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Factors that influence nurses' intention to leave adult critical care areas: A mixed-method sequential explanatory study

By

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Declaration

I declare that this thesis is my own work and has not been submitted in any form for another degree or diploma at any university or other institution of tertiary education. Information derived from published or unpublished work of others has been acknowledged in the text, and a list of references is given.

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…………………………………..This thesis is for you………………………………….

Abstract

Background: The shortage of critical care nurses is a global concern. Although all areas of nursing are affected, critical care areas are especially vulnerable to retention problems. Nurse retention in critical care areas impacts nursing shortages, staff morale, productivity, patient safety, and quality patient outcomes. The issue of nurse retention in critical care areas is evident; however, research into the factors that influence nurses' intention to leave adult critical care areas is limited. Exploring factors that influence nurses' intention to leave adult critical care areas is therefore important and may help in the development of strategies to improve nurse retention, reduce critical care nursing shortages, and thus improve the quality of patient care.

Aim: To examine factors that may influence nurses' intention to leave adult critical care areas and to explore critical care nurses' views and experiences about their working conditions.

Method: A sequential explanatory mixed-method design was used. The main purpose was to use qualitative data to expand on the findings generated using a quantitative approach. Data were collected in two phases from November 2017 to April 2018. An adapted version of the Nursing Work Index-Revised (NWI-R) tool was used in phase one to survey all nurses currently working in adult critical care areas across England; 345 surveys were returned. Data were analysed using chi-square tests, t-tests, factor analysis and logistic regression analysis to determine factors that were associated with nurses' intention to leave. Content analysis was carried out to analyse qualitative comments collected in phase one in response to the three intentions to leave questions. Semi-structured telephone interviews were carried out with a purposive sample of critical care nurses in phase 2 to gain in-depth accounts of the factors

identified in phase 1 and to explore possible solutions to retain nurses. Qualitative data were collected from 15 participants. A framework approach was used to analyse interviews thematically. Data from both phases were integrated using a joint display and narrative weaving approach in phase three.

Results: This study has successfully filled the gaps identified by the literature review including quantifying the data concerning the number of nurses who expressed intention to leave their current job and/or profession in the next one to five years. Quantifying the data regarding nurses' intention to leave is significant as this will hopefully attract the attention of critical care nurse leaders to take notice of this issue and develop strategies to reduce turnover intentions and thus reduce nursing shortages and high turnover. This study has explored the issue of critical care nurses' retention holistically rather than exploring a single factor associated with nurses' intention to leave contrary to previous studies. To our knowledge, this is the first mixed-method study that has explored factors influencing nurses' intention to leave adult critical care areas and hence, not only identified the factors that are significantly associated with nurses' intention to leave but also explained what these factors mean to nurses and why they influence their intention to leave. This detailed insight will make it easier for nurse leaders and policy makers to develop strategies in reducing nurses' intention to leave. The following themes were identified following the integration of findings in phase one and phase two: promoting nurse autonomy and a culture of shared governance, providing a supportive work environment and a system of wellbeing, enhancing workforce relationships and multidisciplinary collaboration, demanding a structured education and development programme and career progression opportunities, feeling demoralised due to the lack of appreciation and acknowledgement for their specialist knowledge and skills, providing flexibility and

maintaining work-life balance when managing the roster, acknowledging nurses' level of experiences when managing teams and experiencing stress and anxiety because of workforce shortages.

Discussion/Conclusion: Overall, the findings of this study have identified several key operational and management issues associated with critical care nurses' intention to leave such as providing educational and professional development opportunities, supportive work environment, promoting nurse autonomy, maintaining work-life balance while managing the roster and workforce shortages. Additionally, this study highlighted some of the more unpleasant aspects of the critical care nursing work environment within critical care and associated workforce misbehaviours. Some of these negative aspects of the critical care nursing culture included judgemental attitudes towards other colleagues; remarks that were anti-intellectual, racist, or ageist remarks towards others; and non-supportive, or even bullying behaviours directed at the junior workforce. Another interesting finding was the feeling among the critical care workforce that they should receive preferential treatment in relation to those employed within other non-critical care areas, such as financial incentives and accelerated career pathways on account of their specialist knowledge and skills which necessitate the completion of additional courses. Another important contribution of this study was the reinforcement and validation of the theories of intention to leave that were developed previously but which have not been acted upon since. Furthermore, based on the findings of this study, a detailed account of recommendations has been provided which will help critical care nurse leaders and policy makers in developing strategies to reduce critical care nurses' intention to leave and thus high turnover and nursing shortages within the adult critical care settings.

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LIST OF ABBREVIATIONS

BNI	British Nursing Index
BOS	Burnout Syndrome
CACCN	Canadian Association of Critical Care Nurses
CCN	Critical Care Nurse/Nursing
CC	Critical Care
CINHAL	Cumulated Index to Nursing and Allied Health Literature
DoH	Department of Health
EBSCO	Elton B. Stephens Co
EfCCNA	European federation of Critical Care Nursing Associations
FTE	Full Time Equivalent
HDU	High Dependency Unit
IC	Intensive Care
ICU	Intensive Care Unit
ICN	Intensive Care Nursing
ICS	Intensive Care Society
ITL	Intention to Leave
JET	Job Embeddedness Theory
MeSH	Medical Subject Headings
MMSR	Mixed-Method Systematic Review
MR	Meaningful Recognition
NHS	National Health Services
NICE	National Institute for Health & Care Excellence
NWI	Nursing Work Index
NWI-R	Nursing Work Index-Revised
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
RN4CAST	Registered Nurse Forecasting
RCN	Royal College of Nursing
SET	Social Exchange Theory
SURE	Specialist Unit for Review Evidence
USA	United States of America
USD	United States Dollars
US	United States
UK	United Kingdom
WHO	World Health Organisation

LIST OF OUTCOMES

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CHAPTER ONE: INTRODUCTION

1.0 Introduction

The shortage of critical care nurses is a worldwide concern (WHO, 2018). Critical care areas are especially vulnerable to retention problems due to unique working conditions characterised by a population of complex patients with multiple organ failure, cared for by nurses with specialist knowledge and skills (Marshall *et al*., 2017. High turnover in critical care areas is well documented; however, evidence into the factors that affect nurses' intention to leave adult critical care areas is limited. This study, therefore, is set to explore factors that influence nurses' intention to leave adult critical care areas, so strategies could be developed to improve nurse retention and thus reduce nursing shortages in the critical care setting.

Attracting and retaining a highly qualified workforce through sustaining employees' wellbeing has become one of the top priorities for organisations worldwide (Kaba, 2017; Zito *et al.,* 2018). The loss of employees leads to a reduction in productivity and quality of work and also increases the economic costs of an organisation. The costs to an organisation due to the loss of employees could be direct such as using temporary staff while permanent staff are hired, recruitment and training of new employees or indirectly such as low morale, pressure on remaining staff and the loss of social capital resulting from the loss of colleagues and friends (Dechawatanapaisal, 2018a). The following sections explore global nursing shortages and high turnover, including its impacts in the field of nursing in general, followed by discussing this issue specifically in the critical care context to set the scene. The link between turnover intention and actual turnover will also be explored before identifying the research question, aims and objectives of this study.

1.1 Nursing Shortages Worldwide

Nursing shortages are a major problem worldwide (WHO, 2018). There was a shortage of more than nine million nurses and midwives worldwide in 2013 (Global Health Workforce Alliance and the World Health Organization, 2013). According to WHO (2018), nurses and midwives represent more than 50% of the current shortage of health care workers, and it is estimated that the world will need an additional 9 million nurses and midwives by the year 2030. It has been reported that a shortage of 260,000 registered nurses will occur in the United States by 2025 (US Department of Health and Human Services, 2014). The European Commission reported a shortage of 590,000 nurses by the year 2020 (Alilu *et al*., 2017) (new data has not been published yet due to COVID-19 to confirm this prediction) while Australia project a shortfall of approximately 85,000 nurses by 2025, and 123,000 nurses by 2030 (Health Workforce Australia, 2014). Similarly, the UK (United Kingdom) Department of Health and Social Care (DoH), estimate a shortage of 42,000 nurses by 2025-26 (Moore, 2017).

Global nursing shortages are expected to accelerate in the next few decades due to the increasing demands of an ageing population with chronic medical conditions and increased life expectancies requiring a greater number of nurses (Chen *et al.,* 2018). The issue of global nursing shortages is further compounded by the current COVID-19 pandemic with significant psychological and physical impacts on frontline nurses (Nie *et al*., 2020). Other factors causing nursing shortages include student nurses attrition (the latest average nurse attrition rate in the UK is 24%) and hence fewer nurses available to recruit (Buchan *et al*., 2019, Ten Hoeve *et al*., 2017) an ageing nursing workforce (Wargo-Sugleris *et al*., 2018) and poor retention of nurses

(Nantsupawat *et al*., 2017). Nursing shortages adversely affect the quality of care and other patient outcomes such as hospital-acquired infections (Rogowski *et al*., 2013); therefore it is vital to explore the causes of nursing shortages and develop strategies to prevent further losses of this valuable workforce. The impacts of nursing shortages and high turnover in nursing as well as in critical care areas will be discussed later in this chapter. One way to manage high turnover and hence nursing shortages is to explore factors influencing turnover intention or intention to leave. The following section explores the relationship between turnover intention and the actual turnover in light of current evidence.

1.2 Intention to Leave and Actual Turnover

There is a consensus among researchers such as Cohen, Blake and Goodman (2016) and Cho and Lewis (2012) that turnover intention or intention to leave and the actual turnover is positively correlated. Findings regarding the strength of the relationship between turnover intention and actual turnover are, however, debatable and depend on individual and organisational factors such as age, education, salary, and work schedule. Cohen, Blake, and Goodman (2016) evaluated the usefulness of turnover intention rate as a predictor of the actual turnover rate in 180 US (United States) federal agencies using hierarchical multiple regression. The study found a positive correlation between turnover intention rate and the actual turnover rate at the agency level. The bivariate regression model was statistically significant ($p<.001$), and each standard deviation increase of intention to quit rate corresponded to a constant proportional turnover rate increase of 13.6% (1.136 times). At the organisational level, this turnover intention rate, however, explains only 4.2% of quit rate variance across the federal government. Cohen, Blake, and Goodman (2016) further reported that

collective demographic variables: average tenure, mid-career workforce, female, and occupation type had a significant effect on agency actual turnover rate at .05 level. Average tenure was most strongly associated with the actual turnover rate ($p < .000$); each standard deviation increase of average tenure results in agencies predicted quit rate decrease by 41.1%. These findings suggest that collective member characteristics are statistically important when intention to leave data is used instead of turnover data. Based on these findings, Cohen, Blake, and Goodman (2016) concluded that there is a significant relationship between turnover intention rate and actual turnover rate in the bivariate regression model. Turnover intention rate is, however, not significantly associated with the actual turnover rate once other jobs and personal characteristics are taken into account. Cohen, Blake and Goodman (2016) suggest that establishing a link between the turnover intention and the actual turnover rate is important but also highlights the significance of exploring other factors such as age, gender, an average tenure that influence turnover intention. The work of Cohen, Blake, and Goodman (2016), therefore, strengthened the need for undertaking this study as it set to explore factors that influence nurses' intention to leave in the adult critical care context. Similar findings have been reported by other researchers such as Cho and Lewis (2012) and Griffeth, Hom and Gaertner (2000). Cho and Lewis (2012) found that turnover intention is a reasonable proxy for actual turnover and there is a strong positive correlation between turnover intention and turnover behaviour when age and experience are used as units of analysis. Similarly, a comprehensive meta-analysis of antecedents and correlates of employee turnover by Griffeth, Hom and Gaertner (2000) reported intention to leave as the main predictor of the actual turnover. Griffeth, Hom and Gaertner (2000), further suggested that the effect of most determinants associated with turnover intention vary widely across populations and

different situations. It is therefore important that theoretical attention is paid to the factors that influence intention to leave, rather than just offering universal turnover formulations to improve turnover. Griffeth, Hom and Gaertner, 2000)'s study further highlighted the importance of exploring factors that influence turnover intentions, including theoretical underpinnings. More recently, a survey questionnaire by Oh and Chhinzer (2020) in a car sale industry while exploring the impacts of transformational leadership on turnover reported a positive relationship between turnover intention and the actual turnover behaviour. These findings suggest that there is sufficient evidence that suggests a correlation between turnover intention or intention to leave and the actual turnover.

Research on the relationship between turnover intention and actual turnover is limited in nursing. Some studies, however, have reported a positive association between turnover intention and actual turnover. For example, a literature review exploring antecedents of turnover intentions by Kaur, Mohindru and Pankaj (2013) concluded that turnover intentions are the antecedent of employee turnover. Similar findings have been reported by other recent studies such as Kim and Cho (2020) (exploring nurses' stress, symptoms, and turnover intention in a 500-bed hospital via a cross-sectional survey) and Ha and Kim (2020) (exploring the impacts of job embeddedness on turnover intentions on clinical nursing in a quantitative study across four hospitals in a metropolitan city). Exploring factors that influence an employee’s intention to leave the organisation and/or profession is, therefore, important and may help in the development of strategies to reduce employee shortages by controlling turnover rates. The purpose of this study is to increase our knowledge regarding the factors that influence nurses’ intention to leave adult critical care areas which may help nurse leaders in developing strategies to reduce high turnover. Managing high turnover may

contribute to the improvement of human resource planning, reducing costs and improving the quality of patient care in adult critical care settings.

1.3 Nursing Turnover

Turnover is defined as a ratio of the number of employees an organisation must replace in a certain period (Suzuki, 2007). Others have defined turnover as staff voluntarily or involuntarily leaving their organisation or profession, as a result of the termination of employment (Hayajneh *et al*., 2009; O'Brien-Pallas *et al.*, 2010). Turnover is expected in all sectors, and it is sometimes valuable to the workforce, but the current global nursing turnover rates (15.1-44.3%) are considerably high (Duffield *et al*., 2014, International Council of Nursing, 2020) compared to other health care professions such as general practitioners (GPs) - 13 to 18% (Owen *et al*., 2019) and physiotherapists- 7 to 16% (Campo, Weiser & Koenig, 2009). According to the International Council of Nursing (2020) 20% of ICN's National Nurses Associations (NNAs) reported an increased rate of nurses leaving the profession in 2020. Considering the international acceptable turnover rate is 4 to 12% (Kosel and Olivo, 2002) and up to 15% is considered acceptable in the literature, despite its implications on cost and quality (Dewanto and Wardhani, 2018), the high nursing turnover rate is becoming a rapidly growing human resource problem in the health care sector (Dewanto and Wardhani, 2018). Considering the current and projected nursing shortages, researchers have focused more attention on the retention of the existing nursing workforce (Hauck, Quinn Griffin and Fitzpatrick, 2011). Research has shown that high nursing turnover is among the most important factors associated with global nursing shortages impacting costs, and performance (Hayes *et al*., 2006; Wan *et al.*, 2018). High nursing turnover leads to increased costs for the organisation by using

temporary staff to fill vacancies and hiring, orientation and training of new staff (Duffield *et al*., 2014). The average cost of turnover for a bedside nurse is 52,100 USD (United States Dollars) and ranges from 40,300 USD to 64,000 USD resulting in the average US hospital losing 4.4 M USD – 6.9 M USD annually (Nursing Solutions, 2019). A study by Roche *et al*. (2015a) while comparing turnover costs reported similar figures (49,255 USD per nurse). Each per cent change in nurse turnover will cost/save the average hospital an additional 328,400 USD (Nursing Solutions, 2019). In the UK, the costs of using temporary staff due to high turnover have approached two billion pounds annually (Robson and Robson, 2016). Considering the limited data on the detailed breakdown costs of bedside nurses in the UK, a research project is underway and will finish in 2022 to investigate the relationship between the NHS staff turnover and health service efficiency in the UK (Buchan *et al*., 2019)

High employee turnover affects the morale of the remaining staff (Yang *et al*., 2017) due to increased pressure to work in excess of contractual hours and providing support to an increased number of new employees (Robson and Robson, 2016), leading to a decline in quality of care such as medical errors (O'Brien-Pallas *et al*., 2010) and employee performance (Labrague *et al*., 2018). These problems are further exacerbated by the perception that non-permanent staff exhibit a weaker degree of engagement with permanent staff and require extra support (Robson and Robson, 2016). A perception of diminishing service due to nursing shortages caused by high turnover leads to further increasing the desire to leave amongst those remaining in their posts (Slåtten, Svensson and Sværi, 2011).

1.4 Impact of Nursing Shortages and High Turnover

As previously noted, nursing turnover is very high in comparison to other health care professions and requires immediate attention and intervention (Alilu *et al.*, 2017, Dilig-Ruiz *et al*., 2018). High turnover in nursing is associated with adverse patient outcomes such as high incidences of medical errors and low quality of care due to increased workload, reduced staffing and reduced nurse to patient ratio (O'Brien-Pallas *et al*., 2010). Rogowski *et al*. (2013), reported a statistically significant ($p<0.001$) association based on regression analysis between understaffing and the risk of nosocomial infections in 67 different units from the Vermont Oxford Network in America. A study by Aiken *et al.* (2018), summarizing the key findings from the RN4CAST (Registered Nurse Forecasting) program of research found that there is strong evidence of a significant association between better nurse staffing and lower mortality. The project of RN4CAST was one of the largest nursing workforce studies conducted in the European Union. The aim of the RN4CAST study was to establish how nurse staffing, skill mix, education, and quality of work environment impact failure to rescue (death after a treatable complication-an important indicator of patient safety), hospital mortality, quality of care, and patients' satisfaction. Aiken *et al*. (2018) found significant association between better staffing and risk-adjusted mortality across all the countries. Similar findings have been reported by other researchers such as Fagerström, Kinnunen and Saarela (2018), in an observational study exploring nursing workload, patient safety and mortality in 36 units of four Finnish hospitals. Fagerström, Kinnunen and Saarela (2018), found that the odds for a patient safety incident were 10%-30% higher, and for patient mortality about 40% higher if the nursing workload was above the optimal level as measured by RAFAELA® (a nursing intensity system that provides information on patients' needs for individual care). More recently, a

clinical evidence review by Halm (2019), reported that better staffing, skill mix and nurse to patient ratio were associated with fewer hospital-acquired pressure injuries, catheter-associated urinary tract infections, surgical site infections, sepsis and heart failure. Having discussed nursing shortages, nursing turnover and the impacts of nursing shortages and high turnover in nursing in general, the following section will discuss nursing turnover and its impacts in the adult critical care settings.

1.5 Nursing Turnover in Critical Care Areas

Critical care areas have higher turnover rates compared to other nursing specialities (Dilig-Ruiz *et al*., 2018). A large study by O'Brien-Pallas *et al*. (2010) in 182 different units across 41 hospitals in Canada reported an annual turnover rate of 26.7% in critical care areas as compared to (13.7%-20.8%) in other non-critical care areas. Numerous other international studies have reported high turnover rates in critical care areas such as the USA (26.8%), Canada (26.7%), Australia (15.1%) and New Zealand (44.3%) (Duffield *et al*., 2014). More recently, Adams, Chamberlain and Giles (2019a) while citing various international studies reported high turnover rates in critical care areas including Canada (24%), Netherland (30%), the USA (29.2%-41.1%) and Taiwan (48.9%). Similarly, Critical Care Network UK reported an annual staff turnover in excess of 20% with some as high as 42% (Horsfield, 2018). Interestingly turnover rates in New Zealand and the UK are similar (+40%) but there is no data to explain the reasons behind this similarity. It is however clear that turnover rates across the whole of New Zealand are similar in contrast to the UK where the turnover rates vary across different regions (20-42%)(Horsfield, 2018). These figures highlight that high nurse turnover rates are a particular problem in critical care areas requiring immediate attention.

1.6 Impact of High Nursing Turnover in Critical Care Areas

The impact of nursing shortages and high nursing turnover can be much greater in critical care areas (Dilig-Ruiz *et al.*, 2018) due to a highly skilled nursing workforce required to care for critically ill patients with complex medical conditions (Intensive Care Society, 2013). Critical care areas are dedicated to the management of patients with acute life-threatening conditions such as sepsis and acute respiratory distress syndrome (Marshall *et al*., 2017) requiring advanced technology and in-depth knowledge of disease process due to multiple-organ failure (European federation of Critical Care Nursing Associations -EfCCNa, 2007). Critical care nurses, therefore, require specialized training to acquire comprehensive knowledge of pathophysiology to be able to respond to the changes in patients' condition. Furthermore, critical care nurses need expert skills to be able to operate advanced technology and excellent communication and leadership skills to be able to work effectively as part of a multidisciplinary team in a very complex and stressful work environment (Endacott *et al*., 2015; Dilig-Ruiz *et al*., 2018). The time required to train a novice critical care nurse to a level where he/she could safely and independently care for a patient in a critical care setting is considerably longer than other less acute settings (Dilig-Ruiz *et al*., 2018), training may take up to a year as compared to other non-critical care areas which may only take weeks (Khan *et al*., 2019).

Furthermore, large number of nurses are required to work in critical care areas (Hauck, Quinn Griffin and Fitzpatrick, 2011) compared to other non-critical care settings due to an elevated nurse-patient ratio (Lobo *et al.*, 2012). The recommended nurse to patient ratio in critical care areas is one nurse to one patient or one nurse to two patients in the UK (The Faculty of Intensive Care Medicine, 2019; Kelly *et al*., 2014),

Europe (European federation of Critical Care Nursing Associations -EfCCNa, 2007) and Australia (Chamberlain, Pollock and Fulbrook, 2018) and range from 1.29 to 3.8 in the United States of America (Kelly *et al*., 2014). Furthermore, a study by Arabi *et al*. (2016) reported a nurse to patient ratio of one to one or one to two in about 84% of intensive care units (ICUs) in twenty different countries across Asia. In this regard critical care areas appear to be unique and replacing a critical care nurse has considerable resources and time implications compared to other non-critical care areas (Vermeir *et al*., 2018) where the nurse to patient ratio varies from one nurse to five patients up to one nurse to eleven patients (Liu *et al*., 2012; Aiken *et al*., 2018).

Appropriate staffing and higher nurse to patient ratio in critical care areas have been linked with improved patient outcomes (Chamberlain, Pollock and Fulbrook, 2018). A systematic review and meta-analysis by Kane *et al*. (2007) examined the association between nurse staffing and patient outcomes with twenty-eight studies reporting adjusted odd ratios of patient outcomes in categories of a nurse to patient ratio. Kane *et al*. (2007), reported an association between increased nurse staffing and low hospital-related mortality in intensive care units (odd ratios (OR)-0.91; 95% confidence interval (CI), 0.86-0.96. Furthermore, an increase by one nurse per patient day was associated with a decreased ratio of hospital-acquired pneumonia (OR-0.70; 95% CI, 0.56-0.88), unplanned extubations (OR-0.49; 95% CI, 0.36-0.67), cardiac arrests (OR, 0.84; 95% CI, 0.62-0.84) and reduced length of ICU stay by 24%. Similarly, a large quantitative study by O'Brien-Pallas *et al*. (2010), reported that reduced staffing and nurse to patient ratio in critical care areas are associated with adverse nursing outcomes, such as burnout, increased workload, decreased morale and poor quality of patient care. Data sources included nurse survey, unit managers, medical records, and human resource databases from nine different types of nursing units. Similar

findings were reported by Dilig-Ruiz *et al*. (2018) in a systematic literature review highlighting the impacts of high nursing turnover in critical care areas.

Apart from adverse patient and nursing outcomes, there are also significant costs to the turnover of staff in critical care areas. It is estimated that costs of nursing turnover range from a low of 20,561 USD in the US to a high of 48,790 USD in Australia and similar in New Zealand and Canada, at 23,711 USD and 26,652 USD respectively (Duffield *et al*., 2014). It could cost up to USD 64000 to train a novice critical care nurse to a level where he or she could independently care for a critically ill patient (Duffield *et al*., 2014), which is much higher as compared to other non-critical care areas of USD 15,000-USD 20,000 (Ruiz, Perroca and Jericó, 2016). Based on these findings, the impact of nursing shortages and high turnover is much greater in critical care areas, and there is a greater imperative to take steps to reduce nursing shortages and high turnover in critical care areas. Being a current critical care practitioner with previous experiences of working in various non- critical care areas, these findings are relevant and reflective in the workplace of the author of this thesis. This study, therefore, aimed to explore factors influencing nurses' intention to leave adult critical care areas which may inform the development of strategies to improve nurse retention in this specialised area thus reducing costs and improving the quality of patient care.

1.7 Definitions of Terms

The following terms referred to in this study:

1.7.1 Intensive Care / Critical Care

Intensive care also known as critical care is a multidisciplinary speciality dedicated to the comprehensive management of patients who have, or at risk of developing acute,

life-threatening organ dysfunction (Marshall *et al*., 2017). Intensive care areas are characterised by the use of advanced technologies such as ventilators, cardiac monitoring and support equipment and renal replacement therapy machines that provide support in multiple organ failure, particularly lungs, heart, and kidneys. The primary purpose of intensive care is to prevent further deterioration, while the underlying disease is managed and treated (European federation of Critical Care Nursing Associations -EfCCNa, 2007. Throughout this thesis, the term Intensive Care Unit (ICU) will be used to represent intensive or critical care areas. An ICU is a specially staffed, self-contained area of a hospital dedicated to the management and monitoring of patients with life-threatening conditions. It includes all areas that provide Level 2 (high dependency care) and/or Level 3 (intensive care) as defined by the Intensive Care Society UK (ICS) document Levels of Critical Care for Adult Patients (Intensive Care Society, 2013).

1.7.2 Critical Care Nurse/Intensive Care Nurse

A critical or intensive care nurse is a registered practitioner with advanced knowledge and skills, who provides comprehensive patient-centred care to critically ill patients requiring complex interventions in a highly technical environment (Williams, Schmollgruber and Alberto,2006). A critical care nurse is a registered nurse who has the knowledge, skills, and competence to meet the needs of a critically ill patient with no supervision (RCN, 2019). Canadian Association of Critical Care Nurses (2018), highlighted that critical care nurses are specialist nurses possessing advanced problem-solving abilities using specialist knowledge regarding the human response to critical illness. The definition of a critical or intensive care nurse presented in this section was used in the recruitment of participants in this study.

1.7.3 Turnover

According to Suzuki (2007), turnover is a ratio of the number of employees an organisation must replace in a certain period. Kim (2014) defines turnover as the process of withdrawal decision in a sequence of the following psychological steps; evaluation of the job, job satisfaction, thinking of leaving, evaluation of search and costs of leaving, intention to search for alternatives, evaluation and comparison of alternatives, intention to leave or stay and leave or stay. Various researchers have provided similar definitions of the term turnover. Harkins (1998,p-74), defined the term employee turnover as the "entrance of new employees into the organisation and the departure of existing employees from the organisation". Kaur, Mohindru and Pankaj (2013), describes turnover as the change in the workforce in a definite period of time while Rahman and Nas, (2013, p-568) refers to turnover as the "permanent movement of an employee beyond the boundary of the organisation. This thesis will use Harkins (1998,p-74) definition of turnover as it is simple, clear and covers both aspects of employee turnover, employees leaving the organisation replaced by those who joins the same organisation in a specific period.

1.7.4 Turnover Intention or Intention to Leave (ITL)

Turnover intention or intention to leave is defined as the thinking of leaving and intent to search for alternative employment (Fardid, Hatam and Kavosi, 2018). According to Hussain and Asif (2012), turnover intention or intention to leave is the prevailing mental, behavioural decision between an employee's choices that are either to stay or leave and connected with actual turnover. The probability that an employee might stay or leave differs from the intention of the employee to leave or stay at that organisation. The latter behaviour has been widely studied and has been labelled as

intent to leave, intention to leave, intention to quit, turnover intent or turnover intention (Liu and Onwuegbuzie, 2012). These terms have been used synonymously in the literature to describe the likelihood that an employee will leave his or her job in the near future. This thesis will use the definition of turnover intention or intention to leave by Tett and Meyer (1993, p-260) as “the conscience and deliberate wilfulness to leave the organisation” due to its focus on leaving the organisation or profession willingly and consciously. Furthermore, the abbreviation ITL will be used in this thesis to describe intention to leave (ITL) the organisation or profession.

1.8 Research Focus

This study focuses on exploring current critical care nurses’ intention to leave adult critical care areas in an attempt to understand the phenomenon of intention to leave among critical care nurses and possible factors that influence nurses’ thoughts about leaving the organisation as well as the nursing profession. This thesis will focus on nurses’ intention to leave rather than the actual turnover because an employee’s intention to leave is considered to be one of the most significant indicators of actual turnover (Hayes *et al*., 2012; Dechawatanapaisal, 2018a) as noted earlier in this chapter. Actual turnover could be assessed by measuring turnover intention or intention to leave (Fardid, Hatam and Kavosi, 2018). According to Berndt (1981,p-1), “intentions are a statement about a specific behaviour of interest and generally signal an accurate indication of the subsequent behaviour”. It is, therefore, important to investigate factors influencing nurses’ intention to leave, which drive critical care nurses to actual turnover. Identifying the causes of nurses’ intention to leave adult critical care settings may help nurse leaders and policymakers to develop strategies

to take preventive measures against nurses’ intention to leave thus improving turnover and stabilising nursing workforce within the adult critical care settings.

1.9 Research Aims and Objectives

1.9.1 Primary Aim

The main aim of this research was to explore possible factors that may influence nurses’ intention to leave adult critical care areas and nurses’ views and experiences about their working conditions.

1.9.2 Secondary Aim

To provide recommendations that may inform strategies to improve the retention of critical care nurses and may, therefore, contribute to a more stable critical care nursing workforce.

1.9.3 Research Objectives

Based on the research question of this study, the following objectives were derived from the aims:

- To conduct a national online survey of critical care nurses currently working in adult critical care areas across England to explore factors that may influence nurses' intention to leave adult critical care areas and to collect data about the number of nurses intending to leave adult critical care areas or nursing profession entirely.
- To undertake telephone interviews with a sample of critical care nurses currently working in adult critical care areas to get in-depth knowledge about their working conditions and possible factors associated with nurses’ intention to leave adult critical care areas.

1.10 Research Question

What factors influence nurses' intention to leave adult critical care areas?

1.11 Study Phases

This study was carried out in three phases using a mixed-method sequential explanatory design (Creswell and Clark, 2018) which is briefly outlined below. A further detailed discussion of these phases will follow in chapter three.

1.11.1 Phase 1

Quantitative data was collected from all nurses currently working in adult critical care areas via a cross-sectional survey. An adapted version of the validated Nursing Work Index-Revised (NWI-R) tool was used. The study was conducted from November 2017 to April 2018 at 263 adult critical care units across England. A link to the online survey questionnaire was emailed to all nurses currently working in adult critical care areas via the critical care network UK.

1.11.2 Phase 2

Qualitative data was collected via in-depth telephone interviews from a sample of nurses currently working in adult critical care areas. Participants who expressed intention to leave and were happy to be interviewed were asked in phase 1 to provide contact information to be followed up for interviews. Semi-structured in-depth telephone interviews were used to collect data from participants who agreed to be interviewed. Interview questions were developed using the information collected from the findings of the literature review undertaken to inform this study and survey in phase 1.

1.11.3 Phase 3

In this phase, data from phases one and two were integrated using a joint display and narrative weaving approach.

1.12 Importance of this Research

Previous studies such as Dilig-Ruiz *et al*. (2018), Dodek *et al*. (2016) and Fitzpatrick *et al*. (2010) have reported nursing shortages and high turnover in adult critical care areas. As discussed in section 1.2 of this chapter, one of the ways to counteract nursing shortages and high turnover in critical care areas is to improve nurse retention by exploring factors influencing nurses' intention to leave. Research into the factors that influence nurses' intention to leave adult critical care areas is, however, limited. Research carried out on the subject of nurses' turnover intentions so far has explored single factors associated with nurses' intention to leave adult critical care areas rather than investigating this issue holistically to get an in-depth understanding of the factors that influence nurses' intention to leave. In addition, previous research on the subject of nurse retention in critical care areas is restricted to cross-sectional studies which lack in-depth understanding. A comprehensive, contextual understanding of factors influencing nurses' intention to leave adult critical care areas needs to capture data that is both subjective and objective. The mixed-method research design used in this study, therefore, has enabled a complete exploration and in-depth understanding of the issue of nurses' intention to leave within the adult critical care settings. This detailed insight will help nurse leaders and policymakers in developing strategies to improve the work environment by counteracting the impacts of nursing shortages and high turnover in adult critical care areas. The justification of this study will be explained in detail in chapter two, which will further highlight the importance of this research. It

is worth mentioning that COVID-19 has further highlighted the importance of this study and the findings of this study may play a crucial role in the aftermath of COVID-19 in supporting and retaining of the critical care nursing workforce. The next section, therefore, discusses the COVID-19 pandemic in relation to this study.

1.13 COVID-19

Research on the current COVID-19 pandemic is limited but slowly emerging, will continue to evolve is mainly linked to the early phases of the pandemic (Crowe *et al*., 2021). Additionally, research carried out so far has focused mainly on the psychological impacts of COVID-19 on nurses such as Crowe *et al.* (2021) and Heesakkers *et al*. (2021). Both studies (Crowe *et al*., 2021, Heesakkers *et al*., 2021) explored the effects of COVID-19 on the mental health of critical care nurses. These findings are similar to what has been observed and experienced in practice by the researcher as a critical care nurse. As discussed earlier, critical care nurses are exposed to work-related stress regularly leading to a relatively high prevalence of symptoms of mental distress. The COVID-19 pandemic, however, confronted ICU nurses with an even greater, unprecedented, challenge and exposed them to these risk factors to great extent, most likely having a profound psychological impact (Crowe *et al*., 2021, Heesakkers *et al*., 2021). Some of these risk factors include ICU nurses having to deal with numerous end-of-life decisions, shortages of ICU beds and inadequate Personal Protective Equipment (PPE), the fear of getting infected or infecting others, and visiting restrictions for families (Crowe *et al*., 2021, Heesakkers *et al*., 2021).

Furthermore, there were not enough properly trained critical care nurses to care for the increased number of critically ill patients due to the COVID-19 pandemic as seen

in the practice area of the researcher. Colleagues from other non-critical care areas including medical students were redeployed to support the critical care services. They, however, were only able to help with basic tasks such as providing mouth care, eye care and repositioning the patient. They were not able to deal with the aspects of critical care nursing such as operating the ventilators in response to frequent changes in patient's condition, cardiac support monitoring and renal replacement therapy needs. This has increased the workload of critical care nurses and they were left with caring for a higher number of critically ill patients compared to normal non-pandemic conditions. This has significantly impacted the physical and mental health of critical care nurses (Crowe *et al*., 2021, Heesakkers *et al*., 2021). Furthermore, colleagues who were redeployed to critical care areas felt overwhelmed and struggled to function in an unfamiliar environment where they were unable to help due to the lack of skills and knowledge required to function effectively in this specialised area as seen in the practice area of the researcher. This further highlights that critical care nursing is different from other non-critical care areas and preparing nurses to a level where they could safely care for the critically ill patient requires time and resources. Additionally, COVID-19 has highlighted that colleagues from different areas could work together as one team to achieve the goal of optimal patient care; however, there is a need for developing skills across the spectrum to care for critically ill patients in various settings of the health sector.

Considering the limited research carried out so far on the effects of COVID-19 on critical care nurses and reflecting on personal experiences during the COVID-19 pandemic, further research is needed beyond the scope of this study to explore the wider effects of COVID-19 on critical care nurses and more importantly, how could the critical care workforce as a whole be supported in the recovery phase of COVID-19.

This study was carried out before the COVID-19 pandemic and the findings of this study are applicable to pre-COVID-19 time. The findings of this study, however, could be crucial in developing strategies to provide psychological support to critical care nurses and developing a system of well-being in the post-COVID-19 era.

1.14 Organisation of Thesis

This chapter has introduced an overview of the problem, aims, objectives and study question. A brief overview of the methods and clear rationale of the need for this research has been presented.

Chapter two explains how the systematic mixed-method literature review was undertaken to appraise existing evidence and highlight gaps in knowledge regarding factors that may influence nurses' intention to leave adult critical care areas.

Chapter three presents an overview of the philosophical and methodological positions underpinning this research. Pragmatism is presented as an appropriate paradigm from which to approach this research. The choice of pragmatism is justified by discussing how this approach may best fulfil the aims of this research. The second part of chapter three describes the mixed-method approach and its suitability for this study. The compatibility of mixed-method research and pragmatism is explained to justify and aid the researcher's decision in determining which approach best suits the research question. The final section of chapter three describes the practical methods adopted in this mixed-method study, including integration. The measures adopted to ensure the quality of rigorous and ethical research are also described.

Chapter four presents the study findings of the quantitative data from phase one. Autonomy, work environment, working relationships, opportunities for professional development and age were statistically significantly associated with nurses' intention

to leave adult critical care areas. In the final section of the chapter, findings resulted from a content analysis of qualitative comments collected in phase one is presented.

Chapter five discusses the findings of the qualitative data in phase two. The following three themes; (1) feeling appreciated and acknowledged for their specialist knowledge and skills (2) providing overall support and developing a system of wellbeing following stressful incidents and (3) acknowledging the importance of organisational and operational aspects of management in the delivery of care are presented and explained.

Chapter six presents the results of combined data after integrating both phase one and two using a joint display and narrative weaving approach.

Chapter seven evaluates the overall results of the study with reference to the current evidence base. Findings that are supported by other research or refute other literature have been identified. Novel findings are highlighted, and their significance discussed.

Chapter eight presents the limitations of the study. Conclusions are drawn, areas for further research are explored, and recommendations for nurse leaders and policymakers based on research findings are presented.

1.15 Chapter Summary

This chapter began by describing nursing shortages and high turnover in nursing in general. This was followed up by establishing that high turnover, and nursing shortages within the adult critical care areas is a major problem. Exploring factors that influence nurses' intention to leave adult critical care areas may help in improving nurse retention. Research into the factors influencing nurses’ intention to leave adult critical care areas is, however, limited. This mixed-method study will, therefore,

explore the issue of nurse retention in great detail by collecting data about the extent of the problem as well as exploring factors influencing nurses' intention to leave. The findings of this study may be used to inform the development of strategies to improve nurse retention by improving the work environment of adult critical care areas. This may reduce costs and positively impact the quality of patient care.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter provides a comprehensive overview of the literature pertaining to nurses' intention to leave adult critical care settings. The chapter describes how a systematic review of empirical research was undertaken to highlight gaps in the current literature, which this study aims to address. The chapter concludes by providing a justification of the thesis based on the gaps identified by this literature review.

2.1 The Literature Review

This section of the chapter explains and justifies the methodology used to carry out the systematic literature review. The objective of this systematic literature review was to examine evidence from quantitative, qualitative, and mixed-methods literature on factors influencing nurses' ITL adult critical care areas. A mixed-method systematic literature review was undertaken to synthesize the findings of empirical quantitative and qualitative studies relevant to the research question. Joanna Briggs's guidelines for mixed-method systematic reviews (Lizarondo *et al*., 2020) were used as a guide to undertake this literature review.

2.1.1 Aim

To explore factors that may influence nurses' intention to leave adult critical care areas.

2.1.2 Objectives

To identify and appraise existing evidence to summarise themes relating to nurses' intention to leave.

2.2 Literature Review

2.2.1 Introduction

This section starts with an overview of the literature to set the scene, followed by the methodology adopted to undertake this literature review, with justification. Historically, two contrary methods of literature reviews were prominent in health care research in the 1990s. One was the highly rigorous, systematic and mostly quantitative review called a 'Cochrane' style review and the other was a 'Narrative' review whereby literature was summarised qualitatively (Aveyard and Bradbury-Jones, 2019). A narrative literature review is a comprehensive, critical and objective analysis of the current knowledge on a topic (Onwuegbuzie and Frels, 2016). However, narrative reviews have been criticised for the lack of a systematic approach and thus the potential for bias in their findings (Booth, Sutton and Papaioannou, 2016). Aveyard and Bradbury-Jones (2019), have identified a rapid increase in the number of approaches and terms used to describe doing a literature review. This surge in review types in the past two decades occurred in response to the Cochrane/Narrative dichotomy. Researchers such as Grant and Booth (2009) and Booth *et al*. (2016) have identified 14 and 19 approaches, respectively, for reviewing the literature, some of which are more common than others. One of the emerging approaches in literature reviews is a systematic literature review. According to the Cochrane approach, systematic reviews seek to collate evidence that fits pre-specified eligibility criteria to answer a specific research question (Chandler *et al*., 2020). The aim is to minimize bias by using explicit, systematic methods documented in advance with a protocol. Other systematic literature reviews include those taking a systematic approach and aims to identify, appraise and synthesize all empirical evidence that meets pre-

specified criteria to answer a specific question (Onwuegbuzie and Frels, 2016). Another common approach is the integrative literature review which can be classified as both a narrative and a systematic literature review (Onwuegbuzie and Frels, 2016). An integrative review summarizes empirical or theoretical literature to provide a more comprehensive understanding of a particular phenomenon or problem (Broome,1993) and allows for the inclusion of diverse methodologies. The complexities inherent in combining diverse methodologies, however, can contribute to a lack of rigour, inaccuracy, and bias (Whittemore and Knafl, 2005). Other terms used in the literature to describe doing a literature review among others include, a scoping review (Peters *et al.*, 2015), realist review (Wong *et al.*, 2013), rapid review (Plüddemann *et al.*, 2018) and focused mapping review and synthesis (Bradbury-Jones *et al.*, 2019). Considering the rapid expansion in the terminology used to describe different approaches to review the literature and avoid confusion, researchers are urged to be explicit about the method they adopt to carry out a literature review. The following section therefore describes and justifies the methods adopted to undertake this literature review.

2.3 Mixed-Method Systematic Literature Review

The objective of this literature review was to identify factors and explore how and why these factors influence nurses' ITL adult critical care areas (including both quantitative and qualitative studies). To get an in-depth and holistic understanding of the research issues in question, this review incorporated an emerging methodology designed for the examination of quantitative, qualitative and mixed-method studies, called mixed-method systematic review (Pope, Mays and Popay, 2007). A mixed-method systematic review can be defined as combining the findings of qualitative and quantitative studies within a single systematic review to address the same overlapping

or complementary review questions (Harden, 2010). Mixed-method systematic reviews (MMSR) are also referred to as mixed-method research syntheses (Heyvaert *et al*., 2013), mixed studies reviews (Pluye and Hong, 2014) and mixed research syntheses (Sandelowski and Barroso, 2006). Regardless of the name, the core purpose of any MMSR is to combine empirical quantitative and qualitative data or integrate quantitative and qualitative evidence to create a breadth and depth of understanding that can confirm or dispute the evidence and ultimately answer the review question posed (Porritt, Gomersall and Lockwood, 2014). MMSR include both the numerical data inherent in the positivist paradigm and the important opinions and perspectives presented in interpretive and critical paradigms (Porritt, Gomersall and Lockwood, 2014). A well-structured MMSR thus has the potential to produce more informative conclusions than those derived from other reviews. Mixed-method systematic reviews have some limitations such as they may result in a larger number of citations, require more time and methodological skills, and are resource-intensive (Petticrew *et al.*, 2013). Despite these constraints, the mixed-method systematic approach maximises the strength of both qualitative and quantitative approaches and provide an additional mechanism to validate review findings (Sandelowski, Voils and Barroso, 2006). Incorporating both quantitative and qualitative data provide an in-depth and holistic understanding of the findings which may not be possible from conducting either of the approaches alone (Lizarondo *et al.,2020)*. The aim of this literature review was not just to identify the factors that influence nurses' intention to leave adult critical care areas, but also to find out what these factors mean to nurses and why they influence their intention to leave. Therefore, MMSR was appropriate to explore this issue. The following section explains and justifies the type of approach adopted to undertake this mixed-method systematic literature review.

Joanna Brigg's Institute (JBI) Reviewer's Manual (Lizarondo *et al*., 2020) guidelines were used to undertake this mixed-method systematic literature review. According to the JBI manual, there are two approaches (convergent where the synthesis occurs simultaneously or sequential where the synthesis occurs consecutively), to carry out MMSR. However, the JBI guidelines exclusively focus on the convergent approach due to the minimal usage of the sequential approach in research. The convergent approach is further broken down into two groups (convergent integrated which allows the combination of quantitative and qualitative data and convergent segregated which involves the synthesis of quantitative and qualitative data synthesis leading to the generation of quantitative evidence and qualitative evidence which are then integrated together (Lizarondo *et al*., 2020). As this literature review aims to explore factors influencing nurses' ITL adult critical care areas, both quantitative studies (to identify factors that may influence nurses' ITL adult critical care areas) and qualitative studies (to explore how and why those factors influence nurses' ITL) needed to be included. The convergent integrated approach was therefore adopted to carry out this MMSR. A detailed explanation of how the synthesis was carried out using the convergent integrated approach will be presented later in this chapter.

2.4 Design and Methods

The following sections outline the full details of specific methods used to carry out this literature review.

2.4.1 Search Strategy

A systematic search was carried out for published and unpublished studies using database searching and supplementary search methods. The search strategy was developed using the List, Keep and Delete approach, a framework used to identify

search terms for systematic reviews in health care (Lavender, Mawhinney and Aveyard, 2016). In the List, Keep and Delete approach, words included in the research question are added to the "List" section. The words that need to be searched are added to the "Keep" section, while words that are not required in the search are added to the "Delete" section (Appendix 2.1). There is no published work yet to support or validate this approach, it is similar to other approaches such as PICO (patient, intervention, comparison, outcome) (Ho *et al.*, 2016). The reason for choosing the List, Keep and Delete approach was its' simplicity and clear, structured pathway which, being an early career researcher, makes it easier to follow and apply. Additionally, this approach is specifically designed for undertaking systematic literature reviews in health care. Despite PICO being a popular search tool, there is very little evidence of its effectiveness in ensuring a good quality literature review (Eriksen and Frandsen (2018). The List, Keep and Delete approach, therefore, was a justifiable choice to answer the literature review question. Additionally, the List, Keep and Delete approach was developed by one of the academics at the Oxford Brooked University and I was keen to use it and reflected on it later with the academic who developed it. On reflection, the List, Keep and Delete approach helped achieve the goal of systematic searching and hence the objectives of this literature review. An initial scoping exercise was followed by a series of complementary search methods, including database and citation searches. Details of the search methods are outlined below.

2.4.2 Scoping Exercise

A scoping exercise was carried out to enhance the sensitivity of the literature search and to map the key concepts underpinning the area of research (Peters *et al.*, 2015). A scoping exercise is a preliminary assessment of the size and scope of available research literature to identify the nature and extent of research evidence (Grant and

Booth, 2009). A list of search terms was generated for the key concepts; these were adult, critical care, intention to leave and nurses. Keywords indexed in studies meeting the inclusion criteria were identified by conducting a scoping search on the databases. This process was useful in the identification of the Medical Subject Headings (MeSH) and synonyms used to search databases when carrying out the literature search.

2.4.3 Literature Searches

A systematic search of the literature was performed using databases, selected journals and grey literature sources between 2005 and 2021. The initial search was carried out in 2016, however, the search was repeated every year until the submission of this thesis to ensure newly published literature was included in the literature review.

2.4.4 Database Searching

Databases searched were, British Nursing Index (BNI) provided by ProQuest, Cumulative Index to Nursing and Allied Health Literature (CINAHL) provided by EBSCO, PubMed provided by The United States National Library of Medicine (NLM), PsycINFO provided by American Psychological Association United States, Embase provided by Elsevier B.V., and Health B Elite provided by EBSCO using the keywords intention to leave, nurses, adult and critical care. The MeSH (Medical Subject Headings) headings and synonyms (identified following discussions with the librarian and looking at the key words cited in relevant literature) used, including the truncation used during searching, are presented in table 2.1. The MeSH headings are highlighted in bold.

Table 2.1: MeSH headings and synonyms used to search databases (using the List, Keep and Delete approach)

Critical Care	**Intention to leave**	**Nurses**	**Adult**
Critical Care Unit*	"Intention* to leave"	Intensive Care Nurs*	
Intensive Care Unit *	Quit*	Critical Care Nurs*	
Intensive Therapy Unit*	Leav*	Intensive therapy nurs*	
High dependency unit*	Abandon*	Adult intensive care Nurs*	
Adult intensive care Unit *	Resign*	Cardiac critical care nurs*	
ICU*	Terminate*	Neuro ICU nurs*	
HDU*		ITU Nurs*	
AICU*		ICU Nurs*	
CCU*		HDU Nurs*	
Cardiac ICU*		CCU Nurs*	
Neuro ICU*			

Keywords were combined using search strings 'and' and 'or'. A summary of how the keywords were combined is presented in table 2.2.

Table 2.2: Combining keywords

1- "Intention to leave*" or Quit* or Leave* or Abandon* or Resign* or Terminate* 2- "Intensive Care Nurs*" or "Critical Care Nurs*" or "Intensive therapy nurs*" or "Adult intensive care Nurs*" or "Cardiac critical care nurs*" or "Neuro ICU nurs*" or "ITU Nurs*" or "ICU Nurs*" or "HDU Nurs*" or "CCU Nurs*.." 3- "Critical Care unit*" or "Intensive Care unit*" or "Intensive Therapy Unit*" or "High dependency unit*" or "Adult intensive care unit*" or ICU* or HDU* or AICU* or CCU* or "Cardiac ICU*" or "Neuro ICU*." 4-2 and 3 5-1 and 4

As an example, the search strategy applied to PubMed, including the outcome, is presented in table 2.3.

Table 2.3: Search strategy applied to PubMed

Search	Add to builder	Query	Items found
#4	Add	Search ((#1) AND #2) AND #3 Filters: Publication date from 2005/01/01 to 2016/12/31	98
#3	Add	Search "Critical Care unit*" or "Intensive Care unit*" or "Intensive Therapy Unit*" or "High dependency unit*" or "Adult intensive care unit*" or ICU* or HDU* or AICU* or CCU* or "Cardiac ICU*" or "Neuro ICU*" Filters: Publication date from 2005/01/01 to 2016/12/31	73047
#2	Add	Search "Intensive Care Nurs*" or "Critical Care Nurs*" or "Intensive therapy nurs*" or "Adult intensive care Nurs*" or "Cardiac critical care nurs*" or "Neuro ICU nurs*" or "ITU Nurs*" or "ICU Nurs*" or "HDU Nurs*" or "CCU Nurs*" Filters: Publication date from 2005/01/01 to 2016/12/31	22900
#1	Add	Search ("intention to leave*" or Quit* or Leave* or Abandon* or resign* or Terminate*) Filters: Publication date from 2005/01/01 to 2016/12/31	121046

2.4.5 Journals and Websites Hand-Search

Hand-searching of key journals and websites in the previous ten years (2005-2016) using their search engines were carried out to identify further relevant studies that may have been missed in the database searches due to inaccurate indexing and mismatches with the search strategy. The hand search of key journals and websites was updated every year until March 2021 similar to the main database searching without identifying any further studies. A list of websites and journals searched is presented in table 2.4.

Table 2.4: Website and journal searches

Websites	Journals
Department of Health (DOH) UK	Journal of Advanced Nursing
Nursing and Midwifery Council (NMC)	Intensive and Critical Care Nursing
Royal College of Nursing (RCN)	Journal of Clinical Nursing
British Association of Critical Care Nurses (BACCN)	British Journal of Nursing
Intensive Care Society (ICS)	Clinical Nursing Research
American Association of Critical Care Nurses (AACCN)	Journal of Nursing Management
Association of Canadian Critical Care Nurses (ACCCN)	Nursing Times
World Federation of Critical Care Nurses (WFCCN)	Nursing in Critical Care
European Federation of Critical Care Nursing Associations (EFCCNA)	
National Institute for Health and Care	

Excellence (NICE)

2.4.6 Grey Literature Sources

A search for grey literature was carried out to identify relevant unpublished studies such as theses, reports, and ongoing research. The databases of grey literature selected for the search included Index to thesis, Oxford Brookes University library, NHS library and Google.

2.4.7 Inclusion and Exclusion Criteria

International and national empirical research studies published between 2005 and 2021 in the English language exploring factors influencing nurses' intention to leave adult critical care settings were included. The initial search was carried out in 2016, however, the search was repeated every year until the submission of this thesis and again before the Viva (March, 2021) to ensure newly published literature was not missed. All study designs exploring factors influencing critical care nurses' intention to leave were included. Primary data from non-critical care areas, neonatal and paediatric critical care areas and studies exploring intention to leave of other health care professionals were excluded. The primary outcome measure of the literature review was to identify factors that may influence critical care nurses' intention to leave, there were no secondary outcome measures.

2.4.8 Search Outcome

The total number of records identified through the database (277) and supplementary (976) searches were 1253. The titles and abstracts of all studies retrieved in the searches were assessed against the inclusion and exclusion criteria. The number of articles removed following title and abstract screening, including duplicates, was 1224,

hence the number of full-text articles assessed for eligibility was 29. The number of articles excluded with reasons after full-text reading was 14 therefore, 15 studies (2 qualitative and 13 cross-sectional studies) were included in the literature review (See figure 2.1 for Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram) (Moher *et al.*, 2009).

2.4.9 Studies Excluded from the review

The number of studies excluded following title and abstract screening (undertaken in non-critical care areas) and accounting for duplications was 1224. A total of 14 studies were excluded from the review following full-text reading based on the exclusion criteria. A number of articles (n=5) exploring other issues such as burnout but without studying nurses' ITL in adult critical care areas were excluded. Studies that explored the association of burnout or other factors with nurses' ITL in adult critical care areas were included in the review. A further five studies claiming in the title or abstract to use a mixed sample including adult critical care areas but didn't specifically mention the outcomes regarding critical care areas in the text and only focused on non-critical care areas were excluded. A number of articles (n=4) claiming to explore factors associated with nurses' ITL adult critical care areas in their titles and abstracts were initially included. On reading the full text, however, it became clear that the issue of nurses' ITL was not explored and these studies were therefore excluded.

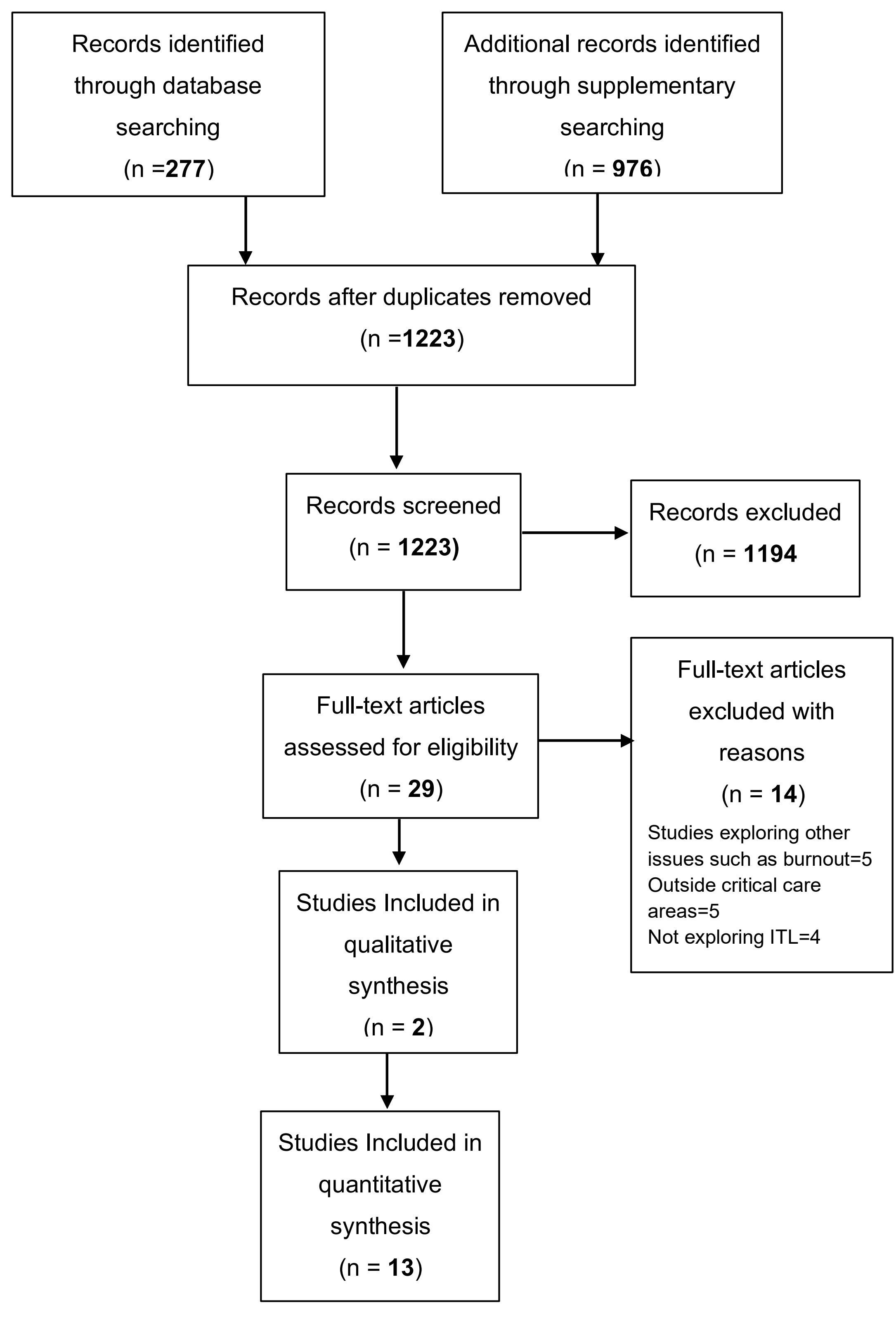

Figure 2.1: PRISMA Flow Diagram (Moher et al., 2009)

2.4.10 Quality Appraisal

Aligned with the guidelines of the JBI Reviewer's Manual (Lizarondo *et al*., 2020), data transformation was carried out using the 'qualitizing' (converting quantitative data into qualitative data/themes) approach. Data synthesis will be discussed in detail in section 2.5 of this chapter. All studies were critically appraised to assess their methodological quality. National Institute for Health and Care Excellence (NICE) qualitative and quantitative checklists (NICE, 2012b; NICE, 2012a) were used to critically appraise the articles. Data were extracted into an evidence table (2.5) following critical appraisal (Cronin, Ryan and Coughlan, 2008).

2.4.11 Quality Assessment

NICE checklists were chosen due to their simple and structured approach to quality appraisal. The NICE quantitative checklist (NICE, 2012a), enables a researcher to appraise a study's internal and external validity by addressing the characteristics of study participants, the definition of independent variables, methods of analysis and outcomes assessed. Similarly, the questions on the qualitative checklist (NICE, 2012b) are framed in a way that can encompass the variety of ways that qualitative research is conducted. After completing the checklists, each study is awarded a study quality grading to assess the validity of the study. A two-plus score (++) means that all or most of the checklist criteria have been fulfilled and where they have not been fulfilled, the conclusions are unlikely to alter. A one-plus score (+) means that some of the checklist criteria have been fulfilled and where they have not been fulfilled, the conclusions are unlikely to alter. A minus score (-) means that few or no checklist criteria have been completed and the conclusions are very likely to alter (NICE, 2012b; NICE, 2012a). A separate checklist was completed using the Specialist Unit for Review Evidence (SURE) checklist (SURE, 2016) to further ensure the accuracy of

the grading score awarded to each article (Appendix 2.2 for an example of a completed SURE checklist applied to a study).

In order to ensure the ethical conduct of this systematic review, studies that adhered to the basic principles of research and were conducted ethically were included in the review. The two qualitative studies were well conducted; however, there were some methodological concerns. The qualitative study by Wåhlin, Ek and Idvall (2010), was conducted by an ICU nurse from the same unit; thus, there was a potential for recruitment bias adding to its limitation. Additionally, the analysis appeared to have been carried out by a single researcher which question its rigour and the study was undertaken in a single hospital limiting its generalisability. In the second qualitative study by Tao *et al* (2015), the relationship between the researcher and participants was not explored, there was no description of how the participants were informed about the research and how confidentiality was assured. Additionally, no quality strategies and no theoretical underpinning were reported by the study questioning its rigour. The remaining thirteen cross-sectional studies were robust; however, there were concerns with some of the studies regarding recruitment bias, where data was collected by a head nurse or director of the unit such as Zhang *et al*. (2014). Furthermore, the majority of the studies were single-site or specific to a district or a province limiting generalisability, such as Lai *et al*. (2008) and Dodek *et al*. (2016) (See table 2.5 for a summary of included studies).

Table 2.5: Summary of included studies

No	Author/Date	Evidence Type	Aims/Objectives	Setting/Sample Size	Methods	Results	Quality/ Scoring[i]	Limitations
1	Stone *et al.* (2006) (America)	Cross-sectional study	Organisational climate and intensive care unit nurses' intentions to leave	This study was part of a patient safety project: • 66 hospitals • 110 critical care units • 2,323 nurses A nationally representative sample of hospitals based on bed size and region. Adult ICUs with ≥500 patient days per year were eligible. Response rate: 41%	Data collected in a variety of ways: • ICU nursing staff survey • Survey of the chief nursing officers • Linking the hospitals to the American Hospital Association (AHA) annual survey data A site coordinator assisted with the distribution of the survey. Surveys were anonymous. Nursing work index-R was used to measure organisational climate. Correlation between scales was examined using pairwise pearson coefficients. Nurses categorised into two groups: 1) Those leaving due to working conditions Others (not leaving or leaving due to other reasons)	17% indicated an intention to leave within 1 year. The majority of reasons for ITL given was working conditions (52%). Two subscales professional practice and nursing competence were significantly related to ITL. 1-year increase at the current job decreased the odds of ITL by 3%. Key themes relevant to intention to leave: • Organisational climate	+	Overall, a well-conducted study, however, there are some concerns: • Limitations due to part of the larger study in terms of recruitment/sampling • Different management styles and organisations in different settings have not been taken into account/discussed • No information about the non-respondents hence the potential of a response bias • No random sampling limits generalisability • Cross sectional study Limitations reported.
2	Poncet *et al.* (2007) (France)	Correlational survey	To identify determinants of burnout syndrome in critical care nurses.	286 ICUs invited. 132 ICU did not answer. 27 refused to participate. 124 ICUs agreed to participate.	Invitation letter and study draft were sent to participants. The head nurse was invited to give the questionnaire to each nurse and nursing assistant. Anonymous questioners. Three parts questionnaire: 1) Demographics	Severe burnout syndrome was identified in 785 nurses (32.8%) respondents. Four groups of characteristics were associated with BOS: • Personal characteristics, e.g. age • Organisational factors, e.g. shifts/teams	+	Broadly a well-conducted study, however, there are some concerns: • Survey date not provided • No data for potentially relevant stressors outside work (e.g. marital status and non-work responsibilities) • No data from those who didn't participate

				Second invitation, email information sent and contact made with head nurses of those ICUs who didn't respond. 165 actually participated. 2'497 respondents completed the questioners. 2'392 MBI (Maslach Burnout Inventory) questioners without missing data. Response rate: 57.7%	2) Relationships with head nurses, other nurses, and physicians 3) 22 items of MBI validated Questioners collected by the head nurse and audited by the authors of the article. Chi-square test used to compare variables. Regression analysis was done to identify variables significantly influencing severe burnout.	• Quality of working relationship, e.g. conflicts • End of life care 458 (60%) respondents with severe BOS reported thinking about changing to another profession. Key themes relevant to nurses' intention to leave • Working relationships • Group/team allocation participation • End of life care		• Data only analysed by the authors • Cross sectional study
3	Stone *et al.* (2007) (America)	Cross-sectional/correlational study	To investigate causes of nurse intention to leave (ITL) while simultaneously considering the organisational climate (OC) in intensive care units (ICUs) and identify policy implications.	This study was part of a patient safety project. Hospitals were eligible to enrol adult, medical, surgical, or coronary care units. All RNs employed in an enrolled ICU were eligible. Self-reported questionnaire. Survey distribution was based on processes developed in previous multisite research studies: • 23 hospitals • 39 adult ICUs • 837 nurses • 20 separate metropolitan states Response rate: 41%	Data collected from a variety of sources. Organisational climate (OC) was measured using the Perceived Nurse Work Environment (PNWE) scale. Behavioural ITL due to work conditions was measured by a single self-reported item; "do you plan to leave your current position in the coming year". Those who expressed ITL were asked why? Reason for ITL – 53%, poor working conditions (majority). Regression performed. Developed and tested an instrumental variable model used to examine the relationship between ITL and OC.	OC was significantly inversely related to ITL ($p<0.001$). Overall nursing experience was significantly related to ITL ($p=.02$). Nurses with less than one year's experience and in between 10 and 15 years' experience were significantly less likely to indicate ITL than those with 1-1.5 years of experience. Wages in the ICU, hospital profitability and magnet status had strong positive and statistically significant effects on OC ($p\leq.05$). 15% of nurses indicated ITL in the coming year. Key themes relevant to intention to leave: • Organisational Climate/working conditions	+	Overall, a well-conducted study, however, there are some concerns: • Those with ITL are less likely to respond, and turnover rates are higher in all other studies • Different management styles and organisations in different settings have not been taken to account/discussed • Mainly larger teaching hospitals, hence smaller and community hospitals were not included limiting generalizability • The outcome of the representativeness not reported. • Cross sectional study Limitations reported.

4	Lai *et al.* (2008) (Taiwan)	Cross-sectional exploratory study Using Cooper's occupational stress model (Cooper et al. 1998)	To understand the factors related to intention to leave their jobs among intensive care unit nurses in eastern Taiwan and to make between-group comparisons between an intention to leave and an intention to stay as well as to predict the influencing factors that affect ICU staff nurses' intention to leave.	2 ICUs (medical, surgical). 799 bedded medical centres. 130 staff nurses currently employed in adult ICUs. April to May 2005. Inclusion criteria: At least one year of critical care experience Completed a recognised critical care course Doing at least three shifts per month in ICU Data collection in 2005 Response rate: 100%	Self-administered paper and pen questionnaire. Questions consisted of 4 parts: • Personal characteristics • Professional characteristics • Health-related factors • General factors Regression analysis performed. Questionnaire completion time-15 minutes when off duty. Questions following the four major factors focused on nurses' intention to leave their job, which was defined as a dichotomous question: "Do you have intention to leave ICU or nursing profession?". T-test and chi-square test used to examine differences between intention to leave Vs intention to stay. Three administrators and three educators performed content validity.	90% reported that their job directly affected their health. 48.5% (n=63) had the intention to leave their job, including leaving the nursing profession. The mean scores of the level of happiness were 2.27 (SD-0.85) for those with an intention to leave, and 3.13 (SD-0.69) for those who did not with a significant difference (t=6.347, p<0.01). There was a significant difference in depression level, job satisfaction and sleep quality between those who had the intention to leave and those who did not (t=-10.853 to 5.192, all p<0.01) with those considering leaving being more depressed, having fewer job satisfaction and suffering from poor sleep. Surgical ICU nurses were more likely to leave than medical ICU nurses. Key themes relevant to intention to leave: • Depression • Sleep quality	+	Overall a well-conducted study, however with some methodological concerns: • 100% response rate, however, this could be due to the fact that the researcher was the director/head of nursing, hence a recruitment bias • Not including those who have already left critical care could potentially cause a sampling bias • Study conducted in one part of Taiwan (only two units) could potentially limit generalizability • Outside of work factors not included which could potentially affect sleep pattern and depression • Cross sectional study Limitations reported.
5	Cho *et al.* (2009) (Korea)	Cross-sectional survey	To examine the relationship between nurse staffing and nurse-rated quality of care and job outcomes.	Korea, Seoul and Hyeonggi province: • 22 hospitals • All ICUs • Nurses All secondary and tertiary hospitals. Small hospitals excluded. Two types of surveys: 1) For nurse managers: 65 ICUs	ICU characteristics were collected from nurse managers. Nurse staffing quantified. Burnout measured using the Maslach Burnout Inventory (MBI). A four-point scale used to define the quality of care and job satisfaction. High burnout was defined with a score of 27 or above.	71% of nurses from private hospitals. 64% of nurses in tertiary and 50% of secondary hospitals nurses stated that they provide a high quality of care. 1/3 were dissatisfied with their job. 50% highly burnt out. A quarter planned to leave in the next year. Secondary hospitals had the worst job outcomes.	+	A well-conducted survey overall, however, there are some concerns: • A specific area could potentially limit generalizability • Outside of work factors not included which affect physical and emotional exhaustion • Cross sectional study Limitations reported.

				of 22 hospitals-all completed 2) For charge and staff nurses: 1463 charge and staff nurses, 1365 completed Response rate: 93%	Nurses were asked whether they planned to leave their job in the next year. Multilevel logistics regressions performed to examine relationships between nurse staffing, quality of care and job outcomes.	The number of patients per nurse and perception of adequate staffing was significantly associated with nurse-rated quality of care. Nurses who perceived adequate staffing were less likely to leave their job in the next year (OR=0.40). Single nurses more likely to leave their job than married nurses. Key themes relevant to intention to leave: • Adequate staffing		
6	Fitzpatrick *et al*. (2010) (America)	Web-based survey	To examine relationships between AACN speciality certification and empowerment and to examine how these variables are related to intent to leave the current position and nursing profession.	44'143 AACN members. 6'589 nurses' responses included. An additional sub-sample of staff nurses-4'268. Response rate: 15%	Nurses registered with the American Association of Critical Care Nurses were invited via email to participate in a web-based survey. The conditions of work effectiveness questionnaires, revised (CWEQ-2), used to measure nurses' perception of empowerment. Intent to leave variables were determined through participants self-reports. Participants were asked to answer yes or no to whether they intended to leave their current position and/or nursing profession. Percentages, means, and standard deviations calculated for the variables.	41.1% indicated their intent to leave their current position. 18.4% indicated that they would leave their current position within the next year. 6.9% indicated leaving the nursing profession. A significant difference was found in intent to leave the current position between respondents who held AACN certification and those who didn't. Significant differences ($p<0.001$) were found in total empowerment scores between respondents who intended to leave the current position and those who intended to leave the nursing profession. Those with high empowerment scores didn't intend to leave their current position or profession. Respondents with a bachelor's degree were more likely to leave their position than those with another type of educational preparation.	+	A well-conducted web-based survey with some concerns: • Only AACN members included in the study limits the generalizability • Those with no email addresses or no AACN membership were not included • Given the nature of the sample, a risk that the results are only generalizable to enthusiastic staff, i.e., members of AACN • Web-based survey • Date of data collection not reported Limitations reported.

						Key themes relevant to intention to leave: • Empowerment • Certification-education		
7	Wahlin *et al.* (2010) (Sweden)	Qualitative Phenomeno logical approach	The purpose of the study was to describe empowerment from the perspective of intensive care staff. What makes intensive care staff experience inner strength and power?	12 ICU staff in southern Sweden. Profession: • 4 registered nurses • 4 enrolled nurses • 4 physicians Purposeful sample.	Open-ended interviews to explore the good or bad situation at the ICU, a day when they felt satisfied on leaving work and experiences of strength/power. Recorded, transcribed verbatim, phenomenological analysis. Themes grouped within general (experienced by all) and typological (experienced by some) structures.	Staffs were empowered by internal processes such as feelings of doing good, increased knowledge and skills; and by external processes such as nourishing meetings, well-functioning teamwork, and a good atmosphere. Key themes relevant to intention to leave: Views specifically relating to intention to leave were not sought as part of the study. ICU staff experience inner strength and power from general structures-6 areas: 1) Feelings of doing good 2) Nourishing encounters 3) Knowledge and skills 4) Teamwork 5) Self-esteem/self-confidence 6) Challenge, variety, speed, and excitement The one typological structure is: 1) Good organisation and atmosphere	+	Credible findings but a number of methodological concerns: • Broad information on the questions asked but not detailed and no piloting • No triangulation data with other qualitative methods • The researcher was an ICU nurse, and this may have influenced the subject's ability to be open/free with responses • This analysis may have been performed by a single researcher only • No date of data collection Limitations reported.
8	Karanikola *et al*. (2012) (Greece)	A cross-sectional survey with correlations	To investigate the prevalence and intensity of burnout symptoms in Greek ICU nursing personnel and any associations with professional satisfaction as well as demographic, educational and vocational characteristics.	Athens metropolitan area. The target population consisted of registered Bachelor of Science and associate degree nurses as well as assistant nurses of adult general ICUs in both public and private sector. A 2-stage random sampling. 1-8 hospitals of the greater Athens area were randomly selected.	The self-reported questionnaire consisted of three parts: 1) Demographics, educational and vocational data 2) The Maslach Burnout Inventory (MBI) 3) The index of work satisfaction Questioners were distributed by the researchers in sealed envelopes.	More than 25% of participants mentioned severe symptoms of burnout. The satisfaction level was moderate. Differences in burnout symptoms and satisfaction level were not significant with regards to sex (p>.8 and family status (p>o.08). 1 in 4 participants exhibited a high burnout score. Statistically, a significant association noted between the three burnout indices and professional satisfaction.	+	A well-conducted correlational study with some concerns: • Group limitation to a metropolitan hospital may compromise generalizability • Personal history and personal factors not included in the study-potential confounding effect • Outside of work factors not included which could contribute towards burnout and emotional exhaustion • The author has stated in the abstract and conclusion section that emotional

				As per power calculation (p=80%, α=0.5), sample size determined=160. 253 questioners. 152 randomly selected. Response rate=60%		Key themes relevant to intention to leave: • Emotional exhaustion was the strongest predictor of professional satisfaction(p=.004), the author linked this with an intention to leave in the conclusion section and the abstract		exhaustion was found to be a strong predictor of job satisfaction, a factor connected with nurse's intention to leave, however, this statement has not been backed up in the body of the study • Assumption as already given in tools • Cross sectional study • No date was given for data collection Limitations reported.
9	Van Dam *et al*. (2013) (Netherland)	Cross-sectional study	To provide insight into the factors that are related to intensive care nursing staff's perceptions of work pressure and turnover.	118 ICU's heads. Those who accepted (N=46) the invitation distributed the questionnaires among their nurses. Academic hospitals=11.7%. Training hospitals=37.5%. Regional hospitals=50.8%. Date=2010. Response rate=55% (461)	The Likert scale used for responses. Tools used to measure the following: • Age • Dealing with night shift • Technical aspects of ICU • Emotional demands • Threats from relatives • Social support • Autonomy • Development opportunities • Intention to leave Regression analysis done.	Mean work pressure-4.02 (SD=1.04). Mean turnover intention-3.10 (SD=1.40) with 30% of ICU nurses intending to turnover. ICU nurses reported high levels of social support. Increased level of physical and emotional demands. Important relationship of turnover intention with age (p<0.001), night shifts (p<0.001), emotional demands (p=0.031) and development opportunities (p<0.001). These predictors explain 34% of the variance in turnover intention. Key themes relevant to intention to leave: • Age • Dealing with night shifts • Physical and emotional demands Development opportunities	+	A well-conducted correlational study with some concerns: • All variables measured with self-reported questions so potentially a common method bias may be present • Independent assessment performed • No causal interpretation due to the study design • Different ICU types so increased generalizability • No data for potentially relevant stressors outside work (e.g. marital status and non-work) • Questionnaires distributed by head nurses could cause recruitment/sampling bias • Cross sectional study • A qualitative study mentioned in the abstract but not reported in the main study, hence confusion. Limitations reported.
10	Panuto and Guirardello (2013) (Brazil)	Cross-sectional study	To evaluate the characteristics of the professional nursing practice environment and	São Paulo Brazil. Adult ICUs.	Data collected through three self-reported instruments: • Personal/professional characteristics form	There seems to be a weak correlation among variables of NWI-R and MBI (perception of the quality of care, job satisfaction and intention to leave the job), hence a new theoretical model	+	Overall, a well-conducted study, however, there are some concerns: • Included 17 hospitals including private, public, and philanthropic, however, this

			its relationship with burnout, perception of the quality of care, job satisfaction and intention to leave the job in the next 12 months in adult ICUs in Sao Paulo Brazil.	17 public, private, and philanthropic hospitals. 144 nurses. 129 included. Inclusion/exclusion criteria: Those performing care activities and having three months or more experience in the current job. Those on leave/vocation not included.	• Nursing work-index (NWI-Revised) • Malash burnout inventory (MBI) Cronbach's alpha used to assess the reliability of NWI-R. MBI validated to measure physical and emotional exhaustion. Data analysed with the help of an expert. Chi-square ratio used to indicate the goodness of fit. A new theoretical model used, considering only one domain: emotional exhaustion.	considering only one of the burnout domains (emotional exhaustion) was used. Key themes relevant to intention to leave: • Emotional exhaustion is associated with quality of care, job satisfaction and intention to leave the job		was in one city which could potentially limit generalisability. • Ethical approval done • Outside of work factors not included which affect physical and emotional exhaustion • Cross sectional study Limitations reported.
11	Breau and Rheaume (2014) (Canada)	Cross-sectional survey Based on the theoretical framework of the Nursing Work-Life Model	To examine whether the empowerment and work environment predicted job satisfaction, intent to leave and perceived quality of care among ICU nurses.	1,679 ICU nurses approached by the Canadian Association of Critical Care Nurses (CACCN) and the Nurses Association of New Brunswick (NANB). CACCN, n=1,138. NANB, n=559. Response rate: 31%	Online survey to measure structural empowerment, work environment, job satisfaction, intention to leave, perceived quality of care. One way ANOVA and t-tests to examine any differences among demographic data and job satisfaction. Hierarchical regression to determine variables predicting intent to leave, job satisfaction and perceived quality of care.	A significant correlation between empowerment and work environment. The work environment was strongly correlated with job satisfaction and intent to leave. Empowerment predicted 16.6% of the variance of intent to leave, adding work environment and job satisfaction to empowerment only predicted 27% of the variance of intent to leave. Key themes relevant to nurses' intention to leave: • Empowerment Authors identified that other factors would also be influential (career advancement, salary, social benefits, personal reasons, and conflict with manager) but no data provided	+	Clear study design with a focused question, however, appeared to have the following weaknesses: • Settings unclear other than ICUs in Canada, date of survey not stated. Unclear how nurses were selected by the organisations, CACCN and NANB and nurses self-selected to contribute • Amends to two scales (to assess the work environment and conditions of work) were made without testing/validation. 31% response rate and may not be generalised. No information on the nature of the hospitals or unit management styles • Poor representation of some areas put a question mark on its generalisability • Not including those who have already left critical care could potentially cause a sampling bias

								• Table poorly annotated Limitations reported.
12	Karanikola *et al*. (2014) (Italy)	A correlational cross-sectional survey, through a self-reported questionnaire	To explore among Italian intensive care unit nurses the level of moral distress (MD) and potential associations between moral distress indices and (1) nurse-physician collaboration, (2) autonomy, (3) professional satisfaction, (4) intention to resign, and (5) workload.	566 attendees to the Critical Care Nurses Association conference. Florence, 2008. 81.8% public, 18.2% private hospitals. Professions: • 89 nurse managers (15.7%) • 477 staff nurses (84.3%) Response rate: 89%	Paper survey in the conference pack.	The intensity of MD was 57.9±15.6 (mean, standard deviation) (scale range 0.84), and the frequency of occurrence was 28.4±12.3 (scale range: 0-84). The mean score of the severity of MD was 88.0±44 (scale range: 0-336). The severity of MD was associated with (1) nurse-physician collaboration and dissatisfaction on care decision (r=0.215, p<0.001); and (2) intention to resign (r=0.244, p<0.0001). There was a negative but negligible correlation with work satisfaction (r=0.144, p<0.003). The frequency of occurrence of MD was associated with the intention of nurses to resign (r=0.209, p<0.0001). Key themes relevant to intention to leave: Key themes related to MD: • Futile care • Poor collaboration with inappropriately skilled colleagues/physicians	++	Well-conducted survey. Given the nature of the sample, there is a risk that the results are only generalizable to enthusiastic staff, i.e., conference attendees with many nurse managers Convenience sample though a good sample size Cross sectional survey Limitations reported.
13	Zhang *et al*. (2014) (China)	Cross-sectional survey	To understand burnout among Liaoning ICU nurses.	10 tertiary hospitals. 17 intensive care units. 14 ICUs responded/included. 3 ICUs excluded. 431 ICU nurses enrolled, 426 responded. Response rate: 98.8%	A self-administered anonymous questionnaire addressing burnout and demographic data was adopted for the interview. Verbal consent only. Recruitment was done by the local head nurse. The Head nurse assisted in recruitment and data collection.	16% have a high degree of burnout. 1/4th of those nurses with experience of 5-10 years had a high degree of burnout (p=0.02. The most pronounced symptoms of burnout were emotional exhaustion and low personal accomplishment. Key themes relevant to intention to leave: • Job Burnout: the author linked this with the intention to leave in the abstract; however, it is not mentioned in the study.	+	Concerns with the study: • The author has stated in the abstract that job burnout has been indicated as a risk factor for the intention to leave; however, this statement has not been backed up in the body of the study • Head nurses assisted in the recruitment and data collection, hence the potential for recruitment and sampling biases

					Burnout was measured by the Maslach Burnout Inventory-Human Services Survey (MBI-HSS). T-test ANOVA used. Mann-Whitney U test used for comparison between two groups and Kruskal-Wallis for more than two groups. P values less than 0.05 was considered statistically significant.			• Missing data from three excluded ICUs and 5 nurses refusing to take part in the study • Important differences in various clinical settings/hospitals/units, hence lack of generalizability • Cross sectional study No limitations reported.
14	Tao *et al.* (2015) (China)	Qualitative Interviews	To determine ICU nurses' perspectives on the factors that influence job satisfaction and whether or not to continue working in the ICU.	12 ICU staff nurses from four hospitals from Shanghai stopped after 9 interviews following data saturation. Inclusion criteria: More than 3 years of work experience. No less than 1-years' experience in ICU and other units. Agreement to participate in the study.	Open-ended interviews to explore factors influencing job satisfaction and intention to remain. Independent extraction of data by each of the three researchers who collaboratively identified themes.	Two themes emerged as major influences on job dissatisfaction: (1) stress experienced from excessive workload demands and the ICU work environment, and (2) a lack of respect and recognition. Two themes emerged as major influences on job satisfaction, (1) recognition of work, and (2) professional opportunities and relationships with co-workers. The effects of job satisfaction or dissatisfaction on nurses' intention to leave their jobs varied Key themes relevant to intention to leave: Dissatisfaction: • Stress from excessive workload • Stress from the ICU environment • Lack of respect and recognition Satisfaction: • Relationships with co-workers • Internal recognition of work • Professional opportunities Influences on the intention to leave: Low turnover intention: • Energy, excitement, and self-worth balancing negative aspects of role-low turnover • Dissatisfied but stable job/best that can do High turnover intention:	+	A reasonably well-conducted qualitative study, reaching data saturation in term of themes identified, but with methodological concerns: • No information on staff that refused to participate • No indication that questions were piloted • No triangulation of data with other methods • Relationship between researcher and participants not explored • No descriptions of how the research was explained to participants and confidentiality assured • No clear link of the themes with ITL • No theoretical underpinning • No quality strategies or limitations reported No limitations reported.

						• General dissatisfaction with the work environment		
15	Dodek *et al*. (2016) (Canada)	Cross-sectional survey/correlation study	To determine which demographic characteristics are associated with moral distress (MD) in intensive care (ICU) professionals.	13 intensive care units in British Columbia, Canada. Tertiary=3. Community Large=3. Community small=7. 1390 health care professionals. Nurses=870. Other health professionals (OHPs)=452. Physicians=68. Response rate: 48%	Paper Survey to measure MD scale (validated scale, ref.3. Hamric 2012) and demographic information: profession, age, sex, and years of experience. Hierarchical regression clustered by hospital site to summarise the relationship between moral distress score and age, sex, experience plus past/present tendency to leave a job.	Nurses and other health professions had higher MD scores than physicians. Age didn't appear to be related to MD in nurses, but there was a direct association with years of experience (MD score difference per decade (95% CI) =-7.3 (-13.4 to-1.2). Key themes relevant to nurses' intention to leave: The MD score was directly related to the tendency to leave	+	Survey date not provided. A small number of physicians. The response rate (48%) and the local nature of the research (one province in Canada) may limit generalisability. No data for potentially relevant stressors outside work (e.g., marital status and non-work responsibilities) so could not be controlled for in the correlational analysis. Cross sectional survey No limitations reported.

2.4.12 Data Extraction

All studies included in the review were systematically examined to retrieve information of relevance that meet the objective of the review and quality assessment. Findings related to factors influencing nurses' intention to leave adult critical care areas and other study details such as authors, year of publication, country, study design, population and number of participants were extracted from all articles. This process was completed through the use of peer-reviewed data extraction forms developed by the researcher and set up as spreadsheets in Microsoft Excel. This process enabled the tabulation of findings within each study.

2.5 Synthesis

A number of approaches are used to carry out the synthesis of mixed-method reviews which are aligned with the JBI Reviewer's Manual (Lizarondo *et al*., 2020). Sandelowski, Voils and Barroso (2006), identify three frameworks (integrative, segregated, and contingent) through which to carry out synthesis in mixed-method systematic literature reviews. A segregated methodology maintains a clear distinction between quantitative and qualitative data and requires an individual synthesis to be conducted before the final mixed-method synthesis, and the final findings fall into quantitative and qualitative categories. A contingent methodology involves two or more synthesis conducted sequentially based on the results from a previous synthesis. An Integrated approach (Sandelowski, Voils and Barroso, 2006) whereby quantitative and qualitative studies are integrated within the same analysis if data is similar enough to do so, was used to carry out this synthesis.

An integrative approach combines both forms of data into a single mixed-method synthesis. This approach was chosen as both quantitative and qualitative data were used to look at the same issue (both exploring factors influencing nurses' ITL adult

critical care areas) and were similar enough to be combined into a single synthesis. This is a primary condition for the development of an integrated mixed-method systematic literature review (Lizarondo *et al*., 2020). Integrated mixed-method systematic reviews require that either quantitative data are converted into codes, themes and then presented along with qualitative data or qualitative data are converted into a numerical format and included with quantitative data in a statistical analysis (Lizarondo *et al*., 2020). The first option was applied to this mixed-method systematic literature review. This involved data transformation into textual descriptions or narrative interpretation of the quantitative results from experimental and observational studies in a way that answered the review questions. An integrated mixed-method synthesis was considered the most appropriate method given the mix of quantitative and qualitative data, a meta-analysis was deemed impractical, given the range of outcomes reported in the quantitative data. Quantitative data was converted into codes and themes and then presented along with qualitative data. Both segregated and contingent approaches were not followed for this review as both were deemed unsuitable to get an in-depth and holistic understanding of the review findings.

Aligned with JBI manual guidelines (Lizarondo *et al*., 2020) using a convergent integrated approach, Braun and Clarke (2006) thematic framework was used to synthesise the qualitative findings. Braun and Clarke (2006) outline the following six phases of analysis: familiarising yourself with the data, generating initial codes, searching for themes, reviewing the themes, defining, and naming themes and producing the report. Braun and Clarke's thematic framework was chosen as it provides a flexible approach that can be modified for many studies but still provides a rich and detailed yet complex account of data (Braun and Clarke, 2006). A thematic analysis does not require detailed theoretical and technological knowledge; it offers a more accessible form of analysis, especially for those early in their research career

(Braun and Clarke, 2006). Furthermore, thematic analysis is also useful for summarizing key features of a large data set, as it encourages the researcher to take a well-structured approach to handling data and producing a clear and organized final report (King, 2004).

Despite these advantages, a thematic analysis has some limitations. The lack of considerable literature on thematic analysis compared to that of grounded theory, ethnography, and phenomenology may cause novice researchers to feel unsure of how to conduct a rigorous thematic analysis (Nowell *et al*., 2017). Additionally, the flexible approach of thematic analysis can lead to inconsistency and a lack of coherence when developing themes (Holloway and Todres, 2003). Based on these findings, some authors such as Holloway and Todres (2003) consider thematic analysis to be a process, not a separate method to assist researchers with analysis. Braun and Clarke (2006), however, assert that thematic analysis is a separate method for qualitative analysis. Many other authors such as Cassell and Symon (2004), Thorne (2000) and more recently Nowell *et al*. (2017) are in agreement with Braun and Clarke (2006) and claim that thematic analysis should be considered a separate method for qualitative data analysis.

To carry out the synthesis, each paper was examined line by line and codes were assigned to relevant sentences and paragraphs. These codes were then organised to construct sub-themes regarding factors that influence nurses' ITL adult critical care areas. Similar sub-themes were put together to form thematic headings which best represent the data. Findings were put together to establish how the evidence as a whole fulfils the aims of the review (See table 2.6 for themes identified).

Table 2.6: Themes Identified

	Quality of work environment	Nature of working relationships	Traumatic/stressful workplace experiences
Stone *et al* (2006)	✓	×	×
Poncet *et al* (2007)	✓	✓	✓
Stone *et al* (2007)	✓	×	×
Lai *et al* (2008)	✓	×	×
Chao *et al* (2009	✓	×	×
Fitzpatrick *et al* (2010)	✓	×	×
Wahlin *et al* (2010)	✓	✓	×
Karanikola *et al* (2012)	×	×	✓
Van Dam *et al* (2013)	✓	✓	×
Paunto and Guirardello (2013)	✓	×	✓
Breau and Rheaume (2014)	✓	×	×
Karanikola *et al* (2014)	×	✓	✓
Zhang *et al* (2014)	✓	×	×
Tao *et al* (2015)	✓	✓	✓
Dodek *et al* (2016)	✓	×	✓

2.6 Findings

Of the thirteen cross-sectional and two qualitative studies, quantitative data was collected from 16'794 critical care nurses drawn from 585 intensive care units in 12 different countries. Qualitative data from 24 nurses were also reported. The following themes were identified following data analysis; quality of work environment, nature of working relationships and traumatic/stressful workplace experiences.

2.7 Quality of Work Environment

Thirteen out of fifteen studies have identified the quality of the work environment as a factor associated with nurses' ITL adult critical care areas. The work environment is multidimensional and comprises organisational, physical, and social aspects.

2.7.1 Organisational Aspects

Nurses with specialised critical care courses and more experience were satisfied with their jobs (Fitzpatrick *et al.*, 2010; Zhang *et al.*, 2014), felt more empowered (Breau and Rhéaume, 2014; Stone *et al*., 2006) and were less likely to leave their jobs. Professional development and career advancement opportunities enhance empowerment, improve teamwork and negatively impacts ITL (Wåhlin, Ek and Idvall, 2010). Furthermore, Wåhlin, Ek and Idvall (2010), while highlighting the importance of the role of nurse managers in maintaining a healthy work environment, reported that poor performance and negative traits of nurse managers are associated with increased stress and nurses' ITL. Not being able to provide a high quality of care due to constant pressures from management to reduce costs and increased workload caused moral distress which is associated with ITL (Dodek *et al*., 2016). Tao *et al*. (2015), found a lack of appreciation and respect to be associated with ITL while

Karanikola *et al*. (2014), found a lack of autonomy, poor nurse-physician collaboration and dissatisfaction with care decisions to be associated with moral distress and ITL.

2.7.2 Physical Aspects

Constant noise and activity due to excessive use of technology and limited working space at the bedside is a source of stress for critical care nurses and impacts ITL (Tao *et al*., 2015). Lai *et al*. (2008), reported that inadequate sleep due to shift patterns, short turnarounds from nights to days and how this impact on their health was associated with ITL. Similarly, inadequate staffing, nurse to patient ratio and increasing physical and emotional demands of the critical care work environment due to increased workload is a source of stress for nurses and associated with ITL (Cho *et al*., 2009; van Dam, Meewis and van der Heijden, 2013).

2.7.3 Social Aspects

Nurses in a work environment where they feel more empowered (Panunto and Guirardello, 2013; Poncet *et al*., 2007), and allowed to discuss and share their opinions and concerns openly regarding the day to day issues at the workplace such as staffing and quality of patient care are less likely to leave their jobs (Wåhlin, Ek and Idvall, 2010). According to Panunto and Guirardello (2013), not being able to share concerns regarding the roster, and the impact of inflexible off-duty on work-life balance increases ITL. Furthermore, social support and networking with colleagues are equally important, and lack of social support has been found to be associated with increased stress and ITL (van Dam, Meewis and van der Heijden, 2013).

2.8 Nature of Working Relationships

Critical care nurses have identified the following relationships in their role.

2.8.1 Relationships with Managers and Colleagues

Good teamwork where everyone's role is appreciated and helping each other increased inner strength and helped towards creating a healthy working environment (Wåhlin, Ek and Idvall, 2010). Similarly, a feeling of fellowship among colleagues is considered to be empowering and enhance good teamwork (Wåhlin, Ek and Idvall, 2010). Conversely, poor relationships with nurse managers and colleagues, especially senior staff, increased stress and has been linked to increased ITL (Poncet *et al*., 2007).

2.8.2 Relationships with Medical Colleagues

Poor relationships between nurses and doctors, especially physicians, are associated with moral distress and ITL (Karanikola *et al.*, 2014). Relationships between nurses and physicians have been labelled as nurse-physician collaboration and are mainly associated with nurses not being involved by physicians in the decision-making process regarding patient care (Karanikola *et al.*, 2014). The feeling of not being involved in the decision-making process makes the nurses feel less empowered and not part of the multi-disciplinary team (Wåhlin, Ek and Idvall, 2010). Similar findings have been reported by nurses regarding ward rounds, where nurses felt they were not involved in discussions during ward rounds (Karanikola *et al*., 2014).

2.8.3 Relationships with Patients and Relatives

Relationships with patients and their relatives were experienced as nourishing, empowering and were one of the valuable sources of energy for the nurses in critical care areas (Wåhlin, Ek and Idvall, 2010). Caring for patients with life-threatening conditions is rewarding and gives nurses the feeling of doing something good for

people who are suffering, which is the driving force in continuing to work in the critical care areas (Wåhlin, Ek and Idvall, 2010). In contrast, conflicts and disagreements with patients and their families regarding an aspect of care such as the end of life and treatment withdrawal are one of the main sources of stress and have been found to be associated with nurses ITL adult critical care areas (Poncet *et al*., 2007).

2.9 Traumatic and Stressful Workplace Experiences

Traumatic and stressful experiences have been found to be mainly associated with the end of life care decisions. Several factors including caring for a dying patient (especially a young one), decisions to continue life-sustaining treatment when it is not perceived to be in the best interest of the patient, and prolonging death are stressful for nurses and are associated with nurses ITL in critical care areas (Poncet *et al*., 2007). Similarly, Dodek *et al*. (2016), pointed out that continuing life support when it is not in the patient’s best interest gives false hope to the family and is associated with moral distress and nurses’ ITL. This literature review was published in the "*Nursing in Critical Care*" journal (Appendix 2.3-published literature review).

2.10 Justification of Research

It is well established from a variety of studies as discussed in chapter one that turnover intention or intention to leave the organisation is the most reliable predictor of actual turnover. Research into the factors that influences nurses' ITL is, however, limited as outlined in this chapter. Previously published studies carried out on the subject of nurses’ turnover intention in adult critical care settings have explored a single factor associated with nurses' intention to leave adult critical care areas rather than investigating this issue holistically to get an in-depth understanding of the factors that influence critical care nurses' ITL. For example, some of these studies included moral

distress (Dodek *et al*., 2016; Karanikola *et al*., 2014), staffing (Cho *et al*., 2009), empowerment (Breau and Rhéaume, 2014; Fitzpatrick *et al*., 2010; Wåhlin, Ek and Idvall, 2010), burnout (Poncet *et al*., 2007; Zhang *et al.*, 2014), emotional exhaustion (Panunto and Guirardello, 2013), workload (van Dam, Meewis and van der Heijden, 2013) and job satisfaction (Tao *et al*., 2015).

This chapter has identified that current studies on the information regarding the number of nurses intending to leave adult critical care areas in the future are limited. The unavailability of this data makes it challenging to get an understanding of the extent of the problem. A study by Lai *et al*. (2008), reported the number of participants expressing ITL their job. However, the study is not recent (data was collected in 2005) and was limited to two ICUs in the same hospital limiting generalisability. There were similar issues with other studies that reported nurses' ITL, such as Stone et al. (2006) and Fitzpatrick *et al*. (2010). In addition, previous research on the subject of nurse retention in critical care areas is restricted to cross-sectional studies, which lack an in-depth understanding of the factors associated with nurses' ITL. Thirteen out of fifteen studies included in the literature review were cross-sectional, and two were qualitative studies. To our knowledge, so far, no mixed-method studies have been carried out exploring nurses' ITL adult critical care areas.

Based on these findings, our research, therefore, is unique and makes an original contribution in three key areas. Firstly, this research has explored factors influencing critical care nurses ITL holistically using a mixed-method study. This detailed insight is expected to result in an in-depth understanding of the factors influencing nurses' ITL. This detailed level of insight will help nurse leaders to better understand the phenomenon of nurses' intention to leave and develop strategies to improve nurse

retention in adult critical care settings. Secondly, our study has collected data about the number of nurses who intend to leave their organisation as well as the nursing profession in the next 5 years, which is another unique aspect of this study. Having this national up-to-date data may help us to understand the extent of the problem and therefore, will attract the attention of policymakers to take preventive measures to improve nurse retention. Thirdly, in contrast to previous studies, our research has explored factors influencing nurses' ITL holistically rather than limiting it to a single factor. The findings of this study should, therefore, make an important contribution to the development of strategies to counteract the problem of high turnover and nursing shortages by taking steps to improve the retention of adult critical care nurses. This may reduce costs incurred through recruiting and training new employees and improve the quality of patient care through better workforce management in this specialised area of nursing.

2.11 Chapter Summary

As this and the previous chapters have shown, high turnover in adult critical care areas is a global issue impacting costs and the quality of patient outcomes. One way of counteracting high turnover in adult critical care areas is to improve nurse retention. Research into the factors that influence nurse's ITL adult critical care areas is limited. Previously literature on the subject of nurses' turnover intention in adult critical care settings have explored a single factor associated with critical care nurses' ITL adult critical care areas rather than investigating this issue holistically to get an in-depth understanding of the factors that influence critical care nurses' ITL. In addition, previous research on the subject of nurse retention in critical care areas is restricted to cross-sectional studies, which lack an in-depth understanding of the factors

associated with nurses' ITL. So far, no mixed-method studies have been carried out exploring nurses’ intention to leave adult critical care areas. This study, therefore, aimed to explore the factors that influence critical care nurses’ intention to leave, thus improving high turnover, reducing costs, and improving the quality of patient care. The following chapter will give an overview of the philosophical and methodological positions underpinning this research followed by the practical methods adopted in this mixed-method study.

CHAPTER THREE: METHODOLOGY AND METHODS

3.0 Introduction

Research is guided by the beliefs of a researcher, by their perceptions about the world and how it can be better understood through study. Therefore, as a researcher, it is imperative to actualise our beliefs before we embark on research. Being aware of our belief system or paradigm is a fundamental part of our research (Weaver and Olson, 2006). With this in mind, this chapter will give an overview of the philosophical and methodological positions underpinning this research project. As part of this, pragmatism will be presented as an appropriate paradigm from which the research will be explored to fulfil its aims. The second part of the chapter provides an overview of the research design and the methods adopted, including integration in this mixed-method study. The measures adopted to ensure the quality of rigorous and ethical research will also be explored.

3.1 Research Paradigms

Research is a process of systematic investigation (Burns, 1997) or an inquiry where data is collected, analysed and interpreted to understand or predict a phenomenon (Mertens, 2014). The exact nature of the research is influenced by the researcher's theoretical framework, referred to as the 'paradigm' (Mertens, 2014). This influences the way the theory is studied and interpreted. The choice of paradigm sets the intent, motivation and expectations surrounding it (Mackenzie and Knipe, 2006). Kuhn (1962) coined the term 'paradigm', originating from a Greek word meaning 'pattern', to refer to a philosophical way of thinking. Kuhn defines a paradigm as 'an integrated cluster of substantive concepts, variables and problems attached with corresponding methodological approaches and tools' (Kuhn, 1962, cited in Flick, 2009, p.69). The

term is used to describe a researcher's 'worldview' (Johnson, Onwuegbuzie and Turner, 2007), which is the perspective, thinking or set of shared beliefs that inform the meaning or interpretation of research data (Mackenzie and Knipe, 2006). As a paradigm is a conceptual lens through which a researcher examines the methodological aspects of their research project, they must consider it in depth during the design phase of their project. Influenced by their worldview, a paradigm defines a researcher's philosophical orientation, which in turn has implications for every decision they make throughout the research process, including the choice of methodology (Parse, 2000). Understanding a researcher's paradigm sheds light on how meaning will be constructed from the data they gather and therefore which research community they belong to (Given, 2008). It is, therefore, important to examine and state the paradigm in which a piece of research is located.

Paradigms have been influential in health care and paradigmatic shifts have affected medicine in the modern world (DeAnguloa and Losada, 2015) including a change from focusing on specific biological analysis and pathological diagnostics to complex human interactions, including environmental, socio-political and economic processes (Morin, 2008). They are of great consequence for the development of nursing research (Parse, 2000). Since the time of Nightingale, nursing has been concerned with acquiring theoretical knowledge to apply to practice (Weaver and Olson, 2006). Early theoretical ideas in nursing were mainly derived from clinical observations, personal knowledge and philosophical thinking (Kirkevold, 1997). These early nursing perspectives were useful for guiding practice but not for guiding nursing research (Hinshaw, 1999). Nursing evolution as a professional discipline needed the establishment of a scientific research base (Wuest, 1994) for the credibility of the nursing profession. Nurse researchers, therefore, initially followed the dominant

positivist paradigm (Nagle & Mitchell 1991) to develop a scientific base for nursing and to seek professional status in academic and medical institutions (Weaver and Olson, 2006). This initial work was later expanded and different benefits to nursing theory development were associated with various research studies such as those by Faye and Yarandi (2004), Treat-Jacobson and Lindquist (2004) and Walusimbi & Okonsky (2004) in the post-positivist, interpretive and critical theory approaches. Nurses are expected to nurture their own nursing philosophies on these paradigms and a humanistic approach rooted in the understanding of paradigms can have a far-reaching influence on the attitudes and behaviours of nurses at different points in their career (McEvan and Will, 2006).

Several concepts constitute a paradigm: ontology, epistemology, axiology and methodology (Denzin and Lincoln, 2008; Hanson *et al*., 2005). Ontology is defined by Crotty, (2003, p.10) as 'the study of being'. It is concerned with 'what kind of world we are investigating, with the nature of existence, with the structure of reality as such'. Ontology refers to the nature of our beliefs about reality (Richards, 2003) and is concerned with the assumptions we make to believe whether something makes sense or is real (Jupp, 2006). It is the ontological question that leads a researcher to inquire what kind of reality exists, be it a singular, verifiable reality or truth or socially constructed multiple realities. (Patton, 2002). Epistemology is 'a way of understanding and explaining how we know what we know' (Crotty, 2003, p.3). Epistemology refers to the subsection of philosophy which deals with the nature of knowledge and the process by which it is assimilated and authenticated (Gall, Borg and Gall, 2003, p.13). It focuses on the nature of human knowledge which is uncovered by a researcher to extend, broaden and deepen understanding. The epistemological question leads a researcher to inquire 'the possibility and desirability of objectivity, subjectivity, validity

and generalisability' (Patton, 2002, p.261-283). The third element, axiology, refers to the philosophical study of values (Bahm, 1993). It is concerned with ethical issues that must be considered when planning a piece of research and the philosophical approach to decision-making (Bahm, 1993). The fourth concept is the methodology, which, according to Ellen (1984, p.9), is 'an articulated, theoretically informed approach to the production of data'. This refers to the study and critical analysis of data collection techniques (Rehman and Alharthi, 2016) and determines how a particular piece of research should be undertaken. Raising questions about how the world should be studied leads to a consideration of methodological issues (Rehman and Alharthi, 2016). Having defined the concept of paradigm and explored its elements, the following section will describe paradigms referred to in literature before presenting the paradigm deemed most suitable for this thesis, including a detailed justification.

3.2 Common Paradigms Referred to in Research

In research, the four commonly agreed paradigms are positivism, constructivism, transformative and pragmatism (Teddlie & Tashakkori, 2009). The transformative and pragmatic worldviews are seen to be compatible with mixed-method research. Positivism and post-positivism are closely identified with quantitative research and constructivism with qualitative research, making neither particularly suitable for mixed-method research on their own. A detailed discussion of these paradigms with reference to the research question is presented in the following sections.

Propounded by a French philosopher, Auguste Comte, the positivist paradigm defines a worldview of research grounded in the scientific method of investigation (Cohen, Manion and Morrison, 2007). Positivism is regarded as a 'scientific method' or 'science research' and is 'based on the rationalistic, empiricist philosophy that

originated with Aristotle, Francis Bacon, John Locke, Auguste Comte and Emmanuel Kant' (Mertens, 2005, p.8). According to Comte, positivism is a belief that defines observation and reason as a means of understanding behaviour. True knowledge is based on sensory experience which can only be reached through observation or experiment (Cohen, Manion and Morrison, 2007). According to Creswell (2011), positivism promotes the idea that scientific knowledge is derived from the collection of data obtained from observation, which is theory-free and value-free, whereby both the investigator and investigated are independent of one another. The positivist paradigm suggests that anything which cannot be observed, measured or quantified is of little or no importance (Creswell, 2011).

Positivists argue for the existence of a true and objective reality that can be studied by applying the methods and principles of natural sciences and scientific inquiry. Whilst the positivist ontology theory is governed by a single external reality with direct access to the real world, the epistemology in positivism is based on research that focuses on generalisation and abstraction (Carson *et al*., 2001). Taking realism as its ontological stance, positivists assume that reality exists and is driven by rigid natural laws and mechanisms (Guba & Lincoln, 1994). Positivists perceive the world as an objective reality where the observers are detached and independent (Cohen, Manion and Morrison, 2007). In terms of epistemology, the positivist paradigm is dualist and objectivist, in which the researcher and the research exist as independent entities and the former can study the object without either influencing the other (Guba & Lincoln, 1994). Positivist axiology defines the researcher as one who must have a clear distinction between reason and feeling in their work and strive to use a rational, verbal and logical approach (Carson *et al*., 2001). Therefore, positivism links to ontology, epistemology and axiology through distinct pathways, each of which determines the

approach taken by the researcher. Positivist methodology is concerned with explaining relationships between various phenomena. Positivist research is related to quantitative methods both experimental and non-experimental in which questions and hypotheses are posited in advance in a propositional way and are subjected to empirical testing under conditions that are carefully controlled so that the results are not influenced (Guba & Lincoln, 1994). This mixed-method study aimed to identify factors that influence critical care nurses' ITL in phase one and to expand on these factors in phase two by exploring the meaning of factors influencing it and why they influence ITL using a mixed-method sequential explanatory design. A positivist approach could inform the quantitative part of this mixed-method study, but it was part of a larger mixed-method study and not a standalone approach. The positivist paradigm was therefore inappropriate.

A notable shift from positivism to post-positivism was observed in the 20th century (Popper, 1989). Like positivists, post positivists also believe in the existence of a single reality, but acknowledge that reality can never be fully known due to the sensory and intellectual limitations of people (Guba, 1990). Like positivists, post positivists strive to be objective and neutral to ensure that findings fit in an existing knowledge base. However, they differ in their approach to the acknowledgement of those issues that may affect objectivity (Doucet, Letourneau and Stoppard, 2010). Both positivists and post positivists believe that the world can be explored through quantitative methodologies (Ryan, 2020). However, post positivists acknowledge a less vigorous form of positivism (Ryan, 2020). This is reflected in their approach to ontology and epistemology. Whereas post-positivist epistemology requires research to focus on the specific and material, positivism deals with abstraction and generalisation (Carson *et al*., 2001). Positivist ontology deals with a single external

reality, whilst post-positivist ontology believes in a less structured definition (Carson *et al*., 2001). Whilst acknowledging the minor differences between the positivist and post-positivist approaches, both believe that the world can be explored through quantitative methodologies. This means that the post-positivist approach was also deemed inappropriate for this mixed-method study.

The positivist paradigm has been criticised for several reasons. It fails to differentiate social from natural sciences, dealing with people like other natural objects (Bryman, 2008). Other criticisms include shedding contexts from the meanings while developing quantified measurements of phenomena (Guba & Lincoln, 1994) and giving no value to research. These conflicts and criticisms inform nursing research as we must examine the approach that balances scientific investigation and human experience. In response to the positivist approach, a strong qualitative tradition emerged in the social sciences in the 1960s and 1970s (Broom and Willis, 2007). These changes were associated with authors such as Glaser and Strauss (1967), Berger and Luckmann (1967) and Lofland and Lofland (1995). Factions in the social sciences were beginning to diverge from the positivist approaches of the classical social scientists as a result of the movement originating at Chicago School in the 1920s and 1930s and gathering momentum in the 1960s. Before this movement, research methods were largely quantitative and firmly based on the positivist paradigm. Often held in contrast to quantitative methodologies, the qualitative methodology is based on constructivism, whereas research focuses on the socially constructed nature of reality (Creswell, 2014).

Constructivism posits that knowledge emerges through the individuals' interaction with the environment in the course of experience (Berger and Luckmann, 1967). Qualitative

researchers seek to provide an understanding of the world through the gathering and interpretation of human experience (Creswell, 2014). In this approach, the emphasis is on constructing meaning from complex human interactions rather than from quantifying experiences. Richards (2003) argues that positivist research has its merits but that there are social phenomena that could be best investigated through the constructive paradigm. To understand this stance, we must recognise that constructivism differs from positivism through its assumptions about the nature of reality, what counts as knowledge, values, and their role in the research process. The key point of contention lies in the ontological question posed by the two schools; the differences in the perception of reality make positivist theory probabilistic, whereas constructivism (as the name indicates) requires the reality to be constructed socially (Richards, 2003). Both approaches offer advantages in terms of the research in question.

It is futile to adopt a one-size-fits-all approach to adopting paradigms to a wide variety of nursing research. The attributes of each theory must be weighed against one another before a decision can be made. This thesis aims to explore the factors that may influence nurses' ITL adult critical care and how and why these factors influence that intention. It was therefore decided that a positivist or a constructivist paradigm alone would not be appropriate due to the multi-faceted nature of the research question and the projected outcomes. This study needs to adopt a multi-dimensional approach in the form of empirical and theoretical reasoning.

3.3 Pragmatism

Pragmatism is the philosophy of common sense, which focuses on human inquiry (Shields, 1998) and is not committed to any one system of philosophy or reality

(Mackenzie and Knipe (2006). Researchers following a pragmatic approach focus on the ‘what’ and ‘how’ of the research (Creswell, 2011) and reject the scientific notion that only approaches following a single scientific method can access the truth about the real world (Mertens, 2007). Rather, pragmatism is a means of bridging the gap between the singular scientific approach and qualitative theories (Tashakkori and Teddlie, 2003). Derived from the Greek word 'pragma' meaning action, pragmatism is a philosophical movement that originated in the US around 1870 and was led by Charles Saunders Peirce (1839-1914), William James (1842-1910), John Dewey (1859-1952), George Mead (1863–1931) and Arthur Bentley (1870–1957) (Shields, 1998). These philosophers and other academics rejected the traditional assumptions regarding the truth, nature of knowledge and inquiry and felt that the real world could not be assessed only by a unique scientific method (Shields, 1998; Gale, 2005). Pierce's early work which suggested that science deals with the world on three levels (the observed object, the working scientist and the signs that science used to explain the world) was not widely read at the time and was not particularly influential (Fisch, 1982). Instead, it was George Mead's contributions to the movement (a colleague of Dewey's at Chicago University) which influenced psychologists and social scientists through ‘social behaviourism’. Mead developed the 'notion of the act' or 'presentism' which means what is real is happening now (Tashakkori and Teddlie, 2003). Dewey is considered to have made significant contributions to the debate surrounding pragmatism and scientific research and although primarily a psychologist, is considered one of the greatest thinkers of the 20th century due to his contributions to empiricism, naturalism, humanism and contextualism (Hickman and Alexander, 1998). Dewey was outspoken and freely voiced his views about education, politics, world peace and women’s rights (McDermid, 2006). He has made significant contributions

in multiple areas, but it was his pragmatic approach to ethics, aesthetics and religion that has remained influential (Hickman and Alexander, 1998). The influence of pragmatism declined during the first part of the 20th century until its revival in the 1970s when interest in the writings of the pragmatists became widespread (Tashakkori and Teddlie, 2003). It is this second period that has made the greatest influence on the philosophy of science and methods of social sciences. This resurgence has fuelled a new way of thinking about pragmatism and its place in philosophy, science and life. According to Tashakkori and Teddlie (2003), pragmatism in the current era is not just a philosophy and method of research; it is also influential in politics, aesthetics and religion.

Pragmatism is a paradigm or worldview arising from actions, situations and consequences rather than from preceding conditions (Creswell, 2014). What initially emerged as a tool for solving practical problems in the real world can also be used as a method of inquiry for like-minded researchers, leading researchers like Creswell to abandon idealistic or rationalistic approaches for empiricism. This makes it a valuable approach for this mixed-method study as it acknowledges that the views of individuals can shape reality. The term mixed-method refers to an engagement or mixing of quantitative and qualitative data in a unified investigation and point of inquiry (Wisdom and Creswell, 2013). It aims to understand multiple perspectives on a single issue such as, what patients, clinicians, caregivers and practice staff might categorise as ‘high-quality’ care, thereby offering an added advantage in nursing research.

3.4 Pragmatism as the Paradigm of Choice

Pragmatism does not subscribe to the established dichotomy between positivism and constructivism. It rejects the positivist notion that a singular reality can be discovered

by objective inquiry which underpins quantitative research methods (Tashakkori and Teddlie, 2010). It follows the idea that subjective inquiry is more valuable and favours qualitative research methods (Creswell, 2011). Whilst this does not apply to all areas of research, especially in the natural sciences, there are obvious advantages in the arena which this study will explore because the key findings are expected to take the form of a spectrum rather than stand-alone inferences. The paradigm problem for mixed-method studies was a result of the so-called 'paradigm wars' of the 1970s and 1980s where the positivist paradigm came under attack from social scientists supporting qualitative research, hence proposing constructivism. The problem for mixed-method researchers was to find a rationale for combining qualitative and quantitative data in the face of the seemingly incompatible paradigms underpinning them (Guba & Lincoln, 1982). To deal with this problem, a range of alternative approaches have been developed to address the utility of the mixed-method approach (Tashakkori and Teddlie, 2003; Creswell, 2011). These approaches have been classified into three categories: the a-paradigmatic stance, the multiple paradigm stance and the single paradigm stance (Tashakkori and Teddlie, 2003). The a-paradigmatic approach is based on avoiding the paradigm issue altogether (Tashakkori and Teddlie, 2003) and so may not be clearly defined by a researcher. However, this does not mean that there is no paradigm as no research can be paradigm-free and so this is not suitable for mixed-method research (Geelan, 2015). A multiple paradigm stance claims that the researchers can adopt more than one paradigm in their research. The third is the single paradigm approach (Geelan, 2015). This involves the researcher adopting a single paradigm with both qualitative and quantitative research methods. Whilst all three offer distinct benefits, different facets of the research would benefit from one of the three viewpoints. This depends on the

question that each section is aiming to answer and is largely the prerogative of the researcher and their judgement.

Pragmatism has been adopted as the most appropriate paradigm for this research project. It is a means to bridge the gap between a singular scientific approach to research and research theories (Tashakkori and Teddlie, 2003). Pragmatism links the choice of approach directly with the purpose and nature of the research question. It acknowledges that research is often multi-purpose and that a ‘what works’ tactic can allow the researcher to address questions that do not sit comfortably in quantitative or qualitative approaches to design and methodology (Creswell, 2011).

For this study, a quantitative method (survey) was adopted to determine the factors that influence nurses’ ITL followed by a qualitative method (semi-structured interviews) to explore what these factors meant to the individuals and how and why these factors influenced their decision. By combining both quantitative and qualitative methods, this study sought to provide a detailed understanding by exploring the factors quantitatively and then understanding the meaning of these factors qualitatively. The appropriateness of pragmatism for this research is clear when one considers the multi-faceted nature of the research question and the projected outcomes. The research used a multi-dimensional approach in the form of empirical and theoretical reasoning.

Unlike other theoretical frameworks, pragmatism focuses on the outcome of the research, gives preference to the research question over the methods used and is informed by multiple data collection methods (Creswell, 2014). Epistemologically, the importance of pragmatism is its practicality as, unlike post-positivism, the researcher collects data by 'what works’ to address the research problem (Creswell, 2014). Axiology highlights the role of values and ethics in research and methodologically,

both quantitative and qualitative data are collected and mixed adding richness and completeness (Tashakkori and Teddlie, 2003). This multi-stance approach allows the researcher to include both biased and unbiased perspectives accepting that both objective and subjective knowledge adds value to the research. Researchers in social sciences have debated the place of pragmatism as a philosophy in social inquiry raising concerns that the trusted scientific approach to research (formalism) would be harmed by accepting pragmatism (Tashakkori and Teddlie, 2003). Pragmatism, however, is slowly being accepted as offering greater diversity to inquiry than the singularity of formalism (Tashakkori and Teddlie, 2003).

Aligned with the author's beliefs and the objectives of this thesis, pragmatism recognises that there are numerous ways of interpreting the world. There may be multiple realities and no single point of view could ever reveal a full picture. Recognising the multiple factors that influence nurses' ITL adult critical care areas and their relative subjectivity, a pragmatic theoretical framework has been identified as the most appropriate method of inquiry for this study. This is primarily justified by its firm empiricist and experiential perspectives, arguing against the metaphysical presumptions of nursing behaviour and focusing on how they adapt to their environment by adapting new experiences during practice, which in itself is a starting point and zenith of knowledge. To achieve this aim, this framework will offer a means of thorough exploration of the experiences (both quantifiable and conjectural), which will be collected and interpreted.

3.5 Methodology

Methodology summarises the research process guided by philosophical beliefs about the nature of reality, knowledge, values and theoretical framework (Johnson,

Onwuegbuzie and Turner, 2007). The term methodology in itself is referred to as “the general logic and theoretical perspective” of a research study (Bogdan and Biklen, 2007,p-35). Somekh and Lewin (2005, p-346) defined methodology comprehensively as both "the collection of methods or rules by which a particular piece of research is undertaken and the principles, theories and values that underpin a particular research approach". Walter (2006, p-35) on the other hand, argues that methodology is the frame of reference for the research influenced by "the paradigm in which our theoretical perspective is placed or developed". Based on these definitions, a methodology is said to be the overall approach to research linked to the paradigm or theoretical framework while a method refers to the systematic modes, procedures or tools used to collect and analyse data (Mackenzie and Knipe, 2006). Creswell and Clark (2018) identified three designs that might be included under the research methodology: quantitative, qualitative, and mixed-method research. Quantitatively oriented researchers, researching empirical ways using statistical analysis and deductively arriving at conclusions (Pole, 2007). Qualitatively oriented researchers on the other hand rely more on subjective construction of reality to arrive at descriptions of phenomena, and their work is influenced by the theory they are using (Creswell and Clark, 2018). The third group of researchers as Teddlie & Tashakkori (2003) claim, they are neither traditional (quantitative) nor revolutionary (qualitative) and referred to as mixed methodologists (mixed-methodology). The mixed methodology tends to fit more closely with qualitative worldviews, including the belief that multiple realities are dependent upon the individual (Pole, 2007), but answer questions by combining qualitative and quantitative methods in various ways (parallel, concurrent, or sequential order). A mixed methodology was adopted for this study to fulfil the aims

and objectives of the research question (Creswell, 2014). The background and justification for adopting a mixed methodology are presented in the following sections.

3.6 Mixed-Method Research

The mixed-method research has been described as a quiet revolution due to its focus on resolving the tensions between quantitative and qualitative movements (Tashakkori & Teddlie, 2003; Teddlie & Tashakkori, 2009), establishing as an identifiable methodological movement with a short history tracing back to the 1980s (Johnson and Onwuegbuzie, 2004). The term 'mixed method' is defined as a process of collecting, analysing and integrating both quantitative and qualitative data within the same study (Bazeley, 2018,p-7). Mixed method studies are different from those studies which incorporate both quantitative and qualitative components but without integration, and from multi-method studies incorporating only quantitative or qualitative components (Teddlie and Tashakkori, 2009). Bazeley (2018) argues that integration should be a core component of mixed-method research and should involve multiple sources and types of data in which integration and analysis of data occur before drawing conclusions about the research topic. This study aimed to fully explore the factors that influence nurses' intention to leave adult critical care areas. A mixed-method study using a sequential explanatory design including integration was, therefore, appropriate to achieve the aims and objectives of this study. By combining both quantitative and qualitative methods, this study sought to provide a detailed understanding of the research question by exploring the factors quantitatively and then understanding the meaning of these factors qualitatively. Further details of this mixed-method design with rationale will be provided later in this chapter.

There are many variations of mixed-method studies, including different terms used for this approach; hence the precise definition of mixed-method research is debatable (Johnson, Onwuegbuzie and Turner, 2007). Some researchers emphasize the philosophical assumptions, calling it a third research paradigm (Johnson and Onwuegbuzie, 2004) and the third methodological movement. Others such as Greene, Caracelli and Graham (1989) focuses more on the data collection and analysis methods. This study has adopted the most widely accepted definition of mixed-method research by Creswell, which focuses both on methods, methodology and philosophy. Creswell (2014,p.4) defines mixed method research as "an approach to inquiry involving collecting both quantitative and qualitative data, integrating the two forms of data and using distinct designs that may involve philosophical assumptions and theoretical frameworks". Creswell (2014) argues that the combination of both quantitative and qualitative approaches provides a more comprehensive understanding of a research problem than either approach alone, hence advocating mixed-method research.

Greene, Caracelli and Graham (1989) have identified five broad reasons for using mixed-method research, still applied frequently in research. These are, triangulation (confirming and converging results from different designs investigating the same phenomenon), complementarity (clarifying and enhancing results of one method with the results from another), development (applying findings from one method to help develop and inform the other method), initiation (discovering contradiction which leads to the review of research question) and expansion (expand the range and breadth of research by using multiple methods). More recently, Bryman (2006) provided a detailed list of sixteen reasons for undertaking mixed-method research adding to the more general list of Greene, Caracelli and Graham (1989). Some of the characteristics

include in Bryman (2006) list are triangulation, Offset, completeness, instrument development, sampling, credibility, utility (improving the usefulness of findings), diversity of views and building upon conclusions. According to Greene, Caracelli and Graham (1989), cited in Bazeley (2018), mixed-method research builds a better understanding and more reliable inferences through increasing confidence in results that are supported by multiple sources of evidence. Furthermore, mixed-method research provides more evidence for studying a research problem than either quantitative or qualitative research alone (Creswell and Clark, 2018). The value of mixed-method research is its potential to present a more complete and comprehensive research opportunity. Which criteria of Greene, Caracelli and Graham (1989) and Bryman (2006) are relevant to the mixed-method design adopted by this thesis will be explained later in this chapter.

There are some limitations and barriers of mixed-method research which should be considered. Undertaking mixed method research is considered to be more complex as compared to a single design research (Creswell and Clark, 2018). Mixed method research is more time consuming, more involved especially where a team approach is required, resource-intensive (Whitehead and Schneider, 2007) and require the principal investigators to have a good working knowledge of both paradigms and how to combine them (Creswell and Clark, 2018). Whitehead and Schneider (2007) argue that some mixed-method studies could be quantitative or qualitative dominant, and one may interfere with the other. The strengths of mixed-method research, however, could outweigh the limitations if the study is carefully planned taking into account the advantages and strengths of mixed method research. The following section explains the rationale for choosing a mixed method.

3.7 Justification for Choosing Mixed-Method Research

The rationale for adopting the mixed-method study was driven by the need for both quantitative and qualitative methods to fully explore the factors that influence nurses' ITL adult critical care areas. A quantitative method (survey) was adopted to find out what factors influence nurses' ITL their current job and/or their profession. A qualitative method (semi-structured interviews) was needed to explore what these factors mean to nurses and 'how and why these factors influence their decisions to leave their job and/or profession in the adult critical care settings. By combining both quantitative and qualitative methods, this study sought to provide a detailed understanding of the research question by exploring the factors quantitatively and then understanding the meaning of these factors qualitatively. Based on the classification of Greene, Caracelli and Graham (1989), the first reason for choosing a mixed-method for this study was 'development' which means using the results of a quantitative method to help develop and inform the qualitative method and using qualitative data to help explain the findings of quantitative data. The second reason was expansion which means extending the breadth and range of inquiry by using different methods allowing a more in-depth insight into the research question.

Regarding the detailed classification of Bryman (2006), the reason for selecting mixed-method approach was offset (combining both quantitative and qualitative methods to offset their weaknesses and draw on their strengths), completeness (comprehensive account of the area of research employing both methods), explanation (using a qualitative method to help explain the findings of quantitative method) and credibility (integrating both approaches enhances the integrity of findings). By applying the classification of Greene, Caracelli and Graham (1989) and reasons of Bryman (2006) for choosing mixed-method, this study aimed to identify factors that influence nurses'

ITL, to find out what these factors mean to nurses and how they impact their intention to leave thus providing a complete picture of the research in question. It has been identified that the most suitable means of exploring factors influencing nurses' ITL is through the use of a mixed-method sequential explanatory design, which will be discussed in depth in the following section.

3.8 Mixed-Method Research Design

Research designs are used for the collection, analysis, interpretation and reporting of data in research studies (Creswell and Clark, 2011). Research designs guide the researcher in making decisions about the methods adopted for their research. The following section presents the research design adopted by this mixed-method study and its justification.

Three core mixed-method designs have been recommended by Creswell and Clark (2018). These are convergent design, the exploratory sequential design, and the explanatory sequential design. Convergent design is used to compare the results from both quantitative and qualitative parts with the intent of obtaining a complete understanding of a problem or validating one set of findings with the other. Furthermore, the convergent design is used to determine if participants respond in a similar way if they check quantitative predetermined scales and if they are asked open-ended qualitative questions (Creswell and Clark, 2018). In sequential exploratory design, qualitative data is collected first, analysed and themes are used to drive the development of a quantitative instrument to explore the research problem further (Onwuegbuzie, Bustamante and Nelson, 2010). As the aim of this thesis was to identify factors influencing nurses' ITL and how and why these factors impact their ITL both convergent and exploratory sequential designs were not aligned with the aims of

this thesis and hence were considered inappropriate to adopt. Consequently, a sequential explanatory design was adopted, which will be explained in the following section.

3.8.1 Sequential Explanatory Design

The mixed-method research design adopted for this study was a sequential mixed-method explanatory design (Ivankova, Creswell and Stick, 2006). This design is also known by other names in the literature, such as sequential mixed design or qualitative follow-up design (Teddlie and Tashakkori, 2009). The main purpose of this design is to use qualitative data to expand on the findings generated using a quantitative approach (Creswell and Clark, 2011). The mixed-method sequential explanatory design has two distinct phases (quantitative followed by qualitative) (Ivankova, Creswell and Stick, 2006). The researcher collects and analyses numeric (quantitative) data followed by the collection and analysis of text (qualitative) data to help explain or elaborate on the quantitative findings obtained in the first phase (Creswell, Fetters and Ivankova, 2004). The rationale for using the sequential explanatory design is that quantitative data and analysis provide a general understanding of the research problem while the qualitative data and analysis refine and explain the statistical results by exploring participants' views in more detail. As the aim of this mixed-method study was to identify factors influencing nurses' ITL in phase one and then expand on these factors in phase two by exploring the meaning of these factors from critical care nurses' perspectives and why these factors influence their ITL, sequential explanatory design was therefore appropriate to investigate the research question.

Sequential mixed-method explanatory design and its strengths and weaknesses have been widely discussed in the literature such as Greene, Caracelli and Graham (1989), Creswell (2003) and Creswell and Clark (2018). Strengths of sequential explanatory mixed-method design include its straightforwardness and simplicity to implementation (Ivankova, Creswell and Stick, 2006). This design appeals to quantitative researchers as it begins with a strong quantitative orientation (Creswell and Clark, 2018). Limitations of sequential explanatory design include the time needed to carry out the research and the feasibility of resources to collect and analyse both types of data (Ivankova, Creswell and Stick, 2006). Furthermore, keeping both phases separate, but at the same time performed sequentially is another challenge (Creswell, 2003). These issues were addressed in the design of this research through early planning and responding to the findings of the quantitative phase proactively as they emerged taking into account what they might mean for the implementation of the qualitative phase.

3.8.2 Sequential Explanatory Design Rationale

Each design has its strengths and weaknesses; however, based on the aims and objectives of this study, the sequential explanatory design was selected as the design of choice (Creswell and Clark, 2018). The main aim of this study was to explore factors influencing nurses' ITL adult critical care areas (quantitative data collection and analysis) in phase one. Findings of phase one helped in the development of interview questions for phase two. Phase two (qualitative data collection and analysis) was carried out to get an in-depth understanding of the factors identified in phase one and to explore how and why these factors influence nurses’ ITL in the adult critical care settings. This was achieved through semi-structured interviews carried out with a purposive sample of nurses currently working in adult critical care areas. In phase three, findings from quantitative and qualitative phases of the study were synthesized

to provide an in-depth understanding of the factors that influence nurses' ITL in adult critical care settings. All these steps are aligned with sequential mixed method explanatory design. The purpose of using a sequential mixed-method design was to identify factors that influence nurses' ITL adult critical care areas in phase one and then find out what these factors mean to nurses and why they influence their intention to leave in phase two via semi-structured interviews. Using a sequential mixed-method design provided a complete exploration of the factors influencing nurses' ITL adult critical care areas and thus may help in the development of strategies to improve nurse retention in the critical care settings. Brief qualitative comments were also collected in phase one to identify the list of factors associated with nurses' ITL adult critical care areas. This will be explained further later in this chapter.

3.9 Visual Model

A visual representation of the mixed-method research helps to understand the sequence of data collection, the priority of either method and the mixing points of the two approaches within the study (Ivankova, Creswell and Stick, 2006). Different visual presentation systems have been used in the literature over the years such as Morse (1991), Tashakkori, Teddlie and (1998) and Creswell (2003). These visual models, however, didn’t include guidelines regarding how to undertake the study. Ivankova, Creswell and Stick (2006) developed ten rules for drawing a visual model for the mixed-method procedures by combining the recommendations of previous researchers such as Creswell (2003), Morse (1991), Tashakkori and Teddlie (1998). The visual model adopted by this study is based on the ten rules (Table 3.1) of Ivankova, Creswell and Stick (2006). Ivankova, Creswell and Stick (2006) model is more detailed as compared to previous models and includes both the steps to follow

while drawing the visual model and specific guidelines related to its content and format.

Table 3.1: Ten rules for drawing visual model for mixed-method design (Ivanovna, Creswell, and Stick, 2006, p.15)

- Give a title to the visual model.
- Choose either a horizontal or vertical layout for the model.
- Draw boxes for quantitative and qualitative stages of data collection, data analysis, and interpretation of the study results.
- Use capitalized or lowercase letters to designate the priority of quantitative and qualitative data collection and analysis.
- Use single-headed arrows to show the flow of procedures in the design.
- Specify procedures for each quantitative and qualitative data collection and analysis stage.
- Specify expected products or outcomes of each quantitative and qualitative data collection and analysis procedure.
- Use concise language for describing procedures and products.
- Make your model simple.
- Size your model to a one-page limit

A visual model of the study design is presented in Figure 3.1 to help illustrate the sequence of both phases and point of integration. This visual model was adopted from the visual model for mixed-method sequential explanatory design procedures by Ivankova, Creswell and Stick (2006,p.16). Figure 3.1 represents the sequence of the research activities in the study, indicates the priority of each phase by capitalizing the term quantitative and qualitative, specifies all data collection and analysis procedures, and lists the outcomes from each stage of the study. It also shows the connecting points between the quantitative and qualitative phases and the related products, as well as specifies the stages in the research process where the integration or mixing of the results of both quantitative and qualitative phases occurred. The priority in this

sequential explanatory mixed-method design is given to both the quantitative method (phase one) and qualitative method (phase two) because both are equally important in the study. The quantitative component identifies factors that may influence nurses' ITL adult critical care areas while the qualitative component aims to provide an explanation of the factors identified in phase one. Both phases are essential to get an in-depth understanding of the research question and to meet research aims and objectives.

Phase one

Phase	Procedure	Product
QUANTITATIVE Data Collection	Cross-sectional survey (*n*=345)	Numeric data
QUANTITATIVE Data Analysis	Chi-square test Exploratory factor analysis T-test Logistic regression analysis	Descriptive statistics Missing data Factor loadings P values and Odd ratios
	Integration-point one	
Connecting both phases (Integrating quantitative data analysis and qualitative data collection)	Purposive sampling Developing interview questions using findings from the quantitative phase	Participants (*n*=15) Interview protocol
	Phase two	
QUALITATIVE Data Collection	Semi-structured in-depth telephone interviews Transcribing Email follow up	Text data (interview transcripts)
QUALITATIVE Data Analysis	Framework analysis	Thematic matrix
	Integration-point two	
Integration of the Quantitative and Qualitative Results	Interpretation and explanation of the quantitative and qualitative results	Discussion Implications Recommendations for practice and future research

Figure 3.1 Visual Model for Mixed-Method Sequential Explanatory Design Procedures adopted from Ivankova, Creswell and Stick (2006, p. 16)

The following sections explain how the research design was implemented across the three phases, including phase one (cross-sectional survey), phase two (semi-structured interviews) and phase three (integration). Findings of phase one (cross-sectional survey) will be presented in chapter four, findings of phase two (semi-structured interviews) in chapter five and the integration of findings from both phases will be presented in chapter six.

3.10 Implementing the Research Design Phase one (Survey)

3.10.1 Study Design

A cross-sectional survey was designed to gather information on the views of current adult critical care nurses across England, including their work environment and possible factors influencing critical care nurses' ITL adult critical care areas. Furthermore, the aim was to find out the extent of the problem by identifying the number of nurses expressing an intention to leave their current job and/or nursing profession.

3.10.2 Sampling

To get a national feel regarding factors influencing nurses' ITL, all critical care nurses currently working across England were invited to take part in this survey. To reach all critical care nurses currently working across England, various approaches and organisations were considered to distribute the survey such as the Royal College of Nursing (RCN), the British Association of Critical Care Nurses (BACCN) and the Critical Care Network (CC3N) UK. CC3N UK was considered the best option to reach all critical care nurses across England as their network covers all areas of England including all critical care units. RCN, on the other hand, is not specific to critical care

nurses and BACCN members comprise of enthusiastic and ambitious critical care nurses and hence lack representation of the wider population of the critical care nursing workforce. Distributing the survey using the RCN and BACCN platforms were therefore considered the least favourite options. The head of CC3N UK was contacted via work email followed by a phone call to discuss the aims and objectives of the study. The head of CC3N UK agreed to distribute the survey to all critical care units across England via their local network leads. There are approximately 15000 critical care nurses across England (including both full and part-time as well as clinical and non-clinical nurses) (Horsfield, 2018). This number however is an estimate and therefore needs to be considered with caution. A link to the online survey questionnaire using Qualtrics^{XM} (Snow and Mann, 2013) was emailed to the national lead for critical care networks which has representatives from every region of England. The email was then forwarded to the managers of adult critical care units via the local critical care network leads. They were asked to distribute the link to the survey to all nurses working in their units in order to reach all nurses currently working in adult critical care areas across England. An invitation letter and participant information sheet was included in the email. To ensure the survey reached all critical care nurses, an audit trail was kept of all email communication between the head of the CC3N and the local network leads and managers. To achieve a representative sample, all nurses who currently work in adult critical care areas were invited irrespective of their age, level of seniority, geographical and socioeconomic areas. No direct contacts to the population were made by any member of the research team. A power calculation was not necessary on the advice of a statistician as the survey was sent to the whole population (all nurses currently working in adult critical care areas across England). As the recruitment was undertaken via a cascade method, it was not possible to know the

number of surveys distributed and the number of participants who received the survey, it was, therefore, not possible to calculate a response rate. A different sampling and recruitment strategy allowing the researcher to retain the number of nurses receiving the survey and those who responded would have been beneficial but as discussed at the beginning of this section, this was not possible and the best available option at the time was chosen. The section below justifies not calculating a response rate and how a response rate alone is a fairly poor predictor of response bias.

The use of response rates to assess the efficacy of surveys is declining (Howcutt *et al*., 2017). Falling response rates have been documented in research especially in the past two decades (Atrostic *et al*., 2001; de Heer and de Leeuw, 2002; Cannon, Steeh and Kirgis, 2001; Stoop, 2005). The response rate of a Scottish Health Survey (SHeS) has fallen from 84% (1995) to 56% (2013) (Corbett *et al*., 2014). More recently, a longitudinal study by Stedman *et al* (2019) reported a decline of 0.76% per year in average response rate to mail surveys between 1971 and 2017. While a decline of <1% doesn't look significant, it results in an overall decline of about 35%. The bivariate correlation between response rate with the year was very strong ($r = 0.600$), and statistically significant ($p < 0.001$). The average response rate per decade, ranging from 77% in the 1970s down to 43% in 2010 and a linear projection, using regression model, suggests a 21% average response rate by 2030. The trend toward a lower response rate continues despite additional procedures (increasing contact rates and reducing refusals) aimed at increasing survey responses (Brick, 2013). None of these methods appears to be helping in reducing the level of nonresponse, and despite their weaknesses, reliance on other methods such as representativeness and weighting adjustments is increasing.

Furthermore, overall response rates cannot quantify the extent to which samples represent the sampled population, and there is no consensus on acceptable response rates (Howcutt *et al.*, 2017). Additionally, "response rate alone is a fairly poor predictor of response bias" (Wright, 2015, p-306), There is also a danger of ecological fallacy where estimates for the aggregated data may not adequately reflect the risks and events of individuals (Howcutt *et al*., 2017). This could happen as a result of the over or under-representation of different sectors of the population source. Some researchers such as Bethlehem and Kersten (1985) and Wright (2015) argue that the response rate is not an indicator of quality. Researchers argue that as response rates go down, the risk of nonresponse bias increases, but what is not known is by how much and for which subgroups? Heffetz and Rabin (2013) explored the problem of selection bias by comparing easy-to-reach versus hard-to-reach respondents and found important differences. This suggests that all non-respondents are not equivalent, and survey results could shift depending on how much effort is made to reach non-respondents. Skalland (2011, p- 89) argues that there are major limitations to using response rates as the "primary measure of quality when assessing the validity of survey data or comparing different surveys". Similarly, Kreuter (2013) reports that decreasing response rates do not always produce nonresponse bias in survey estimates, noting that how nonresponse influences bias depends on the relationship between the likelihood of response and key survey variables. Further details regarding the representativeness of the study sample have been presented in chapter 4.

3.10.3 Recruitment and setting

Phase one was conducted from November 2017 to April 2018 at 263 adult critical care units across England. A link to the online survey questionnaire using Qualtrics^{XM} (Snow and Mann, 2013) was emailed to the national lead for critical care networks

which has representatives from every region of England. The email was then forwarded to the managers of adult critical care units via the local critical care network leads. They were asked to distribute the link to the survey to all nurses working in their units in order to reach all nurses currently working in adult critical care areas across England. An invitation letter and a participant information sheet (Appendix 3.1 and 3.2) were included in the email. To maximise the response rate, a reminder email was sent to participants six weeks after the initial email. Participants were thanked if they had already responded to the questionnaire and were reminded of the invitation to take part if they had not already done so.

3.10.4 Survey Questionnaire

A validated Nursing Work Index-Revised (NWI-R) tool (Aiken and Patrician, 2000) was used. The NWI-R (57 items) is a modified version of the Nursing Work Index (NWI) tool (65 items) developed directly from the findings of extensive research of 25 years period on magnet hospitals characterised by excellent patient outcomes and high level of job satisfaction (Kramer and Hafner, 1989). The American Academy of Nursing interviewed nurses and nurse managers from 41 out of the 46 magnet hospitals that were able not just to attract nurses but also able to retain nursing staff despite national shortages of nurses at the time (McClure *et al*., 1983). Findings of their study concluded that magnet hospitals supported work environments that emphasized decentralisation of decision making, promoted nurse autonomy and control over practice, encouraged good nurse-physician relationships and provided flexible roster and adequate staffing levels. NWI was an all-inclusive list of factors related to nurse job satisfaction and perceived productivity defined as an environment conducive to quality nursing care (Li *et al*., 2007). NWI was critiqued by three out of the four magnet

hospital researchers for content validity and completeness (Kramer and Hafner, (1989).

Other researchers such as Kramer and Schmalenberg (1991) and then Aiken and associates extended the research of Kramer and Hafner, (1989) on magnet hospitals and identified trends and characteristic differences between the magnet and non-magnet hospitals. Nurses in the magnet hospitals were satisfied with all aspects of their jobs and reported a good staffing level as compared to non-magnet hospitals (Aiken and Patrician 2000). Based on the results of their ongoing investigations, Aiken and Patrician (2000) modified the basic structure of NWI and reanalysed the NWI data collected by Kramer and Hafner (1989) as well as NWI data collected for their study of specialized AIDS units. They conceptualized three NWI subscales believed to measure nurse autonomy, nurse control over the practice setting, and nurse relations with physicians (Estabrooks *et al*., 2002). Aiken and Patrician (2000) revised the NWI in their study of the impact of specialized AIDS patient care units on both patient and nurse outcomes, renaming it the Revised Nursing Work Index (NWI-R) to measure characteristics of professional nursing practice environment (Li *et al*., 2007). Nurses' report on the series of factors used to represent traits of a hospital or a nursing unit in a hospital. Reliability issues related to measurement theory such as the unit of analysis being the patient care unit or hospital rather than the individual were discussed. The unit of analysis being the hospital or hospital unit, they concluded that the traits examined were organizational characteristics (Estabrooks *et al*. (2002). They described how an organizational trait or characteristic is measured reliably when the variability in evaluations between nurses within a hospital is small relative to the variability in mean evaluations across hospitals. However, no evidence was provided to confirm this hypothesis about the reliability of their research (Estabrooks *et al*.,

2002). While modifying NWI to NWI-R by Aiken and Patrician (2000), the two value statement in NWI (This is important for my job satisfaction, this is important to me being able to give quality patient care) were removed, and only the presence statement (This factor is present in my current job) were retained (Aiken and Patrician, 2000). NWI-R uses a 4-point Likert scale with choices ranging from 1 (strongly agree) to 4 (strongly disagree). In addition to the preceding revisions, three subscales containing 15 of the 57 items were conceptually derived from measuring nurse-physician relationships, control over practice settings and autonomy (Li *et al*., 2007). A fourth subscale was created from items in the previous three subscales (NWI) to measure organisational support for caregivers (Aiken and Patrician, 2000).

The NWI-R was first used in a study of Medicare mortality rates for 39 magnet hospitals and 195 matched control hospitals (Aiken, Smith and Lake, 1994). Magnet hospitals were found to have significantly lower mortality and significantly higher NWI-R scales scores on nurse autonomy, control over their practice setting and relationships with medical colleagues (Aiken and Patrician 2000). Furthermore, NWI-R was used in a 20-hospital national AIDS care study with matched control hospitals and internal control units. Dedicated AIDS units were compared with scattered bed units in the same hospital and in control hospitals, and the comparison was extended to magnet hospitals. The presence of organisational traits measured by NWI-R explained better patient outcomes (lower mortality), better nurse outcomes (Lower burnout), organisational outcomes (staff stability and cost) and hence lower turnover rates (Aiken and Patrician 2000). The strategy in the AIDS care study was to survey all nurses who worked more than 16 hours per week and thus ensuring enough exposure of nurses to the unit's organisational traits. The overall response rate was 86% (Aiken and Sloane, 1997a) claiming the reliability of NWI-R. Additionally, a

difference in the characteristics of nurses such as age and sex were controlled through hierarchical linear modelling when outcomes of interests were studied (Aiken and Patrician, 2000) which further enhances the reliability of NWI-R. Another way to maintain reliability is the extent to which the same results are obtained over time. The NWI-R subscales and the total scores present were found to be stable over time for the same institutions or when used by different institutions. For example, NWI-R results comparing magnet hospitals at two points were identical despite using different sampling strategy. Kramer and Hafner, (1989) used a randomly drawn sample comprising 20% of the nurses from each magnet hospital while Aiken, Smith and Lake (1994) used a total sample (100%) of the nurses on two of each hospital (Aiken and Patrician, 2000). Finally, in terms of the reliability of the instrument itself, the reliability of NWI-R was reported in a study of dedicated AIDS units and the assessment of the instrument itself with Cronbach's alpha of 0.96 for the entire NWI-R (Aiken and Patrician, 2000).

The content validity of the NWI-R is evidenced by the fact that the characteristics of magnet hospitals were used as the basis for the development of the items of NWI (Aiken and Patrician, 2000). Furthermore, three of the original magnet hospital researchers attested to the content validity of the NWI in capturing elements of professional practice models (Kramer and Hafner, 1989). Critorien-related validity was evident by the correlation of NWI-R scores, organisational forms and thus better outcomes. For example, higher NWI-R subscale scores have been found to exist in dedicated AIDS units (Aiken and Sloane, 1997b) and in magnet hospitals (Aiken, Smith and Lake, 1994) such as patient satisfaction (Aiken, Sloane and Lake, 1997), decreased mortality (Aiken, Smith and lake, 1994) and lower nurse emotional exhaustion and burnout, thus improved retention (Aiken, Sloane, 1997b).

The NWI-R (Aiken and Patrician, 2000) is widely used for identifying nurses' intention to leave by evaluating nurses’ practice environment (Li *et al*., 2007) and measuring the organisational traits of hospitals or a hospital unit (Aiken and Patrician (2000). Furthermore, NWI-R is based on the characteristics of magnet hospitals with lower nurses' turnover intention rates. This study aimed to explore nurses' intention to leave adult critical care areas by identifying various characteristics and traits of their unit. Using NWI-R allowed nurses to identify whether these characteristics were present in their practice area and how they influence their intention to leave. It was, therefore, considered an appropriate instrument to explore factors influencing nurses’ ITL adult critical care areas.

The main criticism of the NWI-R tool to date is a large number of items (57) to describe the work environment and characteristics of organisational traits which may be too heavy. Due to this criticism, many studies such as Estabrooks *et al*., (2002) Lake (2002) and Slater and McCormack (2007) have been made to find sub-themes or factors from the 57 items of NWI-R. These studies introduced models differing in items and sub-factors such as Estabrooks *et al*., (2002) producing a 26 item one factor through exploratory factor analysis of NWI-R survey data collected from 17,965 nurses of 415 hospitals in three Canadian provinces. Similarly, Lake (2002) used an empirical approach for the development of subscales and used 48 out of the 65 NWI items. Warshawsky and Havens (2011) while exploring the global use of the NWI reported that the scale was modified for ten practice settings in five different countries. These modifications include changing the wording of some of the items taking into account the different terminology used and/or adding/removing some of the items to suit local settings and research aims. Li *et al*. (2007) used a modified version of the NWI-R while testing the validity of some of the subscales reporting 0.90-0.95 Cronbach’s alphas

overall indicating satisfactory reliabilities. Similar approaches were used in the development of other measurement tools such as PEI-NWI and PES-NWI (Li *et al*., 2007). The same strategy was applied in this study to ensure the suitability of NWI-R in the UK critical care context.

Furthermore, to validate the questionnaire as well as to eradicate any ambiguities and/or difficulties in phrasing, the 57 items questionnaire was piloted on ten nurses from critical care and non-critical care areas which were not included in the study population. As a result of piloting and adopting the questionnaire to suit the critical care context, 17 items that were found to be repetitive, not applicable to the UK context or not relevant to the research aims and objectives were removed. The piloting also resulted in the addition of three ITL items to the questionnaire, which further enhances the suitability of the NWI-R tool to explore factors influencing nurses' ITL adult critical care areas, these were:

- I intend to leave my current job in the next twelve months
- I intend to leave my current job in the next three to five years
- I intend to leave the nursing profession in the next one to five years

The adapted 43 items instrument (Appendix 3.3) was piloted again on five nurses from non-critical care areas to test its reliability which resulted in no changes. Details of the 17 items removed are presented in Figure 3.2.

Reasons	Items removed
These items were removed for the following reasons, following piloting: repetitive, not applicable in the UK context, not applicable/relevant to critical care areas and/or not relevant to the research question, aims and objectives.	1-Team nursing as the nursing delivery system 2-Total nursing care as the nursing delivery system 3-Nurses actively participate in efforts to control costs

	4-Nursing care is based on nursing rather than a medical model 5-Clinical nurse specialists who provide patient care consultation 6-A chief nursing executive is equal in power and authority to other top-level hospital executives 7-Physicians give high-quality medical care 8-A clear philosophy of nursing pervades the patient care environment 9-Written up-to-date care plans for all patients 10-Use of nursing diagnosis 11-A chief nurse is highly visible and accessible to staff 12-Opportunities for advancement 13-Floating so that staff is equalised among units 14-Each nursing units determines its policies and procedures 15-Use of problem-oriented medical records 16-Nursing care plans are verbally transmitted from nurse to nurse 17-Opportunities to work on a highly specialised unit

Figure 3.2: List of items removed from NWI-R

3.10.5 Ethical Considerations

The study was conducted in accordance with the principles of ethical conduct (Social Research Association, 2020) outlined by the Oxford Brookes University ethics department. Before commencing the study, ethics approval was obtained from the Faculty Research Ethics Committee (ref no-2016/56, Appendix 3.4). To adhere to the ethical principles applied to the survey, a cover letter accompanied the survey which informed participants of the aims, benefits to be gained and an outline of study requirements to ensure informed consent. Study participation was voluntary, and consent was assumed when the participant chose to complete the survey online. This

practice is the norm in survey research, as obtaining written consent is not usually possible (Polit and Beck, 2010). The new GDPR (General Data Protection Regulation) (Information Commissioner Office, 2018) came into force after the completion of this survey, thus not applicable.

The cover letter accompanying the survey made it clear that information about participants such as their names, geographical location and phone numbers would be known only to the researcher. Furthermore, they were informed that results would be reported in an aggregated form, thereby diminishing the possibility of individuals being identified in verbal or written dissemination of the results. The questionnaire data were stored securely as per university guidelines such as using a network shared drive to store data and regularly reviewing access to files. Computer files are double password protected and only known to the researcher.

In this study, a heightened vulnerability existed for the participants as the topic of nurses' ITL was sensitive and likely to raise emotions. Details of organisations, who provide support such as RCN (Royal College of Nursing) including their phone numbers, were included in the participant's information sheet if they needed to seek support. The researcher's contact details were provided in the cover letter accompanying the survey in the event that issues emerge, and the respondents wanted to discuss anything further.

3.10.6 Statistical Methods

Statistical analysis was performed using SPSS (version 2.0) software (IBM, 2018) Descriptive statistics were used to summarise the sample of respondents; this included age, years of experience, salary band and level of education. Chi-square tests for independence were carried out to test for associations between demographic

factors and the three ITL questions. An exploratory factor analysis with the principal components method of extraction (Pallant, 2013) was used to identify underlying themes associated with ITL. Factor analysis was carried out to achieve construct validity (Tabachnick and Fidell, 2000) as the four subscales in the NWI-R were conceptually derived. The 40 items from the NWI-R tool were reduced to a smaller set of summary variables, and Varimax rotation (Pallant, 2013) was used to aid the interpretation of the underlying factors. The Kaiser-Meyer-Olkin measure of sampling adequacy (0.913) indicates the appropriateness of factor analysis. Bartlett's test of sphericity ($p<0.001$) indicates the suitability and validity of responses and further confirming that it was appropriate to use factor analysis. Further background details of factor analysis are provided in appendix 3.5.

A factor loading threshold of 0.4 was set which is at the top end of the suggested level 0.30-0.40 (Gorsuch, 1988, Hong *et al*., 2020), and loadings higher than 0.4 were considered to add to a particular factor. Where items had a higher loading to more than one factor, a decision was made to use the higher loading. Most of the items (37) had a loading threshold of 0.4 and above however, items 23 and 24 (Table 4.4) had loadings of 0.366 and 0.319, respectively. These were included as they are greater than 0.3 and hence still within the accepted range of 0.3-0.4 and add to the interpretation of the factors (Gorsuch, 1988, Hong *et al*., 2020). One item "a chief nurse is equal in power and authority to other top-level executives" did not load to any of the four factors and therefore, was removed for analysis. The remaining factors had factor loadings of 0.4 to 0.78 which sufficiently contributed to the factors (sub-themes).

Independent sample t-tests were carried out to compare the mean scores between those who intend to leave and those who do not, on each of the four new themes: autonomy, work environment, relationships and professional development as derived

from the factor analysis. Logistic regression modelling (Hosmer, Lemeshow and May,2008) was performed to determine which factors were independently associated with ITL. Both forward and backward likelihood ratio modelling approaches were used to determine the final models. Three separate models were built for the three dependent variables which were ITL current job in the next 12 months, ITL current job in the next 3-5 years and ITL the nursing profession in the next 1-5 years. Independent variables considered for inclusion in the modelling were the four factors (autonomy, work environment, relationships, and professional development), and age, years of critical care experience and salary band.

3.11 Content Analysis

Participants were given the option to provide brief comments regarding the reasons for their ITL if they have said yes to any of the ITL questions. These brief qualitative comments were part of the questionnaire in phase one. A summative approach to content analysis (Hsieh and Shannon, 2005) was used to analyse the brief qualitative comments. The summative content analysis approach includes identifying and quantifying certain words to understand the context. This approach is called quantitative summative content analysis (Kondracki, Wellman and Amundson, 2002) as it focuses on counting the frequency of specific words or content in a text. The summative content analysis approach was appropriate because the text data was not collected on its own and was part of a large mixed-method study and the aim was to count identified codes associated with ITL current job and/or profession across the qualitative comments to identify the frequency each occurred. Using numbers in this way helped in strengthening the internal generalisability of conclusions and present evidence to support interpretations. The other two approaches to content analysis (conventional content analysis which is usually used with a study design aiming to

describe a phenomenon and a directed content analysis approach which aims to validate a theoretical framework or theory (Kondracki, Wellman and Amundson, 2002) were considered inappropriate to analyse this data.

3.12 Implementing Research Design- Phase Two (Interviews)

A section was added in phase 1(survey) regarding phase 2 of this mixed-method study and participants were requested to provide their contact details if they were happy to take part in the qualitative phase 2 of this study. Participants who expressed ITL adult critical care areas and agreed to be interviewed were followed up for interviews. Participants' information sheet for phase two (Appendix 3.6) and consent forms were sent via email to those participants who agreed to be followed up for interviews. Participants were informed that interviews would be transcribed *verbatim* and digitally audio recorded. In sequential mixed-method explanatory design, findings of phase one are used to develop an interview guide in phase two to collect qualitative data. This stage is referred to as integration point one (integration through methods) of the sequential mixed-method explanatory design (please see figure 3.9 on page 110). Aligned with integration in sequential mixed method research design, an interview guide was therefore developed using the information collected from the surveys in phase 1 and findings of the literature review (Silverman, 2005). Three themes resulted from the literature review: quality of work environment, nature of working relationships and traumatic and stressful workplace experiences and the four factors resulted from the data analysis of quantitative data in phase one: autonomy, working environment, relationships and professional development were used as a guide to developing interview questions in phase two. In mixed-method research, data collection is

dependent and not independent with one form of data adding to or building on another (Silverman, 2005).

3.12.1 Recruitment

Participants who agreed to participate in phase two were contacted via phone to provide an opportunity to ask questions about the study. Additionally, arrangements to participate in the study were negotiated, including the date/time of the interview. Informed consent was gained at two points in the study; firstly, written consent was obtained prior to the interview via post or email, followed by verbal consent at the beginning of the interview. The date and time of the interview were booked after receiving a signed consent form. Further details regarding the ethical issues around consent are provided in section 3.12.6.

3.12.2 Sampling

A purposive sample was used, consisting of participants that best provide the detail needed to explain and expand on the findings of the quantitative phase. This study used criterion sampling (Krathwohl, 1993) to ensure that the sample included nurses with a variety of characteristics. The purposive sampling aimed to include a diverse set of participants from all salary bands, level of education and years of critical care experience. Purposive sampling was successfully achieved by including nurses from all salary bands (ranging from band 5 to band 8), level of education (ranging from nursing degree to PhD) and years of experience (ranging from two to twenty).

3.12.3 Rationale for Using Telephone Interviews

As this was a national study, telephone interviews were chosen for pragmatic reasons. Telephone interviews offer great flexibility than face to face interviews in setting up the

interview time and date most convenient to the participants (Cachia and Millward, 2011). Telephone interviews and communications are widely used in qualitative research and in many ways, parallels that of semi-structured face to face interviews (Farooq, 2015). Researchers have reported many advantages of telephone interviews, such as providing access to participants who are otherwise hard to make contact with due to work commitments (Fenig *et al*., 1993). While undertaking this research, it was noted during the communication that participants were more inclined to take part in telephone interviews rather than face-to-face due to the nature of their job and shift pattern. They perceived that telephone interviews would be less demanding than face-to-face interviews taking up less time and effort parallels with real-life situations. Furthermore, research shows that interviewees feel more at ease in telephone interviews by taking control over their privacy in choosing the settings they feel more comfortable with (Holt, 2010). Other logistical advantages include reduced cost, access to a larger population as geographical location is not an issue and faster data collection (Shuy, 2002). In addition, telephone interviews can overcome the distractions associated with notes taking during face to face interview (Sturges and Hanrahan, 2004).

There are disadvantages of telephone interviews, including the perception that the lack of physical presence and visual cues, inhibit the rapport building process (Novick, 2008). With experience and time the interviewers, however, become aware that all communication needs to be verbalised including exploration through probing such as a ‘nod’ in the face to face interview is replaced by ‘umm’ or ‘ahh’ (Holt, 2010; Stephens, 2007). Other disadvantages include the lack of nonverbal communication, which can indicate someone’s thoughts and feelings contributing to the richness of the data

(Fontana and Frey, 2005). This could be overcome by asking questions such as "how did it make you feel" in an attempt to find out the feelings of the participant.

The interviewers also need to be sensitive to uncomfortable feelings when the interviewees become distressed while talking about their experiences. Possible disadvantages for taking part in this research were included in the participant's information sheet to ensure participants could make an informed decision to take part in the study. Considering the strengths of telephone interviews, previous research, logistics and the steps taken to overcome its methodological weaknesses, telephone interviews were considered more appropriate to fulfil the aims of this study as compared to face to face interviews.

3.12.4 In-depth Semi-Structured Interviews

In qualitative research, interviews are a well-established tool that can be adapted to fulfil various research aims and can be utilized at any point in the data collection process (Brewerton and Millward, 2001). Interviews can be structured (predetermined questions similar to the self-administered questionnaire), unstructured (questions evolve as the interview process unfolds) (Cachia and Millward, 2011). The semi-structured interviews, on the other hand, are characterized by elements from both structured and unstructured interviews (Farr, 1982). A fixed set of sequential questions is used as an interview guide, but additional questions can be introduced to facilitate further, thus almost like a managed conversation. The purpose of the semi-structured interview is to obtain as much information on the investigated phenomenon as possible but at the same time put the interviewee at ease, establishing rapport while maintaining control of the discussion (Brewerton and Millward, 2001). The aim of qualitative data collection in phase two was to get in-depth information regarding the factors identified in phase one, to find out what these factors mean to nurses and

why/how these factors influence their ITL adult critical care areas. To fulfil these aims and objectives, semi-structured conversation style (Rowley, 2012) telephone interviews (Farooq 2015) were carried out with fifteen participants to achieve data saturation. Semi-structured in-depth interviews allow for an open, relaxed approach (Drever, 1995) with a focus but at the same time, less intimidating than structured approaches of interviewing (Tashakkori, Teddlie and 1998). To collect reliable data (Yin, 2003), the interviews were designed to allow for time to establish a rapport and summarise and clarify issues at the end of the interview. An opening and sufficiently broad question outlining the topic without applying constraints were used to encourage discussion and allow for follow up questions (Dick, 1990). An example of such questions is "tell me about your experiences of working in the adult critical care environment? Probing questions were used to ensure all identified areas were explored in great detail such as expanding on the negative or positive experiences of the participant depending on their responses. A follow up probing question used was "please tell us about any challenging aspects of the critical care working environment". This method of asking broad open-ended questions followed by some probing questions was followed throughout the interviews (please see attached appendix 3.7 for the list of interview questions). Researchers argue that semi-structured interviews have high validity because they allow participants to talk in detail and provide an explanation for action with little and sometimes no input from the interviewer (Drever, 1995; Glesne, 2006).

3.12.5 Data Saturation

The origin of data saturation lies in the grounded theory proposed by Glaser and Strauss (1967) and is used as a criterion for discontinuing data collection and/or analysis. Glaser and Strauss (1967, p-60) defined saturation as "the criterion for

judging when to stop sampling the different groups pertinent to a category is the category's theoretical saturation. Saturation means that no additional data are being found whereby the sociologist can develop properties of the category. As he sees similar instances over and over again, the researcher becomes empirically confident that a category is saturated. He goes out of his way to look for groups that stretch diversity of data as far as possible, just to make certain that saturation is based on the widest possible range of data on the category". Saturation is considered an essential element of qualitative research (Saunders *et al*.,2018). Fusch and Ness (2015), suggest that failing to reach saturation will have an impact on the quality of research undertaken while Guest, Bunce and Johnson (2006, p-60) calls it "a gold standard by which purposive sample sizes are determined in health care research".

According to Fusch and Ness (2015), there is no one-size-fits-all method to reach data saturation because study designs are not universal. There is, however, an agreement among researchers on some broad principles such as no new data, no new coding and the ability to replicate the study (Guest, Bunce and Johnson, 2006). How a researcher reaches the level of saturation will vary from design to design. Guest, Bunce and Johnson (2006) argue that reaching saturation in qualitative research is helpful; however, it does not provide any pragmatic guidelines for when data saturation has been reached. Researchers suggest that it is best to think of the data in terms of not just quantity (thickness) but also quality (richness). Data saturation is not just about the numbers but also about the depth of the data. Fusch and Ness (2015) and Guest, Bunce and Johnson (2006) suggest that when a researcher reaches a point of no new data, this means no new themes and therefore they have reached the point of data saturation.

Saunders *et al*. (2018) have identified four models of saturation in research. The first of these is called theoretical saturation which is rooted in the traditional grounded theory and uses the development of categories and the emerging theory in the analysis process as the criterion for additional data collection (Saunders *et al.,* 2018). The second model is inductive thematic saturation which takes a similar approach but focuses on the identification of the number of new codes or themes rather than the completeness of existing theoretical categories (Saunders *et al.,* 2018). In the third model called a priori thematic saturation, a reversal of the inductive thematic saturation is suggested, where data is collected to exemplify theory, at the level of lower-order codes or themes, rather than to develop or refine theory. Finally, the fourth model, referred to as data saturation, relates to the degree to which new data repeat previous data (Saunders *et al.,* 2018). It indicates that data analysis is complete, hence data collection is terminated. Saunders *et al*. (2018) four models' approach was chosen because it is based on the previous work of many expert researchers in the field such as Guest, Bunce and Johnson (2006), Starks and Trinidad (2007), Urquhart (2013) and Fusch and Ness (2015). Consistent with the research question aligned with sequential explanatory mixed-method design, saturation was achieved after 15 interviews using both inductive thematic and data saturation models. This is because one relates to data collection and the other is associated with thematic analysis and hence covered both theoretical and practical aspects of data collection and analysis.

3.12.6 Ethical Considerations

Several measures were incorporated into the qualitative phase to ensure the research was conducted to a high standard and in line with ethical guidelines. Ethics approval was obtained from the Faculty Research Ethics Committee (ref no-2016/56, Appendix 3.4). Prior to conducting the interviews, several strategies were implemented to inform

potential participants about the study and to support them, making an informed decision about whether to participate or not (Sala, Burton and knies, 2012). A separate information sheet for phase two of the study was sent to all participants who agreed to take part in qualitative interviews. Based on ethical principles such as beneficence, maleficence and justice (Social Research Association, 2020) the participant information sheet provided participants with the purpose of the study, specific aims and benefits and informed participants of the commitment required for involvement in the study. It was stated that participants could withdraw at any point in the study. Statements about how the data would be de-identified and managed were also included. Furthermore, it was stated that the telephone interviews would be tape-recorded and transcribed *verbatim*. Ethical issues including informed consent, anonymity, confidentiality and data protection were considered (Whiting, 2008).

A consent form (Appendix 3.8) accompanied the participant information sheet which reinforced the statements provided in the information sheet. Those participants who agreed in phase one to be contacted for interviews in phase two were sent a participant information sheet, a cover letter from the researcher and a consent form via an email. Those who didn't have access to a computer or printer received the consent form, including a stamped envelope via post. Each participant was contacted via phone to discuss the details provided in the participant information sheet and was given the opportunity to ask questions about the study before returning the consent form. A date and time for the telephone interview were also scheduled conveniently for the participant. Most participants returned the signed consent form via email, those who received their consent form in the post returned their signed consent form in the post. Completion and return of the written consent form demonstrated the participant’s willingness to volunteer to participate in the study. Written consent was gained from

all participants before the interview. A verbal consent was sought again just before the start of the interview.

It is worth noting that, the researcher cannot remain anonymous in the interviews including telephone interviews from the data source as it is an interactional process involving one to one communication (Speziale, Streubert and Carpenter, 2011). This issue will be explored in section 3.14 of this chapter titled the role of the researcher. Assurances were given in the participant's information sheet and verbally in the telephone conversation before the interviews about participant's confidentiality and anonymity in relation to the data collection and dissemination of findings (Whiting, 2008). To promote the privacy of the participants from external sources, the researcher used first names during the conduct of the interviews. These names were removed during the transcription process and replaced with participant number. Furthermore, the de-identification of information that might reveal a participant's identity or location was removed prior to the researcher's supervisors viewing the transcripts. In the final thesis, conference presentations and published articles, the allocated participant numbers are used to de-identify the participants. The numerical codes allocated to the interview tapes are stored separately known only to the researcher.

In the interviews, participants were asked to recount their experiences of working in the adult critical care settings, including factors influencing their intention to leave. This could have an emotional effect producing a range of feelings (Mealer and Jones, 2014). With this in mind, a list of organisations such as the Royal College of Nursing (RCN) and their contact details were provided in the participant's information sheet in case of any support required. Each participant was informed that they could ask the interviewer to stop the interview at any time during the interview if they feel they are unable to carry on. To practice the interview questions, the questions were piloted on

two nurses with critical care background but who were not working in critical care areas at the time of the interview and didn't participate in the study. This helped the researcher on how to ask sensitive questions in the actual interviews.

Furthermore, the researcher acknowledged their role as an interviewer and not a counsellor or therapist; this has helped the researcher in knowing at what point to refer the interviewee for further support. The interview was carefully designed to minimise the risk of causing distress to participants (Mealer and Jones, 2014). In order to avoid direct sensitive questions, an indirect approach was adopted (Que and Dumay, 2011) in which participants were asked to share their experiences and views about their working conditions and factors influencing nurses' intention to leave adult critical care areas. An example of such questions would be, tell me about your experiences of working in the adult critical care areas so far? rather than asking direct questions relating to the stressful incidents. To ensure an appropriate closer (Qu and Dumay, 2011), the researcher thanked the participants for their honesty and openness, affirmed the importance of their contribution to workforce development and improving practice and reinforced the availability of the researcher and other support organisations post-interview if needed. In regard to self-care, the researcher undertook a range of activities, including debriefing with supervisors and appropriate scheduling of interviews to allow time for reflection.

3.13 Data Analysis (Semi-Structured Interviews)

Interviews were transcribed *verbatim* and checked the transcripts against the original recording for accuracy. Each transcript was then anonymised to protect the identity of the participants. This was achieved by replacing the participant's names with numbers and by anonymising any information that would readily identify the participant such as

people's names, places of work and area of residence. The anonymised transcripts were then imported to NVivo version 12 (QRS International, 2018), a computer-assisted qualitative data analysis software package. Interviews were analysed using the framework method of analysis (Gale *et al*., 2013) which involves the following stages; transcription, familiarisation with the interview, coding, developing a working analytical framework, applying the analytical framework, charting data into framework matrix and interpretation of the data.

Additionally, field notes, analytic memos, and analysis from phase one was also used to aid the analysis of phase two. The framework approach was developed by applied qualitative researchers (Ritchie and Spencer, 1994) in the 1980s who were working as an independent social research institute of social and community planning. The framework approach has been increasingly used in social and health sciences and psychology which shows its potential as an approach for analysis with multidisciplinary significance.

3.13.1 Rationale for Using Framework Analysis

Various analysis approaches were considered before analysing the interviews in view of the research question this study was trying to address and the nature of the data. The aim of the qualitative phase of this mixed-method study was to explore nurses' views and experiences about their working conditions and how/why factors identified in phase one influence their ITL adult critical care areas. The interviews aimed to elicit the perspectives of nurses, including their thoughts and feelings about factors influencing their ITL, which suggested using a method with an explicit focus on the experiences of nurses. In view of this, the framework approach was chosen to analyse the qualitative interviews as it is not bound by a particular epistemological position

giving it flexibility which aims to obtain the best fit with specific aims of a particular piece of research (Ritchie and Spencer, 1994). This makes the framework approach similar to thematic analysis which claims to be independent of theory and epistemology (Braun and Clarke, 2006) providing a somewhat pragmatic approach. The framework approach was considered a better choice because it fitted with the aims of this study exploring and expanding on some predefined areas (phase one) but at the same time remain open to discovering the unexpected. Ritchie and Spencer (1994) outline four types of research questions that the framework approach could help address. These include contextual (identifying the form and nature of what exists), Diagnostic (examining the reason or cause of what exists), Evaluative (appraising the effectiveness of what exists) and strategic (identifying new theories and policies). The research question of this study fitted within the contextual, diagnostic and evaluative categories as this research interested in finding out the nature of nurses' views and experiences about their working conditions (contextual) and how/why the factors identified in phase one influence their intention to leave adult critical care areas (diagnostic and evaluative). Based on this discussion a framework approach, therefore, was considered appropriate to analyse the data to get a full picture of the problem. As previously discussed, the framework approach fitted with the aims of this study exploring and expanding on some predefined areas but at the same time remain open to discovering the unexpected. The framework approach is, therefore, aligned with the philosophical theory of pragmatism using sequential mixed method design.

3.13.2 Using Data Analysis Software to Conduct Framework Analysis

Qualitative researchers are divided regarding the usefulness of computer-assisted software (Odena, 2013). A number of factors need to be considered when deciding between data analysis software and manual methods. These factors include the theory

and methodology to guide the aims of the research, data set, the depth and complexity of the analysis, costs and expertise (Phelps, Fisher and Ellis, 2007). Considering the extensive data set in this study, NVivo was appropriate software to aid the analysis of data. NVivo (Bazeley and Jackson, 2013), was a useful tool to improve the transparency of the analysis because it leaves a clear audit trail which means that analysis decisions and interpretations can be easily traced back to the raw data. NVivo is one of the leading computer-assisted software available, which provides the best balance between ease of use and power (Hoover and Koerber, 2009). It is important to remember that the main function of NVivo or any other computer-assisted software is not to analyse the data but rather to aid the analysis process by boosting the accuracy and speed of the analysis (Zamawe, 2015). With this in mind, NVivo was only used to manage the data; the actual analysis was performed by the researcher.

3.13.3 The Process of Carrying out Framework Analysis

The analysis was carried out using the following stages of the framework approach (transcription, familiarisation with the interview, coding, developing a working analytical framework, applying the analytical framework, charting data into framework matrix and interpretation of the data) by Gale *et al*. (2013). An audio recorder was used to record the interviews and interviews were transcribed *verbatim*. The process of transcription was used to become immersed in the data. The second stage involved listening and re-listening to the interviews and reading and re-reading the transcripts to become familiar with the data, which is vital for interpretation. Additionally, reflective and analytical notes were also used to aid this process. The stage of familiarization was followed by coding, which involved reading the transcript line by line and applying a label (code) that describes what they have interpreted in the passage. This was performed digitally using NVivo software (Bazeley and Jackson, 2013). The next

stage involved developing a working analytical framework. This was done after coding the first few transcripts, the labels applied were then compared and the agreed set of codes (Gale *et al*., 2013) from the initial transcripts were applied to all remaining transcripts. This formed a working analytical framework (Gale *et al*., 2013). This working analytical framework was then applied by indexing the subsequent transcripts using the existing codes. Each code was assigned a number for easy identification using data analysis software NVivo. Data was charted into a matrix on a spreadsheet. This involved summarising the data by categories from each transcript, making sure a balance is maintained between reducing the data and retaining the original meanings and feel of the interviews. In the last stage of the data analysis process characteristics and differences between the data, including the theoretical concept and mapping connections, were identified. A final framework matrix was developed to illustrate the main themes, sub-themes, and related codes (See appendix 3.9).

3.14 Role of the Researcher

The researcher of a study is a primary research instrument, and their background and identity should be treated as a bias (Maxwell, 2012). In qualitative research, researcher biases, beliefs, and assumptions can intrude into the analysis of data (Strauss and Corbin, 1998). Researchers should, therefore, attempt to neutralize their biases through full disclosure and develop strategies to minimise personal bias. The researcher of this study works as a practice development nurse and involved in the recruitment, education, and development of critical care nurses. This is a neutral role that works as a bridge between the line managers in the critical care areas and other staff. The researcher acknowledged that his work background could influence the interpretation of data. Various strategies such as reflexivity were therefore developed alongside other quality strategies to minimise the researcher's personal biases and

establish the trustworthiness of this study. The following section explains reflexivity when considering the role of a researcher.

Reflexivity is an essential part of qualitative research (Bloor, 1978). Porter (1993) refers to reflexivity as researchers reflecting on their own beliefs in the same manner as they examine those of their respondents. These beliefs and values are taken into account so that 'rather than engaging in futile attempts to eliminate the effects of the researcher, reflexive researchers try to understand them' (Hammersley & Atkinson 1995, p-18). Reflexivity has evolved over time as a process to reflect on the researcher's influence on the research process (Jootun, McGhee and Marland, 2009) rather than separating the research process and the researcher as previously thought. Darawsheh and Stanley (2014, p-567) argue that reflexivity is a "contested and underused term" and that there is a lack of consensus concerning its meaning and application to the maintenance of rigour in qualitative research however, according to Finlay (1998) reflexivity in qualitative research improves transparency in the researcher's subjective role during the process of data collection and analysis. Reflexivity was maintained in this study by documenting detailed accounts of processes, thoughts, ideas and discussions with the supervisory team. The researcher was explicit about his personal biases, as explained earlier, a reflective diary was used to record any progression and decisions undertaken and learning identified through the study (Dowling, 2006). The researcher engaged with the supervisory team at all stages of the study, ensuring own views did not influence the interpretation of data. The researcher's role as a practice development nurse helped in neutralising personal biases as this role works as a bridge between the line managers and the rest of the critical care nursing team. This helped in the development of a neutral mindset which contributed towards neutralising personal biases whilst interpreting the findings. The

following section presents other quality strategies used to establish the trustworthiness of this study.

3.15 Quality Strategies

The trustworthiness of qualitative research and the transparency of the conduct of the study is crucial to the integrity and quality of the findings. The quality of qualitative research cannot be judged comparatively with quantitative research (Houghton *et al.*, 2013). Instead, the issue of rigour and trustworthiness in qualitative research needs to match the philosophical underpinnings, methodology and methods of the study (Houghton *et al.*, 2013). Trustworthiness (parallel to rigour in quantitative research) of a study refers to the degree of confidence in data and interpretation, authenticity, transferability, validity and methods used to ensure the quality of a study (Polit and Beck, 2009, Holloway and Wheeler, 1995). Experts agree trustworthiness is necessary; however, what constitutes trustworthiness (rigour) in qualitative research is debatable due to the nature and subjectivity of qualitative research. Based on the current evidence in research, steps were taken to ensure the research process was transparent, including reporting the aim, methods and decisions that were taken while undertaking this research.

Various strategies have been identified by experts to ensure trustworthiness in qualitative research such as credibility, dependability and confirmability by Lincoln and Guba (1985). Denscombe (2002), on the other hand, emphasized addressing two main questions when determining reliability in social research: (a) are the data valid? and (b) are the methods reliable? According to Guba and Lincoln (1982, p-3, 4) “internal validity should be replaced by credibility, external validity by transferability, reliability by dependability, and objectivity by confirmability”. There are different

measures used to assess the rigour of qualitative research, but those named by Guba and Lincoln (1982) are the most commonly employed. The four factors proposed by Guba and Lincoln (1982) are described by Forero *et al.* (2018) as “the four-dimensions criteria” to determine rigour in qualitative research. Additionally, the concept of reflexivity (Berger, 2015) has also been considered to increase the rigour of the research process in qualitative research. The application of the processes of the rigour of the current study, therefore, comprising confirmability, credibility, dependability, transferability and reflexivity. Reflexivity has already been discussed in section 3.14, the following section will therefore discuss confirmability, credibility, dependability and transferability.

Rigour in qualitative research is ensured through confirmability (or auditability), which means accuracy, neutrality and presentation of data (Lincoln and Guba, 1985). Auditability is concerned with making sufficient information available about the research to enable another researcher to repeat the study (Daniel, 2019). Lincoln and Guba (1985) argue that findings are auditable when another researcher can follow the steps used by the researcher in the study and a clear trail of the decisions taken throughout the research process (Sandelowski, 1993). To ensure confirmability, enough details in the study were provided, and several processes were put in place to minimise the researcher’s bias, including a complete set of notes on decisions making during the research process through regular supervision meetings and a reflective diary. The supervisory team were involved in all decision-making points and witnessed how the findings were developed. This method of verification by others in qualitative research is an acceptable practice (Burns and Grove, 2009). A diary was produced by the researcher to document issues and challenges. This helped to maintain clarity in terms of thought process during data collection, analysis and interpretation of findings.

The researcher presents the research process and findings in an open approach where assumptions and thought processes were challenged by the supervisory team during data collection, analysis process and reflection of the researcher. This process helped in detecting biases and inappropriate claims that had emerged in attempting to fit interpretation not confirmed by the data. For example, the theme regarding the lack of appreciation and acknowledgement for the specialist skills and knowledge of the critical care nurses by colleagues in the non-critical care areas was based on the perception of the critical care nurses. The researcher was unable to identify this perception initially and this may have been due to the researcher's background as a critical care nurse. Following discussions with the supervisory team, looking back at the field notes and reflective diary, the researcher was then able to identify that the lack of awareness regarding the role of critical care nurses was based on their perception. This was a good example of highlighting the importance of the peer review process, field notes and reflection in the interpretation of findings. This audit trail of decision making constitutes the criterion of auditability (Polite and Beck, 2010).

Credibility is defined as the truthfulness and subsequent interpretation of data, and it is the criterion for evaluating the internal validity of qualitative research (Hammarberg, Kirkman and Lacey, 2016). Lincoln and Guba (1985) define credibility as the value and believability of the research findings. A qualitative study is credible when its results are presented with adequate descriptions of context and when the meanings of the study findings as reported by participants and the meanings interpreted by the researcher are as close as possible (Hammarberg, Kirkman and Lacey, 2016). To ensure credibility, the research process and generation of findings were overseen by the researcher's supervisory team. All members of the supervisory team were involved in the decision-making process and witnessed how the findings were developed.

Credible findings were further strengthened by providing a narrative illustrated by concrete examples drawn from participant's experiences in the form of rich quotes from interview transcripts (Sandelowski, 1986).

Dependability is the criteria for assessing the reliability of the research (Hammarberg, Kirkman and Lacey, 2016) and refers to consistency, stability and equivalence of the data (Guba and Lincoln, 1989, Long and Johnson, 2000). The term reliability has been used in research instead of dependability; there is however a growing popular movement within qualitative researchers originated from the work of Lincoln and Guba (1985) who insist that 'dependability' is a more appropriate term than reliability for qualitative research. Other researchers with the same view include Sandelowski (1986), Hall & Stevens (1991), and Koch (1994). Three tests (stability, consistency and equivalence) have been proposed in the literature to test the reliability and dependability of qualitative research. Long and Johnson (2000, p-30,31), defined stability, consistency and equivalence as: "stability is established when asking identical questions of an informant at different times produces consistent answers, consistency refers to the integrity of issues within a single interview or questionnaire, so that a respondent's answers on a given topic remain concordant and equivalence is tested by the use of alternative forms of a question with the same meaning during a single interview, or by concurrent observation by two researchers". To consider data as dependable and reliable, Krefting (1991) states that the exact methods of data collection, analysis, and interpretation in qualitative research should be described in depth. Lincoln and Guba (1985) used the term auditable to describe how other researchers might follow the decision trail used by the investigator in the study. This means that a clear audit trail could enhance both the dependability and the previously discussed confirmability of the study (Lincoln and Guba, 1985). To maintain the

dependability of this study, a thorough description of the research methodology and methods were provided by the researcher. Furthermore, detailed accounts were provided of any changes to the data over time and any alterations made in his own decisions during the analysis process to avoid inconsistency. For instance, to maintain consistency and therefore, dependability, the researcher asked the same questions from all participants.

Transferability also called applicability (Lincoln and Guba, 1985) of the research findings is the criterion for evaluating external validity (Hammarberg, Kirkman and Lacey, 2016). A study is considered to meet the criterion of transferability when the findings of the study fit with the context outside the study situation (Hammarberg, Kirkman and Lacey, 2016). Bradshaw, Atkinson and Doody (2017) reported four means of supporting transferability in the qualitative description approach in health care research: purposeful sampling, reflexive journal, providing sufficient study details, and rich description. To ensure transferability in this study, a thorough description of the research methodology and methods was collated so that repetition or replication could occur. Detailed descriptions of sample characteristics, the setting, the inclusion/exclusion criteria, and data collection and analysis methods were provided, which could enable readers to assess whether the findings were transferable to other settings or contexts or not. Another strategy to promote quality was provided by disseminating the findings at various relevant national and international forums. This prompted readers of the research to reflect on the phenomenon being studied, causing resonance with their own experience, and having a dialogue with the researcher thereby contributing to creating a shared understanding of the research problem in question. In summary, various strategies were applied to ensure the trustworthiness and reliability of qualitative interviews were maintained throughout. So far, this chapter

has discussed the methods adopted by this study in phase one and two with rationale, including qualitative strategies applied to ensure rigorous research. The following section provides details of the integration methods (phase one and two) employed with rationale.

3.16 Integration

An increased interest has been noticed in mixed-method research in recent years (Creswell *et al*., 2011). The mixed-method is a procedure for collecting, analysing, and integrating both quantitative and qualitative data at some stage of the research process within the same study (Tashakkori and Teddlie, 2003). Integration is considered to be the core component of a mixed-method study to gain a better understanding of the research problem (Bazeley, 2018). Integration refers to the stage in the research process where the mixing of the quantitative and qualitative methods occurs, intentionally bringing together quantitative and qualitative approaches, such that their combination leads to a greater understanding of the topic (McCrudden and McTigue, 2019). The possibilities of integration include mixing at the beginning of the study while formulating its purpose and introducing mixed-method research questions (Tashakkori and Teddlie, 2003) to the integration of the quantitative and qualitative findings at the interpretation stage of the study (Onwuegbuzie and Teddlie, 2003). Integration is considered to be a central defining feature of mixed-method research, separating a mixed-method study from a study that happens to include some quantitative and qualitative information (Clark, 2019). Given the importance of integration in mixed-method research, it is crucial that researchers articulate how and to what extent they integrate the quantitative and qualitative approaches (Fetters and Freshwater, 2015). According to Tunarosa and Glynn (2017), integration in mixed-method research is its greatest advantage and at the same time, its greatest

challenge. The following section thus explains the purpose and various strategies of integration employed in mixed-method research. This will be followed by explaining the specific integration methods adopted by this thesis.

3.16.1 The Why, What, When and How of Integration

Integrating quantitative and qualitative data can significantly enhance the value of mixed-method research (Bryman, 2006). After reviewing much of the theoretical literature, as well as a purposive sample of 57 mixed-method evaluation studies, Greene, Caracelli and Graham (1989) identified five purposes for mixed-method studies. These include *triangulation*, which seeks convergence and correspondence of results across the different method types. A *complementary* purpose is indicated when quantitative and qualitative methods are used to measure overlapping. Results of one method type aim to enhance or clarify results from the other. The different method types are used sequentially in *development* designs. The intent is to use the results of one method to help develop or inform the other method. In *initiation* designs, questions, or results from one method type are replicated with questions or results of the contrasting method. Last, combining methods for the purpose of *expansion* occur, when researchers extend the breadth and range of inquiry by casting the method types for different inquiry components. Based on the aims and objectives of this mixed-method study, purposes identified by Greene, Caracelli and Graham (1989) that were relevant and hence applicable to integrate this mixed-method study included: *triangulation* (correspondence of results using both quantitative and qualitative methods), *development* (quantitative method in phase one developed and informed the qualitative method in phase two, similarly qualitative findings in phase two expanded and explained the findings in phase one) and *expansion* (increasing the breadth and depth of the findings by using both quantitative and qualitative methods).

Researchers have reported many advantages of integration in mixed-method research, such as using qualitative data to assess the validity of quantitative findings (Fetters, Curry and Creswell, 2013). Furthermore, quantitative data can also be used to generate a qualitative sample or explain findings from the qualitative data (Creswell *et al*., 2011). The Qualitative inquiry can inform the development or refinement of quantitative instruments or interventions or generate a hypothesis in the qualitative component for testing in the quantitative part (O'Cathain, Murphy and Nicholl, 2010). The integration adds value to mixed-method research; however, meaningful integration is challenging. Clark (2019), identified the following strategies to meet the challenges of integration in mixed-method research while reviewing mixed-method studies. The first strategy is to identify the need for integration in mixed-method studies explicitly. Second, to specify what will be integrated. This means carefully planning quantitative and qualitative data and the results obtained in the study with integration in mind. Third, to identify points of integration. Last, to explicitly identify and explain the strategies applied to integration in mixed-method research.

Data integration can be conducted using a broad spectrum of approaches and techniques. These are used to blend, weave, combine, and synthesize two or more types of data together. Researchers, such as Yin (2006), (Tashakkori, Teddlie and 1998), Bazeley (2018), and Creswell and Clark (2018) have highlighted four common techniques to integrate data in mixed-method studies.

- Data transformation (transforming qualitative textual data into quantitative numerical data or vice versa)
- Visual presentation of data using a matrix or joint display

- Following a thread (a multistage technique that aims to conduct a primary analysis of all aspects of a study, identify key themes for further exploration, and follow those key issues across other data groups within the study)
- Triangulation/comparison of data sets (data are collected and analysed separately and then combined at the point of interpretation, and are checked for agreement or disagreement between findings that examine the same phenomenon)

Integration could happen at the following three levels: design, methods and interpretation, and reporting (Fetters, Curry and Creswell, 2013). First, integration at the study design level refers to the conceptualisation of the study and the type of design implemented to investigate the research topic. Four advanced mixed-method frameworks incorporate one of the basic designs. The three basic designs include explanatory sequential, exploratory sequential and convergent designs. In sequential explanatory design, quantitative data is collected and analysed first, quantitative findings then inform the qualitative data collection and analysis (Ivankova, Creswell and Stick, 2006). Additionally, qualitative data is used to expand, elaborate and explain the quantitative findings. In sequential exploratory design, the researcher first collects and analyses qualitative data, and these findings inform subsequent quantitative data collection (McCrudden and McTigue, 2019). In convergent design, quantitative and qualitative methods are complementary during data collection or data analysis or both. Integration occurs during the collection and analysis of quantitative and qualitative data (Pluye and Hong, 2014). In sequential designs, data are collected and analysed in the first phase, which informs the follow-up phase. In convergent designs, the data in the two phases are collected and analysed independently and then brought together

to identify convergence and divergence between the two phases (Creswell and Plano Clark, 2011).

The four advanced frameworks encompass adding a larger framework that incorporates the basic design into one of the three basic designs. The larger framework may involve a multistage, an intervention, a case study or a participatory research framework (Fetters, Curry and Creswell, 2013). In a multistage mixed-method framework, multiple stages of data collection are used, which may include a combination of exploratory sequential, explanatory sequential, and convergent approaches (Natasi *et al*., 2007). This type of framework will have multiple stages and may be used in longitudinal studies focusing on evaluating the design, and on implementation and assessment of a programme or intervention (Fetters, Curry and Creswell, 2013). In an intervention mixed-method framework, the focus is on conducting a mixed-method intervention. Qualitative data are collected to support the development of the intervention in order to understand contextual factors during the intervention that may affect the outcome, and/or explain results after the intervention is completed (Lewin, Glenton and Oxman, 2009). In a case study framework, both qualitative and quantitative data are collected for a complete understanding of a case that is the focus of the study (Fetters, Curry and Creswell, 2013). A case study approach involves detailed qualitative and quantitative data collection about the case. Last, in a participatory framework, the focus is on involving the voices of the research population to inform the direction of the research (Fetters, Curry and Creswell, 2013). A participatory framework strongly emphasises using mixed methods data collection through a combination of basic mixed-method designs or another advanced design, such as a randomised control trial.

Second, integration could also happen at the methods level. This involves linking the methods of data collection and analysis (Creswell *et al*., 2011). Integration at the methods level includes connecting, building, merging, and embedding (Fetters, Curry and Creswell, 2013). Integration through connecting takes place when one type of data links with the other through the sampling frame (Clark, 2019). Integration through building happens when results from one data collection procedure inform the data collection approach of the other procedure, with the latter building on the former (Pluye and Hong, 2014). Integration through merging occurs when researchers bring both databases together for comparison and further analysis. Integration through embedding occurs when data collection and analysis are linked at multiple points (See Table 3.2 to demonstrate integration through methods).

Table 3.2: Integration Through Methods (Fetters, Curry and Creswell, 2013)

Approach	Description
Connecting	One database links to the other through sampling.
Building	One database informs the data collection approach of the other.
Merging	The two databases are brought together for analysis.
Embedding	Data collection and analysis link at multiple points.

Third, integration at the interpretation and reporting level occurs when the researcher mixes the two datasets to demonstrate how they are more informative than either data alone. Types of integration at this level include: (1) describing the quantitative and qualitative data in a report; (2) converting one data type into the other type of data, such as quantifying qualitative data and integrating it with the data that have not been transformed, and (3) using a joint display (McCrudden and

McTigue, 2019). A joint display in mixed methods is a visual display that a researcher uses to represent quantitative and qualitative data analysis or result interpretation in a single display (Guetterman, Fetters and Creswell, 2015) (Table 3.3).

Table 3.3: Levels of Integration in Mixed Methods Research (Fetters, Curry and Creswell, 2013)

Integration level	**Approaches**
Design	Three basic designs • Explanatory sequential • Exploratory sequential • Convergent design Four advanced frameworks • Multistage • Intervention • Case study • Participatory
Methods	Connecting Building Merging Embedding
Interpretation and reporting	Narrative • Weaving • Contiguous • Staged Data transformation Joint display

Having described the various strategies and designs of integration in mixed methods research, the following section explains the methods of integration adopted by this thesis at various levels.

3.16.2 Implementing Integration at the Study Design Level

Integration at the design level was implemented using an explanatory sequential design. The purpose of this explanatory sequential mixed-method study was to explore factors influencing nurses' ITL adult critical care areas using a cross-sectional survey and semi-structured in-depth telephone interviews. In the quantitative phase, factors influencing nurses' ITL adult critical care areas were identified. In the follow-up qualitative phase, a purposeful sample subset of the participants from the quantitative phase was interviewed to gain insights into the factors identified in phase one and to find out how and why these factors influence nurses' ITL adult critical care settings.

3.16.3 Implementing Integration at the Methods Level

Integration at the methods level was implemented through connecting and building. Connecting occurs when one type of data is linked to the other type of data through the sampling frame (Fetters, Curry and Creswell, 2013). In this explanatory sequential design, integration was used through connecting, when data from the quantitative phase was used to purposefully sample participants for follow-up interviews in the qualitative phase. Integration was also implemented at the methods level through building, which occurs when a researcher uses the results from one data collection procedure to inform the data collection of the other procedure (Fetters, Curry and Creswell, 2013). Findings from the quantitative data were used to develop the interview protocol to explore factors that influence nurses' ITL the adult critical care settings.

3.16.4 Integration at the Interpretation and Reporting Level

This section is divided into two parts; the first part describes methods of integration at the interpretation and reporting level. The second part explains how integration was

implemented in this mixed-method study at the interpretation and reporting level. Three approaches are used to integrate qualitative and quantitative data at the interpretation and reporting level. These approaches integrate through: (1) narrative; (2) data transformation, and (3) joint displays (Tashakkori and Creswell, 2007). Researchers describe the qualitative and quantitative findings in a single or series of reports in an integration through narrative (Fetters, Curry and Creswell, 2013). Three approaches are used to integrate narrative in research. In a weaving approach, both qualitative and quantitative findings are written together on a theme-by-theme basis (Fetters, Curry and Creswell, 2013). For example, Classen and colleagues used a weaving approach to integrate results from a dataset and perspectives of stakeholders to summarise factors of vehicle crashes among the elderly (Classen *et al.*, 2007). The contiguous approach to integration involves the presentation of qualitative and quantitative findings within a single report, but in different sections (McCrudden and McTigue, 2019). Carr (2000) reported survey findings in the first half of the results section and the qualitative results about contextual factors in the second part of the report. The staged approach to integration occurs in multistage mixed-method studies when the results of each step are reported in multiple stages as the data are analysed, and they are published separately (Fetters, Curry and Creswell, 2013). Integration through data transformation happens in two steps. First, one type of data must be converted into the other type of data, such as qualitative into quantitative or quantitative to qualitative. Secondly, the transformed data are then integrated with the data that have not been transformed (Jang *et al.*, 2008). Data transformation in the mixed-method context refers to transforming the qualitative data into numerical data and variables using content analysis so that the data can be integrated with the quantitative database. In integration through joint displays, data is brought together

through a visual means to obtain new insights beyond the information that would be gained through quantitative and qualitative results alone (O'Cathain, Murphy and Nicholl, 2010). This can be achieved through organising related data in a figure, table, matrix or graph (Johnson, Grove and Clarke, 2019).

This thesis implemented integration at the interpretation and reporting level in two ways; first, via integration through joint displays and second, via integration through narrative. The joint display technique to integrate data could be used when qualitative and quantitative data exist for the same case and are studied together (O'Cathain, Murphy and Nicholl, 2010). Cases are the unit of study and can be individuals, settings or data on the same topic (Johnson, Grove and Clarke, 2019). As the qualitative and quantitative data were collected from nurses currently working in adult critical care areas across England (both data from the same settings and the same population), the joint display was, therefore, an appropriate technique. Furthermore, this thesis aimed to explore factors influencing nurses' ITL adult critical care areas (same topic) through quantitative and qualitative data collection and analysis, which further proves the suitability of integration through the joint display. Second, the narrative weaving approach was used to describe the quantitative and qualitative findings. In the weaving approach, both qualitative and quantitative findings are described and presented together on a theme-by-theme or concept-by-concept basis (Fetters, Curry and Creswell, 2013). Based on the aims of this thesis and using a sequential explanatory mixed-method design, the narrative weaving was an appropriate approach to integrate both quantitative and qualitative data through reporting. It is important to highlight the fit of data integration, which refers to the coherence of the quantitative and qualitative findings when using any of the analytical procedures. The assessment of the fit of integration leads to three possible outcomes (Fetters, Curry and Creswell, 2013).

These include confirmation (when findings from both types of data confirm the results of the other methods, adding greater credibility), expansion (when findings from the two sources of data expand insights of the phenomenon of interest), and discordance (when quantitative and qualitative findings are inconsistent, contradict or disagree with each other). The outcome of the fit of data integration will be discussed when the findings of integration are reported in chapter six. The following section explains the Pillar Integration Process (PIP) (a joint display technique) to integrate data.

3.16.5 Pillar Integration Process: A Joint Display Technique to Integrate Data

Experts in the field of mixed-method research, such as O'Cathain, Murphy and Nicholl (2010); Fetters, Curry and Creswell (2013); Guetterman, Fetters and Creswell (2015), and Bazeley (2018) have highlighted the importance of data integration methods and increased use of joint displays to enhance the insights of findings gained through mixed-method approaches. A variety of techniques have been used in the limited available research on well-defined analytical techniques to support integrated joint displays, such as illustration (Fetters, Curry and Creswell, 2013), using a matrix (Miles and Huberman, 1994) and pillar integration processes (Johnson, Grove and Clarke, 2019). This thesis adopted the pillar integration process, which will be explained in the following section.

A four-stage validated technique called Pillar Integration Process (PIP) using a joint display approach was adopted by this thesis to integrate quantitative and qualitative data through interpretation and reporting. The development of the PIP is underpinned by a subtle realist view (Hammersley, 1992). Subtle realists state that all research involves subjective perceptions, and we can only know reality from our own perspective of it (Duncan and Nicol, 2004). According to Lipscomb (2020), both a

philosophy of science and methodology, realism can coordinate or structure mixed-method inquiry. This subtle realist position (Hammersley, 1992) is, therefore compatible with the pragmatic approach to mixing methods (Johnson, Grove and Clarke, 2019). The PIP was developed by Johnson, Grove and Clarke (2019) to integrate quantitative and qualitative data collected as part of an evaluation of a City Health Improvement Programme (CHIP); a three-year joint-funded project by a city council and the National Health Service in England. Second, the PIP was applied in a different context to integrate data unrelated to the original PIP development datasets to check the external validity of the PIP. The PIP was used to integrate the findings of a mixed-method review of barriers and facilitators to decision-making by orthopaedic surgeons (Grove *et al*., 2016) demonstrating that the PIP can be used to integrate and synthesise secondary, as well as primary data.

3.16.6 Stages and Process of the PIP

Johnson, Grove and Clarke (2019) have identified four stages of the PIP (listing, matching, checking, and pillar building). These stages are completed sequentially after completing the initial quantitative and qualitative data analysis. A blank PIP diagram is presented in Figure 3.3 to illustrate the four stages of the PIP. The arrows demonstrate how the joint display is completed from the outside columns first, working toward the central column as the data become integrated.

In stage one, the raw data, such as percentages, selected quotations, coded data, and themes that the researcher considers important for inclusion in the integration are listed in the joint display. This raw data is either added in the QUANT DATA and QUANT CATEGORIES columns or in the QUAL CODES and QUAL CATEGORIES columns. According to Johnson, Grove and Clarke (2019), listings can be

comprehensive, including all codes and data or selective, including only particular codes, data or emergent themes. Either column could be the starting point, and there is flexibility regarding the data that can be included in these outside columns. It is expected that two of the five columns will be completed by the end of stage one.

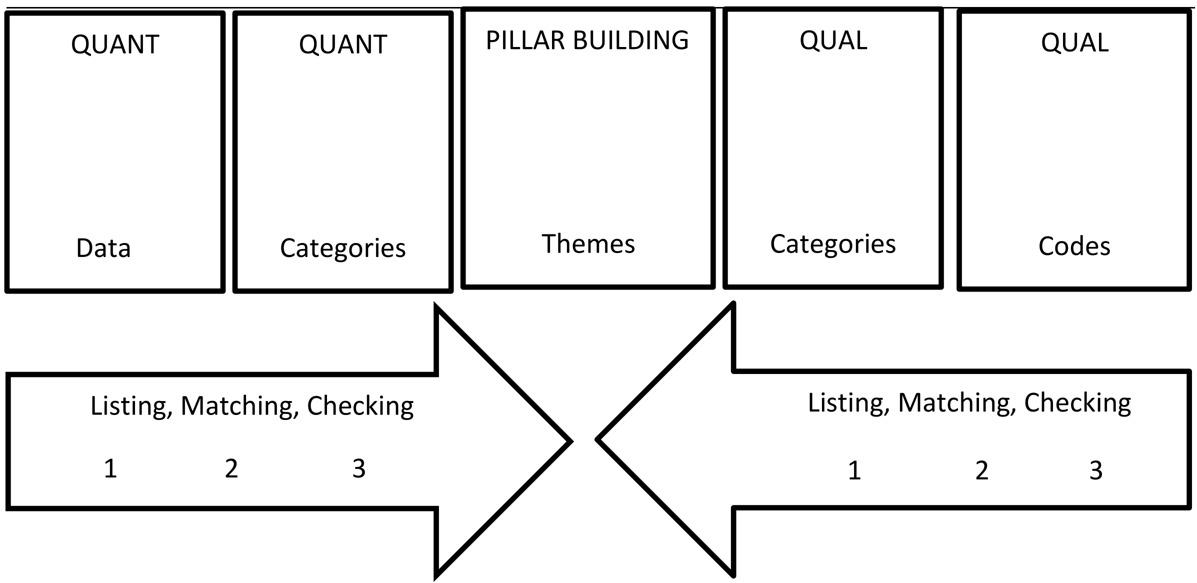

Figure 3.3 A blank diagrammatic representation of the Pillar Integration Process. Adapted from Johnson, Grove and Clarke (2019)

In stage two, a matching process starts on the opposite side of the joint display. If the listing in stage one was completed in the QUANT Data column, then matching a list of qualitative data in the QUAL Codes column is needed or vice versa. In this stage, the researcher matches the opposite column data, reflects on content that relates to the initial listed data; horizontally aligns similar data, and organises categories that had been generated in the two categories columns. Each list is organised and compared across rows of the joint display so that the qualitative items reflect patterns, similarities, parallels, or other relational qualities with the quantitative items. This process may produce quantitative or qualitative items that do not appear to have a

match. According to Johnson, Grove and Clarke (2019), if this is the case, this column can be labelled as ‘not identified’ or left blank. This helps to visually identify gaps in the matched data. By the end of stage two (matching), the QUANT DATA, QUANT CATEGORIES, QUAL CODES, AND QUAL CATEGORIES columns should be completed.

After matching the data accurately, the data are checked for quality purposes in stage three (checking). All data in the four completed outside columns need to be cross-checked for completeness to ensure the rows are appropriately matched. This includes double-checking and verifying gaps. These gaps can aid the identification or confirmation of emerging patterns and equally, a lack of pattern for some elements, thus improving the quality of integration (Johnson, Grove and Clarke, 2019). According to Johnson, Grove and Clarke (2019), this stage acts as a point in the process to step back and reflect on the emerging pattern or lack of pattern, and hence refine the nature of the lists and how they match across the four columns.

In stage four, the PILLAR is built in the final central column. To build the PILLAR, the findings that have developed from the listing, matching, and checking stages are compared. This process conceptualises the insights identified from connecting and interpreting the qualitative and quantitative columns. The researcher concludes the emerging patterns, insights or themes and their possible explanations. These themes are located in the PILLAR columns. The PILLAR holds the integrated themes from each row. The researcher then begins to weave together a meaningful narrative from the integration of quantitative and qualitative data after viewing the themes together in the PILLAR columns. Details of how the four stages of the PIP was implemented in

this mixed-method study, including the findings resulted from the integration is presented in chapter six.

3.17 Chapter Summary

The current chapter presented the architecture of this study, including the research paradigm, methodology and methods adopted and data analysis techniques employed for both phase one and two. This is followed by methods of integration employed in phase three. Measures adopted to ensure the quality of rigorous and ethical research have also been explored in this chapter. In the subsequent chapters, the author presents the findings of this mixed-method study started with quantitative results first followed by qualitative findings and then integration.

CHAPTER FOUR: SURVEY FINDINGS (PHASE ONE)

4.0 Introduction

This chapter reports on the findings from the first phase of this mixed-method study which sought to identify factors influencing nurses' ITL adult critical care areas. To meet this objective, data from a cross-sectional survey of all nurses working in adult critical care settings were analysed to identify factors that were associated with nurses ITL. Autonomy, work environment, working relationships, opportunities for professional development and age were found to be statistically significantly associated with nurses' ITL adult critical care areas. This chapter also reports on the findings resulted from a content analysis of qualitative comments collected in phase one.

4.1 Representativeness of the sample

A total of 345 surveys were returned. The survey was sent to all nurses currently working in adult critical care areas via the national lead of the critical care network who then cascaded it down to the nurses through their local managers, and therefore who received and completed the survey cannot be reported. To achieve a representative sample, all nurses who currently work in adult critical care areas were invited irrespective of their ages, level of seniority, education, geographical and socioeconomic areas. No direct contacts to the population were made by any member of the research team. Various methods were considered to assess possible bias and determine the representativeness of the sample as explained in the following sections.

4.1.1 Percentage method

Available demographic data in the study and population samples can be compared in terms of percentages (Sousa *et al*., 2004), that is the percentage of a demographic in the sample which can be compared with the percentage in the overall population to check for representativeness. The only demographic information available in the population group (critical care nursing workforce in England) was the salary band and thus was compared with the study sample following the percentage method of representativeness (Sousa *et al*., 2004). Table 4.1 compares salary band data from both the study and population groups. The comparison indicates a difference between the percentages in certain banding such as salary band 5s. Overall, the response rates indicate over-representation of higher bands (bands 7, and 8 and above) which represents the senior workforce, indicating a risk of an experienced workforce being lost. Salary band 6s, on the other hand, are similar (difference of 0.9%) in both study and population groups indicating representativeness of the study sample and thus no recruitment bias. A lower proportion of band 5s and a higher proportion of band 7s and 8s responded to the survey. This could be that the junior workforce in the critical care areas have different priorities and are more focused on settling in the critical care environment and worried about how to survive the initial phase of their critical care career rather than thinking about responding to surveys. Another reason may be that most of the band 5s are new to the environment, hence don't have much to say compared to their senior colleagues. Furthermore, the more experienced critical care nurses belonging to band 7s and 8s may have more administration/managerial time which they could use to fill the surveys. It is also worth highlighting that the findings relating to the representativeness of the sample need to be viewed with caution as the demographic data was collected by the Critical Care Network (CC3N) UK (Horsfield,

2018) via a survey and according to Horsfield (2018), not all units participated in the survey. This means that the data may not accurately represent the whole population and hence may not be reliable.

Table 4.1: Characteristics of the population and research groups

Variable	Population Group	Study Group
Band 5	64.8%	45.8%
Band 6	26.8.7%	27.7%
Band 7	7.1%	20%
Band 8 and above	1.3%	6.5%

4.1.2 Statistical Adjustment

Due to the limitations of the percentage method discussed in the previous section, another method of representativeness, statistical adjustment was considered. Statistical adjustment, such as weighting data, is often used to standardise results to population norms by altering the influence of responses (Brick, 2013). These are, however, useful for large sample data containing sufficient data to inform assumptions about missing information. Furthermore, they also rely heavily on the flawed supposition that respondents will be similar to non-respondents (Howcutt *et al.*, 2017). Another concern regarding statistical adjustments is that they effectively increase sample size, and hence making summary statistics appear more accurate than they should be (Brick, 2013). No statistical adjustments such as weightings were, therefore, undertaken.

4.1.3 Sample Size Rule of Thumb

Factor analysis was undertaken to identify factors/themes that influence critical care nurses' ITL. Several guiding rules of thumb are cited in the literature regarding the sample size for carrying out factor analysis such as Tabachnick‟s rule of thumb

(Tabachnick and Fidell, 2007) suggests having at least 300 cases for carrying out factor analysis. Comrey and Lee (Comrey, 1973), cited by several textbooks (Gorsuch, 1983; Pett, Lackey and Sullivan, 2003; Tabachnick and Fidell, 2007) in their guide to sample sizes suggest 100 as poor, 200 as fair, 300 as good, 500 as very good, and 1000 or more as excellent. The sample size of this study was 345 which according to Comrey, (1973) lies in between good (300) and very good (500) and hence demonstrate the appropriateness of the sample size for statistical data analysis.

4.2 Participant Characteristics

A total of 345 surveys were returned which included 11 incomplete surveys; therefore, 334 surveys were included in the analysis. Respondents were RNs (n=334) currently working in adult critical care areas across England. Almost half (n=148; 47.0%) were in the age range 26-40 years, and 156 respondents (49.4%) had 10 years and more critical care (CC) experience. Approximately one third (n=119; 32.9%) reported having completed a specialist academic qualification in critical care nursing, and 142 respondents (45.8%) were in salary band 5 (See Table 4.2 for participant characteristics).

Table 4.2: Participant characteristics

Age group (years)	n (%)	Band	n (%)
18-25	20 (6.3)	5	142 (45.8)
26-40	148 (47)	6	86(27.7)
41-50	94 (29.8)	7	62 (20.0)
51-65+	53 (16.8)	8+	20 (6.5)
Total	315	Total	310
Critical Care experience (years)	**n (%)**	**Education**	**n (%)**
0-2	41(13)	MPhil/PhD	2 (0.6)
2 up to 5	54(17.1)	Masters	32 (10.2)
5 up to 10	65(20.6)	Critical care course	119 (37.9)
10+	156(49.4)	Degree	103 (32.8)
Total	316	Diploma	47 (15)
		Others	11 (3.5)
		Total	314

4.3 Data Regarding the Number of Nurses Who Expressed Intention to Leave

Critical care nurses who expressed intention to leave their current job in the next 12 months or 3-5 years included those who wanted to leave the critical care environment to work in other non-critical care areas as well as those who wanted to change their current units without leaving the critical care environment. A significant number of critical care nurses expressed ITL, not just in the critical care environment but also nursing profession. Nurses aged 51-65+ years expressed a greater intention to leave the nursing profession in the next 1-5 years than those in the younger age groups ($p<0.001$) which is not surprising considering their age. However, the number of nurses with 0-2 years of experience who intended to leave the nursing profession was significant indicating newly qualified nurses expressing intention to leave the nursing profession soon after qualifying. An association was found between years of critical care experience and intention to leave the nursing profession in the next 1-5 years ($p= 0.009$). The findings show that 37.3% of nurses with at least 10 years of experience

indicated they intend to leave the nursing profession in the next 1-5 years, whereas intention to leave was indicated by only 15.8%, 22.7% and 21.9% in the groups with 0-2 years, 2 up to 5 years and 5 up to 10 years of experience, respectively. Similarly, a significant association was also found between grade band and intention to leave the nursing profession in the next 1-5 years (p=0.012). Those in the highest salary band (band 6, 7 and 8) indicated a greater intention to leave (44.4%) than those in the lowest salary band (20.6%). Critical care nurses with years of critical care experience and high salary bands intending to leave the nursing profession indicate a significant loss of nursing knowledge and experience and will have a greater impact on the critical care workforce. The study findings, however, show insufficient statistical evidence that years of critical care experience is associated with intention to leave the current job in the next 12 months (p=0.583) or in the next 3-5 years (p=0.123). Overall, data regarding critical care nurses' intention to leave suggesting a worrying dissatisfaction in their job as well as the nursing profession. See table 4.3 for an association between the demographics and intention to leave.

Table 4.3: Chi-square test for associations

Demographic factors	I intend to leave my current job in the next 12 months (Strongly agree/somewhat agree)	I intend to leave my current job in the next 3-5 years (Strongly agree/somewhat agree)	I intend to leave the nursing profession in the next 1-5 years (Strongly agree/somewhat agree)
Age group in years	***n* (%)**	***n* (%)**	***n* (%)**
18-25	4 (21.1)	14 (73.7)	3 (16.7)
26-40	52 (35.4)	88 (61.6)	33 (22.5)
41-50	17 (18.7)	40 (46.0)	19 (22.1)
51-65 and over	15 (30.0)	37 (74.0)	31 (63.2)
p-value	0.083	0.025	<0.001
Years of critical care experience	***n* (%)**	***n* (%)**	***n* (%)**
0 - 2 years	12 (29.3)	24 (63.2)	6 (15.8)
2 up to 5 years	15 (28.3)	30 (56.6)	12 (22.7)
5 up to 10 years	22 (34.4)	38 (62.3)	14 (21.9)
10 or more years	40 (26.7)	87 (59.2)	54 (37.3)
p-value	0.583	0.123	0.009
Salary Band	***n* (%)**	***n* (%)**	***n* (%)**
5	40 (28.6)	78 (57.7)	28 (20.6)
6	24 (28.5)	50 (61.8)	29 (34.5)
7	16 (26.7)	34 (57.6)	18 (31.5)
8 and above	5 (27.8)	14 (70.0)	8 (44.4)
p-value	0.188	0.763	0.012

4.4 Factor Analysis: Identifying Factors that are Associated with Nurses' Intention to Leave Adult Critical Care Areas

The factor analysis identified four new factors (subscales): autonomy, work environment, relationships and professional development. Importantly, the four new factors (autonomy, work environment, relationships and professional development)

identified were similar to those of the four conceptually derived factors (nurse-physician relationships, control over practice settings, autonomy and support for caregivers) of NWI-R by (Aiken and Patrician, 2000). Control over practice settings and autonomy in NWI-R relates to autonomy, nurse-physician relationships relate to relationships and support for caregivers relates to the work environment, which means that the factor analysis validates the NWI-R tool. The rotated component matrix is presented in Table 4.4, and components that load onto each of the four factors are highlighted in bold. Furthermore, factors with loadings between 0.40-0.60 are highlighted in **green,** factors with the threshold of 0.60 and above in **blue** and the two factors with the threshold of less than 0.4 including the excluding factors are highlighted in **red**.

Table 4.4: Rotated component matrix (Factor Analysis)

Questionnaire items	Factors			
	Autonomy	Work Environment	Relationship	Professional Development
1. Adequate support services allow me to spend time with patients.	.206	**.462**	.114	.211
2. Physicians and nurses have good relationships.	.214	-.111	**.668**	.122
3. A good orientation programme for newly employed nurses.	.110	.076	.158	**.732**
4. A supervisory staff that is supportive of nurses.	.196	.243	.123	**.603**
5. A satisfactory salary.	.185	**.402**	.024	.022
6. Nurses control their own practice.	**.447**	.296	.325	-.074
7. Active in-service/continuing education programme for nurses.	.436	.151	.088	**.621**
8. Career development opportunities.	.465	.219	-.027	**.510**
9. Opportunities for staff nurses to participate in policy decisions.	**.645**	.111	.057	.313

10. Support for new and innovative ideas about patient care.	**.603**	.202	.287	.200
11. Enough time and opportunity to discuss patient care problems with other nurses.	.280	**.400**	.242	.277
12. Enough registered nurses to provide quality patient care.	.092	**.591**	.084	.364
13. A nurse manager is a good manager and leader.	.392	**.437**	.026	.303
14. Flexible or modified work schedules are available.	.383	**.593**	.111	.060
15. Enough staff to get the work done.	.108	**.700**	.082	.271
16. Freedom to make important patient care and work decisions.	**.598**	.312	.273	.001
17. Praise and recognition for a job well done.	**.514**	.452	.207	.214
18. Good relationship with other departments and members of the multidisciplinary team.	.139	.171	**.537**	.253
19. Not being placed in a position of having to do things that are against my nursing judgement.	**.426**	.175	.228	.238
20. A high standard of nursing care is expected by the administration.	.208	.015	**.478**	.216

21. A chief nursing officer is equal in power and authority to other top-level hospital executives.	.284	.074	.221	.227
22. Much teamwork between nurses and doctors.	.166	.053	**.789**	.091
23. Nursing staff is supported in pursuing degrees in nursing.	**.366**	.191	.160	.297
24. Working with nurses who are clinically competent.	.251	.268	**.319**	.268
25. The nursing staff participates in selecting the new equipment.	**.623**	.090	.270	.008
26. The nurse manager backs up nursing staff in decision making.	**.617**	.397	.112	.174
27. An administration that listens and responds to employee concerns.	**.568**	.402	.143	.250
28. An active quality assurance programme.	**.513**	.198	.235	.375
29. Staff nurses are involved in the internal governance of the unit and hospital.	**.695**	.025	.159	.185
30. There is a collaboration between nurses and physicians.	.256	-.004	**.741**	.084
31. A preceptor programme for newly hired nurses.	.077	.082	.195	**.690**

32. Staff nurses have the opportunity to serve on hospital and nursing committees.	**.421**	-.009	.180	.388
33. The contribution that nurses make to patient care is publicly acknowledged.	**.509**	.319	.163	.019
34. Nurse managers consult with staff on daily problems and procedures.	**.500**	.383	.065	.207
35. The work environment is pleasant, attractive, and comfortable.	.112	**.562**	.354	-.002
36. Patient assignments foster continuity of care.	.122	.278	**.516**	-.081
37. Regular, permanently assigned staff nurses never have to move to other units.	.017	**.422**	-.066	.011
38. Staff nurses actively participate in developing their work schedules.	.281	**.524**	.154	.053
39. Standardised policies, procedures, and ways for doing things.	.151	.269	**.435**	.311
40. Working with experienced nurses who know the unit/hospital.	-.037	.333	**.490**	.339

4.5 Independent Samples t-Test: To Identify a Mean Difference Between Those Who Agreed to ITL and Those Who did not

To test for a mean difference between those who agreed to ITL and those who disagreed, an independent sample t-test was performed. For each of the four new subscales (factors) resulted from factor analysis, the means between these groups were compared for those who agreed to ITL and for those who didn't. The mean (standard deviation) scores in the independent samples t-test (Table 4.5) indicated that nurses who ITL their current job within the next 12 months were in less agreement with the statements relating to the presence of good relationships and professional development and a positive work environment. Similarly, those who ITL their current job in the next 3-5 years and the profession in the next 1-5 years gave lower agreement scores on average to the statements relating to the presence of autonomy, positive work environment, good relationships, and opportunities for professional development. Furthermore, all tests (Table 4.5) were statistically significant ($p<0.05$) indicating evidence that these differences were present in the study population of critical care nurses across England.

Table 4.5: Independent sample t-test results

ITL current job in the next 12 months

Factor	Strongly or somewhat agree (n=91)	Strongly or somewhat disagree(n=228)	
	Mean (SD)	**Mean (SD)**	**p-values**
Autonomy	2.61(0.487)	2.88(0.499)	<0.001
Work environment	2.36(0.488)	2.67(0.494)	<0.001
Relationship	3.13(0.422)	3.35(0.388)	<0.001
Professional development	3.02(0.638)	3.27(0.551)	<0.001

ITL current job in the next 3-5 years

Factor	Strongly or somewhat agree(n=184)	Strongly or somewhat disagree(n=126)	
	Mean (SD)	**Mean (SD)**	**p-value**
Autonomy	2.72(0.512)	2.95(0.485)	<0.001
Work environment	2.52(0.510)	2.72(0.480)	<0.001
Relationship	3.22(0.417)	3.39(0.370)	<0.001
Professional development	3.13(0.603)	3.30(0.558)	0.016

ITL nursing profession in the next 1-5 years

Factor	Strongly or somewhat agree(n=184)	Strongly or somewhat disagree(n=126)	
	Mean (SD)	**Mean (SD)**	**p-value**
Autonomy	2.59(0.570)	2.88(0.471)	<0.001
Work environment	2.37(0.490)	2.67(0.493)	<0.001
Relationship	3.14(0.419)	3.34(0.393)	<0.001
Professional development	3.04(0.679)	3.27(0.531)	0.002

4.6 Logistic Regression Analysis: To Identify which Factors/Sub-scales were Independently Significantly Associated with Nurses' Intention to Leave

As noted in section 4.4, all four factors (lack of autonomy, unsatisfactory work environment, poor working relationships and lack of professional development) were

statistically significantly associated with the three ITL questions but to determine which ones were independently associated with nurses' ITL; a logistic regression analysis was performed. Three separate logistic regression models were built. The independent variables were to agree or disagree with ITL current job in the next 12 months, ITL current job in the next 3-5 years and ITL nursing profession in the next 1-5 years. Seven independent variables, the 4 factors (autonomy, work environment, relationships, and professional development) and 3 demographic variables (age, years of critical care experience and salary band) were considered for inclusion in the modelling. The work environment ($p<0.001$) and relationships ($p<0.049$) among staff were both statistically significant, illustrating that these two factors are independently associated with ITL current job in the next 12 months. The odd ratios (a measure of the strength of association with exposure and an outcome) indicate that improving the working environment may reduce the ITL current job in the next 12 months (OR=0.35, 95% CI=0.19 to 0.65). Those who experience more positive relationships in the workplace also have a lower odds ratio of ITL (OR=0.48, 95% CI=0.24 to 1.00). Improving autonomy may reduce ITL current job in the next 3-5 years (OR=0.36, 95% CI=0.22 to 0.60, $p<0.0014$)) and may also reduce ITL the nursing profession (OR=0.27, 95% CI=0.15 to 0.48, $p<0.001$) (Table 4.6).

Age group is independently associated with ITL current job in the next 3-5 years ($p=0.009$), and ITL the nursing profession in the next 1-5 years ($p<0.001$). The age group 41-50 years are less likely to leave their current job in the next 3-5 years than those aged 18-25 years (OR=0.30, $p=0.034$); however, there is no evidence that those aged 26-40 years or over 51-65+ years differ from the youngest age group ($p=0.230$ and $p=0.978$ respectively). However, those aged over 51-65+ years are significantly more likely than younger colleagues to ITL the nursing profession in the next 1-5 years

(OR=9.06, 95% CI=2.22 to 36.93, p=0.002) which may be due to retirement or early retirement.

Findings of the regression model indicate all four subscales (autonomy, work environment, relationships and professional development) were independently associated with critical care nurses' ITL. Work environment and relationship were associated with nurses' ITL their current job in the next 12 months. Lack of autonomy was found to be significantly associated with nurses' ITL in their current job in the next 3-5 years and nurses' ITL in their nursing profession in the next 1-5 years. The data suggest that improving the work environment and relationship may reduce nurses' ITL in the next 12 months while improving autonomy will reduce nurses' ITL in the next 3-5 years and nurses' ITL in the next 1-5 years.

Table 4.6: Logistic regression analysis

Independent factors associated with ITL in the next 12 months	n	OR (95% CI)	p-value
Work environment	319	0.35 (0.19, 0.65)	0.001
Relationships	319	0.48 (0.24, 1.00)	0.049
Constant		57.61	<0.001
Independent factors associated with ITL in the next 3-5 years	**n**	**OR (95% CI)**	**p-value**
Autonomy	299	0.36 (0.22, 0.60)	<0.001
Age (18-25)	19	1.00	0.009
Age (26-40)	143	0.51 (0.17, 1.53)	0.230
Age (41-50)	87	0.30 (0.10, 0.91)	0.034
Age (51-65+)	50	0.98 (0.29, 3.34)	0.978
Constant		53.907	<0.001
Independent factors associated with the ITL nursing profession in the next 1-5 years	**n**	**OR (95% CI)**	**p-value**
Autonomy	300	0.27 (0.15, 0.48)	<0.001
Age (18-25)	18	1.00	<0.001
Age (26-40)	147	1.23 (0.33, 4.63)	0.763
Age (41-50)	86	1.34 (0.34, 5.28)	0.677
Age (51-65+)	49	9.06 (2.22, 36.93)	0.002
Constant		7.851	0.046

4.6.1 Summary of Findings

Data has been presented to show the statistical analysis of nurses who expressed intentions to leave their current job and/or nursing profession in the next 1-5 years and factors found to be statistically associated with nurses' ITL have been identified. The following section presents the findings of the content analysis carried out to analyse the qualitative comments collected in phase one as part of the survey.

4.7 Content Analysis of Qualitative Comments Collected in Surveys

Content analysis of qualitative comments revealed factors associated with critical care nurses' ITL. Brief qualitative comments collected as part of the survey were analysed using a summative approach to content analysis (Hsieh and Shannon, 2005). The summative content analysis approach was appropriate because the text data was not collected on its own and was part of a large mixed-method study and the aim was to count identified codes associated with ITL current job and/or profession across the qualitative comments to identify the frequency each occurred (see section 3.10 of chapter 3 for detailed explanation).

Content analysis revealed the following themes associated with critical care nurses' ITL. The most important factor associated with critical care nurses' ITL was poor working conditions mainly associated with increased workload without appropriate resources such as the sufficient number of staff and provision of appropriate training. Other factors associated with nurses' ITL identified in the content analysis included lack of professional development and career progression opportunities, early retirement, poor pay, off duty issues such as lack of work-life balance, lack of appreciation and acknowledgement for their specialist knowledge and skills and other reasons such as promotion and career change. These findings are similar to the

factors identified in the statistical analysis of the quantitative data (work environment, autonomy, and professional development) and therefore enhance the reliability of the results. See table 4.7 for a summary of findings with their percentages resulted from the content analysis.

Table 4.7: Themes associated with nurses' ITL resulted from content analysis

No	Themes	%
1	Poor working conditions	27.50
2	Lack of professional development and career progression opportunities	18.84
3	Early retirement	15.45
4	Poor pay	14.49
5	Off duty issues such as Lack of work-life balance	12.07
6	Lack of appreciation and acknowledgement for their specialist knowledge and skills	8.69
7	Other reasons such as promotion and career change	3.44

4.8 Chapter Summary

This chapter has presented the findings from phase one of this mixed-method study which aimed to identify factors influencing nurses’ ITL adult critical care areas. Findings of statistical data analysis showed that a large number of experienced critical care nurses will be lost in the next 1-5 years including those who are nearing retirement age and those taking early retirement due to poor working conditions. These findings are significant as it shows the extent of the problem and thus hoping to attract the attention of critical care nurse leaders in developing strategies to improve turnover by reducing nurses' ITL. Furthermore, findings identified four factors that were statistically significantly associated with nurses' ITL These factors include lack of autonomy, unsatisfactory work environment, poor working relationships and lack of professional development. Nurse leaders, therefore, need to consider these factors when developing strategies to improve nurse retention. Content analysis of qualitative

comments supported the findings suggesting an increase in the reliability of the results. The following chapter reports the findings of qualitative phase two of this mixed-method study.

CHAPTER FIVE: INTERVIEW FINDINGS (PHASE TWO)

5.0 Introduction

This chapter presents the findings from the second phase of this mixed-method study, which set out to explain, build upon and expand on the quantitative findings identified in phase one. The objective was to explore the meaning of the factors identified in phase one from the perspectives of critical care nurses and why these factors influence their intention to leave adult critical care areas, thus adding depth and richness to the data and gave a voice to participants about their experiences and working conditions.

5.1 Participants

Purposive sampling was used to recruit participants from nurses who expressed ITL adult critical care areas and provided their details in phase one to be followed up for interviews. Purposive sampling was achieved to include a diverse set of participants including nurses from all salary bands (salary band 5 to 8), level of education (ranging from nursing degree to PhD) and years of experience (1 to 20). Data saturation was achieved after fifteen interviews. See table 5.1 for participant's demographics.

Table 5.1: Participants demographics phase 2

Part no	Years of critical care experience	Band	Level of education
1	20	6	CC course
2	10	6	CC course
3	20	7	CC course
4	20	8	Masters
5	20	7	CC course
6	10	6	CC course
7	20	8	PhD
8	10	6	CC course
9	10	5	CC course
10	1	5	Nursing degree
11	12	5	Nursing degree
12	10	5	CC course
13	2	5	Nursing degree
14	20	8	Masters
15	10	5	CC course

CC course (critical care course at MSc or BSc level)

5.2 Interviews

The interviews were 30 to 90 minutes in duration and included questions related to nurses' working conditions and factors influencing their intention to leave adult critical care areas.

5.3 Findings

The framework analysis of the transcripts produced three main themes that were developed to represent nurses' views and experiences regarding factors that influenced their intention to leave adult critical care areas. Three main themes that reduce the likelihood of nurses intending to leave adult critical care areas and increase the likelihood of retention were, (1) feeling appreciated and acknowledged for their specialist knowledge and skills, (2) providing overall support and developing a system of wellbeing following stressful incidents and (3) acknowledging the importance of organisational and operational aspects of management in the delivery of care. Each main theme was further divided into sub-themes (Figure 5.1). Participants not only

expressed their views about factors that influence nurses' ITL the adult critical care settings but also discussed various aspects of their work environment, including recommendations to improve nurse retention.

Feeling demoralised due to misperception regarding the workload of critical care nurses

Raising awareness about the specialist nature of critical care nursing

Rewarding critical care nurses' specialist knowledge and skills

Feeling appreciated and acknowledged for their specialist knowledge and skills

Demanding a structured training and education program for novice critical care nurses

Providing opportunities for professional development and career progression

Enhancing workforce behaviors and multidisciplinary collaboration

Focusing on wellbeing following stressful and traumatic incidents

Providing overall support and developing a system of wellbeing following stressful incidents

Nurses' intention to leave adult critical care areas

Maintaining work-life balance while managing the roster

Promoting nurse autonomy and a culture of shared governance

Acknowledging nurses' level of experiences when managing teams

Experiencing stress and anxiety because of workforce shortages

Acknowledging the importance of organizational and operational aspects of management in the delivery of care

Figure 5.1: Main themes and sub-themes from phase two

It is worth highlighting that there is some overlapping among the main and sub-themes impacting each other. A Venn diagram (Figure 5.2) shows all possible relations among the main and sub-themes. The Venn diagram was created by an English philosopher John Venn (1834-1923) best known as the inventor of diagrams (Verdinelli and Scagnoli, 2013). It consists of overlapping circles with intersections that represent common areas between themes and sub-themes. Various display diagrams have been used in the literature to present qualitative data such as matrix (LeGreco and Tracy, 2009), the ladder step by step process (Eriksson, Starrin, and Janson, 2008) and metaphorical visual display (Barnes and Murphy, 2009). The Venn diagram (Carr, 2008) was however the most appropriate visual display diagram to present the relationship among the themes and sub-themes in the findings of this study. This is because the circles in the diagram represent the wholeness of the themes and the intersection/overlap show the mutual influence that the themes have on each other (Verdinelli and Scagnoli, 2013).

Figure 5.2 indicates that the sub-theme "enhancing workforce behaviours and multidisciplinary collaboration" is in the centre of the three circles. This means that this theme is linked to most of the other themes and improving this theme will positively impact the remaining themes. Similarly, the sub-theme "acknowledging nurses' level of experiences when managing teams" overlaps and hence influence theme 2 and 3. In summary, the three main themes and some of the sub-themes are interlinked and any improvement or decline in one theme will influence the other themes demonstrating an association and overlap among most of the themes.

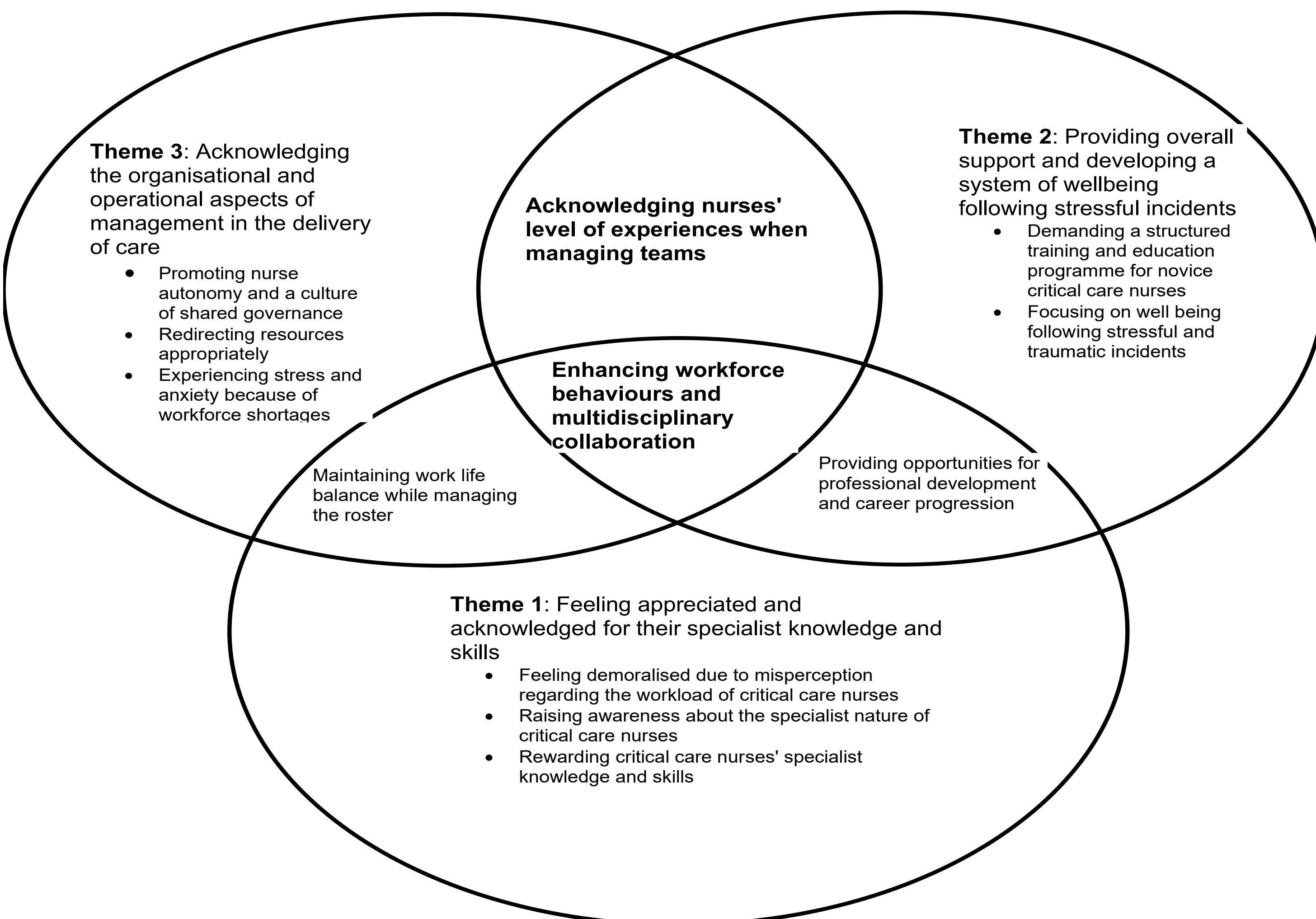

Figure 5.2 Venn diagram highlighting the overlap between the themes and sub-themes (phase 2) associated with critical care nurses' ITL adult critical care areas (Adapted from “Mapping the Processes and Qualities of Spiritual Nursing Care,” (Carr, 2008) Qualitative

The following section explains each theme and its sub-themes in detail.

5.4 Theme 1: Feeling Appreciated and Acknowledged for their Specialist Knowledge and Skills

The majority of participants stated that the specialist knowledge and skills required to work in the adult critical care settings are not acknowledged and appreciated by colleagues from non-critical care areas and hospital management. There was a feeling of demoralisation among the critical care nurses due to misperception regarding their workload as colleagues from non-critical care areas, and management perceived critical care as an easy job. It was reported that a highly skilled nursing workforce is required to work in critical care areas to care for critically ill patients with complex medical conditions. This was however not acknowledged due to the apparent lack of awareness regarding the work and nature of critical care nursing. Three sub-themes emerged, which took account of each aspect under the overall theme of feeling appreciated and acknowledged for their specialist knowledge and skills. These sub-themes included feeling demoralised due to misperception regarding the workload of critical care nurses, raising awareness about the specialist nature of critical care nursing and rewarding critical care nurses' specialist knowledge and skills. The following section presents the findings under each of these sub-themes.

5.4.1 Feeling Demoralised due to Misperception Regarding the Workload of Critical Care Nurses

The majority of participants expressed their frustration regarding the perceived misperception that critical care nursing is an easy job due to the elevated nurse to patient ratio. From outset, participants perceived that colleagues from non-critical care areas and the hospital management who are not familiar with the critical care

environment think that having a ratio of one patient to one nurse make the critical care areas an easy place to work. Participants reported, however, that the situation is the opposite and whenever colleagues from non-critical care areas have spent time in the critical care environment, their perception has changed as they understood the reason behind the elevated nurse to patient ratio:

> *“Sadly, I think certainly in this trust, the attitude to critical care nurses is that you don't really do a lot, do you? You only have one patient. You sit on your bums all day. It's not hard. I think that's quite demoralising for a team. I think when nurses do come and work with us, they're like, "Oh my gosh. I had no idea."* **(Participant 8)**

Participant 1 explains how a colleague from another area came to their unit thinking that working in critical care might be easier due to the elevated nurse to patient ratio. The nurse left critical care after 2 months realising that it was not the case:

> *"We did have a staff member who came here, one time here a few years ago thinking she may have an easy ride because she will only have one patient and left after 2 months. They just see one patient; one nurse; they don't see that sometimes it could take 2 or 3 nurses to look after one patient".*

Participant 14 provided a possible explanation for the perceived misperception regarding one to one nursing and elevated nurse to patient ratio in the adult critical care settings and highlighted that this may be because colleagues from non-critical care areas and hospital management have never been exposed to the critical care environment due to the isolated and closed nature of critical care areas:

> *“I think that people who don’t work within critical care don’t understand what it’s actually like. So, they think that it’s easy because it’s one nurse per patient. It’s hard for them to grasp the concept of why you would need one nurse per patient until they come to ITU, and then*

people understand why that ratio is there. So, I think sometimes it can be dismissed as, it's an easy place to work, which it does a disservice to the nurses that are working there". **(Participant 14)**

The majority of participants stated that elevated nurse to patient ratio is not the only reason, and other characteristics separate the critical care settings from other non-critical care areas such as extra training required to be able to work in this specialised area:

> *"You need to have very high skill level across lots of different things, medical devices, obviously, we have extra trainings, so we trained to work in that environment, we keep our skills up, and we work hard, we study and do lots of, you have to do lots of extra training".* **(Participant 2)**

Others highlighted the extra specialist courses that critical care nurses need to complete apart from the usual essential training. These courses are compulsory to acquire the specialist knowledge and skills required to work in the adult critical care settings which may not be the case in other non-critical care areas such as this reflection by participant 13:

> *"We do have to have certain courses under our belt, and qualifications, before we can apply for promotion, you know, currently studying for that goal, to achieve any sort of, you know, upgrade in your career. You see I've gone back from, I've been dropped from a 7 to a 6, to a 5, to go back to intensive care, and now I'm finding it very hard to get up, back up to, you know, to a 6 at least".* **(Participant 13)**

Participant 13 provided an example as evidence regarding the lack of understanding and appreciation from management regarding critical care nursing. It was reported that

the hospital management pulls critical care nurses away to work in other areas based on the argument that critical care areas have more nurses due to elevated nurse to patient ratio. Furthermore, the hospital management uses the categorisation of patients such as level 1, 2 and 3 as the basis of their decision to pull nurses to other areas rather than looking at patient's individual needs. It was suggested that it is the level 2 patients who look more stable from the outset that is more vulnerable and could deteriorate quickly and hence still require one to one nursing care. This is however not been acknowledged which frustrates critical care nurses:

> *"It's hard because even, sometimes the bed managers or, you know, who are sort of dragging staff away from us, they haven't got the knowledge, and the background and they don't understand that, you know, the level one and level two patients could go into a bleed, they could arrest, they're the ones that, actually, they can go off quite quickly and quite dramatic, I can't begin to tell you how many patients that we've had, that have come in, you know, we'll just do a little bit of non-invasive nasal high flow, that is next minute, they're vented and tubed, you know, and sedated and what have you. It's such a challenge, and they just do not get it. It's really, really frustrating".* **(Participant 13)**

The issue of sending critical care nurses to other areas for help is presented in detail in section 5.6.4 of this chapter as a separate theme. All participants echoed the argument that critical care area has to be recognised as specialised areas including better pay due to their specialist nature. Participant 12 highlighted that critical care areas were considered similar to ward areas when they were first introduced. This meant that critical care areas were considered no different from other non-critical care areas and this has not changed. Participants suggested that critical care areas should be recategorized as specialised areas due to the specialist knowledge and skills required to work in these areas and should be paid fairly according to their advanced skills and knowledge:

“I think the other thing as well, going back to the pay thing, that I’ve just sort of thought about as well, is that with agenda for change, when critical care sort of first started, I think, and then it was just seen as maybe another ward area. And I think probably now if it were to be re-categorised, I’m not sure whether it would be. I think it would have to be looked at as a specialist area and different rates of pay”. **(Participant 12)**

Most of the participants highlighted various aspects of critical care nursing which makes it unique and different from other non-critical care areas. For example, participant 5 commented on the requirements of getting promotion from salary band 5 to salary band 6 in critical care areas:

"They can’t be a Band 6 until they’ve got the ITU course. And they have to be a year course, because we, I know a lot of people send people on an ITU course for the year; ours don’t go on it until they’re five or six years at least".

Participant 8 on the other hand compares herself with her colleagues in other non-critical care areas who started their jobs at the same time but their colleagues were able to apply for promotions within a couple of years without any extra qualifications. This is however not the case in critical care areas:

" I’ve got colleagues that are now Band 7s and people are qualifying with degrees and within a couple of years they’re applying for Band 6 roles on general wards, but you couldn’t ever expect to be able to do that on intensive care or critical care unit. You have to undertake specialist courses and years of experience before applying for promotion to Band 6 or Band 7".

Participant 14 commented on a specific aspect of critical care areas relating to the use of technology which requires advanced skills and hence highlights the specialist nature of critical care:

"I think it’s become a lot more technical, even from when I started. It was, I mean, obviously, there’s always been some machinery but now there’s a lot

more, and more and more stuff being added in, you know, as new things come on board. For example, just to support the heart, we do four or five different types of invasive cardiac output monitoring, you know, whereas, years ago, you would have just had a Swan-Ganz catheter".

Looking at the reflective notes and in summary, the critical care nurses felt frustrated and demoralised because their specialist knowledge and skills have not been acknowledged by colleagues from non-critical care areas. Based on the perception of participants, the issue of the lack of appreciation and acknowledgement has been further worsened by the behaviour and actions of the hospital management when they send critical care nurses to other areas for help based on the same thinking that critical care areas have more free nurses due to elevated nurse to patient ratio. The issue of moving critical care nurses to other areas is mentioned here briefly as it is linked to the issue of appreciation and acknowledgement, this will however be discussed in detail in section 5.6.4 as a separate sub-theme. It is evident from the interviews that the issue of the lack of appreciation and acknowledgement for their specialist skills and knowledge is important to critical care nurses and associated with nurses' ITL adult critical care areas. It is also worth highlighting that critical care nurses appreciated the specialist nature and stresses faced by other non-critical care areas such as renal and oncology, it was, however, suggested that comparison of critical care settings with other specialist areas would be unfair. This is because critical care staff cares for patients with complex medical conditions requiring multiorgan support such as renal replacement therapy, cardiac monitoring and support and ventilatory support including both theoretical and practical aspects at the same time. Critical care nurses, therefore, need to develop skills and knowledge in all subjects in contrast to other areas where their speciality is limited to one specific area. Additionally, the patients in critical care areas are in a fragile state and their conditions change second

by second which means that critical care nurses need to be vigilant at all times, another unique aspect of critical care areas adding to the stresses of this specialised area.

5.4.2 Raising Awareness about the Specialist Nature of Critical Care Nursing

Various strategies were suggested by participants to raise awareness regarding the specialist and stressful nature of critical care areas among colleagues from other non-critical care settings, including hospital management. These strategies include taking steps to build relationships and providing support to the ward nurses, which may help in rectifying the issue of perceived misperception as discussed earlier in section 5.4.1. This will also help the ward nurses in developing their skills and knowledge further which may improve the quality of patient care as participant 3 explains:

> *"We have been able to develop a different role for our band 6s and band 7s what we call the follow up and stabilisation? So, although it's not a true outreach, that the nurse is less free, no patient in ICU there is free to maybe you could say a ward area and follow up. And we are getting stronger links then with the wider population within the hospital, and therefore, maybe that would help to be more appreciated. So, we are going out and supporting, in my role I go out and support the ward areas, and I feel appreciated when I go there and helping people with tracheostomies or whatever it requires".* **(Participant 3)**

Other strategies include providing secondment opportunities in the critical care areas for the staff of other specialities which may help in opening their eyes to the critical care environment. Furthermore, this could be used as an educational exercise where they could develop their knowledge and skills which could be beneficial in looking after patients in their respective areas. This may improve critical care nurses' relationships with other non-critical care areas and could also help in reducing the anxiety of critical care nurses when they are sent to other areas for help:

> *“Our unit has recently had a nurse that worked in an elective orthopaedic, came for a six-month secondment and now she’s gone back. And, you know, she’s seen the difference, and I think if, yes, so I think maybe if we had an educational sort of position that could be, you know, a two or three-week rolling secondment, where they stayed with a nurse for those three weeks to get an idea of what critical care is all about, just as part of maybe an educational system, where they get some sort of assessment qualification out of it. Like we are very good at assessing A to E and could be part of many, you know, degree courses, as part of a placement. I think that would open up many people’s eyes to the difficulties of working on intensive care”.* **(Participant 9)**

Acknowledging that arranging secondment opportunities may not be possible at times, participants suggested other ways of providing opportunities to nurses from other non-critical care areas to increase their awareness regarding critical care nursing. This could include arranging a short informal visit when nurses transfer their patients to critical care areas with the CCOT (critical care outreach team):

> *"The nurses spend time with our CCOT team who bring them to ITU and show them, you know, where their patients are going. So, I think when they actually see it, then they can understand more about what we’re doing here and the difference between their patients and our patients. So, I think the more we do that, the more we open up, the more people will understand what we do".* **(Participant 14)**

The issue of the lack of awareness regarding the work and nature of critical care nursing is not limited to colleagues from other specialities or management. It was suggested that lack of awareness in the public regarding the nature of critical care nursing adds to the issue of the lack of appreciation and acknowledgement as a whole and is therefore important to critical care nurses. A few participants, therefore, highlighted that there is a need to raise awareness in the public regarding the work of critical care nursing:

"Sadly, I think the public are apathetic. Until you have had to use a hospital or you have used critical care, our lovely relatives, they have no idea until they came here, what we did and what we can do. But you don't want everybody to experience that you don't want people to get sick that they need to come to us. It's changing, but I think the public needs to wise up really and see how fab the critical care nurses are and what we can do". **(Participant 8)**

Some participants suggested using TV and media to raise public awareness regarding the specialist nature of critical care nursing as reflected by participant 11. Raising awareness in the public regarding critical care nursing may raise the profile of critical care nursing and thus boost the morale of critical care nurses:

"You see lots of programs, isn't it, on the telly that has like the insights from A&E. It would be good actually; maybe that they show it as well, like a similar program that would show the insights of intensive care. I think that actually, would open the eyes of many people". **(Participant 11)**

One participant suggested arranging exchange visits for managers of different departments who could visit critical care areas and vice versa which will raise the profile of critical care nursing and thus help in the acknowledgement and appreciation issue discussed in the previous section:

"I think that with us here, with the management team, we have Friday walk rounds, where anybody from an 8a or above, goes into clinical areas and does audits and talks to the staff and patients and things. And I think, and you go into areas that aren't your own, so, like I might go into the cancer wards, and so, therefore, the senior managers are coming into critical care that way. So, they, you know, when it's their week they'll come in, and they'll talk to the staff and look at the patients and the documentation, and just see what it's actually like inside of critical care. So, I think that's opened the management's eyes more, into what critical care is?" **(Participant 14)**

To summarise this sub-theme and on reflection, raising awareness in colleagues working in non-critical care areas including the hospital management and public

regarding the nature of critical care nursing was highlighted. This is because critical care nurses felt that colleagues working in non-critical care areas, hospital management and even the public don't understand the nature of critical care nursing. It could be argued that the lack of awareness regarding other people's roles is not specific to critical care areas and this could be a common feeling among nurses working in many different areas across the globe. Furthermore, the view that others don't understand the nature of critical care nursing is based on participant’s perception only as we don't know how staff in other areas and management think of ICU nursing, this wasn't the aim of this study. Rightly or wrongly, participants felt that other staff don't understand their job, it was, however, important to highlight this issue as it added to the overall negative feelings among critical care nurses about how they are perceived by others including the public. It is also worth highlighting that the current COVID-19 pandemic may have helped in raising the profile of critical care nursing as colleagues from other non-critical care areas were redeployed to support the critical care services. This was however beyond the scope of this study as the data was collected in the pre-COVID-19 pandemic period. Additionally, documentaries in the media regarding critical care areas may have highlighted the work of critical care nursing in the public. It will be interesting to explore whether the perception of critical care nurses regarding how others see their work has changed after the COVID-19 pandemic, further research will therefore be useful. Details of the experiences of the researcher as critical care nurse during the COVID-19 pandemic have been explained in section 1.13 of the introduction chapter.

5.4.3 Rewarding Critical Care Nurses’ Specialist Knowledge and Skills

This sub-theme illustrates how the specialist knowledge and skills of the critical care nursing workforce need to be rewarded fairly to alleviate the feelings of demoralisation

as discussed in the previous sections. Various measures have been suggested to achieve this, such as financial incentives, clearer and accelerated pathways, promotions and labelling critical care nurses according to their advanced skills and knowledge. Participant 2 and 15 suggests that critical care nurses should get promotions according to the specialist skills and knowledge they acquired which enabled them to work in the critical care environment similar to other specialities, using midwifery and physiotherapy as an example based on their perception:

> *"I feel like we are always fighting for that kind of, like the midwife you qualified to a midwife, you come out, and you are going to be a band 7 or whatever after each, they always had that you know what I mean."* **(Participant 2)**

> *"A physiotherapist, you know, they're getting band 6 pay because they're, apparently, specialised, you know".* **(Participant 15)**

Others, propose that critical care nurses should have clearer and accelerated pathways such as higher salary bands to reflect their specialist knowledge and skills acquired following the completion of extra specialist courses required to work as critical care nurses:

> ***"****We are more like mini doctors, and I know there is lots of research been done on that over the years, maxi nurse versus mini doctor but that is definitely, we do a lot of the extended roles as a nurse and you make a lot of really important decisions, and you're very active in decision making for patients. I think after 12 months or 2 years in ITU you should become a Band 6 automatically".* **(Participant 6)**

One participant pointed out that appreciation from managers and supervisors from within critical care, areas are equally important such as saying thank you for a job well done:

“To make the staff feel appreciated, to tell them thank you and really as a shift leader that’s what you should be doing to your staff at the end of every shift, you should go to your staff and say, you have done a very good job, you have a difficult shift, but you know, you did really well there managing that situation whatever it is, you know, and I appreciate you know the fact that you are brilliant”. **(Participant 3)**

To make a thank you more meaningful, it was suggested that thank you should be made more personalised by adding the reasons behind saying thank you as participant 13 explains:

“The only problem is if you say thank you to everybody every shift, it comes to like; it’s not important anymore. You are just saying it. We got to really have some reasons or pick out for them that were important. It’s not good to say, oh thanks a lot you did really well; you got to say what they did well at, so that inclusion. That’s the way, definitely then you know just say thank you for that, don't as if not say thank you, but you know what I mean, If, you could make it personal for them”.

To summarize theme one, most of the nurses felt that the specialist knowledge and skills of the critical care nurses have not been acknowledged and appreciated by colleagues from non-critical care areas, management and the public. This lack of understanding was demoralising for nurses, has caused a feeling of frustration and anger among the critical care nursing workforce, and is associated with nurses’ ITL. It was suggested that colleagues from non-critical care areas and management may not be fully aware of the issues faced by critical care nurses as critical care are closed areas with no access and exposure to other colleagues as compared to the general wards. Various strategies were therefore suggested such as a rotation programme or short visits for nurses of non-critical care areas and management to spend time in the critical care environment. These steps will raise the profile of critical care nursing, boost the morale of the critical care workforce and may improve critical care nurses'

retention. Furthermore, it was suggested that the specialist knowledge and skills of critical care nurses should be appreciated and acknowledged through fairer and accelerated promotions and financial incentives.

Looking at the field notes and reflective diary of the researcher, anger and frustration was evident among critical care nurses due to the lack of appreciation and acknowledgement highlighted in this theme for their specialist skills and knowledge. Being a critical care researcher who initially started working in the ward before starting a career in critical care, these feelings among the critical care nurses are evident in the practice area of the researcher. The feeling among the critical care nurses is that they have to complete extra courses not only to be able to work in this specialised area but they are also necessary for promotions. Critical care nurses feel that this may not be the case in other non-critical care areas and these efforts need to be acknowledged through financial incentives and accelerated career pathways.

5.5 Theme 2: Providing Overall Support and Developing a System of Wellbeing Following Stressful Incidents

A recurrent theme in the interviews associated with nurses' ITL was about the lack of overall support and a focus on wellbeing following stressful incidents in the adult critical care settings. This theme is further divided into four sub-themes. These sub-themes include, (1) demanding a structured training and education programme for novice critical care nurses, (2) providing opportunities for professional development and career progression, (3) enhancing workforce behaviours and multidisciplinary collaboration and (4) focusing on wellbeing following stressful incidents. The following section explores these four subs themes through interview quotes.

5.5.1 Demanding a Structured Training and Education Programme for Novice Critical Care Nurses

This sub-theme is about a specific focus on supporting novice critical care nurses through a structured education and development programme as well as guidance and support from the senior staff. This will help the novice critical care nurses in settling into the challenging environment of critical care nursing and hence may improve their retention. It was suggested that having supportive and friendly senior colleagues is an important aspect of a supportive work environment while commenting on the bullying behaviour of some of the senior members of the team as participant 1 explains:

> *"It was initially when I started; it was some of the staff were very kind of some of the senior staff were very knowledgeable but bully, and oh there was one very bad bully. Yes, yeh, it was awful, you know the unit didn't have a good reputation around, because of, you know a few people that worked here".* **(Participant 1)**

Having a supportive work environment for the novice critical care nurses was echoed by the senior and junior critical care nurses alike. The novice critical care nurses, however, felt very strongly about this issue, highlighting further some of the negative cultures within the critical care areas, as participant 10 explains:

> *"I know a lot of people have left recently and quite a few of them are sort of new starters, and they feel like they're isolated, and they're not supported. I know, and I think a few of them have felt sort of that the older ones that have been there for years, are a bit sort of clicky and they're not really willing to support them. So, a lot of them have left because of that reason". I felt, especially when I was working in a cubicle, I'd feel really isolated. And I thought, do I actually want to be here? Because I felt really lonely. Then I know a couple of nurses up there, their comment was, oh, you know, I don't speak to new starters until they prove themselves, like that kind of attitude".*

It was highlighted that the lack of clinical educators due to increased workload caused by the shortage of nurses due to high turnover is one of the reasons for the lack of educational support required for novice critical care nurses:

> *"We have experienced nurses, but they are, they just, you know, with staff shortages and everything, there just not enough time, you know, our practice educator is really like experienced, but she is this, that and the other thing, she just doesn't get to work on the shop floor, not as often so she doesn't have to work with these staff".* **(Participant 1)**

This situation is worsened by the fact that it takes much longer for a novice critical care nurse to settle into the critical care environment due to the specialist skills and knowledge required to care for critically ill patients:

> *"it can take you so long to settle within the environment, when we get a new starter, I generally say give it 12 months because in the first few weeks it is such a different environment you used to, you can obviously feel quite stressed".* **(Participant 3)**

In contrast, those who experienced a supportive work environment have found it easier to settle into their new role within the critical care settings, further highlighting the importance of a supportive work environment:

> *"I do find working in critical care, a lot more sort of quality of nursing; it's a much more supportive environment. I do find that everybody is mainly supportive, and it is quite a, sort of a close-knit team if you like*". **(Participant 10)**

To support the novice critical care nursing workforce, it was suggested that a designated person in a neutral position should support novice critical care nurses in their first two years until they settle into the new environment. This neutral person would not be their supervisor, mentor, or direct line manager. This way the new staff nurses will feel comfortable talking to them about their problems which may not be the

case when it comes to their direct line manager or supervisors because of the formal nature of their relationship:

> *"I am seen as a neutral person, and not particularly seen as management, and I am not particularly seen as a ward or shift leader and therefore if there is a problem, and I normally have a queue on a Monday when come into work, say you never know what happen, can I come and talk to you and it's having that kind of neutral relationship. From new starters point of view, they have got somebody who they know will get them developed and will support them in their development and be there if there is a problem and they not too close to what's going on, they can give a neutral side of the story kind of things, that way, so I think that helps to support the staff with that neutral person".* **(Participant 3)**

One participant while agreeing with participant 3 called this neutral person, a buddy who is designated to support the large number of novice critical care nurses, especially in their first two years:

> *"We have developed a buddy system, so when people have finished their induction period, which is a six weeks period, we then, they then pick a buddy, they then pick somebody who is a role model for them, that they find that they learn from and that they find they could go to and talk to, we allocate a mentor when they start but then, may find somebody else, and then buddy system continuous for a couple of years, so they have got some guidance about their development, and someone who is in a bit more senior position to be with them, more vocal for them until they feel comfortable, it takes about a year, 18 months to settle, I think in critical care".* **(Participant 2)**

Participant 13 while summarising this sub-theme highlighted that education and support are the two key aspects to help novice critical care nurses in settling into the new environment and is associated with their ITL:

> *"I do feel that you know, the education and support do play a massive part in the retention of your staff. Knowing that they've got that support network,*

knowing that they can turn to someone and say, hey, you know, I'm struggling a little bit here, is there anything that you can offer?".

Analysis of the field notes collected during interviews indicates that novice critical care nurses (the junior workforce) felt strongly about having a supportive work environment including structured educational support but more importantly, a friendly supervisory team. Non-supportive behaviour of senior colleagues was one of the main reasons for ITL mentioned by junior critical care nurses; some even mentioned bullying as the reason for their ITL. The lack of support and bullying behaviour (although not widespread and was only reported by a few participants) have been further highlighted and explained by some of the relationship issues identified in section 5.5.3 and the generational differences explained in section 5.6.3. From the senior nurses' perspectives, some were dismissive of these comments while others understood the negative feeling of the junior workforce. They, therefore, suggested different strategies to tackle this issue such as having a buddy system alongside a structured training and education programme in the first two years to support new starters until they settle into the new environment.

5.5.2 Providing Opportunities for Education, Professional Development and Career Progression

All participants expressed their concerns regarding the lack of education, professional development and career progression opportunities. Lack of education and professional development opportunities was one of the main reasons associated with critical care nurses' ITL. Various reasons were given for the lack of educational and development opportunities such as how high turnover and nurse shortages impact education and development as participant 1 explain:

"There were a lot of people that had left, there was a massive turnover of staff, and they are constantly taking on junior staff but these are all new starters that have been taken on are newly qualified generally, there is very little people you know what I mean that come with experience and so, that impacts on education when 2/3rd of your staff are junior, you know". **(Participant 1)**

Participant 1 also expressed concerns regarding junior staff being promoted without appropriate skills and experience to replace the senior nursing workforce lost due to high turnover. It was suggested that this is impacting the quality of patient care and the way the junior colleagues are educated and trained:

"People are climbing the ladder a lot quicker because, you know these opportunities come up, so I think it is getting worse". I think it's coming, you know, it's almost at breaking point, you know, some serious things are going to happen, you know because even more if I look at my unit now, there is the one, there is just a handful of people now who are really experienced, you kind of think, who God forbid if I came in, and if somebody I knew came in, who I would, I want to look after them, and the numbers are getting less and less and less, and I think once they start to go, then things seriously will start happening". **(Participant 1)**

One of the main reasons for the lack of educational opportunities is the lack of resources caused by cuts to education and professional development funding as participants 2 explains:

"It's now no more, the health education …… have taken CPD funding away from nurses in critical care and that was the pot of money that we would put into post-graduate training for our nurses, so it's going to be a massive challenge, well it is a massive challenge now, ammm to try and find funding from other pots of money in nursing courses". **(Participant 2)**

It was highlighted that cuts to education funding impact the provision of specialist courses which are essential to educate and develop critical care areas and hence enabled them to work in this specialised area:

> *"The only other issue we've had in the last 18 months, I want to say, is access to courses for critical care nurses, because of the…… funding being cut we've had real problems with that, and because we are a dual speciality, we've got coronary care as well as intensive care courses, we're finding that difficult".* **(Participant 6)**

All participants agreed on the need for a structured professional development programme and career progression opportunities. It was suggested that providing professional development and career progression opportunities is associated with the previously discussed theme of valuing and appreciating the specialist knowledge and skills of critical care nurses which is linked with nurses' ITL. Participant 14 summarised some of the professional development and career progression strategies implemented in their unit to improve nurse retention in the adult critical settings:

> *"We listened to feedback from the staff; we were losing lots of nurses to other hospitals, who had got their ITU course and then six months after their ITU courses were getting their Band 6 post. So, what we did was, we implemented a senior staff nurse post, where you can apply for a band 6, six months after ITU Course. We've got a really structured development programme here so that when people start as a band 5, they have their supernumerary time. And then we have; obviously, they're allocated to a team and a mentor, and then they have band 5 study days that are systems-based, so cardiac, respiratory, renal. And then after they've done that, after about a year, they're ready for the ITU course. They do their ITU course, and when they come off their ITU course we've got some more study days for experienced band 5s, and then they can apply for their band 6 post".* **(Participant 14)**

Providing the traditional mandatory education and training is not enough, it is about being innovative and try new ideas such as individualised career progression opportunities to value and thus retain the critical care nursing workforce as participant 14 further added:

> *"So, I think our retention here has improved since we, since we reviewed things, like the career progression and the development pathways and the education opportunities. So, we support people to go on their master's and PhDs, and we're developing the academic roles and that sort of thing. And I think that it's about looking at all of that really, so that, more than just people working on the ITU and then leaving again. It's about what you can offer them while they're here, and I think that's only going to get more over the next few years. And I think it is about sort of being a bit wider with your thoughts. So, it is about, you know, allowing time for people to go away and do their PhDs and maybe only do one or two clinical shifts a month, but then they'll come back to you with a PhD, having done, you know, and then they can help other people to develop on their research or, you know. And it's about allowing people to make changes and to get the recognition or go to conferences, you know, all of that sort of stuff, I think is the way that we're going to have to look at this issue".* **(Participant 14)**

On reflection, the challenge however would be to keep these critical care nurses with high academic qualifications in the health sector as they tend to transfer to academia. It is therefore important to develop a system where the health sector equally benefits from their expertise alongside academia. To achieve this, the academic and health sector needs be innovative and work closely together so new clinical academic type roles could be developed. An example of such roles may be to have dual contract roles both with university and hospital where hours are distributed according to the need of each sector/area. Having a clear pathway and knowing that the clinical area will benefit from clinical academic roles will hopefully improve the provision of development and career progression opportunities in the clinical areas including

critical care as the current education and development opportunities are based mainly on the statutory, mandatory and essential courses rather than individualised career progression opportunities. Contrary to the comments of participant 14, most participants raised concerns about the overall worsening situation of education and reported none or very limited education and professional development opportunities. It was suggested that lack of education and development opportunities frustrate nurses and hence is associated with nurses' ITL:

> *"We can't even get people on the high dependency course, this year we've managed to get two on at very short notice. They do the mentorship course and the ITU course because there are only two or three places a year, some people have been waiting four or five years to go on the ITU course. And that's frustrates them, and that's the reason that some of them leave. We don't have, we have very little option for study, which is a real shame".*
> **(Participant 5)**

All participants agreed that education and development is one of the most important issues for critical care nurses as reflected by participant 2:

> *"When you speak to staff apart from having a good work-life balance with your roster, they want to be developed, they want to learn, they want to be taught, they want access to training".*

Another important aspect relating to education and development is to utilise the expertise of the senior workforce before retirement. It was suggested that a large number of senior critical care nursing workforce will retire soon; they, therefore, need to transfer their skills and knowledge to their junior colleagues who could then take over from them. This could only be achieved with training, education and professional development:

"I mean all our sisters; all of them except one are due to retire in the next three years. Luckily, although older, and I'm very old, I mean I could walk out tomorrow, all, once they've gone, we can't see people, we need to bring people forward and train them forward to take over from us" **(Participant 5)**.

Lack of education, development and career progression opportunities was reported by the majority of participants. It was clear that education and professional development was important to all nurses regardless of their salary band and level of experience and one of the main reasons for their ITL:

"I feel, for myself, I'd love to do the ITU course but there isn't the option down here, which that's one of the things, which I, you know, I would love to do, but I haven't got the option of doing that". **(Participant 10)**

Others highlighted the lack of professional development and career progression opportunities as reflected by participant 12 and 13:

"It's quite difficult to get that career pathway" **(Participant 12)**

"It's very, very difficult to get promotion and, you know, you've got to have, you know, working towards your Masters, or something like that to go up to a higher band". **(Participant 13)**

Participant 14 highlighted another unique aspect relating to education and development and pointed out that providing education and career progression opportunities is a way of investment in the workforce and it demonstrates that you value them which will in turn help in their retention and benefit the unit:

"*It's about investing in the staff, which can be difficult at times because you have to balance it out with having enough nurses clinically. But I think if you make them feel valued and that it's about them and their wellbeing, and that you're not there to work them hard to get, you know, cases or your patients*

through, I think that's what keeps them. But I think it's good anyway because if you can get some strong clinical academics working, that are good role models, one: you'll retain junior nurses who want to do that, but also, it will progress your units because they're interested in doing the research and reviewing practice, you know. And looking at things, like you are, about retention and moral distress, and the more we look at those things and talk about them, the more we can do things. And then, yes, and then prevent nurses from leaving critical care".

In summary and reflecting on the field notes, critical care nurses felt that high turnover and workforce shortages were the main reasons for the lack of education and development opportunities as most of the resources are directed towards recruiting more staff. This means that managers are only able to provide the essential courses without any development and career progression opportunities. This frustrates critical care nurses, influence their ITL adult critical care areas and also linked with the previously discussed theme "lack of structured educational support for novice critical care nurses". Here is an extract from field notes of an interview regarding this theme, "The participant spoke very passionately about the importance of education and development especially in the critical care context due to the specialised nature of critical care nursing and the type of patients they have to care for and became quite upset when talking about the lack of educational and development opportunities". See appendix 5.1 demonstrating how the field notes have been integrated into the themes.

5.5.3 Enhancing Workforce Behaviours and Multidisciplinary Collaboration

A common view among the participants was the need for further enhancing relationships among nurses, multidisciplinary collaboration, and relationships with patients and their relatives. All participants agreed that good working relationships among nurses and with other members of the multidisciplinary team, especially with

doctors are important for good teamwork, providing high-quality care and is associated with nurses' ITL. Participant 2 described the importance of multidisciplinary teamwork present in their unit:

> *"We got a band 6 team day coming up next week, so there band 6s from high dependency units, from the intensive care units, various things on the agenda, we will invite the medical team to come and present some M&M, half way through the day, and we try, and we have unit meetings for all the staff, and we try to involve medics and the nurses together, and we do have a very good working team, between the intensivists and the nurses here, and we try to look after one another, and because the feeling is that we have to look after one another because anyone outside the walls doesn't really give a stuff, whether that is real or not, that's the perception".* **(Participant 2)**

About half of the participants pointed out, how unpleasant relationships and conflicts with medical colleagues and lack of multidisciplinary collaboration impact nurses' psychological health which further highlights some of the toxic aspects of the critical care work environment as this reflection by participant 7:

> *"The hostility has come as a result of the, shall we say, lack of collegiality and make me your best mate and I will be your best mate forever, and you will get everything you possibly need. Make an enemy out of me, and you will live to regret it. Because that's not a good idea, I will just come for your throat, and that's what I did, basically. As a result of that, as tough as I think I am, I then developed a sleep problem. I had about six months of feeling like shit, I went to occupational health, and I told them what had happened. This was all while we were under the …., and it was all while we were looking at merging with another big hospital, and everybody was under pressure. That was 18 to 20 months ago. I couldn't say that's the definite reason why I left, but it was certainly a chip in the coffin. Because when you've gone through that, you do not trust the people that you work with. That's the reason why I am telling you the story. It*

was a seminal event for me that affected my health, and it made me distrust senior people in my trust". **(Participant 7)**

While some participants have shared their negative experiences relating to multidisciplinary collaboration, several participants commented on how pleasant relationships with medical colleagues and other members of the multidisciplinary team could contribute to a positive working environment:

> *"We work really closely together, and we share the information, that knowledge, that skill. Sometimes training, I can remember a physio teaching me to listen to a chest when I came here. Doctors? well, we get the doctors to make a tea trolley".* **(Participant 8)**

It was suggested that experience and education equipped nurses to maintain their relationships with medical colleagues and enabled them to use their voice regarding challenging issues they don't feel comfortable with:

> *"Also, one of the things that I think enhanced my relationships and my confidence, was the fact that I was working, for part of my role, as a lead nurse in a very successful network, where collaboration and engagement are really high on the agenda, so I had learnt professional behaviours, at a network level. I think probably the power of my education and ongoing education gave me the confidence to speak out and speak out appropriately".* **(Participant 7)**

Most participants also commented on the impact of their relationship with their managers. Participant 13 mentioned two contrasting experiences: A negative experience about how the behaviour and attitude of her manager affected both her work and health which resulted in increased sickness and at the end leaving the unit, further highlighting the negative atmosphere mentioned earlier but this time linked with the attitude of managers. In contrast, the positivity experienced in another unit and how the attitude of the manager impacts the work environment was also highlighted:

“The managers weren’t very nice, and it did sort of like put a bit of an atmosphere on the unit. Oh, yes, definitely. I used to go home from…. crying. I used to be so upset because I hated, I absolutely hated going to work, and that’s not me because I enjoy my job, you know, I’m very, very passionate about my job. And no, I just, I never wanted to go, I thought, it made me ill in the end, I was off for quite a while because I just felt so ill with the stress”. Whereas now, on this new unit, the manager is, she’s really, really good. She’s very firm but extremely fair, and it is a good, everybody gets along with everybody, there isn’t a single person that’s got an issue with anybody else. We all work very, very well as a team and it’s nice, that’s why I went back, it’s a lovely unit to work on”. **(Participant 13)**

A possible explanation for the unsupportive and unpleasant behaviour of managers might be their management and leadership styles which are linked to the desire and inappropriate use of power as participant 15 explains:

"What I experienced, was the desire of power, the desire of being recognised, I’m more senior than you. That it’s getting, you get picked on when you first start to make sure your place in, as a part in your workforce, you know. So, you get, some nurses, and not all, of course, you know, I don’t speak for all, but some nurses, they have such a desire to make sure that the new member of staff, or even existing members of staff, knows in which pecking order you are".

It was suggested as the matron role has changed over the past few years to more office-based, they are not involved in the day to day activities of the clinical area and thus, not aware of what goes on. This means that they can get the wrong information as they rely on other staff to keep them up to date and thus negatively impacting their relationship with staff:

“I think the matron’s job has changed, massively in the last couple of years, and I think they are really pulled away from the clinical area. They are not involved with what’s goes on, on the day to day basis in the clinical area and staff pick up on that perception”. **(Participant 2)**

Talking about the issue of relationships, participants also commented on nurses' relationships with each other, supporting each other at the time of increased pressure and how this impact team dynamics and work environment:

> *"So, the good thing is that we've got really good teamwork here. So, the units are really busy, but everybody comes together really well, and then, so people get through that shift. But I think the bad side, is that if that happens every day, people's resilience to that sort of gets broken down, so that the amount that people can take on board is less and less, which leaves them vulnerable then to being stressed and so getting burnout and things like that".* **(Participant 14)**

Another important aspect linked to good teamwork and positive working relationships is to deal with conflicts and disagreements among staff straight away and professionally. This has been positively associated with nurses' retention as participant 6 explains:

> *"We're very lucky here; we have an excellent team. We've got a couple of band 7s, quite a lot of band 6s and band 5s and band 3 HCAs, a band 2 housekeeper, and we're very lucky, everyone seems to get along really well. We don't have a lot of conflict issues, and if we get them, we tend to nip them in the bud and manage it internally. There are some conflict issues amongst some of the medical team, as there is everywhere, but on the whole it's not really a problem here. We have a strict staff charter that everyone agrees to when they come and work here, we have a handbook with it all in, and we have a philosophy of care that we adhere to. If anybody steps outside of those expected behaviours and values, then staffs are not afraid to report them".* **(Participant 6)**

The majority of participants commented that workforce relationships are important to them, associated with their ITL and impacts on the quality of patient's care as participant 14 explains:

> *"I think that the way critical care is now, everybody needs to be happy working in the team. I think that if you have unhappy staff, then there's no way they're*

going to be able to deliver good quality care. I think that only comes if your workforce is happy. So, we need to make sure that the workforce is, you know, like the nurses and the doctors and everybody, physios are happy, and that we can all work together, otherwise, you just won't get the quality of care that you'd like for the patients or their relatives".

Reflecting on the field notes while summarizing this section, leadership styles and attitude of managers were important to critical care nurses and one of the main reasons associated with their ITL. Furthermore, team dynamics and multidisciplinary collaboration especially nurses' relationships with doctors were also important factor associated with nurses' ITL. This theme further highlighted some aspects of the negative culture and bullying behaviour of managers and members of the multidisciplinary team (although not widespread) towards their colleagues and how this impact their health and decision to leave critical care areas.

5.5.4 Focusing on Support and Wellbeing Following Traumatic and Stressful Incidents

In the opinion of participants, traumatic and stressful incidents were mainly associated with end of life care and decisions regarding continuity of treatment when it's not in the best interest of the patient. Most participants reported a lack of structured psychological or other forms of support following stressful incidents in the adult critical care settings. One participant while highlighting the issue of the lack of support following stressful incidents, commented that it is sometimes nurses, especially junior colleagues who don't take advantage of the support offered to them:

"I think it was last year where we lost some people, you know, we had a mum that was pregnant and we trying to keep her going just to get the baby, you know, really awful….. and there were a few incidents ammmm, and there was no, well to be fair our boss did try to have a psychologist come in and do some drafting sessions, this psychologist, stayed in the coffee room and just as you

know if people want to come and any of the staff could come down and people really just didn't and it's such a petty, because, I know, I talked to them, you know, to be the senior person, it was the senior people who spoke to the psychologist, not the juniors, who really, probably needed the support, but quite often the juniors don't really admitted to themselves or admitted to others, you know". **(Participant 1)**

Participant 13 explains the reason for not asking and accepting psychological support by the junior workforce after stressful incidents:

"There's a bit of a stigma, isn't there, with a counsellor and things. And people think, well I'm not weak, you know. It's not a weakness, it's the fact that you need to offload these stresses before it makes you unwell. They just don't get that you know".

Most of the participants reported that decisions about withdrawal of treatment could be very stressful for nurses in critical care especially if they feel that they are not involved in the decision-making process despite spending most of their time with the patient and their family as highlighted by participant 3:

"It can cause friction within the team and generally what we do, and if we have to discuss like a patient meeting, to discuss care and for nurses to allow their views, ah so that they feel that they are considered, but obviously it may not make any difference to the end result, but they could still go away frustrated, but at least they said what they needed to say. This is supported by the management to make sure that does happen, so yeh I could understand from a junior member of staff point of view. that will be really really difficult, I feel now, 30 years on remembering the first death I had, and it was really quite traumatic, you could say, in fact, I remembered it ammmm, but it had a big impact on me". **(Participant 3)**

Most of the participants mentioned treatment withdrawal as a source of stress, some

however, highlighted specific aspects of treatment withdrawal relating to disagreement and conflicts with patient and families regarding treatment withdrawal as participant 15 explains:

> *"So, other things, which I think is also traumatic, you know, also what's very much in the news, you know, withdrawing of patient care and the issue with relatives if they want to carry on. And that is really, really hard going".* **(Participant 15)**

It was suggested that the junior members of the team need support and guidance from their senior colleagues to deal with stressful incidents such as treatment withdrawal:

> *"Like so it depends on your experience and your support, and it should be from the senior management and senior nursing level to support those new starters and give them that encouragement really and let them hear their views, but I could understand it can be very frustrating".* **(Participant 3)**

Participant 15 further explains how she was supported by her colleagues during and after the incident, but there were no words of support provided by management highlighting the importance of support from their colleagues and managers especially at a stressful time:

> *"I have to say, lots of my colleagues, they were very, very supportive. I got text messages, are you OK? If you want to talk. And that was really, really nice. So, I think, in that sense, my colleagues are very supportive and aware of what trauma we are going through. On the other side, I haven't heard anything from management".*

It was suggested that better teamwork, clear communication, and multidisciplinary collaboration helps in better managing end of life care and treatment withdrawal decisions:

> *"I think it has to be a bit of understanding between the nurses and the doctors really, you know, the fact that, like you say, we see the patients and the family,*

who are going through the suffering, and sometimes doctors don't realise maybe, well they do realise, I can see their point of view as well, that it's such a big, I don't think they put off making it because they're all very aware as well, but I think that sometimes the nurses don't realise that actually, you know, it's a big decision, isn't it, to make for the doctors that have to do it. But I think that, on the whole, there is understanding, I think it has become better, the communication between the nurses and doctors about it". **(Participant 12)**

It was highlighted that the current informal debrief support system following stressful incidents is not enough as it is facilitated by people with no psychological background and no appropriate skills. Furthermore, there is no follow up which sometimes is needed to ensure the staff involved is doing fine. The majority of participants, therefore, agreed that there is a need for a structured psychological and long-term support following stressful incidents rather than just a one-off informal debrief session as participant 12 explains:

"We're trying to implement a sort of hot debriefing thing at the bedside, which is a bit touch and go really, I don't know how often that happens. But I think that's one; I think people are aware of it, which is a good thing. The other thing that we've had as well, is certain cases, which have been very traumatic, is then to have sessions, not just one session but various sessions afterwards, to involve people, so that everybody can talk about it and do that. So, I think, I think that's, I don't know if there's much else, and to offer, to know that there's staff support out there and that there is support. I think, and to just be aware that people are, that the management and that the senior nurses are aware that things are stressful". **(Participant 12)**

Some suggested having a clinical psychologist available to provide psychological support, guidance, and counselling to nurses regarding how to cope with stressful incidents regularly:

“We hold monthly debrief sessions that anybody can drop into from any of the units. But apparently, that’s led by one of the, some of the ITU consultants who’ve got experience in that. But, obviously, it would be much more beneficial if we could have that led by a clinical psychologist because then they can explore it a bit further and also, help to put coping strategies into the unit so that the staff can because that’s all retrospect, in the debriefing, whereas I’d like to be proactive, to help staff to protect themselves from getting in that situation”. And I think that the clinical psychologists are invaluable in doing that”. **(Participant 14)**

Participant 13 commented that talking about this issue during the interview has made her thinking about it and will consider discussing it with her manager regarding having structured psychological support after stressful incidents:

"Yes, it’s made me think, to be honest with you now, you know, talking about it. Maybe it’s something I can suggest when I go back to work tomorrow, you know, just email the manager and say, look, can we talk together about, you know, getting like a bit of a support group for the staff".

Another common view among participants was to focus on the overall wellbeing of critical care nurses and a system of support to counteract the impacts of working in this specialised and stressful environment:

“I think more people, just have more wellbeing, I just you know, and a bit more focus on wellbeing, you know more mandatory, like I said when my boss brought the psychologist, if there had been a session where we all went to, we were all kind of, this is an hour blocked out to go to, something like that, maybe onto a study day whatever, making wellbeing more of a mandatory thing”. **(Participant 1)**

One of the participants highlighted the importance of some of the elements of resilience such as having a strong social network with colleagues outside work and a

supportive circle of friends and family to deal with the stresses of the critical care environment:

> *"There was much better communication if you like, yeh, also like teamwork, everybody was at the Christmas party, everybody would be at the leaving duo where's now, they don't, you know, people, before you could never get a day off to go out where's now. There was much better social networking? Yeh and I think it's very important. You need a good kind of support around you, you know to be able to go out with your colleagues and laughs, and kind of you know, and that kind of black sense of humour, where you can't do that with anybody else, you know".*
> **(Participant 1)**

Most of the participants highlighted other sources of stresses in the critical care environment apart from the end of life care and treatment withdrawal which is associated with nurse's ITL as participant 1 explains:

> *"I think people are much more psychologically ammm,…., you know because of the lack of support, people are taking a lot more, you know, people get upset, you know, there is more people get upset these days than they ever used to. I think it is just the whole, you know, maybe people the junior people are facing it, they are not as supported in situations where you know they used to be, ammm, it is the lack of support I suppose and you know of course it is busier. It is very much busier in the last ten years than they used to be, you know, people are living longer, people are living longer with complications, older people are coming to ICU, you know the whole... everything and the lack of support. Nurses have taken on more and more roles as well in the last 10 years, you know".* **(Participant 1)**

Participant 7 while agreeing with participant 1 commented on several issues that could be the source of stress in the adult critical care environment from a management point

of view such as increased workload, inexperienced workforce and lack of resources and how is this impacting the well-being of critical care nurses:

> *“It was a very, very stressful environment in the fact that you felt that you were fighting every day. You were fighting to get a bed for your patient because we had got delayed discharges. We cannot train our nurses. We have got nurses who are Band 6s, who haven’t got the qualification. We have got nurses who are in charge of the unit, who haven’t got the qualification. The workload has increased. I think our stress levels are increasing, burnout, our sickness rates certainly because we are picking up extra shifts”.* **(Participant 8)**

The majority of participants commented on various issues that were the source of stress for critical care nurses mainly associated with lack of support and resources despite a significant increase in the workload as participant 11 and 12 highlighted:

> *"Again, like if you have a really sick patient, you don’t get the support. Because like sometimes, you know, a pair of hands is not enough, you know, it can feel like it’s just you. That can be really stressful".* **(Participant 11)**

> *"So, things have changed a lot actually, it’s become a lot busier, as in the patients have become, I think, probably sicker, even during that time actually I think, the ones that we get through. I think that’s been our busiest as a unit, as in I think the workload is more somehow".* **(Participant 12)**

Participant 13 suggested that shortage of staff and high turnover is the main problem impacting education and support, increasing workload and hence causing stress:

> *"But there are immense pressures at the moment, number one is staffing levels, number two is education because there are so many shortages of staff that, you know, they’re not able to educate, we’re bringing in newly qualified nurses that, you know, need, it’s in intensive care at the end of the day, and I think they need a lot more support than they’re actually getting these days". I think, you know, a lot are leaving as well because of that issue. They’re not feeling supported, you know, and, as I say, because of the staffing issues, people are just thinking, well, you know, if other people are going, then I’m going to go as well because, you*

know, it's such a high-stress area. I just don't think, I think the support network is a big, big issue for them".

Participant 14 on the other hand highlighted providing career development opportunities and building emotional resilience as the two key factors which could support critical care nurses in dealing with the challenges of this specialised environment:

"I think for us, the big thing here is looking at, is a career development and protecting the staff from resilience, emotional resilience side really. They would be the two things, the key things for us".

Theme 2 highlighted some important issues and factors that influence critical care nurses' ITL. Most participants reported no or little training and education support. One participant reported having a structured education and development programme, including providing career progression opportunities that improved nurse retention. All participants agreed on the need for having a structured training, education, and development programme, including providing career progression opportunities and especially focusing on supporting novice critical care nurses in their first two years. Additionally, participants commented on the importance of their relationships with colleagues, managers, members of the multidisciplinary team. It was suggested that unpleasant relationships, disagreements, and conflicts with colleagues' including toxic and bullying behaviour cause stress and associated with nurses' ITL in adult critical care areas. Disagreements with patients and their families was a major source of stress and mainly related to end of life care and treatment withdrawal decisions. Lastly, traumatic and stressful incidents were mainly associated with the end of life care and withdrawal of therapy scenarios. All participants agreed that there is a need for a structured psychological support ideally by a clinical psychologist following traumatic

and stressful incidents as the current short and informal debrief system is not enough. Furthermore, it was suggested that steps need to be taken to focus on the overall wellbeing of critical care nurses taking into account the stressful nature of critical care nursing.

5.6 Theme 3: Acknowledging the Importance of Organisational and Operational Aspects of Management in the Delivery of Care

This theme was regarding the organisational and operational aspects of the management associated with the delivery of care that influences critical care nurses' ITL. In this theme, participants highlighted key organisational and operational issues and explain why these are important to them? The main theme was divided into the following sub-themes (1) maintaining work-life balance while managing the roster (2) promoting nurse autonomy and a culture of shared governance (3) acknowledging nurses' level of experiences when managing teams and (4) experiencing stress and anxiety because of workforce shortages. The following section explains each sub-theme separately.

5.6.1 Maintaining Work-Life Balance while Managing Roster

This sub-theme was about the issues linked to managing the roster and how various elements of rostering impact nurses' health and ITL in adult critical care areas. Participant 12 commented that shift pattern and lack of work-life balance is the main reason for their ITL:

> *"I'm thinking about leaving as well, and it's not really, I absolutely love the job, but what's made me decide to go, is the nights and weekends, I've just had enough of doing nights and weekends. And this year I worked Christmas Day and New Year's Day, and I just don't want to do that again".* **(Participant 12)**

Participant 1 further added that the issue of work-life balance is getting worse and specifically highlighted the increased number of night shifts:

> *"We gone to e-roistering and they are night, day, night day, and you know they just constantly, they have a private Facebook group which is called shift swaps, and they are just constantly trying to make it a bit better. It is a disaster, it is absolutely, you know, some of the girls are like, I got 13 nights this month, you know, just, oh, I am so crossed. I think it is getting worse***". (Participant 1)**

In contrast, some participants were happy with the flexibility in their off duty and a shift pattern aligned with work-life balance and hence expressed intentions to stay:

> *"I adopted two children's four years ago, and my speculation for coming back to work was that I could come back to work, but I could only work Monday-Friday, and four days in a week I have to finish 2:15, so I could pick my children up from school, so I didn't want to run... and that was fine, so... that is very good, and I don't think I would be given that in many other trusts, I think in this trust, we have two ward managers for the ICU and one for the high dependency unit, and they spend a lot of time in a month, trying to you know, make sure that people's requests are considered".* **(Participant 2)**

Most of the participants understood the challenges of maintaining a work-life balance and flexibility while ensuring patient safety through an appropriate skill mix. They, however, suggested that both could be achieved through fairness and with a degree of flexibility:

> *"I think the big bugbears are leave, off duty and unfairness. So, if you've got a manager that favours some people and not others, that really causes a problem. And we had a problem with our last manager but the current manager; it's really, really good, she's very fair. She's firm, but she's very, very fair with everybody and that's a reason to stay as well".*
> **(Participant 5)**

A small number of participants pointed out that maintaining work-life balance is more challenging in large units in big teaching hospitals compared to the smaller unit as participant 6 explains:

> *"We're very fortunate, because we're a small unit and we've only got 44 staff it's much easier to manage than the bigger units. When it's a big unit, and you've got 100 members of staff, it's impossible to accommodate everyone".* **(Participant 6)**

Another important aspect of rostering that is associated with nurses' ITL is the short turnaround from night to days without an appropriate rest time. Participants 10 commented that the issue of the lack of flexibility and lack of work-life balance is worsened by high turnover and nurse shortages:

> *"A lot of people have actually left, and I think, at the moment, they're short staffed. Most of my friends have got really rubbish off duties, where they're doing nights, and then they've got one sleep day, and they're back on days again, which I feel is too much".* **(Participant 10)**

It was suggested that the management should listen to concerns of their staff regarding the off duty and find ways to fulfil their requests as nurses are leaving because of the poor shift pattern and lack of work-life balance:

> *"I think listening to people, you know, that's the first thing. Because you could see, sometimes bosses get quite stubborn on certain things, and that may not work in reality. Like some people, you know, have busy lives, have whatever, certain shifts would work for them, so why not accommodate that. So, I've seen my mates that really struggle with nights, being given lots of nights, and then other people like me that like nights, you know, doing nights, they may not get as many nights. And I think by talking to people and asking, and, obviously, circumstances can change, so being as flexible as you can".* **(Participant 11)**

The challenges faced by nurses with children due to inflexible roster were also highlighted by participants:

"The other thing with people who've got families as well, is that people aren't always, you know, they're sort of expected still to be, it's only in a few cases that people can have set hours, and so people are expected to be quite flexible. So that must be quite difficult with a young family". **(Participant 12)**

In contrast, some pointed out that those with children get a set off duty to accommodate childcare. This means that those with no children have to take the remaining unfilled shifts which may not be balanced and aligned with work-life balance:

"I think that's why a lot of those girls whose children are older or don't have any children; they ended up in these kinds of, you know doubling back from nights to days and only asleep day in-between". **(Participant 1)**

Furthermore, some hospitals don't have onsite nurseries, or the opening hours don't match with the shift start times, which is a problem for nurses with younger children:

"I think having a nursery would help definitely. None of the nurseries in our local area opens early; if you start at 7, they will open at 8 or 7:30, it's not good for anybody is it?" **(Participant 1)**

There were strong feelings among all participants that inflexibility, lack of work-life balance and a quick turnaround from nights to days frustrates nurses, increased sickness and ITL, hence this need to be looked at to improve nurses' retention in the adult critical care settings. This is made worse by unsupportive management which further highlights some of the negative aspects of the critical care work environment as participant 15 explains:

"Then it started, the management started to change. You're not allowed to swap any shift. I generally, only worked nights at that stage, and they said, right, you

have to work a day shift, that's non-negotiable. OK, so I swapped to a day shift on a Sunday because my husband was at home on a Sunday. Then they came out with; we have to do also day shifts during the week. So, what happened then, they said, I was speaking to my manager and complained, and they said, well that's not our decision, it was HR who said that. So, then I rang HR twice, spoke to HR on the phone for a lengthy time. She said, I don't know why you're actually ringing; we have nothing to do with this. So, they, putting fear into us that HR is demanding these kinds of shifts, it's down to the management. If I'm not happy with this, then I should appeal. Fine, appealing, now we're going down this route, appealing? So, my manager said, I have to appeal. And I think that's just a face with this family-friendly working because it isn't, they can just do what they like with us, how we work, to be honest". **(Participant 15)**

Some participants expressed their frustration due to the lack of attention from the managers to acknowledge the issue of the quick turnaround from nights to days and its association with increased sickness:

"Some of my colleagues, they have three nights, they're coming out of nights, and that is their day off, and then they have two-day shifts. And I find it extraordinary why the management actually is querying why people are off sick, you know. How can you recover if you don't have enough time to recover, and then people go off sick". **(Participant 15)**

Participant 15 further highlighted the issues with weekend shifts and commented on how the inflexibility is impacting nurses' ITL by giving an example of her colleague:

"I mean weekends are also terrible, you know, some people, they get put on all the time on weekends and, you know, they don't have a private life anymore and, again, it's really, really frustrating for anybody really".

Participant 11 whilst acknowledging the rostering issues associated with nurses' ITL put forward some suggestions:

"I'm thinking like, you know, the way in …. they work, like you would have, as we said, like the day staff, the night staff, and then you have certain days, so you know which days you're going to be working much more ahead as well. Because that's your pattern, exactly. So, then you can plan your life around that and if you need to swap, then bosses being flexible for you to swap with one of your mates. So maybe that would be one of the things because, as I'm saying, as long as you know, you know, then you are the one accepting them conditions and you're the one working round it to make it work, isn't it?".

Reflecting on the field notes associated with this theme, the majority of critical care nurses understood the challenges of patient safety and skill mix when managing the roster. They, however, felt that while maintaining an appropriate skill mix and hence patient safety, the roster could still be managed in a way that could be flexible and aligned with work-life balance by making it fairer and individualised. Furthermore, the issue of a work-life balance was important to most participants but especially to those with young children. Unbalanced shift pattern such as doing five twelve hour shifts in one week and then less in the next and the quick turnaround from night shifts to days was mentioned by all participants impacting their health and one of the main reasons for their ITL. It could be argued that the off-duty issues highlighted in this theme are not specific to critical care areas and applicable to all areas of nursing. It is however seen in the practice area of the researcher that the impact of the issues highlighted in this theme is much greater in the critical care settings due to the complex nature of critical care nursing requiring a large number of critical care nurses due to elevated nurse to patient ratio (explained in chapter one in detail). It is also worth noting that the off-duty issues highlighted in this theme are worse in the large teaching hospitals with bigger size ICUs compared to smaller district general hospitals as reported by some participants. This means that resolving the off-duty issues will be challenging,

they however need to be prioritised due to its impacts on staff morale and hence the quality of care.

5.6.2 Promoting Nurses' Autonomy and a Culture of Shared Governance

This theme was about the clinical, operational and professional aspects of autonomy which include involving nurses in the decision-making process at all levels, including issues relating to patient's care and the day to day management of the unit and hospital. Participant 14 pointed out that decisions regarding patient's treatment sometimes don't get to the bedside nurse due to poor communication highlighting the lack of appreciation for the role of bedside nurse:

> *"I think sometimes, the decisions don't always get to the bedside nurse, which is what we're, are going to try and work out a way of doing that here".*

It was suggested that sometimes the cultural background of nurses influences their practice regarding decision making and being listened to within MDT as participant 5 explains:

> *"This is going to come across racist but it's not racist, some of the, a couple of …. girls, the very quiet shy ones, a couple of …. girls, a …. girl, and the …. when they first come, have very much more hierarchical background".*

Due to the racial nature of the comments, participant 5 offered further explanation of her comments relating to culture and racial background including her own experience as an example. These comments, however, further highlighted the unprofessional and judgemental attitude of experienced critical care nurses towards other colleagues highlighted earlier in this chapter:

> *" I think the people who have worked in ……, those sorts of places, the doctors made all the decisions, the nurses have to carry them out. And even when I*

was in …. I had a trip to …. as part of a job I was doing, I was lucky, got a trip out to, and even then, the nurses in the ITU there would do, and there was one about withdrawal, it was terrible, and the nurses just did what the doctors said, they had no input at all. Our junior nurses will actually stand to the doctor, you know, is that what you want? They won't argue with them but they will discuss".

It was suggested that the issue of treatment withdrawal is complex and while the more senior nurses would raise their concerns when it comes to stopping or continuing treatment in the best interest of the patients, the junior workforce would find it hard to speak up which highlights their lack of understanding regarding nurses' involvement in the decision-making process as participant 1 explains:

"I think, the not being involved in the treatment process only really upset the senior staff, you know, the people that have been here for quite a while, because they see it. The nurse looking after the patient was quite experienced and she basically, they should have withdrawn treatment probably two days before they did and she was finding it very distressing, and they kept going, they were keeping filtering, and you know, and she was, and that's really is distressing, when you get to that, when you are experiencing, you could see that, and they don't ask you, and they don't care , you know, the consultant where's, the junior staff would never see it like that because they just wouldn't know". **(Participant 1)**

Several participants reported that there is better collaboration between nurses and doctors in regard to decision making in the smaller units as the team know each other well. There is better nurse involvement in decision making in smaller units as a result as participant 3 explains:

"I quite like the smaller district hospitals for the fact that it's more like a family because you don't have that many staff, so you know your staff really well so another little family really exactly, yeh and they support each other really well. maybe in the larger unit, you don't feel that way, I mean on the unit I am

in now and have been since 2009, it's an 8 bedded unit, and so it's quite small, and the medical staff and the nursing staff make quite a good team". **(Participant 3)**

A few participants shared positive experiences relating to shared governance and nurse's involvement in decision making when meetings were held between doctors and families of the patients regarding treatment withdrawal as participant 5 explains:

"I think we're very lucky. Every consultant knows every nurse by their name, which is amazing; one of them picks up their names on the first day. And because they go to each bed on the multidisciplinary round in the morning, the nurse by the bed is actually, involved in the discussion with the patient. Our doctors are very good, and they'll look at the nurse, and if they don't, I will say on the round, have you got anything to say, to the nurse themselves". **(Participant 5)**

Others commented on the nurse's role in the decision-making process relating to the operational and management issues of the unit highlighting the operational aspects of nurse autonomy and suggested that nurses who work clinically should be involved when decisions are made that could directly impact their practice area:

"I do think the feeling among the nurses on the shop floor in critical care is that the executive ammm, the general manager, the people who are directing whatever happening is they don't give a stuff about the nurses, they don't care about how the nurses feel, they don't care about how the nurses on the shop floor feel". **(Participant 2)**

In summary, this sub-theme highlighted the clinical, operational and professional aspects of nurse autonomy which in the literature means involving nurses in decision making relating to patient care (clinical aspects) as well as relating to the day to day issues around practice (such as managing the roster and providing educational opportunities) which is associated with the operational and professional aspects of

nurse autonomy (Kramer, Maguire and Schmalenberg, 2006). Furthermore, critical care nurses also felt that nurses with current clinical experience and exposure should be given representation in all decision-making forums including at executive levels which are linked with the concept of shared governance and hence nurses' empowerment.

5.6.3 Acknowledging Nurses' Level of Experiences when Managing Teams

Most of the participants commented on the level of experiences of nurses and acknowledged the way, the new generations of nurses look at various issues differently compared to the more senior nursing workforce. There was a clear split in the views of the junior and senior nursing workforce regarding various issues explored in these interviews. Participant 1 highlighted one issue to be aware of relating to the training of the junior critical care workforce:

> *“They don't know what they are missing really and what they should be expecting because it’s fading away fast, you know”.* **(Participant 1)**

It was suggested that the junior critical care nurses are now being promoted to senior roles without appropriate training and experience due to high turnover, and this has impacted the quality of care:

> *“I think people get promoted very quickly these days, and they don't have the same amount of knowledge and the same amount of experience. There is, definitely, the quality has significantly reduced, you know”.* **(Participant 1)**

Similar views were mentioned by most of the senior nursing workforce such as reflected by participant 7:

*"They thought that in three months of my notice period that I was going to train a band 6 to do my clinic job. Now bearing in mind, they'd appointed a bunch of band 6s that hadn't got the critical care post-registration qualification. So, these were band 5s with a band 6 badge on basically. They wanted me to train these people, within three months, to be able to do a critical care follow-up clinic. Well, they haven't got a hope in hell. Talk about making a silk purse out of a sow's ear". (***Participant 7)**

Several participants pointed out that the attitude of the less experienced nurses is very different to the work ethics of the more senior nursing workforce. It was suggested that maybe the way the nursing students are recruited and trained should be reviewed taking into account their new and contrasting views regarding various issues and aspects of life. Recruiting the right people into nursing training in the first place will have a positive impact on nurse retention:

"This lady was crying and crying and crying. When we finished the audit, she never broke off to go and see this patient. As we we're walking out of the bay, I actually, stepped over the threshold to give her the absolute last opportunity to go and speak to this patient that was crying. She didn't, and I turned around to her, and I said, "We are not going to leave that lady there are we, crying? I went down, sat on the bed, God forbid, sat on the bed, and talked to that lady and sorted her out. Do you know what, I would put a pound to a penny amongst shit, while I was talking to that patient, that woman had got her hands in her pocket, jiggling around with her bloody mobile phone. Do you know what if I were, not the person that I am, I could have thumped her in the bloody face. Because she did not care about that patient, one bit. She didn't even show any interest. she just did not care". **(Participant 7)**

This quote highlights some of the toxic aspects of the work environment mentioned earlier in this chapter, in this case, the unprofessional behaviour is specifically directed at a student nurse. It was suggested that the focus should also be on recruiting the right students into nursing training in the first place if were to improve nurse retention.

Basic nursing skills such as caring nature should be the key attribute when recruiting people into nursing rather than focusing just on their academic skills, participant 7 further added:

> *"What we are doing is, we are picking young ladies from…, whose parents can afford to support them through university. They teeter around in their high shoes and put their Prada handbags on your desk when they are coming in for supervision. Why, why do those people want to be nurses? Okay, that's a very class statement, but we have got people where I've worked, in …., we have got a bunch of people out there, who are hardworking, kind, loving people, who I would give as a job, as a nurse, tomorrow. But they can't be registered nurses because they can't articulate to do a degree. I do not need those things to make me a caring person".* **(Participant 7)**

The quote above highlighted further negative aspect of the nursing culture and unprofessional behaviour towards other colleagues such as anti-intellectualism. Participant 7 suggests that the new generation of nurses focus more on the academic side of nursing but not so much on the basic nursing skills and accusing them of non-caring attitude. It is worth highlighting that the negative stereotyping with regards to nursing students being uncaring and anti-intellectualism was mentioned only by a few participants and hence needs to be considered with caution. The majority of participants whilst appreciating the academic skills of the new generation of nurses including nursing students however highlighted that there is a need for further enhancing the focus on basic nursing skills alongside academia. Furthermore, the issues highlighted mainly by participant 7 such as anti-intellectualism contradicts previous findings of the need for career progression opportunities such as clinical academics roles. Contrary to the comments of participant 7, most participants however highlighted the importance of career progression and mentioned that those with academic skills could also be good nurses, appreciated the contribution of the new

generation of nurses and commented that their up-to-date research and academic skills could be used in the practice area to improve patient care as participant 8 explains:

> "*I do think that we need to value their ability to look at research and they are more academically led, the new nurses. So, they can, they are very, you know, they are very good at searching up the newest research and being able to critique it".*

Others while agreeing with participant 8, suggested that critical care nurses with high academic qualifications could be good role models and could contribute towards staff development and research in practice which will improve the quality of care and nurse retention as participant 14 explains:

> *"If you can get some strong clinical academics working, that are good role models, one: you'll retain junior nurses who want to do that, but also, it will progress your units because they're interested in doing the research and reviewing practice, you know. And looking at things, like you are, about retention and moral distress, and the more we look at those things and talk about them, the more we can do things. And then, yes, and then prevent nurses from leaving critical care".*

Considering the negative and toxic culture within the critical care work environment mentioned in the previous sections, it was not surprising that most of the novice critical care nurses on the other hand felt unsupported by their senior colleagues and also complained about their attitude towards them as participants 10 and 11 explains:

> *"I know a lot of people have left recently and quite a few of them are sort of new starters, and they feel like they're isolated, and they're not supported. I know, and I think a few of them have felt sort of that the older ones that have been there for years, are a bit sort of clicky and they're not really willing to support them. So, a lot of them have left because of that reason*". **(Participant 10)**

"Sometimes you can feel, yes, that isolation and, obviously, you don't want to make mistakes either. So sometimes it's good if you could like check, OK, I'm doing this, and this and I think that am I kind of like going in the right path, you know, here? Because, you know, sometimes the band 6 might be busy with another patient. So yes, that's why I want the skill mix in the, you may have someone around that you can double-check as well with that. So yes, I would say like really, really sick patients and when you feel you're not getting the support that can be really stressful". **(Participant 11)**

Looking at the field notes regarding this theme, there was evidence of a split between the senior (more experienced) and junior (less experienced) nurses in their views regarding various issues such as how the off duty should be managed and how educational support be provided. Most of the novice critical care nurses complained about the attitude and behaviour of their senior colleagues, supervisors and managers. Similar feelings were found in the opposite camp but not as widespread and were limited to some participants. This theme further highlighted some of the toxic elements present in the critical care environment which is associated with nurses' ITL. It is worth noting that while bullying behaviour was not widespread and reported by few, most participants however reported other unpleasant behaviours such as devaluing other colleagues, judgemental behaviour, anti-intellectualism, ageist and racist remarks which could be considered as bullying behaviour.

5.6.4 Experiencing Stress and Anxiety Caused by Sending Critical Care Staff to Other Areas Because of Workforce Shortages

Concerns regarding workforce shortages and their impacts on training and education, teamwork, workload, and quality of patient's care were widespread. This theme was however mainly related to the issue of sending critical care nurses to other non-critical care areas for help on a regular basis. It was suggested, as noted previously in theme

one that this was due to the misperception of management and colleagues from non-critical care areas regarding the workload of critical care nursing. Most of the participants pointed out that sending critical care nurses to cover other areas on regular basis is a source of stress for critical care staff and associated with their ITL. Participants acknowledged the need for sending critical care nurses to other areas, they however highlighted various concerns related to this issue that was a source of stress and anxiety for critical care nurses. It was suggested that sending critical care staff to other areas is not good for patient's experience and safety and hence has been stopped in their hospital as participant 14 explains:

> *"Yes, and all the evidence points to that as being really bad for patient experience and for safety. Yes. So, we used to, a couple of years ago, would send nurses out to the ward, but it stopped, we just stopped it, and we look at other ways of staffing the wards now, so that we don't have to do that".* **(Participant 14)**

Some participants commented on the risks associated with the movement of staff to other non-critical care areas such as inappropriate use of resources, financial implications, and nurses' ITL:

> *"Certainly, in my experience, I know that there are people who have left because of it. There are people who have said to me that they came to work in critical care; that's what they want to do. If they had wanted to work on the ward, then they would take a ward job five days a week. Why on earth would they want to do critical care? However, what they don't fully understand is, particularly with nurses of my age, who have worked – well it's nearly... years since I worked on a… ward. I've worked in an …. ward, but I would be completely like a fish out of water. I think there is considerable risk in moving people like me to ward areas to work. One of the things that they tried to make me do, as a …. as an… was to go and work one day a month or one day a week, they couldn't quite decide, on a ward. I said, "Well this is ridiculous, you're*

paying an …. salary for me to do a staff nurse job. Why on earth would you do that? **(Participant 7)**

One of the reasons critical care nurses don't like being sent to other areas is because of their anxiety relating to unfamiliar equipment and protocols that they are expected to use on short notice. To counteract this issue, some participants commented on the steps they have taken to ease the stress of critical care nurses when they are sent to the wards:

"Staff has been to a ward area, and they felt completely out of their depth, and we put on a provide if somebody goes to a ward area they don't take charge of the bay, or charge of their ward, they are there as a pair of hands to support the staff who is in charge. They would also don't do medicine now? because they don't have the familiarity with their drugs on that medicine round so it would take them a lot longer to do that medicine rounds because they would have to be accessing information about the drugs before they could be administered etc. so we are trying to put things in place so it would ease that stress. So now if they go to the ward, they are not charge of the day or at ward, they are not the only trained member of staff on the shifts, and they don't generally do the medicine rounds". **(Participant 3)**

Participant 3 further added to the issue of unfamiliarity when critical care nurses are sent to the ward adding to the stress and anxiety:

"They don't know where everything is kept and that in itself could be stressful when you not sure whom to ask about it or what's going on and that type of patient so it's difficult so we were trying to get a system in place before they go so they know what's their boundaries are so they feel comfortable in going but saying that we only had one person moved to a ward area and I don't think it happened since then so may be that improved".

From the management point of view, the critical care nursing management understood that at times they may be asked to help other areas, however, the critical care nurses

have to be sent back on short notice as the situation in critical care could change instantly such as getting emergency admissions from accident and emergency department following a road traffic accident. Furthermore, some of these patients could be very sick and sometimes one patient requires 2-3 nurses. This unique aspect of critical care is, however, not acknowledged and appreciated, and the nurses are not sent back to critical care which causes frustrations and anger among the critical care nurses as participant 13 added while highlighting the nonprofessional response from the management:

> "*So then when we say, oh excuse me, we need our staff back, you know, they're quite funny with us really, they're quite rude and a bit nasty really at times".*

Not getting the staff back has huge implications such as not having enough nurses to look after the critically ill patients as participant 7 explains:

> *"The other issue is, in relation to not being able to get your staff back, that one of the arguments that I had with the management was that if you are taking a member of staff, that we cannot get back, you are essentially closing a bed"*

Most participants agreed that sending critical care nurses to other areas is a big issue and linked to critical care nurses' ITL:

> *"It's a huge problem, they will leave critical care quite happily and the promise is, I think every time we have sent a nurse, we will, you know, is so they are happy and we left short, can we have the nurse, I don't think we ever get the nurse back from where they went to work. We have lost staff, we have staff leave because they get moved regularly and they said on their exit interview that that the fundamental, we had our health care assistant leave and we had our staff leave".* **(Participant 2)**

Participant 2 highlighted another aspect of this issue and commented that the coordinator of the critical care area should have a final say in this matter as they are aware of the safety issues and patient's dependency on their unit rather than the management of the hospital:

> *"It’s down to the nurse making the decision based on clinically what's happening and I think that there needs to be a shift in the perception about the respect given to the nurses on the shop floor".*

Participant 11 further highlighted that the movement of critical care nurses to other areas is one-way traffic and critical care areas never get any help when needed which worsens their feelings about this issue:

> *"But even like the bed managers, you see that is like, we are always the one being pulled out to help in other areas, and then we never get the help from anyone, you know. And that is a feeling that, obviously, does not make people want to go and help anywhere else".*

The majority of participants also commented on the impacts of shortages of nurses and high turnover in the critical care areas such as taking extra shifts because of the shortage of nurses which increases sickness and burnout:

> *“Yes, that is a big issue. Yes, it is, that is a massive issue. And yes, that is probably another reason, thinking about it, is another reason for staff leaving because they’re just so tired, you know, they completely burn out. They’re only young kids, and they are burning out. I find it stressful, last week I did, I completed fourteen shifts on the bounce, and I was, you know, I was, I couldn’t speak at the end of the run because I was just so exhausted. And, you know, a lot of people are worried as well about the sickness because, you know, you have three strikes and basically, you’re sacked. So, you know, the strictness of the sickness policy at the moment is just, it is really bad, to be honest with you. Yes, definitely. It’s a catch 22 situation I think, you know, they’re doing the overtime*

because, number one, they want the extra money, you know, for holidays or whatever, and, you know, and then in the next breath they're going off sick because they're burnt out because they've done too much. So, we're in a catch 22 with them all. And then, obviously, then they're faced with this sickness policy and worrying about all that". **(Participant 13)**

Summarising and reflecting on the field notes, this sub-theme was mainly about sending critical care nurses to other areas for help regularly. This was an important issue especially to the junior workforce, however, was acknowledged by the majority of participants and one of the main factors associated with nurses' ITL adult critical care areas. See appendix 3.9 for the framework matrix, including the three main themes, sub-themes and associated codes.

5.7 Chapter Summary

This chapter has presented the findings from the second phase of this mixed-method study, which sought to explore how and why factors identified in phase one influenced nurses' intentions to leave adult critical care settings. This objective was achieved through the collection and analysis of qualitative data from semi-structured in-depth telephone interviews held with a sample of nurses currently working in the adult critical care settings across England who expressed ITL and participated in phase one. The findings from the qualitative analysis identified three main themes associated with critical care nurses' ITL. The main themes were sub-divided into a number of sub-themes. These findings provide a detailed exploration of the factors that are associated with critical care nurses' ITL and therefore need to be considered when strategies are developed to improve nurse retention. The following chapter focuses on integrating the findings of the two phases (quantitative and qualitative) of this mixed-method study by drawing the two phases together to identify the final findings.

CHAPTER SIX- INTEGRATION (PHASES 1 & 2)

6.0 Introduction

Integration is considered to be the core component of a mixed-method study to gain a better understanding of the research problem (Bazeley, 2018). A detailed account with rationale has been presented regarding the methods of integration employed by this mixed-method study in chapter three. This chapter presents the findings resulted from integrating both phase one and phase two of the study. Aligned with sequential mixed-method design, the findings of qualitative phase two explained and expanded on the findings of the quantitative part in phase one.

6.1 Implementing the Four Stages of the PIP

As discussed in chapter three, a four-stage validated technique called Pillar Integration Process (PIP) using a joint display approach was adopted by this study to integrate quantitative and qualitative data. Each stage of the PIP is illustrated below with data from the quantitative and qualitative phases of this mixed-method study.

6.1.1 Stage 1: Listing

Findings from quantitative data analysis in phase one were listed in the QUANT DATA column of the PIP joint display. Factor analysis in phase one resulted in four factors that were significantly associated with nurses' ITL adult critical care areas. These were autonomy; work environment; working relationships, and opportunities for professional development. Findings from the content analysis of the qualitative comments collected in the quantitative phase one were also listed in the QUANT DATA column. The factors reported by participants that were associated with nurses' ITL adult critical care areas included poor working conditions; lack of professional development and career

progression opportunities, poor pay, off-duty issues and lack of work/life balance, and lack of appreciation and acknowledgement.

6.1.2 Stage 2: Matching

After listing the relevant data in the QUANT Data and QUANT Categories columns, a matching process started on the opposite side in stage two of the joint display. In this stage, qualitative data, such as codes and some selected quotations that reflected and/or related to QUANT Data in the QUANT Data column, were added to the QUAL Codes column. Additionally, relevant qualitative themes and subthemes were listed in the QUAL Categories column that matched with the quantitative data in the QUANT Categories column (Table 6.1). For example, the qualitative theme "feeling appreciated and acknowledged for their specialist knowledge and skills" was matched with the item in the QUANT Data column, "lack of appreciation and acknowledgement". Table 6.1 shows all qualitative findings that matched with the QUANT Data and QUANT Categories columns. At the end of this process, some qualitative data were left unmatched; this data was labelled as "not identified" (Johnson, Grove and Clarke 2019). The unmatched data helped to identify gaps in the relationship between the quantitative and qualitative data sets.

6.1.3 Stage 3: Checking

In stage three, data were checked for quality purposes after matching the data across the four outside columns. Data were checked for completeness to ensure the rows were appropriately matched, including any gaps.

6.1.4 Stage 4: Pillar Building

In Stage 4 of the PIP, the evidence presented on both sides was synthesised into the

PILLAR column. The PILLAR column represents the visual and conceptual integration of both quantitative and qualitative findings. The PILLAR holds the final integrated themes from each row (Table 6.1 - bolded themes in the PILLAR column). Having completed the joint display process, the following section will now weave together a meaningful narrative from the quantitative and qualitative data. Table 6.1 illustrates all 4 stages of the PIP.

Table 6.1: Stages 1, 2, 3, and 4 of the PIP joint display using data from qualitative phase two matched with quantitative data, including the integrated themes in the Pillar Building column ((Johnson, Grove and Clarke, 2019)

QUANT Data	QUANT Categories	PILLAR BUILDING Themes	QUAL Categories	QUAL Codes
→	→		←	←
Autonomy Autonomy and age have a significant statistical association with ITL current job in the next 3-5 years and ITL nursing profession in the next 1-5 years.	Participants felt that they were not involved in the decision-making process by management at all levels. Autonomy was more important to the more experienced nurses compared to their younger and less experienced colleagues.	**Promoting nurse autonomy and a culture of shared governance**	Autonomy is important to nurses. There is a lack of nurse autonomy.	Nurse autonomy has declined with the decline of relationships between nurses and consultants as well as because of an increased junior workforce due to high turnover. (Participant 1, p.15-16) Getting nurses involved in the decision-making regarding the care of the patient is important to enhance multidisciplinary collaboration. (Participant 12, p.6) Getting the nurses involved in the decision-making regarding the patient's treatment is important to nurses. (Participant 14, p.9) *"I do think the feeling among the nurses on the shop floor in critical care is that the executive arm, the general manager, the people who are directing whatever is happening, they don't give a stuff about the, about how the nurses feel, they don't care about how the nurses on the shop floor feel". (Participant 2)*

				Current clinical nurses need to be involved in the decision-making process as they feel the hospital management does not care about what they think and how they feel. (Participant 2, p.10,11,15)
Work environment Poor working conditions. Work environment has a significant statistical association with ITL current job in the next 12 months.	Nurses were not happy with various aspects of their work environment, such as increased workload, poor physical working conditions, and lack of resources.	**Providing a supportive work environment and a system of wellbeing**	Providing overall support and developing a system of wellbeing following stressful incidents.	Psychological and structured support and wellbeing is needed following stressful and traumatic incidents. (Participant 15, p.18) Nurses are leaving critical care because of the lack of support in a very stressful work environment. (Participant 13, p.2) Following feedback from staff, we are working on appointing a clinical psychologist to provide psychological support to nurses following traumatic incidents. (Participant 14, p.6-7) Making staff feeling valued and focusing on their wellbeing is the key to retaining critical care nurses. (Participant 14, p.14,16) Lack of support and increased workload is having psychological impacts on staff. (Participant 1, p.6,7) Poor physical working conditions, such as the design of the unit, could impact staff allocation and teamwork. (Participant 6, p.5,6) Inappropriate patients' allocation and increased workload is stressful for nurses. (Participant 5, p.9)

The stresses of personal and home life also have an impact on how nurses' function at work. (Participant 7, p.40)

The type of patients has changed and include more young patients, which impacts on staff and causes burnout. (Participant 8, p.2)

The critical care workload has significantly increased in the past few years. (Participant 8, p.3)

Due to increased workload, nurses are taking extra shifts, which are causing sickness, burnout, and increases ITL. (Participant 8, p.3,4,11,12)

Increased workload and lack of resources compromise the safety of staff and patients. (Participant 9, p.18)

"I know a lot of people have left recently and quite a few of them are sort of new starters, and they feel like they're isolated, and they're not supported. I know, and I think a few of them have felt sort of that the older ones that have been there for years are a bit sort of clicky and they're not really willing to support them. So, a lot of them have left because of that reason". (Participant 10)

"Well yes, there are, there are incidents, you know, that stick in your mind forever". (Participant 15)

				An unsupportive manager at the time of sickness is stressful. (Participant 15, p.27-28)
Working relationships Relationships have a significant statistical association with ITL current job in the next 12 months.	Participants reported the following relationships that may impact their ITL: relationships with managers; members of the multidisciplinary team; patients and their families, and among colleagues.	**Enhancing workforce relationships and multidisciplinary collaboration.**	Enhancing workforce behaviours and multidisciplinary collaboration.	Unpleasant relationships with medical colleagues could be very stressful with negative effects on health and are associated with nurses' ITL. (Participant 7, p.27-32) Conflicts and disagreements with managers are associated with nurses' ITL. (Participant 15, p.9) Good teamwork and a supportive work environment make the stressful job of critical care easier. (Participant 15, p.15) Good teamwork and support help nurses to get through the shift, but if it is busy every day, then it breaks their resilience and leaves nurses vulnerable and stressed. (Participant 14, p.3) Having a strong social network with colleagues outside work and a supportive circle of friends and family is important to deal with the stresses of critical care areas. (Participant 1, p.23-25) *"The hostility has come as a result of the, shall we say, lack of collegiality and make me your best mate and I will be your best mate forever, and you will get everything you possibly need.*

Make an enemy out of me, and you will live to regret it. Because that's not a good idea, I will just come for your throat, and that's what I did, basically. As a result of that, as tough as I think I am, I then developed a sleep problem. I had about six months of feeling like shit. I went to occupational health, and I told them what had happened. This was all while we were under the….and it was all while we were looking at merging with another big hospital, and everybody was under pressure. That was 18 to 20 months ago. I couldn't say that's the definite reason why I left, but it was certainly a chip in the coffin. Because when you've gone through that, you do not trust the people that you work with. That's the reason why I am telling you the story. It was a seminal event for me that affected my health, and it made me distrust senior people in my Trust". (Participant 7*)*

"I think the matron's job has changed massively in the last couple of years, and I think they are really pulled away from the clinical area. They are not involved with what goes on, on the day-to-day basis in the clinical area, and staff pick up on that perception". (Participant 2)

Lack of professional development and career progression opportunities.	Lack of training, education, professional development, and career progression opportunities were associated with nurses' ITL.	**Demanding a structured, education and development programme and career progression opportunities.**	Demanding a structured training and education programme for novice critical care nurses. Providing opportunities for professional development and career progression.	Educational support is important in critical care to improve retention. (Participant 13, p.4) Listening to staff and developing a structured education development and career progression programme has positively influenced nurse retention. (Participant 14, .5-6) Due to cuts in education funding, it is very challenging to provide essential training courses. (Participant 2, p.3,4) It is important to allocate a neutral well-being person to support new starters who is not their direct line manager or supervisor, but a third person who could listen to them and guide and support them. (Participant 3, p.17,18,20) *"Yes, so we did, we listened to feedback from the staff about, we were losing lots of nurses to other…hospitals, who had got their ITU course and then six months after their ITU courses they were getting their Band 6 post. And here, traditionally, what we have always done here, is you would do probably a year post-course before you got your ITU course. So, what we did was, we implemented a senior staff nurse post, where you can apply for a Band 6 six months after an ITU course. We've got a really structured development programme here. Our retention here has improved, since we reviewed things, like the career progression and the development*

				pathways and the education opportunities. So, we support people to go on their master's and PhDs, and we're developing the academic roles and that sort of thing. And I think that it's about looking at all of that really, so that, more than just people working on the ITU and then leaving again". (Participant 14, p.5,6,13)
Lack of appreciation and acknowledgement. Poor pay.	Nurses reported a lack of appreciation and acknowledgement for their specialist knowledge and skills.	**Feeling demoralised due to the lack of appreciation and acknowledgement for their specialist knowledge and skills.**	Lack of appreciation and acknowledgement for their specialist knowledge and skills. Feeling demoralised due to misperception regarding the workload of critical care nurses. Raising awareness about the specialist nature of critical care nursing. Rewarding critical care nurses' specialist knowledge and skills.	There is a lack of understanding about the workload in critical care areas by colleagues who work in non-critical care areas. (Participant 1, p.9) Critical care nurses should have better pay and higher bands to acknowledge their specialist knowledge and skills. (Participant 6, p.13) The public is not aware of how critical care works. (Participant 11, p-11) Acknowledging critical care as a specialist area would improve the morale of critical care nurses. (Participant 1, p.27) Critical care nurses should have better pay and higher bands to acknowledge their specialist knowledge and skills. (Participant 6, p.13) *"Sadly, I think certainly in this trust, the attitude to critical care nurses is that you don't really do a lot, do you? You have one patient. You sit*

				on your bums all day. It's not hard. I think that's quite demoralising for a team. I think when nurses do come and work with us, they are like, Oh, my gosh, I had no idea". (Participant 8) *"It is specialised, and I would really much want to see that it's recognised as a specialism and being reflected in the pay, because we are dealing with the sickest of the sickest. And, as I said, we have the impact of, you know, well we need specialised training with all the equipment, we need to, the in-depth of looking after relatives and the sick patients is so much more complex, you know than on a ward".* (Participant 15)
Off-duty issues and lack of work/life balance.	Lack of flexibility while managing the off- duty and lack of work/life balance was associated with nurses' ITL.	**Providing flexibility and maintaining work/life balance when managing the roster**	Maintaining work/ life balance while managing rosters.	The off-duty is rubbish because of the quick turnaround from nights to days. (Participant 10, p.3) Management should listen to nurses' requests regarding flexibility when finalising rosters. (Participant 11, p.4) *"I think the big bugbears are leave, off duty and unfairness. So, if you've got a manager that favours some people and not others, that really causes a problem".* (Participant 5) *"Some members of staff struggle in terms of family and can' work certain days".* (Participant 6)

				"Most of my friends have got really rubbish off-duties, where they're doing nights and then they've got one sleep day, and they're back on days again, which I feel is too much". (Participant 10)
<u>Age</u> Autonomy and age have a significant statistical association with ITL current job in the next 3-5 years and ITL nursing profession in the next 1-5 years.	Experienced nurses expressed the ITL nursing profession due to the lack of autonomy more than their junior colleagues.	**Acknowledging nurses' level of experiences when managing teams.**	Acknowledging generational characteristics of nurses when managing teams.	The attitude and way of working of the new generation of nurses are very different from the older generation. (Participant 7, p.20-21) Younger generation of nurses deals with stressful incidents differently as compared to the older generation of nurses. (Participant 8, p.10-11) Most of the new starters are singled out and isolated because of the attitude of some of the senior colleagues and are leaving because of the lack of support from senior nurses. (Participant 10, p.4,6,15-16) There is too much focus on academia and less on basic nursing care, and this needs to Change. (Participant 1, p.27, 28) *"And they don't care either. While I was in this bay of four patients, this lady in the first bed was crying. My normal reaction would have been to go straight to that lady, but I thought, "You know what, I am just going to hold back and see what this student does. This lady was crying and crying and crying. When we finished the audit, she never broke off to go*

				and see this patient. As we were walking out of the bay, I gave her the absolute last opportunity to go and speak to this patient that was crying. She didn't, and I turned around to her, and I said, "We are not going to leave that lady there are we, crying?" (Participant 7) *"I know a lot of people have left recently and quite a few of them are sort of new starters, and they feel like they're isolated and they're not supported I think a few of them have felt sort of that the older ones, that have been there for years are a bit sort of clicky and they're not really willing to support them. So, a lot of them have left because of that reason".* (Participant 10)
Leaving because of the fear of being moved to the ward.	Staff feel anxious about being moved to the ward on a regular basis. Increased workload due to the shortage of nurses because of high turnover.	**Experiencing stress and anxiety because of workforce shortages.**	Experiencing stress and anxiety because of workforce shortages. The workload has increased due to workforce shortages caused by high turnover.	Sending critical care staff to other non-critical care areas regularly are a huge problem and a cause of nurses' ITL. (Participant 2, p. 9) *"There are risks associated with moving staff to other non-critical care areas, it also means that resources are being used inappropriately by asking experienced critical care nurses to work on the wards. It increases pressures on critical care and associated with nurses' ITL". (Participant 7, p.10-14)* *"The other big factor is critical care staff being moved to the ward. It's a huge problem, they will leave critical care quite happily, and the promise is, I think every time we have sent a nurse, we will, you know, is so they are happy,*

		and we left short. Can we have the nurse? I don't think we ever get the nurse back from where they went to work, absolutely, we have lost staff, we have staff leave because they get moved regularly, and they said on their exit interview that the fundamental, we had our health care assistant leave, and we had our staff leave, because they do not like going to the ward". (Participant 2)
Not identified	Redirecting resources appropriately and efficiently to invest in the workforce.	Redirecting resources appropriately and reducing layers of management would improve nurse retention. (Participant 8, p.5) More resources and improving services in the community will reduce pressures on the acute settings and improve workforce shortages. (Participant 10, p.7)
Intentions to leave ITL current job in the next 12 months - 28.5%. ITL current job in the next 3-5 years - 59.4%.	Not applicable	Percentage of nurses who ITL their current job or profession was not the purpose of phase two, as it was explored in phase One.

ITL nursing profession in the next 1-5 years - 29.3%.

6.2 Integration Through Narrative

A weaving approach was chosen to integrate through the narrative. The weaving approach involves writing both quantitative and qualitative findings together on a theme-by-theme or concept-by-concept basis (Fetters, Curry and Creswell, 2013). As previously noted, phase one of this mixed-method study explored factors influencing nurses' ITL adult critical care settings using quantitative data collection and analysis. Aligned with mixed-method sequential explanatory design, phase two expanded on phase one and explained these factors through qualitative interviews to find out how and why these factors influence nurses' ITL. Based on the aims of this study, and using a sequential explanatory mixed-method design, the weaving narrative approach was; therefore, appropriate to report the findings of this mixed-method integration. Integration resulted in eight out of nine factors being matched, which adds credibility to the findings. The following section reports the themes in the PILLAR column resulted from the PIP joint display using a narrative weaving approach. According to the assessment of fit of integration (Fetters, Curry and Creswell, 2013) discussed in chapter three, the qualitative themes confirmed (adding greater credibility) and expanded (expanding insights into the research question) the quantitative findings aligned with the sequential mixed-method design. Any gaps in the PILLAR integration will be explained at the end of this section.

6.2.1 Promoting Nurse Autonomy and a Culture of Shared Governance: The Need to Enhance Autonomy and Shared Governance

Autonomy was one of the four factors included in the quantitative findings and had a significant statistical association with the three ITL questions. Logistic regression analysis revealed that improving autonomy reduces nurses' ITL. Furthermore, experienced nurses were more likely to ITL their nursing profession in the next 1-5

years due to the lack of autonomy compared to their less experienced colleagues.

Aligned with sequential mixed-method explanatory design, qualitative interviews revealed what autonomy means to nurses and why it influences their ITL adult critical care settings. Aspects of autonomy highlighted by participants in their interviews includes empowering and involving nurses in the decision-making process by the hospital management at all levels. This includes decisions regarding patients' care, as well as operational issues such as managing the off duty and providing educational opportunities. Nurses' involvement in patients' care was mainly about involving nurses in the discussions during ward rounds and decisions around end-of-life care and treatment withdrawal. Nurses reported a decline in nurse autonomy regarding patients' care and argued that improving nurse autonomy could enhance nurse-physician collaboration.

Furthermore, nurses expressed their frustrations about the lack of involvement in matters that directly affect them. It was reported that most of the decisions are made by those who do not work clinically and hence are not fully aware of the issues faced by nurses on a day-to-day basis. This applies to both clinical decisions where nurses are not consulted and managerial decisions such as moving critical care staff to other areas. Participants wanted their management to get the clinical nurses involved when decisions are made about the day-to-day issues regarding the practice area. Furthermore, nurses demanded to be represented in all forums, both at local and executive levels.

6.2.2 Providing a Supportive Work Environment and a System of Wellbeing: The Need to Provide a Supportive Work environment

The work environment was statistically significantly associated with nurses' ITL current

job in the next twelve months. Content analysis of qualitative comments collected in phase one that was associated with nurses' ITL, included poor working conditions (27.50%). In phase two, participants explained various aspects of the work environment that were important to them and influenced their ITL. This theme is multidimensional covering various aspects of the work environment, including the lack of overall support and wellbeing. It was reported that despite limited resources, the workload in critical care areas had increased significantly in the past few years, adding to the stresses of critical care. The type of patients has changed, and patients are much sicker with increased medical and physical dependencies requiring an increased number of skilled critical care nurses. This situation is worsened by workforce shortages due to high turnover. On the whole, nurses reported a lack of structured support for novice critical care nurses and suggested allocating a buddy for all novice critical care nurses who could provide guidance and support, especially in the first two years until they settle into the new environment. The two years was suggested as a longer time is required to learn the basic critical care skills required to care for critically ill patients safely and independently, compared to other non-critical care areas.

Concerns were also raised regarding the lack of structured psychological support for nurses following traumatic and stressful incidents. It was reported that nurses are faced with traumatic and stressful incidents, such as dealing with dying patients and treatment withdrawal scenarios on a daily basis and are expected to carry on without any psychological or other support. Some suggested appointing a clinical psychologist to provide professional psychological support following stressful and traumatic incidents to replace the current limited debriefing sessions facilitated by staff with no psychological experience. In summary, participants reported that there are various sources of stress in the critical care environment that influences their ITL. Participants

highlighted the lack of focus on nurses' wellbeing in general and suggested a system of structured support to ease the stresses of critical care nursing and thus improve retention.

6.2.3 Enhancing Workforce Relationships and Multidisciplinary Collaboration

Interprofessional relationships were important to nurses and had a significant statistical association with nurses' ITL in phase one. In phase two, participants expanded on this and reported the following relationships that may impact their ITL: relationships with managers; members of the multidisciplinary team; patients and their families, and among colleagues. Nurses' relationships with doctors were found to be associated with the previously discussed theme of nurse autonomy related to their involvement in the decision-making process suggesting that relationships and autonomy are interlinked and may impact one another. It was reported that unpleasant relationships with members of the multidisciplinary team, especially medical colleagues, is very stressful for nurses with negative effects on their health and are associated with nurses' ITL.

Relationships with managers were also important to nurses. Relationship traits of managers that were important to nurses included being approachable, being actively involved in the day-to-day running of the unit, and clear communication. Other traits important to nurses and may influence their decision to leave or stay in critical care includes feeling valued, respected, and acknowledged by their managers. The characteristics of a manager and how he or she interacts with their team members play a key part in the development of positive working relationships. Conflicts and disagreements with managers were reported to have been associated with nurses' ITL.

Nurses' relationships with their colleagues was also an important factor associated with nurses' ITL. It was suggested good teamwork and supportive colleagues ease the stressful job of critical care. Having a strong social network with colleagues outside work and a supportive circle of friends and family was also reported to have been important to deal with the stresses in critical care areas. The majority of participants felt that their relationships with patients and their families were a source of inner strength; however, disagreements and conflicts with patients and their families regarding treatment withdrawal was stressful and traumatic.

6.2.4 Demanding a Structured Education and Development Programme and Provision of Career Progression Opportunities: The Need to Provide Structured Education and Development

Lack of education and development was statistically significantly associated with the three ITL questions in phase one. Additionally, in the content analysis of the qualitative comments collected in phase one, a proportion (18.84%) of participants indicated the lack of education, development, and career progression opportunities as one of the reasons for their ITL. Participants in phase two explained various aspects of education and development that were important to them and influenced their ITL. Nurses reported a lack of a structured education and training programme for novice critical care nurses to help them settle in the new environment and equip them to deal with the challenges of the critical care environment. Critical care nurses require advanced knowledge and skills to provide comprehensive patient-centred care to critically ill patients who require complex interventions in a highly technical environment. Novice critical care nurses, therefore, require extra training and education, which takes longer compared to other non-critical care areas. It was, therefore, suggested that a structured training and education programme is developed in their first two years to

train novice critical care nurses. This education and training programme should cover various aspects of education and development to ensure the novice critical care nurses are ready to care for critically ill patients independently and safely. It was suggested to appoint a well-being person alongside the education and training programme who is designated to support and guide the novice critical care nurses until they settle into the critical care environment. This designated well-being person should be a third person who has no formal relationships with the new starters, and not their direct manager and supervisor so that the new starters feel comfortable discussing their problems with them.

Another problem reported by participants was the lack of a structured education and development programme for all grades of nurses. Nurses highlighted that the current education system was limited to the generic statutory and mandatory training and essential courses, such as preceptorship and critical care courses rather than focusing on individual development. Furthermore, participants as a whole felt strongly about having opportunities for individualised career progression, such as a Master and a PhD rather than just focusing on mandatory courses only. In summary, nurses in phase two reported that there is a lack of structured training and education programme for novice critical care nurses and a lack of professional development and career progression opportunities for nurses in general.

6.2.5 Feeling Demoralised due to the Lack of Appreciation and Acknowledgement for their Specialist Knowledge and Skills: The Need to Improve Morale

Phase one identified a lack of appreciation and acknowledgement for the specialist skills and knowledge of critical care nurses as a factor associated with nurses' ITL. Nurses expanded on this in phase two and explained various factors associated with

this theme. A feeling of frustration was reported by participants overall because of the misperception that critical care nursing is an easy job compared to other non-critical care areas due to the elevated nurse/patient ratio. It was suggested that the lack of awareness does not take into consideration that patients in critical care areas are the sickest in the hospital requiring close monitoring, and they always need a nurse present at their bedside; hence, the elevated nurse/patient ratio. Furthermore, participants reported that this misperception is not limited to one group but was present across most teams working in non-critical care areas, including nursing colleagues and hospital management. Participants pointed out that the misperception regarding critical care areas change when nurses from other areas spend some time in the adult critical care environment.

Participants in phase two also highlighted some of the reasons that make the critical care environment different from other areas, such as extra training and advanced skills and knowledge required to work in this specialised area. While some participants generally commented on the lack of appreciation and acknowledgement of their specialist knowledge and skills, others pointed out specific aspects, such as the lack of understanding by the management of the hospital towards critical care nursing. For example, hospital management asks critical care nurses to help elsewhere in the hospital on a regular basis. This is because they think critical care areas have more nurses due to the elevated nurse/patient ratio and hence not that busy and could lend nurses to other areas. Participants whilst appreciating the need for helping other areas suggested that this is a complex issue impacting patient's safety on both the leaving and receiving units and causes stress, anxiety and feeling of vulnerability among the critical care nurses.

Most participants echoed the argument that the critical care areas have to be recognised as specialised areas, including better pay for staff, with some suggesting re-categorisation of critical care to highlight its specialist nature. Various strategies were suggested to raise awareness regarding the stressful nature of critical care areas among colleagues from other non-critical care settings, including hospital management. These strategies include taking steps to build relationships and providing support to the ward nurses, which may help in rectifying the issue of misperception. Other strategies include providing secondment opportunities in the critical care areas for the staff of other specialities, which may help to open their eyes to the critical care environment. Furthermore, this could be used as an educational exercise where they could develop their knowledge and skills that could be beneficial in looking after patients in their respective areas.

Some participants proposed specialist titles for critical care nurses similar to that of other specialities. Others suggested better pay and financial incentives to acknowledge the critical care nurses' specialist skills and knowledge. Appreciation from managers and supervisors within the critical care areas were equally important, such as management stating their gratitude for the hard work done as a means of meaningful recognition.

6.2.6 Providing Flexibility and Maintaining Work/life Balance when Managing Roster: The Need to Consider Work Life Balance

Off-duty issues and the impacts of the lack of work/life balance was an important issue to nurses and was highlighted as one of the main factors associated with nurses' ITL in adult critical care areas in both phase one and two. In phase two, nurses identified specific issues relating to the roster that are important to them, impact on their lives

and one of the reasons associated with their ITL. The main issues reported regarding off duty include lack of flexibility; unbalanced shift patterns, such as doing 2-3 shifts in one week and 4-5 the next, and a quick turnaround from night shifts to day shifts with no time to recover or relax. While appreciating the challenges of maintaining a work/life balance and flexibility and at the same time ensuring patient safety through an appropriate skill mix, it was suggested that both could be achieved through fairness and with a degree of flexibility. Highlighting the importance of flexibility when managing their off-duty, some pointed out that maintaining a work/life balance is more challenging in larger units compared to smaller units in big teaching hospitals. It was suggested that the management should listen to staff regarding their off-duty and find ways to fulfil their requests, as nurses are leaving because of poor shift patterns and lack of a work/life balance. The issue of the short turnaround from nights to days, which means not getting enough time to recover before the day shift, was echoed by most of the participants and was reported to have negatively impacted their health, increased nurse sickness, and was associated with nurses' ITL.

The impact of an inflexible roster on nurses with small children was also highlighted by participants. There were strong feelings among all participants that inflexibility, lack of a work/life balance, and a quick turnaround from days to nights frustrated nurses, increased sickness and influenced their ITL. Hence, these need to be looked at to improve nurses' retention in adult critical care settings.

6.2.7 Acknowledging Nurses' Level of Experiences when Managing Teams

Most of the participants commented on the difference in the level of experiences of the critical care nurses including generational characteristics of nurses, acknowledging the way the new generation of nurses look at various issues differently compared to

their senior nursing colleagues, and vice versa. There was a clear split in the views of the junior and senior nursing workforce regarding various issues, such as off-duty, educational opportunities and support. Most of the experienced nurses felt that the junior nurses had been promoted to senior roles without appropriate training and experience due to high turnover, and this has impacted the quality of care. Furthermore, senior members of the critical care workforce also raised concerns regarding the attitude and work ethics of their junior counterparts.

In contrast, most of the novice critical care nurses (nurses new to critical care) felt unsupported by their senior colleagues, and they also complained about their attitude towards them. It was claimed that most of the new starters leave critical care because of the attitude and lack of support from their senior colleagues. In summary, it was clear that the junior and senior members of the critical care workforce have contrasting views about various issues, which has impacted team dynamics and particularly junior nurses' ITL. This theme highlighted some of the unpleasant aspects of the nursing work environment such as unprofessional and judgemental comments regarding their colleagues, devaluing the knowledge and hard work of other nurses and at times bullying behaviour of senior staff and managers towards their junior colleagues. Some of the toxic aspects highlighted in this theme will negatively affect the work environment and thus increase ITL.

6.2.8 Experiencing Stress and Anxiety Because of Workforce Shortages: Manging Workforce Shortages

Workforce shortage was one of the main factors associated with nurses' ITL in both phase one and two. Participants in phase two identified various aspects of workforce shortages as a source of stress and explained how they influence their nurses' ITL.

This theme was specifically related to the issue of sending critical care nurses to other non-critical care areas for help on a regular basis. As previously noted, this was due to the misperception of management and colleagues from non-critical care areas regarding the workload of critical care nursing.

Sending critical care nurses to other areas for help is a source of stress for critical care staff and is associated with ITL. It was suggested that sending critical care nurses to other areas could compromise the safety of patients in their areas and is not good for patients' experience. One of the reasons critical care nurses don't like being sent to other areas is because of their anxiety relating to unfamiliar equipment and protocols that they are expected to use without any prior training. To counteract this issue, some participants commented on the steps they have taken and found effective to ease the stress of critical care nurses when they are sent to the wards. From the management point of view, the critical care nursing management understood that at times they may be asked to help other areas, however, the critical care nurses have to be sent back on short notice as the situation in critical care could change instantly such as getting emergency admissions from accident and emergency department following a road traffic accident. Furthermore, some of these patients could be very sick and sometimes one patient requires 2-3 nurses. This unique aspect of critical care is, however, not acknowledged and appreciated, and the nurses are not sent back to critical care which causes frustration and anger among the critical care nurses. The majority of participants also commented on the impact of the shortages of nurses and the high turnover in the critical care areas. It was pointed out that nurses have to take extra shifts because of the shortage of nurses. This has resulted in increased sickness and burnout. In summary, the issue of sending critical care nurses to other areas for help is not as simple as it looks from outset. This issue has many aspects such as patient

safety and is the source of stress and anxiety for critical care nurses and associated with their ITL. It is, therefore, important to develop strategies to carry on with this practice in a way that is safe both for staff and patients.

6.2.9 Gaps in the PIP Joint Display

One theme was identified in the qualitative phase, with no match in the quantitative phase. This theme was about redirecting resources appropriately to invest in the workforce, such as improving procurement services and reducing waste. It was suggested that improving mental health and elderly services in the community should reduce the pressure on accident and emergency departments and critical care areas, thus reducing workload. Waste was considered a major issue in health care, and it was suggested that resources saved by reducing waste could be used on workforce development, and thus improve nurses' retention. This theme was about redirecting resources appropriately and thinking outside the box to try to save money, which could then be used on workforce development. A possible explanation for not having a match of this theme could be that this was only explored in the interviews in phase two as participants had the chance to discuss issues broadly relating to their ITL which may not have been possible in phase one due to the quantitative nature of the study. Considering this theme has no match in phase one, is related to the workload and waste management in critical care areas and may or may not influence critical care nurses' ITL, it could be argued that this theme has less credibility as a finding.

Similarly, the percentage of nurses who expressed ITL in the quantitative data did not have a match in the qualitative phase in terms of numbers. This was expected, as the number of nurses expressing ITL was not explored quantitively in phase two. The qualitative phase was about exploring in detail how the factors identified in phase one

influenced nurses' ITL. Overall, integration resulted in eight out of nine factors being matched, which adds credibility to the findings. It is also worth highlighting that most of the themes correlated well in both phases where the main factors were identified in phase one and detailed explanation of these themes/factors were provided in phase two with minimal blurring. For example, the lack of appreciation in phase one was linked to financial incentives and career progression according to the skills and knowledge of critical care nurses which matched with the theme "lack of appreciation and acknowledgement for their specialist skills and knowledge" in phase two. This theme identified similar issues such as financial incentives, accelerated career pathways due to the completion of extra courses. Similarly, off duty issues and lack of work-life balance in phase one was matched with providing "flexibility and maintaining work-life balance when managing the roster". The specifics identified in phase two relating to this theme included flexible off duty, balanced shift pattern (equal distribution of the contracted hours) and short turnaround from nights to days.

6.3 Chapter Summary

This chapter has presented the findings from the integration phase of this mixed-method study. Integration was achieved through joint display using a Pillar Integration Process. This was followed by a narrative weaving approach to report the findings of the quantitative and qualitative phases following integration. Integration resulted in eight out of nine factors being matched, which adds credibility to the findings. The mixed-method integration enabled a complete exploration and in-depth understanding of the issue of nurses' ITL within the adult critical care settings. This detailed insight will help in developing strategies to improve the work environment in adult critical care areas that may reduce nursing turnover and hence nursing shortages within this

specialised area. The following chapter evaluates the overall results of the study with reference to the current evidence base. Findings that are supported by other research or refute other literature have been identified. Novel findings are highlighted, and their significance discussed.

CHAPTER SEVEN: DISCUSSION

7.0 Introduction

In this chapter, the findings presented in Chapters 6 (integration phase 1 & 2) are discussed with reference to the scholarly work that was reviewed in Chapter 2 (literature review), and the existing wider literature and theory on factors influencing nurses' ITL adult critical care areas. Where findings of this study stand in support of, or contradiction to the prevailing viewpoint is addressed in some detail. Novel findings are highlighted, and their wider significance discussed.

Overall, the findings of this mixed method study are astonishing and unacceptable, highlighting some of the unpleasant aspects of the critical care nursing work environment and associated workforce misbehaviours. Some of these negative aspects of the critical care nursing culture included judgemental attitudes towards other colleagues; remarks that were anti-intellectual, racist, or ageist remarks towards others; and non-supportive, or even bullying behaviour directed at the junior workforce. Additionally, this study identified several key operational and management issues associated with critical care nurses' ITL such as providing educational and professional development opportunities, supportive work environment, promoting nurse autonomy, maintaining work-life balance while managing the roster and workforce shortages. Another interesting finding was the dissatisfaction of critical care nurses due to the lack of appreciation and acknowledgement for their specialist knowledge and skills by colleagues from non-critical care areas and management. The feeling among the critical care workforce was that they should receive preferential treatment in relation to those employed within other non-critical care areas, such as financial incentives and accelerated

career pathways on account of their specialist knowledge and skills which necessitate the completion of additional courses. A further important contribution of this study was the reinforcement and validation of the theories of ITL that were developed previously but which have not been acted upon since (Ngo-Henha, 2017). This study developed our understanding of these theories within the context of critical care which is new knowledge and therefore a novel contribution. Another important point to mention is, that this study set out to explore factors associated with critical care nurses' ITL and found that the issue of critical care nurses' ITL is not a straightforward one as initially anticipated. This study has highlighted the complexities of this issue and has raised further questions which weren't clear before this study and would need further research such as lack of effective leadership resulting in the issues highlighted by this study.

This study aimed to answer the primary research question and identify those factors that may adversely influence nurses' ITL rates so that strategies could be developed to mitigate such high ITL rates and thus improve the retention of nurses within adult critical care settings. A systematic literature review (Khan *et al.*, 2019) which was undertaken as part of this study identified the need for further research to gain an in-depth understanding of those factors influencing nurses' ITL within adult critical care areas. Previously published studies conducted in relation to nurses' ITL adult critical care settings have so far explored only a solitary factor such as nurses' empowerment relating to nurses' ITL rather than investigating this issue holistically to obtain an in-depth understanding of those other issues influencing critical care nurses' ITL. Furthermore, no current studies are identifying the number of nurses intending to leave adult critical care areas. The lack of availability of such data makes it challenging to obtain an understanding of the extent of the problem. Also, previous research about

nurse retention in critical care areas was restricted to cross-sectional studies (only two qualitative studies included in the literature review), which lack in-depth understanding. So far, no mixed-method study has been conducted to explore nurses' ITL adult critical care areas. This study aimed to fill the gaps identified in the literature review (Khan *et al.*, 2019) and thus make a useful contribution. The following sections explain the theories of intention to leave followed by the themes identified by this study that influence critical care nurses' intentions to leave in relation to the wider literature. A detailed discussion to explain how these themes inform literature and practice including possible strategies to improve high turnover and nursing shortages within the adult critical care settings will be presented in the final section of this chapter.

A review of the theoretical literature was undertaken separately from the empirical literature review to identify theories explaining ITL. Multiple theories of ITL were identified within the literature; with the theory that is most germane to the findings of this study is Herzberg's two-factor motivation-hygiene theory. The two-factor motivation-hygiene theory, which was in turn influenced by Maslow's hierarchy of needs (Jones, 2011), was originally developed by Herzberg and Mausner (1959). Herzberg created a two-dimensional paradigm of factors influencing people's attitudes towards work. According to Herzberg and Mausner (1959), two sets of factors arising within an organisation that affect job satisfaction and thus the intention to leave or stay. The first set contributes to job satisfaction and is known as "motivators", while the second set is called "hygiene factors". Motivators include achievement, recognition, the work itself, responsibility and opportunities for growth and development (Herzberg, 1968). Hygiene factors include policies and the administration of an organisation, relationships with supervisors, interpersonal relations, working conditions, supervision and wages, status and security (Herzberg, 1968). Simplistically, certain factors in the

workplace contribute to job satisfaction, while a separate set of factors may lead to dissatisfaction, and both are deemed to act independently of each other.

The two-factor theory has been widely used by researchers including Kacel, Miller and Norris (2005); Hegney, Plank and Parker (2006); Jones (2011); and McGlynn *et al*. (2012) to evaluate job satisfaction within the nursing career. According to this theory, an employee begins to think about leaving her or his job when he or she starts to believe that it is not stimulating in terms of growth and development, disinteresting, or if he or she does not receive fair recognition (Maidani, 1991). Therefore, to prevent employee turnover intentions, retention strategies should be focused on optimising those motivational factors which improve job satisfaction, thereby discouraging intention to leave. By adopting this theory, organisations could suitably motivate their employees by taking steps to improve their working conditions. Furthermore, the two-factor theory considers career advancement, recognition, and relationships as motivating factors. Additionally, the employee deemed to be the crux of all issues wherein organisations seek to focus on making the working environment 'employee friendly' by attempting to mitigate those factors that dissatisfy their employees. The findings of this study will be discussed in the following sections in detail in relation to the current evidence, the two-factor hygiene and other relevant theories.

7.1 Discussion of Main Findings

This chapter incorporates eight themes and discussion points which are associated with nurses' ITL adult critical care areas. These include (7.1.1) feelings of demoralisation due to a lack of appreciation and acknowledgement for their specialist skills and knowledge: the need to improve morale (7.1.2) promoting nurse autonomy and a culture of shared governance: the need to enhance autonomy and shared

governance (7.1.3); providing a supportive work environment and a system of well-being: the need to provide a supportive work environment (7.1.4) enhancing workforce relationships and multidisciplinary collaboration (7.1.5) demanding a structured education and development programme and provision of career progression opportunities: the need to provide structured education and development (7.1.6) providing flexibility and maintaining work-life balance when managing the roster: the need to consider work-life balance (7.1.7) acknowledging nurses' level of experiences when managing teams and (7.1.8) experiencing stress and anxiety because of workforce shortages: managing workforce shortages. The following section discusses each theme or finding in detail in the context of extant evidence and prevailing theory.

7.1.1 Feeling of Demoralisation due to a Lack of Appreciation and Acknowledgement for their Specialist Knowledge and Skills: The Need to Improve Morale

There was a general perception among nurses that the specialist knowledge and skills of critical care nurses are neither appreciated, nor acknowledged by colleagues from non-critical care areas, hospital management, or even within the public. The issue of lack of acknowledgement and appreciation was further compounded by misperceptions regarding the workload of critical care nursing which deem it to be an easy job because of the elevated nurse to patient ratio. This theme is associated with the motivating factors of Herzberg's theory (Herzberg and Mausner, 1959). One of the main motivating factors is appreciating and acknowledging employee's contributions to their organisation. According to the two-factor motivation-hygiene theory, employees whose contributions through hard work, skills and knowledge are not recognised will eventually express dissatisfaction and hence an intention to leave. Recognising employee's contributions, on the other hand, is a source of satisfaction and hence an implicit intention to stay. Herzberg suggests that organisations should

therefore address the motivating factors through meaningful recognition to create satisfaction and thus reduce nurses' intention to leave. The term ‘recognition’ has been described in many ways within the literature, including an act of intellectual apprehension (e.g., recognising one’s own mistakes); recognising the influence of religion and the act of acknowledging or respecting someone else such as recognising their status, achievements or hard work (Inwood, 1992, p-245-47; Margalit, 2001, p-128-129). The philosophical foundation of recognition is based on the work of German philosopher Hegel (1770-1831), cited in Ikaheimo (2014). According to Hegel, "recognition is the mechanism by which our existence as social beings is generated" (Ikaheimo, 2014, p.11-38). Hegel introduced the idea of a 'struggle for recognition', describing it as an encounter between two self-consciousnesses which both seek to affirm the certainty of their being for themselves by recognising each other's status and achievements (Ikaheimo, 2014, p-11-38). Hegel's philosophy thus highlights the importance of recognising the role of achievements and hard work in terms of employee-employer relationships. Meaningful Recognition (MR) is thus one of the six essential standards of a healthy work environment and is central to nurses' satisfaction and retention (Cherian, 2016).

A survey undertaken by the Chicago Tribune of over 30,000 employees found that the number one reason reported by employees who enjoy their work was appreciation and acknowledgement by their colleagues and employers (Huppke, 2013). Furthermore, experts believe a superficial approach to such appreciation does not work and an authentic appreciation in the form of meaningful recognition for the value each team member brings to the workplace is essential (White, 2014). Cherian (2016), while exploring nurses and their managers' perception of MR, recommended that nursing leadership needs to focus on developing strategies to provide MR consistently and

include it as an essential competency for nurse leaders. Chapman and White (2019) identified four conditions in the workforce which facilitate the development of a culture of appreciation and meaningful recognition. These conditions include communicating appreciation regularly; appreciation through both language and action; making appreciation personal and individualised and, finally, making appreciation appear authentic. Making recognition meaningful by making it individualised by applying these strategies within the critical care context may help in alleviating the feelings of a lack of appreciation and acknowledgement among critical care nurses, and may, in turn, boost their morale and thereby reduce their intention to leave. It is worth highlighting though that current research into the feelings of demoralisation arising due to an overarching lack of appreciation and acknowledgement for specialist knowledge and skills of critical care nurses is largely non-existent. The findings of this mixed-method study are, therefore, significant and make a unique contribution to the current literature in relation to the issue of appreciating, recognising and valuing nurses within the critical care context.

This study highlighted that lack of appreciation and acknowledgement for the specialist skills and knowledge of critical care nurses could be the result of the lack of awareness relative to the role of others. Research suggests that lack of awareness and thus lack of appreciation for the role of others could be linked to interprofessional relations, collaborative practices, and a failure to understand the roles of other colleagues (Suter *et al*., 2009). Suter *et al.* (2009) suggested role understanding and effective communication are the two core competencies that serve to enhance collaborative practice. Appreciating and respecting each other's roles contributes towards a healthy work environment and protects nurses against burnout and ITL. A study by Lehmann-Willenbrock, Lei and Kauffeld (2012), while exploring age diversity and nurses' well-

being in relation to workplace complexities, identified that appreciating each other's roles and co-workers' trust helps to cultivate an environment amenable to the sharing of positive feelings, thereby improving nurses' occupational well-being.

It could be argued that the lack of appreciation of the critical care nurses' specialist skills and knowledge due to the lack of understanding of their roles by others applies to the whole workforce spectrum in health care and is not specific to critical care. Participants in this study have acknowledged this and hence demanded parity across the whole of the profession including critical care nursing. Additionally, how staff in non-critical care areas think of critical care nursing is only based on the perception of participants. It was not the aim of this study to explore how other staffs think of critical care nursing and hence future research would be beneficial to explore this issue further. It is worth noting that the COVID-19 pandemic has highlighted critical care nursing as a safety-critical profession, but it is seldom recognised as such, this has left the precious and highly skilled workforce of critical care nursing feeling devalued and unhappy. Furthermore, COVID-19 may have raised the awareness and profile of critical care nursing. It will thus be interesting to explore the views, experiences and feelings of the critical care nursing workforce concerning the lack of appreciation and acknowledgement for their specialist skills and knowledge in the post-pandemic era.

7.1.2 Promoting Nurse Autonomy and a Culture of Shared Governance: The Need to Enhance Autonomy and Shared Governance

The term autonomy is derived from the Greek words '*autos*' and '*nomos*' meaning 'self' and 'rule' and is a complex and multidimensional phenomenon (Curtin, 1982; Dempster, 1994). Philosophically speaking, our understanding of autonomy is based on the works of German Philosopher Immanuel Kant (Hoffe, 1994) and English

Philosopher John Stuart Mill (Mill, 1961). According to Kant, a person is said to be autonomous if his or her choices and actions are unaffected by factors that are deemed to be external, or inessential, to the individual, while Mill believes that a person is only autonomous to the extent that he or she can direct his or her actions in accordance with his or her values and volitions. Due to the multidimensional nature of the term autonomy, various definitions and forms of autonomy have been proposed within the literature. For example, autonomy refers to "the right of self-government, personal freedom, freedom of will and a self-governing community" (Fowler & Fowler 1995, p. 85). Other types of autonomy include structural or work autonomy (i.e. worker's freedoms regarding decision making based on the requirements of the job; Batey & Lewis 1982; McKay, 1983); attitudinal autonomy (i.e. the belief that being free to exercise one's judgement in terms of decision making reflects the way individuals feel and view the work of their profession; Hall, 1968); and aggregate professional autonomy (i.e. the socially and legally granted freedom of self-governance and control within the profession's activities without undue influence from external forces; McKay 1983).

From a theoretical perspective, promoting nurse autonomy and a culture of shared governance are linked to both the motivation and hygiene factors of Herzberg's theory (Herzberg and Mausner,1959). Based on the various dimensions of nurses' autonomy, it could be argued that this is linked with responsibility in terms of motivational factors. This implies that instilling a sense of satisfaction as a form of responsibility is concomitant with empowerment and autonomy. On the hygiene side, nurse autonomy is linked to company policies, status and working conditions. According to Herzberg's theory of motivation (Herzberg and Mausner, 1959), giving nurses empowerment and hence responsibility is associated with greater job satisfaction, while providing

conditions wherein nurses are empowered and autonomous, hence raising their status, will reduce their dissatisfaction, both of which will, in turn, reduce their intention to leave.

In relation to nursing, professional autonomy means having "the authority to make decisions and the freedom to act in accordance with one's professional knowledge" (Skar, 2010, p. 2226). Autonomy within the context of nursing involves clinical, operational, and professional dimensions (Kramer, Maguire and Schmalenberg, 2006). Clinical aspects of autonomy are associated with nurses' involvement in the decision-making process relating to patient care (Georgiou, Papathanassoglou and Pavlakis, 2017), while operational and professional aspects of autonomy are related to day-to-day nursing practices (Kutney-Lee *et al*., 2016). Operational and professional aspects of autonomy are associated with the term shared governance which will be explained later in this section. In the context of critical care, a key example of complex autonomous decision-making, as documented within the research literature, is involvement in end-of-life care and treatment withdrawal (Georgiou, Papathanassoglou and Pavlakis, 2017). According to Georgiou, Papathanassoglou and Pavlakis (2017), nurses' autonomy regarding end-of-life care and treatment withdrawal doesn't mean that nurses make the final decisions and thus somehow perform the role of medical professionals. This means that critical care nurses feel empowered and autonomous to express their opinions regarding matters relating to end-of-life care and continuity of treatment within the limits of their professional boundaries. In other words, nurses' knowledge which enable nurses to act autonomously needs to be considered in the shared decision making. Critical care nurses report a lack of involvement when decisions are made about stopping or continuing treatment, despite their important role in caring for patients and their

families (Georgiou, Papathanassoglou and Pavlakis, 2017). This is a common source of moral distress because of its distressing nature, further compounded by the lack of autonomy among nurses and is associated with nurses' ITL (Karanikola *et al*., 2014).

Evidence suggests that a lack of nurse autonomy in relation to patient care arises from weak communication and poor nurse-physician collaboration (Wheelan, Burchill and Tilin, 2003). This factor is ultimately linked to patient outcomes, including mortality rates, ICU readmissions, and rates of complication (e.g. ventilator-associated pneumonia and pressure ulcers; Wheelan, Burchill and Tilin, 2003). Rao, Kumar and McHugh (2017), examined the relationship between nurse autonomy and both 30-day mortality and a failure to rescue by analysing cross-sectional data from three different sources within a hospital's surgical population in a non-critical care setting. Greater nurse autonomy was found to be significantly associated with lower odds of 30-day mortality and a failure to rescue. Each point on the nurse autonomy scale was associated with approximately 19% lower odds of 30-day mortality ($p<.001$) and 17% lower odds of a failure to rescue ($p<.01$; Rao, Kumar and McHugh, 2017). The findings of this study must be interpreted with caution in the context of this study, as the study was carried out in a non-critical care setting and as previously discussed, significant differences are arising between critical care and non-critical care settings, such as a divergence in the skills of the medical and nursing workforce. Greater nurse autonomy is associated with critical care nurses' job satisfaction (Dilig-Ruiz *et al.*, 2018); nurse-physician collaboration (Georgiou, Papathanassoglou and Pavlakis, 2017); and lower turnover intentions (Hauck, Quinn Griffin and Fitzpatrick, 2011). Lower nurse autonomy, on the other hand, was associated with increased intensity of moral distress and lower levels of nurse-physician collaboration (Papathanassoglou *et al.*, 2012) both of which are linked to nurses' ITL.

As noted earlier, operational and professional aspects of autonomy are associated with the term ‘shared governance’, which is based on Kanter’s theory of structural empowerment. Kanter proposed that the level of employee engagement is linked to the level of their role in decision-making, especially on issues surrounding daily practices (Kanter, 1993). Shared governance has emerged as a key component of efforts to improve the nurse practice environment (Kutney-Lee *et al*., 2016) and as a critical element of the American Nurse Credentialing Centre (ANCC) Magnet Recognition Programme under the principle of structural empowerment (American Nurses Credentialing Centre, 2016). It is thus essential for those hospitals applying for Magnet Status to provide examples and supporting evidence of nurses’ levels of participation in governance and decision-making (American Nurses Credentialing Centre, 2016). Achieving operational and professional aspects of autonomy is as important as clinical aspects of autonomy and is essential for improving nurse autonomy as a whole within the critical care settings.

The extant literature has established autonomy is important to nurses and is associated with both patient and nurse outcomes (Karanikola *et al*., 2014). There is, however, only limited research with regards to the meaning of autonomy from the perspective of nurses within the critical care context. This mixed-method study, while contributing to the current evidence, further explains the meaning of autonomy from the perspective of critical care nurses and explored why autonomy influences critical care nurses' decisions to stay or leave. This mixed-method study has identified some key aspects of autonomy that were important to nurses. These included involving nurses with current clinical experience in decision-making about those issues that directly affect them. This means that decisions are not made by those who do not have current first-hand clinical experience and thus may not be fully aware of those

problems faced by nurses in their working environment. Similarly, nurses felt that they were not involved in discussions during ward rounds by their medical colleagues, especially when junior nurses were at the bedside. To improve the operational and professional aspects of autonomy within the critical care environment, nurse leaders must involve nurses with current clinical practice and experience in the decision-making process regarding those issues which directly affect them, such as managing the roster or career progression opportunities. Nurses need to have representations across all forums from the local to the executive level to ensure that the views of nurses with current clinical experience are heard and acted upon.

In summary, this study, while exploring autonomy in the critical care context, concluded that autonomy is important to critical care nurses and is associated with nurses' ITL not only their current job but also the nursing profession as a whole. The key message from this study is that nurses with current clinical exposure and experience would like to get involved in the decision-making process at all levels rather than those who have been pulled away from the clinical environment. This is to make sure that their voices are heard in matters that directly affect them by improving nurse autonomy and shared governance.

7.1.3 Providing a Supportive Work Environment and a System of Wellbeing: The Need to Provide a Supportive Work Environment

The work environment is multidimensional and as such has physical, organisational, and social aspects (Khan *et al.*, 2019). Most of the researchers who explored the nursing work environment (e.g. Nantsupawat *et al*., 2017) have highlighted that the work environment as a whole impact both nurses’ and patients’ outcomes. Others have explored specific aspects of the work environment, such as increased workload

and the lack of resources. For instance, Fagerström, Kinnunen and Saarela (2018), while investigating the effects of daily workload on patient safety incidents and mortality, reported that a workload above an assumed optimal level increases the risk of adverse events and patient mortality. Other studies investigating the work environment and its impacts have reported similar findings, such as those reported by Liu *et al*. (2018) and McLinton *et al*., (2018). Similarly, the work environment has also been associated with adverse nurse outcomes such as job dissatisfaction, burnout, and ITL (Nantsupawat *et al*., 2017; Wan *et al*., 2018). The physical dimensions of the work environment are equally important to nurses. Improving such physical aspects of the working environment such as providing sufficient rest breaks and promoting adequate lighting and ventilation within the design of buildings is intrinsically linked to increased job satisfaction and a healthier working environment (Brunges and Foley-Brinza, 2014). Extant evidence would suggest a general decline in the quality of the working environment. For example, surveys conducted by the American Association of Critical Care Nurses (AACCN) in 2006, 2008, and 2013 found a decrease in the quality of the working environment (Ulrich *et al.*, 2014).

Inevitably, the working environment is important to nurses. However, identifying what constitutes the work environment is challenging due to its multidimensional and subjective nature. This lack of clarity is not helping nurse leaders and policymakers, as they may find it challenging to develop improvement strategies without a specific or defined focus. With this in mind, this mixed-method study identified two aspects of the working environment that were important to nurses, and that were associated with nurses' ITL. Firstly, nurses highlighted the importance of having a support structure for novice critical care nurses. Second, the majority of nurses felt that there was a need for developing a system of well-being with a specific focus on structured

psychological support following traumatic or stressful incidents. The following section explores these factors further in light of the current evidence.

Newly qualified nurses comprise a large proportion of those leaving their organisations and profession. Zhang *et al.* (2017) reported a high proportion of newly graduated nurses leaving their profession who were only in the first year of their practice due to occupational stress and a lack of perceived professional identity. Others have reported a positive association between satisfied clinical supervision, effective unit orientation, and newly qualified nurses' intention to stay (Hussein *et al.*, 2019). This mixed-method study, while supporting these findings, further highlighted that the attitudes of senior colleagues' matter to novice critical care nurses, as some identified bullying and disrespectful behaviour by their supervisors as the reason for their ITL. It is important to mention that novice critical care nurses include both newly qualified nurses as well as those who are not newly qualified and are working in other non-critical care areas but are new to critical care nursing. Bullying in the workplace is characterised as "on-going health or career endangering mistreatment of an employee by one or more of their colleagues or supervisors and reflects the misuse of actual and/or perceived power or position that undermines a person's ability to succeed or do good, or leaves them feeling hurt, frightened, angry or powerless" (Adams and Maykut, 2015, p. 769; American Nurses Association, 2015). Workplace bullying has been widely studied in various research settings (Einarsen *et al*., 2018; Bergbom *et al*., 2015; Devonish, 2013) as it negatively affects some 10 to 20% of employees a year (Einarsen *et al*., 2018). Workplace bullying has significant behavioural and psychological impacts, and it is believed to be linked to the *Conservation of Resource Theory* (CORT; Hobfoll, 1989). According to CORT, acquiring and preserving resources drives human behaviour, and the theory suggests that if there is a real or perceived loss of resources,

this will result in adaptive behaviours that seek to conserve resources (Hobfoll, 1989, p-513). CORT suggests that workforce bullying results in a serious loss of personnel resources due to the repetitive loss of self-respect, dignity, and/or status (Srivastava and Agarwal, 2020) which eventually manifests itself in the human behaviour of conserving resources via intention to leave an organisation (Jeon *et al*., 2018). The theme of providing support is also associated with multiple factors highlighted by the motivation-hygiene theory, notably supervisory support, relationships with supervisors, and growth and advancement. According to the two-factor motivation-hygiene theory, to prevent employee's turnover intentions, retention strategies should focus on optimising such motivation factors as supervisory and buddy support; providing opportunities for growth and development; and discouraging bullying in the workplace, thereby reducing ITL of novice critical care nurses.

A plethora of physical and psychological consequences of bullying have been reported within the literature, including loss of confidence (Nazarko, 2001), depression (Embree & White, 2010; Rowell, 2005), anxiety (Rowell, 2005), burnout (Thomas, 2003), post-traumatic stress disorder (PTSD; Rowell, 2005), and producing a sense of powerlessness (Embree & White, 2010). Workforce bullying is evident within the field of nursing (Lambert, Brown and Nava, (2020), especially afflicting those nurses who are at the beginning of their careers. A study in the US by Berry *et al.* (2012) found that 44.7% of nurses reported bullying within their first six months. Another study by the Ministry of Health and Welfare of Korea (2018) reported that the average turnover rate of nurses in the first year reached 33.9%, with 40.9% of such instances linked to bullying in the workplace. Lambert, Brown and Nava (2020), in their findings of a cross-sectional survey of 184 nurses, suggest that nurse managers and leaders could play a crucial role in mitigating the negative effects of bullying, thus increasing their

intention to stay. Furthermore, supportive managers and supervisors have a positive influence on both attitudinal and behavioural outcomes of their staff (Shehawy, Elbaz and Agag, 2018). Therefore, nurse leaders in the critical care environment need to develop strategies to tackle bullying in their workplace if they are to reduce ITL rates. This mixed-method study also reported bullying behaviour from members of the multidisciplinary team, especially in relation to doctors towards nurses, which is linked to the theme of nurse-physician collaboration and autonomy discussed earlier in this chapter. The relationship of managers and their supervisors with their employees have been further explored in a separate theme as detailed in section 7.1.4. It is worth noting that although the word bullying is used by one or two participants in this study, the majority of participants however reported other unpleasant behaviours such as devaluing other colleagues, judgemental behaviour, anti-intellectualism, ageist and racist remarks which could be considered as bullying behaviour suggesting the presence of an unpleasant culture within the critical care environment.

It is also worth noting that the transition of novice nurses into the critical care environment takes considerably longer compared to other non-critical care areas due to the specialist nature of the critical care environment. Qualitative insights from a longitudinal study by Vanderspank-Wright *et al*. (2019) argued that the transition of critical care nurses into the critical care environment takes time and includes both social and emotional aspects alongside developing their knowledge and skills. Building confidence in the critical care environment is a time-consuming process due to the advanced knowledge and skills required to care for critically ill patients in a highly technical environment (Khan *et al*., 2019). Based on these findings, novice critical care nurses, therefore, require a structured support system to ensure a smooth transition to the critical care environment.

This study reported a widespread lack of structured support for novice critical care nurses and suggested allocating a buddy for each novice critical care nurse who would provide guidance and support, especially during the first two years until they have settled into their new environment. It was further suggested that a buddy should be a neutral person who is not directly involved with their line management or supervisor, so that the relationship between novice critical care nurses and their buddies remained informal as, otherwise, the novice critical care nurses will not feel comfortable discussing their problems with the buddies. Current research regarding the concept of a 'buddying' system in the critical care context is non-existent. This may be because buddying is sometimes represented by the term clinical supervision within nursing practice. According to Falender & Shafranske (2008), clinical supervision is a distinct professional activity in which education and training aimed at developing science and informed practice is facilitated through a collaborative interpersonal process. It involves observation, feedback, and facilitation of supervisee self-assessment and the acquisition of knowledge and skills via instruction and mutual problem-solving. Evidence suggests that clinical supervision improves job satisfaction (Bambling *et al*., 2006) and is negatively associated with nurses' turnover intentions (Knudsen, Ducharme, & Roman, 2008). The concept of clinical supervision, however, seems to be based on a formal relationship which contradicts the findings of this mixed-method study, as the key aspect of the buddy system was based on the concept that the buddy would be neutral and hence engage in an informal relationship with their supervisee. Another issue that has been observed in clinical supervision within the practice area of the researcher is that the supervisee and supervisor often belong to two different specialities. The supervisors are from non-critical care areas and have no critical care background and thus struggle to guide and support their supervisees as they don't

have the expertise in some aspects of critical care (*e.g.,* ventilation or the use of inotropes). This is why both the supervisors and supervisees must be from the same areas, especially in specialist clinical settings.

Buddying is sometimes considered similar to the mentor/mentee relationship. Looking at the literature, however, buddying and mentorship are two different concepts. Mentorship is defined as a developmental, empowering, and nurturing relationship that extends over a period in which mutual sharing, learning, and growth occur in an atmosphere of respect, collegiality, and affirmation (Vance and Olson, 1998). Mentoring is a more formal and structured process than buddying, it aims to provide support and guidance, is open-ended, based on a longer-term and involves a supervisory senior as a mentor to a novice mentee (Nowell *et al*., 2017). Buddying on the other hand means assigning a member of staff to act as the first point of contact to a new starter while they are settling into their new role. It may be a colleague, a new starter seeking advice on issues of a clinical, ethical or professional basis or sometimes just seeking emotional support (The Faculty of Intensive Care Medicine, 2021). Having a buddy gives a new member of staff a friendly face they know they can seek support from in terms of explaining how things work and answering questions. This can help them to settle into their new role more quickly and reduce the chance of them feeling isolated or unsupported. Considering the limited literature on the buddy system, further research would be beneficial to explore the idea of a buddy system, especially for novice critical care nurses. Further, this mixed-method study suggests that buddy support should continue alongside a structured training and education programme that are specifically designed for novice critical care nurses. Training and education programmes for novice critical care nurses have been explored separately in this chapter as part of another theme. Developing a support system alongside

structured training and educational programmes can help novice critical care nurses to settle into their new environment smoothly, providing them with a strong foundation to build on to ensure that they will be ready to deal with the challenges of critical care environment. This will enable them to care for critically ill patients independently but safely, thereby improving the quality of patient care.

The second aspect of this theme pertained to a lack of focus on the well-being of nurses, especially following traumatic or stressful incidents. There exists a range of definitions of well-being, but it is broadly referred to as the 'combination of functioning effectively and feeling good' (Huppert, 2009). The theoretical underpinning of well-being has grown out of various perspectives such as Maslow's Hierarchy of Needs (Maslow, 1958); self-efficacy theory which refers to an individual's belief in their capacity to execute necessary behaviours to produce specific performance attainments (Bandura and Adams, 1977); and self-determination theory (Deci and Ryan, 2000). There is strong evidence that critical care nurses are exposed to work-related stresses more frequently when compared to their colleagues in non-critical care areas, including end-of-life issues, prolongation of life via artificial support measures, treatment withdrawal (Mealer *et al.*, 2007), and continual exposure to painful procedures (Li and Lambert, 2008). Evidence suggests that critical care nurses often experience psychological disorders such as PTSD (Mealer *et al.*, 2007), depression, anxiety, burnout syndrome (Mealer *et al.*, 2012), and compassion fatigue (Meadors and Lamson, 2008). Furthermore, critical care nurses are among the group of specialist nurses in the healthcare workforce who care for critically ill patients necessitating complex medical conditions and multiple organ failures which require both vigilant monitoring and acute intervention (Marshall *et al.*, 2017). This results in a constant exposure to unpredictable challenges plus the demands of caring for

patients who are biomedically unstable as well as their distressed family members. This places nurses at a high risk of fatigue. This situation is further compounded by higher physical dependency upon a practice environment brimming with technology (Moloney-Harmon, 2010) and an increased workload without appropriate resources. Consequently, critical care nurses frequently experience low job satisfaction and high turnover.

This mixed-method study, while highlighting the importance of well-being, raised two issues. First, there is a lack of focus on the overall well-being of nurses and, second, a lack of structured psychological support for nurses following traumatic and/or stressful incidents. Managers and supervisors could play a key role in taking steps towards improving the well-being of their staff. The findings of this study raised concerns about the attitudes of managers and supervisors towards the well-being of nurses who were told to 'get on with their jobs or consider leaving critical care' when they expressed concerns about their lack of support or raised issues of their well-being. It was suggested that those raising the issue of well-being are somehow perceived as weaker and thus not fit to work within the critical care environment. A possible explanation for this behaviour might be a lack of understanding of their role as managers. A study by Adams and colleagues (Adams, Chamberlain and Giles, 2019b) reported that nurse managers felt unsure about what their supportive role involved and lacked training on how to support nurses' well-being and seek organisational support to carry out their role effectively. Nurses used personal resources to maintain their workplace well-being such as mindfulness, yoga and peer support (Jarden *et al*., 2019). No support from managers was, however, provided. Second, nurses felt that informal short debriefing sessions following traumatic and stressful incidents such as end-of-life care and treatment withdrawal scenarios did not

add any value. It was reported that some of these stressful incidents have had long-lasting psychological effects on nurses, especially if they happen frequently. Some, therefore, suggested appointing a clinical psychologist to each unit to provide professional support following such stressful and traumatic incidents to replace the current short debriefing sessions that are currently facilitated by staff with no psychological background or the appropriate skills to be able to mediate these sessions effectively. Some researchers such as Siffleet *et al*. (2015) have reported a positive association between greater nurse autonomy and their emotional well-being. This means that autonomy and emotional well-being may be interlinked and impact one another. Other aspects of the work environment were also important to critical care nurses' well-being, some of which will be explored separately in this chapter such as rostering issues or a lack of work-life balance, education, career development or opportunities for career progression.

In summary, the findings of this mixed-method study, while highlighting the importance of structured support for novice critical care nurses, suggested introducing a buddy system to guide and support novice critical care nurses during their first two years. This will help them to settle into their new environment smoothly and become part of the critical care team, ready to deal with the challenges of the critical care environment. Furthermore, managers of critical care areas need to take steps to develop a system of well-being for all bands of nurses, which should include psychological support that is provided by qualified clinical psychologists following traumatic and stressful incidents. This will help nurses to develop resilience and other coping skills to enable them to deal with the day-to-day stresses of this specialised area which will, in turn, improve the quality of patient care and nurse retention.

7.1.4 Enhancing Workforce Relationships and Multidisciplinary Collaboration

Nurses constantly interact with each other and with other members of the multidisciplinary team within their workplace. The theoretical basis of workforce behaviours and relations is linked to the aspect of relationships with supervisors and peers in accordance with the hygiene factors of Herzberg's theory (Herzberg and Mausner,1959). According to Herzberg, employees having a good relationship with their managers and supervisors, as well as their peers and colleagues, reduce their dissatisfaction and thus their ITL. This theme is also associated with other ITL theories such as the Social Exchange Theory (SET) (Homans, 2017). SET has been described as the most influential conceptual paradigm describing workplace behaviour (Cropanzano and Mitchell, 2005) and has been adopted by many researchers as the theoretical basis for both employee-employee, and employee-employer relationships (Tanova and Holtom, 2008; Bambacas and Kulik, 2013). According to SET, developed by George Homans in 1958 (Homans, 2017), individuals enter into relationships that involve an exchange of economic and socio-emotional resources. This means that relationships comprise both 'give' (such as a time when providing guidance and support) and 'take' (such as financial benefits, workplace and social support) which are not always equal. According to SET, it is the perceived value of these benefits and costs that determine whether such relationships continue. Social behaviour results from this exchange process to maximise benefits in the form of good friendships, workforce relationships, and allowances, thereby minimising such risks as giving more time or spending more money. People weigh the potential benefits (in terms of money, friendship) and risks (as regards the loss of financial or personal support) of their social relationships and terminate relationships when the risks are deemed to outweigh the benefits (Ngo-Henha, 2017). According to Cropanzano and Mitchell (2005), the core

principle of SET is that the relationship between two social entities depends on the extent to which each of the two parties respects the social rules of exchange agreed between the two. Examples of attributes defining the quality of such relationships include trust, loyalty and commitment (Cropanzano and Mitchell, 2005). Based on the principles of SET, it could be argued that SET applies to those workplace relationships identified by the findings of this study, including relationships of critical care nurses with their colleagues, managers and other members of the multidisciplinary team. According to SET, respecting the agreed rules of exchange within the workplace and appreciating each other's roles could contribute towards a healthy and positive working environment and may, in turn, reduce nurses' ITL.

The quality of working relationships influences employee attitudes with implications for both employee outcomes and unit performance (Laschinger *et al.*, 2009). Poor relationships between nurses and doctors are associated with low job satisfaction and ITL critical care areas (Karanikola *et al*., 2014). One term used to describe the nurse's relationship with physicians is the 'nurse-physician collaboration' (Galletta *et al.*, 2013), which is associated with the previously discussed theme of "nurse autonomy". Critical care nurses reported that they had not been involved in the decision-making process by their medical colleagues during treatment withdrawal or in discussions during ward rounds. This suggests that the nurse-physician collaboration is an aspect of workplace relationships and that autonomy is interlinked and thus one may impact upon the other. The findings of this study reported that disagreements and conflicts arising with members of the multidisciplinary team, especially medical colleagues, is very stressful for nurses with associated negative effects on their health and their ITL. Conflicts are defined as "a situation arising where one party in a workplace relationship perceives that the behaviours and objectives of the other party are not compatible with

and therefore threaten their own" (Tabak and Orit, 2007). Working relationships between doctors and nurses, like many other workplace relations, have been adversely affected by interprofessional conflicts which arise due to multiple factors, including gender differences (nurses being a female dominant profession while medicine male dominant); differences in education and socio-economic status; a lack of understanding; and nurses taking on more and more responsibilities (Corley, 1998). Non-recognition, or the presence of disrespect, are the driving forces for interprofessional conflicts arising within healthcare settings (Habermas, 2003). Nurse-physician collaboration impacts patient's outcomes (Kramer & Schmalenberg, 2003; Latimer *et al*., 2009), nurses' job satisfaction and hence their ITL (O'Leary *et al*., 2011) and yet there is a lack of empirically derived theoretical support for the term nurse-physician collaboration. Considering the limited literature on the theoretical underpinning of nurse-physician collaboration and relationship, the SET could play an important role in understanding the issues of poor nurse-physician collaboration. SET allows both parties (doctors and nurses in this case) to work together through give and take within their professional boundaries but at the same time acknowledge, respect and appreciate the role of others and hence work collaboratively for a common goal of patient's care. Strategies to improve nurse-physician relationships could, therefore, be achieved through respecting each other's roles and improving communication and multidisciplinary education at all levels wherein nurses and doctors train and learn together as part of the same team. Non-recognition is also linked to the concept of meaningful recognition as discussed in section 7.1.1. Furthermore, disagreements and conflicts arising among members of the multidisciplinary team need to be dealt with appropriately and promptly by nurse managers, rather than using tactics of avoidance as evidenced by the literature (Hightower, 1986; Cavanagh, 1991).

Another major factor reported by critical care nurses was their relationships with their managers. The importance of the quality of working relationships between staff and their managers was acknowledged a while ago (Graen, Dansereau Jr and Minami, 1972) and is becoming known as ‘leader-member exchange’ (Rodwell, McWilliams and Gulyas, 2017). It is based on SET, wherein a series of interpersonal interactions cultivate a system of exchange and trust between the manager and their team (Cropanzano and Mitchell, 2005). Rodwell, McWilliams and Gulyas (2017), while exploring nurses’ relationships with their managers, reported that nurse managers who understand social exchange at work are more likely to become engaged, perform well, and have stable nursing teams. Nurse managers are not only providers of informational, social, and emotional support, they also help to reduce work stress (Himle, Jayaratne and Thyness, 1989), and are also considered organisational mediators in actions towards their followers (Rhoades and Eisenberger, 2002). This support is important in helping nurses in critical care settings when facing many challenges of their environment, such as extended work hours, rigid work schedules, and working as part of a multidisciplinary team.

The quality of leader-member exchange has also been found to be associated with nurses’ ITL through job embeddedness (Dechawatanapaisal, 2018b). Job Embeddedness Theory (JET), proposed by Mitchell *et al.,* (2001)*,* summarises the various forces that attach an employee to his or her organisation, thereby stopping him or her from leaving his or her job (Huysse-Gaytandjievaa et al., 2016). Leader-member exchange is associated with JET and improves our understanding of those factors that cause employees to become embedded within their organisation and hence reduces turnover intentions. Furthermore, the transformational leadership of nurse managers, which refers to the leader’s ability to influence others towards

attaining a common goal (Vesterinen *et al*., 2012), positively influences both structural empowerment and nurse engagement, which in turn reduces nurses ITL (García-Sierra and Fernández-Castro, 2018). This is another aspect of a relationship that is linked to the previously discussed theme of 'autonomy', showing an association arising between autonomy and leadership styles and relationships with managers.

The human skills of managers, such as acknowledging their team's concerns, providing clarity in instructions (Vermeir *et al.*, 2018), and participation in decision making, are more important to nurses than other leadership characteristics (Roche *et al*., 2015b). Other relationship traits of managers which are important to nurses include being approachable, becoming actively involved in the day-to-day running of the unit, valuing and respecting their staff, and acknowledging their skills and knowledge (Van Osch *et al.*, 2018). According to Van Osch *et al.* (2018), nurses perceive respect as a feeling of being listened to and appreciated for their abilities. The characteristics of the manager and how they interact with their team members play a key part in the development of positive working relationships. Conflicts and disagreements with managers were reported by this study to have been associated with nurses' ITL. It is, therefore, important that nurse managers take steps to understand the positive traits of managers and to develop skills that will ensure the well-being of their staff while dealing with conflicts and disagreements.

Nurses' relationships with their colleagues were also an important factor associated with nurses' ITL. Evidence suggests that nurses find feelings of fellowship (camaraderie) within the workplace empowering because they help them to deal with the day-to-day stresses of the critical care environment (Wåhlin, Ek and Idvall, 2010). In addition, a work environment in which everyone contributes and works together as a team increases inner strength and is found to be associated with nurses' ITL

(Wåhlin, Ek and Idvall, 2010). Souza *et al.* (2016), while exploring the concepts of teamwork in nursing through a qualitative study in an oncology hospital, reported that teamwork is characterised by communication, trust and professional bonds, mutual respect, recognition of the work of the other team members, and fostering a spirit of collaboration. Furthermore, conflict was considered an obstacle to teamwork. Based on the discussion in the current and the previous sections, the characteristics identified by Souza *et al*. (2016) are linked to both enhancing workforce relationships among nurses and interprofessional collaboration. This mixed-method study has added to the current literature by highlighting the issues and strategies linked to workplace relations within the critical care context. This study further highlighted the importance of strong social networking ties with colleagues outside of the workplace and of a supportive circle of friends and family to deal with the stresses of critical care areas.

Relationships with patients and their families were important to critical care nurses. Having a loved one admitted to critical care is distressing for families (Poncet *et al.*, 2007). Nurses find caring for critically ill patients rewarding and looking after their relatives nourishing, which gives them the strength to carry on working in the critical care setting (Wåhlin, Ek and Idvall, 2010). Conflicts and disagreements with patients and their relatives about aspects of care, however, are a source of stress for nurses and influence their ITL (Poncet *et al.*, 2007). Aligned with the current evidence, this mixed-method study reported that nurses' relationships with patients and their families served as a source of inner strength in critical care settings. However, they found disagreements and conflicts with patients and their families regarding treatment withdrawal to be both stressful and traumatic. Issues surrounding treatment withdrawal arise from medical colleagues not involving nurses in decision-making. This issue has been discussed previously within the theme of 'autonomy'. This means that most

aspects of relationships explored in this section are linked to nursing autonomy and, therefore, impact one another. Further, as previously noted, improving nurse autonomy will likely have a positive impact on interprofessional relations and multidisciplinary collaboration.

In summary, this mixed-method study, while adding to the current knowledge, has highlighted various aspects of workforce relationships that are important to nurses within the critical care environment and are thus associated with their ITL. These relationships include relationships of nurses with other colleagues, their managers, and members of the multidisciplinary team, especially doctors and patients and their families. Nurse leaders, therefore, need to take steps to ensure a work environment in which everyone's role is appreciated, acknowledged and respected, thereby fostering a culture in which everyone works as a team player towards the same goal and in which any disagreements or conflicts are dealt with swiftly and appropriately. This will help in creating a healthy work environment that benefits the workforce and thus the quality of patient care.

7.1.5 Demanding a Structured Education and Development Programme and Provision of Career Progression Opportunities: The Need to Provide Structured Education and Development

Evidence is suggestive of a gradual decline in the training and education of nurses in critical care areas. A survey by Ulrich *et al*. (2014) reported a decline in support for continuing education among both junior and senior critical care nurses. Most of the newly hired nurses reported having very little training, and only 28.5% of respondents had some critical care specific training (Balsanelli and Cunha, 2013). Tao *et al.* (2015), while exploring job satisfaction and ITL among ICU nurses via a qualitative study,

reported that training and education were contributing factors towards job satisfaction and ITL. Providing education and development opportunities is theoretically linked to the aforementioned motivation-hygiene theory developed by Herzberg and Mausner (1959). According to motivation-hygiene theory, providing training and education is linked to growth and the development of 'motivators' that increase employee job satisfaction and thus their intention to stay. The two-factor motivation-hygiene theory was influenced by Maslow's hierarchy of needs (Jones, 2011), which means that providing appropriate levels of training and education is essential for employees within an organisation to be able to function effectively. A quasi-experimental study by Khademian, Mohebi and Khademian (2020) explored the effects of training and education on the knowledge and attitudes of nurses in relation to teamwork. They concluded that education and appropriate training improved the knowledge and attitudes of nurses in a coronary care unit in relation to teamwork. Good teamwork enables nurses to predict the needs of others, be in harmony with each other, and have a shared under-standing of situations in order to achieve the same goal (Behnia, HosseinPour and Zara, 2016). The findings of Khademian, Mohebi and Khademian's (2020) study suggests that providing appropriate training and education could enhance workforce relationships through good teamwork.

The findings of this study, while supporting previous research regarding cuts to education funding and a lack of structured education and development programme, identified three main areas of focus regarding education and training within critical care settings thus making a useful contribution. First, as previously discussed, critical care nurses look after critically ill patients with life-threatening conditions which require highly specialised training and education. This, in turn, takes time to acquire (Dilig-Ruiz *et al.*, 2018). This means that novice critical care nurses need a structured

training, education and support programme over the first few years to enable them to work independently within critical care settings and thus ensure their competence and patient safety. Such training and education programmes need to run alongside a buddy system for novice critical care nurses (discussed in detail in section 7.1.3) to ensure that they are provided with a supportive work environment. Second, a continuous and ongoing education and development programme is needed for nurses of all levels of experience to ensure that critical care nurses maintain their specialist knowledge and skills. This will also enable them to train and develop novice critical care nurses appropriately and maintain their quality of care. Third, it was suggested that critical care nurse leaders should take steps to provide individualised development and career progression opportunities such as completing master's degrees or PhDs rather than focusing on mandatory and essential training only. Providing funding to support masters and PhDs will be challenging as the health care system is under-resourced. Not everyone, however, wants to do masters and PhDs and supporting a small number of staff for these high-level qualifications could pay back through role modelling and supporting other colleagues and could potentially reduce high turnover. To summarise, education and development are important to critical care nurses and are associated with their ITL. Nurse leaders, therefore, need to focus on the three areas identified in this section when developing training and education strategies for critical care areas.

7.1.6 Providing Flexibility and Maintaining Work-Life Balance when Managing the Roster: The Need to Consider Work-Life Balance

To determine staffing levels, managers, need to understand patient factors such as acuity and dependency and nursing factors such as skill mix (Driscoll *et al.*, 2018). As previously discussed, critical care areas are specialised areas designed to care for

critically ill patients requiring a large number of the specialised nursing workforce due to elevated nurse-to-patient ratio as compared to other areas. This makes maintaining work-life balance while managing the roster more challenging in critical care settings. Critical care nurses in this study appreciated these challenges. However, they felt that, while ensuring an appropriate skill mix and patient safety, the roster could still be balanced in a way that is flexible and aligned with work-life balance. Lack of work-life balance occurs when an individual's social and family life is challenged by demands of their role at the workplace, including working long shifts, and night and weekend work (Bagley, Abubaker and Sawyerr, 2018). This term has been referred to as work-family conflict in non-nursing literature by authors such as Mansour and Tremblay (2018), and Jabeen, Friesen and Ghoudi (2018). A work/family conflict is a form of inter-role conflict in which role pressures from work and family are mutually incompatible (Greenhaus and Beutell, 1985). Conceptually, the work-family conflict has two perspectives: work-to-family, where demands in the work sphere affect performances in the family sphere and family-to-work, where family difficulties affect performance in the work sphere (Frone, Russell and Cooper, 1992). According to Greenhaus and Beutell (1985), a conflict between work and non-work roles appears when the roles are unbalanced at work and home. Work-family conflict is linked to the previously discussed social exchange theory (SET) (Cropanzano and Mitchell, 2005). As noted before, people weigh the potential benefits (money, friendship) and risks (financial loss and loss of support) of social relationships and terminate relationships when the risks outweigh the benefits (Ngo-Henha, 2017). According to SET, work-family conflict occurs as a result of an imbalance between work and family life and as the risks to family life are increased, employees terminate their contract with the organisation. Providing flexibility and work life balance is also associated with the

hygiene factors of the Herzberg's theory (Herzberg and Mausner,1959). According to Herzberg's motivation-hygiene theory, organisational policies should take appropriate actions to reduce factors that dissatisfy their employees such as inflexibility and lack of work life balance when managing the roster to reduce their ITL.

Recently there has been an increased interest in work-family conflict as this negatively influences the well-being of both individuals and organisations (Greenhaus and Powell, 2006). Furthermore, women tend to report problems with work-life balance more often than men (Peeters *et al.*, 2005). Work-family conflict has been shown to be associated with increased burnout in female nurses within non-critical care areas, especially those who have preschool children with less than three years of experience (Maruyama, Suzuki and Takayama, 2016). Similar findings were reported by Chen *et al*. (2015), who found a positive association between turnover intention and work-family conflict in nurses within nursing homes. Mothers at work have been reported to experience greater work-family conflict given the gender differences arising in terms of time spent in caregiving and household labour (Bianchi *et al.*, 2000). Some studies have reported that fathers are more likely to report having too little time with their children “due to gender differences in the amount of time spent in paid work and away from children” (Milkie *et al*., 2004, p-757). However, consistent with the expectations of mothers, their well-being suffers more than that of fathers when they feel they do not have sufficient time for their children and partners (Bianchi et al. 2000).

Managing the roster is an important and challenging aspect of the critical care work environment with an inappropriate staffing level and skill mix is significantly associated with worse mortality and patient outcomes (Kane *et al*., 2007; Khan *et al*., 2019). An inflexible roster, on the other hand, is linked with sleep disorders (Chung *et al*., 2013), and is associated with burnout (Sundin, Hochwälder and Lisspers, 2011), both of

which are associated with an ITL. It is, therefore, important to strike a balance between maintaining a work-life balance while ensuring patient safety through an appropriate skill mix. Understanding work-life balance within the critical care context is crucial and this is achieved by exploring the concept of work-family conflict as an increased number of nurses with specialist skills are required to work within critical care settings. Evidence suggests that organisational practices which are supportive of a family-friendly work schedule are linked to the psychological well-being of female staff (Burke, Koyuncu and Fiksenbaum, 2006) and their autonomy (Budhwar, Wickramasinghe and Jayabandu, 2007). Another factor (work-life balance and flexible rostering) is also found to be linked to autonomy.

This mixed-method study, while supporting previous research, highlighted the important issue of work-life balance and how ITL is associated with work-family conflict within the context of critical care. The issue of work-family conflict has been widely explored in non-nursing research, especially in female-dominant professions (Mansour and Tremblay, 2018). However, research is limited in nursing, especially in critical care settings. Considering that 70% of the global health and social workforce are women, as compared to 41% in all other sectors (WHO, 2018), this is an area that warrants further explanation.

Other issues that were raised in this study in relation to rostering were regularly working unpaid extra hours beyond the contracted hours, paid overtime, and an unbalanced shift pattern which included not getting sufficient time to recover from night shifts. These aspects of work demands are considered a breach of the psychological contract (Sturges and Guest, 2004) and are positively correlated with work-family conflict (Batt and Valcour, 2003), and negatively impact upon nurses' health (Giorgi *et*

al., 2018) and are widely associated with job dissatisfaction (Dilig-Ruiz *et al.*, 2018). To fulfil their social obligations and reduce turnover intentions, organisations should encourage family-friendly practices, including flexible rostering, balanced shift patterns, employee assistance programmes, and family leave.

7.1.7 Acknowledging Nurses' Level of Experiences When Managing Teams

This theme centres on the extreme and contrasting views of nurses with various level of experiences representing different generational characteristics on topics such as how the roster should be managed, and what level of support should be provided to novice critical care nurses. Generational characteristics are associated with a difference in the level of experiences and play an important role in workplace behaviours. A generation is a group of individuals sharing birth years across a 20-year lifespan (Schullery, 2013). Due to these commonalities, they have a unique perspective in interpreting and experiencing the world (Ng, Lyons, & Schweitzer, 2012), including the workplace. These generational differences are based on the Strauss-Howe generational theory, also known as the fourth turning theory (Strauss and Howe, 1992). According to Straus and Howe (1992), historical events are associated with recurring generational personae which unleash a new era (called a turning) which typically lasts around 20–22 years, in which a new social, political, and economic climate exists. This theme is also associated with relationship and status factors associated with the hygiene dimension and recognition factors on the motivational side of Herzberg's theory (Herzberg and Mausner,1959). According to Herzberg's two-factor theory, good working relationships among colleagues reduce dissatisfaction while recognising each other’s role and status as a source of satisfaction. The current nursing workforce includes three generations, namely the Baby Boomers (1945-1964, BB), Generation X (1965-1980, G X), and Generation Y,

also known as Millennials (1981-2000, G Y; Stauss and Howe, 1992). A fourth generation, the so-called “Veterans” or “Silent Generation” (1925–1944) is largely retired and is thus described primarily in earlier studies (Stevanin *et al*., 2018). Similar life events and political environments shared within a generation influence behaviours (Hansen and Leuty, 2012) which, in turn, foster the development of traits, beliefs, and attitudes to work. Different generations may share common experiences but may differ across many perceptions such as in attitudes, contexts and values within the workplace (Hendricks and Cope, 2013). Previous research suggests that general values at the workplace change with age and experience (*e.g.* an increasing desire for work-life balance; Wey Smola and Sutton, 2002). It is evident that different generations of nurses with different beliefs, values, different level of experiences and attitudes will work together in the same workplace. Their differences can be a strength if nurses work together as a team, but they can also affect occupational well-being, performance and may cause conflicts (Grubb, 2016). Intergenerational differences and different level of experiences can also affect collaboration, respect and teamwork (Manojlovich *et al*., 2014) as well as patient safety (Roux & Halstead, 2009), thereby increasing turnover rates and costs (Hayes *et al*., 2012). Research about intergenerational differences by Deal (2007), Hart (2006) and Parry and Urwin (2011) have reported contradictory findings, including some stereotyping. For example, BB have more difficulty with technology than Gen X or Y and, similarly, Gen Y is difficult to engage with in the workplace (Weeks, Weeks, & Long, 2017).

The findings of this mixed-method study, while exploring this issue in the critical care context, confirmed that intergenerational differences and level of experiences can affect teamwork, respect among colleagues, and are associated with nurses’ ITL. The findings of this study identified two extreme contrasting views. The more experienced

nurses mostly representing the baby boomers expected novice critical care nurses mainly representing generations X and Y to demonstrate similar work ethics as they do. They argued that the new generation of nurses has lost their focus on acquiring basic nursing skills and that they do not appear to show a caring attitude at the workplace. Furthermore, it was suggested that new generations of nurses should not complain about their shift patterns and accept whatever shifts they are allocated. Nurses from Generations X and Y, on the other hand, felt that times have changed and that the way that Baby Boomers behaved in the past concerning their work ethics does not mean that they should do the same today. Some more experienced nurses however acknowledged intergenerational differences and suggested that these differences should be considered when managers develop suitable training and education programmes for novice critical care nurses and when managing their rosters.

Surprisingly, this study also highlighted aspects of poor work culture, revealing many 'toxic' aspects of the critical care nursing work environment and workforce behaviour. Some of these more negative aspects of the critical care nursing culture included judgemental attitudes towards other colleagues, anti-intellectualism, racism, ageist remarks towards others, and non-supportive, and at times bullying behaviour mainly towards the junior workforce mostly belong to the latest generation of nurses. These negative traits are not good for teamwork and workforce relations and thus affect nurse retention. Based on the findings of this study, managers and nurse leaders have the responsibility to develop suitable strategies to create a healthier working environment in which current and future generations feel engaged and can perform effectively. Nurse leaders also need to develop strategies to tackle the negative and toxic culture

arising among critical care nurses to create a healthier work environment and thus reduce nurses' ITL.

7.1.8 Experiencing Stress and Anxiety Because of Workforce Shortages: Managing Workforce Shortages

This theme was related to critical care nurses' stress and anxiety levels associated with critical care nurses being sent routinely to other non-critical care areas for help due to workforce shortages. This was not linked to outreach teams (Hyde-Wyatt and Garside, 2020), follow-up services (Lasiter *et al.*, 2016), or specially designated teams who support nurses within non-critical care areas in identifying and caring for deteriorating patients. As discussed previously in this chapter, sending critical care staff to other areas for help was linked to a prevailing misconception by management and colleagues from non-critical care areas that critical care nurses are not busy as they have increased the nurse-to-patient ratio. Critical care areas, therefore, should be able to send their staff to other areas to offer assistance. Surprisingly, the majority of critical care nurses felt strongly about this issue and have reported that it was one of the major sources of stress, especially for those less experienced nurses, and is thus associated with nurses' ITL. Workforce shortages within critical care and non-critical care areas and their associated impact have been explored widely and were discussed in detail in the introductory chapter of this thesis. However, research on the issue of moving critical care nurses to other non-critical care areas for help is non-existent. Research regarding sending critical care nurses to other non-critical care areas for help was explored through searching databases such as CINHAL and BNI (using the terms critical care nurs* OR intensive care nurs* AND (help* OR assist*) AND ward*) and Google Scholar, which produced no results. Within the UK context, organisations such as the Critical Care Network (CC3N, 2017) and RCN (2020) have

recently acknowledged this issue and have developed guidelines and checklists for sending critical care staff to other areas for help. The CC3N (2017) guidelines are specific to critical care areas, while the checklist developed by RCN (2020) is more generic. The CC3N (2017) has identified that there are risks associated with moving critical care staff to other areas and suggested that a risk assessment be completed before the decision is made to safeguard patient and staff safety. Both CC3N (2017) guidelines and the RCN (2020) checklist are, however, not based on empirical research. Considering that there is no research on the subject of sending critical care nurses to other areas for help, this study has made a unique contribution to the literature worthy of further investigation by exploring this issue of moving critical care nurses to other non-critical care areas is directly associated with nurses' ITL within the UK context. Nurse leaders, therefore, need to develop strategies to reduce anxiety levels amongst critical care nurses and ameliorate their feelings of vulnerability when they are sent to other areas for help. These strategies could include arranging a rotation programme for both critical care nurses and ward nurses to spend time in each other's workplaces. This will help them develop an understanding of each other's roles and to identify their respective strengths and limitations which could, in turn, be brought into consideration when critical care nurses are sent to other areas for help. Furthermore, ensuring that critical care nurses are sent back on short notice when emergency patients are admitted to the critical care areas would also ease the anxiety levels of critical care nurse managers, as this is one of the reasons that they don't feel comfortable sending their staff to other areas as this compromise's patient safety within their own units. Future research to explore this issue further will be beneficial in obtaining an in-depth understanding and in identifying any global similarities. Some issues identified in this mixed-methods study in relation to nurses' ITL belonged to

their perspective phases alone and thus were not integrated. These issues are presented in the following section.

The survey findings indicated that a large proportion of the more experienced critical care nursing workforce would be lost over the next one to five years. Retirements of a significant number of baby boomers are usually presented in the literature within the context of anticipated nursing shortages, costs of training replacements and strategies to retain older nurses (Sherman, 2008). This is true in the context of critical care due to a high number of critical care nurses being in the older age group (>20% over the age of 50; Horsfield, 2018). There is less focus, however, on the issue of lost knowledge and experience associated with losing the more experienced nursing workforce (Sherman, 2008), especially within the critical care context. This is highly significant as specialist knowledge and skills are required to care for critically ill patients with complex medical conditions (Marshall *et al.*, 2017). This means that developing the necessary skills and knowledge required to work in the critical care environment takes much longer as compared to other non-critical care areas. Evidence suggests that experienced nurses in non-critical care areas are happier in their workplace (Takase, Oba and Yamashita, 2009), tend to report less psychological distress (Lavoie-Tremblay *et al.*, 2010), and feel more autonomous (Wieck, Dols and Landrum, 2010). This is, however, not the case in critical care areas, as demonstrated by the findings of this study. In view of these findings, critical care nurse leaders need to develop strategies to enable the more experienced nursing workforce to transfer their knowledge and skills to their junior colleagues before retirement. Furthermore, steps need to be taken to retain the senior workforce lost through early retirement due to poor working conditions.

Secondly, some issues identified in the qualitative phase with no match in the quantitative phase were indirectly related to the critical care environment. Issues identified concerned the redirection of resources appropriately in the NHS (Ibrahim *et al.*, 2010) so that money could be saved to invest in the workforce, notably by improving procurement services and reducing waste. Previous research on the issue of waste in the healthcare system has explored waste management in general on a large scale. For example, Nichols *et al.* (2013), explored the feasibility of sustainable waste management in one county using a qualitative approach and reported that knowledge, environment, finance and legislation all influence attitudes and behaviour of healthcare staff regarding waste management. The findings of this mixed-method study, however, raised the issue of poor procurement services and the wastage of supplies and equipment by the healthcare staff themselves. This is a new issue that has been raised by this study and needs further research. It was suggested that improving services in the community such as for the mental health and the elderly will reduce the pressure on acute services (Smith *et al.*, 2014), including critical care areas, thereby reducing workloads and improving the quality of care. This theme was about thinking outside the box to try to save money, which could then be used for workforce development rather than making cuts to the workforce.

Another unique aspect of this study was the collections of data in phase one in relation to the number of nurses who intend to leave their organisation as well as the nursing profession as a whole over the next five years (discussed in Chapter 5). Up-to-date research regarding the number of nurses intending to leave adult critical care areas is limited and is necessary to gain an understanding of the extent of the problem. A study by Lai *et al*. (2008), reported that 48.9% of participants expressed an ITL in their job. However, the study is not recent (data was collected in 2005) and was limited to two

ICUs of the same hospital, thus limiting its generalisability. There were similar issues with other studies that reported nurses' ITL, such as those by Stone *et al.* (2006) and Fitzpatrick *et al*. (2010). Data regarding the number of nurses intending to leave adult critical care areas are presented in chapter five in more detail, but in summary 91 respondents (28.5%) expressed an ITL their current job over the next twelve months. More than half (n=184, 59.4%) expressed an ITL in their current job over the next three to five years. Those who expressed an ITL in the nursing profession in the next one to five years totalled 91 (29.3%). This data is important and may aid the understanding of the extent of the problem and will, therefore, attract the attention of policymakers to take preventive measures to improve nurse retention.

To summarise, critical care nurses' ITL is associated with several key operational and management issues such as lack of educational and professional development opportunities, lack of a supportive work environment, promoting nurse autonomy, maintaining work-life balance while managing the roster and workforce shortages. Additionally, some of the more unpleasant aspects of the critical care nursing work environment within critical care and associated workforce misbehaviours have also been found to be associated with nurses' ITL. Some of these negative aspects of the critical care nursing culture included judgemental attitudes towards other colleagues; remarks that were anti-intellectual, racist, or ageist remarks towards others; and non-supportive, or even bullying behaviours directed at the junior workforce. Another interesting finding was the feeling among the critical care workforce about the lack of preferential treatment in relation to those employed within other non-critical care areas, such as financial incentives and accelerated career pathways on account of their specialist knowledge and skills which necessitate the completion of additional courses.

7.2 Understanding the Meaning of the Findings and Possible Strategies to Improve Nurses' ITL Within the Adult Critical Care Areas

Discussion of the eight themes presented in the previous sections leads to the identification of three areas of concern: (1) toxic aspects of the critical care nursing work environment including unprofessional, bullying and judgemental behaviour, lack of multidisciplinary collaboration, ageism and racism (2) operational and management issues including a lack of autonomy, lack of education and development opportunities, rostering issues and providing a supportive work environment; and (3) critical care nurses feeling undervalued and hence the demand for preferential treatment for specialist skills and knowledge. A complex set of issues has been identified which is linked with critical care nurses' ITL and therefore a multifaced approach is needed to resolve these issues. The following section explains what these findings really mean and possible strategies to improve nurse retention within the adult critical care settings.

The dissatisfaction shown by critical care nurses due to the lack of appreciation and acknowledgement for their specialist skills and knowledge in this study could be linked to the historical notions associated with nursing. Nursing, including in critical care, suffers from a historical construction as a vocation where individuals usually women enter as a calling and some inherited notions persist that have consequences for modern nursing (Clayton-Hathway *et al.,* 2020). This is seen most clearly in the huge amounts of goodwill demonstrated by nursing staff, both in working beyond their paid hours and in difficult situations, often without financial rewards. Clayton-Hathway *et al.,* (2020) published a document commissioned by the RCN in response to the current nursing workforce shortages in the UK contends that responsibility, skills, accountability and education of nurses is undervalued both in terms of status and

financial rewards suggesting that nurses should be appropriately valued and rewarded. The work of Clayton-Hathway *et al.,* (2020) was based on evidence collected through literature review, quantitative data collection and analysis and interviews with key stakeholders. Nursing, including critical care, is a female-dominated profession and 70% of the global health and social workforce are women, as compared to 41% in all other sectors (WHO, 2018). Despite this, several studies have shown that women are under-represented in leadership positions in the NHS and across the medical profession more widely (Hauser, 2014; Hopkins *et al*., 2006; Hoss *et al*., 2011; Lantz, 2008). The undervaluing of critical care nurses stems from the feminised nature of the profession and may be reflective of how women are valued in society in general, another inherited notion referred to by Clayton-Hathway *et al.* (2020) and linked to feminism in nursing (Chinn and Wheeler, 1985).

Nursing, critical care included, occupies a unique niche in the occupational structure of health care. It has been persistently female dominated and associated with stereotypically feminine characteristics and located between the legions of non-professional workers and the elite of the professional staff in the health care industry (Hoffmann, 1991). Due to nursing being a female dominated profession, organisations increasingly rely on their goodwill to perform their duties which results in a lack of recognition for all their efforts, not being paid for doing overtime or staying late (Hopkins *et al*., 2006). The lack of appreciation and acknowledgement for the specialist skills and knowledge of critical care nurses highlighted by this study may reflect the goodwill expected of nurses in general because of the distinct traits such as caring associated with nursing as a female dominated profession. Nursing traditionally being a female’s profession could benefit from better understanding of the feminist theory which provides a frame of reference for examining nursing from a

historical, political and personal point of view and may explain some of the issues highlighted by this study such as the lack of appreciation and acknowledgement for the specialist skills and knowledge of critical care nurses. Feminism can be defined as a world view that values women and that confronts systematic injustices based on gender (Chinn and Wheeler, 1985). Contemporary feminist theory began to emerge in the late 1960s, as the current women's movement evolved along with the civil rights and peace movements of the 1950s and 1960s (Chinn and Wheeler, 1985). There are four major philosophical approaches to feminism (Spender and Gaze, 1982) including the liberal feminist view, Marxist feminist theory, Socialist feminist theory and the Radical feminist theory. The Marxist feminist theory (identifies the origin of women's oppression in the introduction of private property) (Chinn and Wheeler, 1985) doesn't seem to be relevant to the role of women in nursing. The remaining three approaches (the liberal feminist view which stresses equal opportunities for women in wealth, power and position, the socialist feminist theory which insists on an analysis of the particular problems of working-class women and women of colour and the radical feminist theory developed from a woman centred world view and suggest an end to the institutionalised gender discrimination and elimination of gender roles to end of the oppression of women (Daly, 1978)) seems relevant to nursing including the issues highlighted in this study. A major contribution of the feminist theory in relation to nursing is its basic tenet that women are oppressed. As discussed earlier, nursing including critical care has traditionally been a women's occupation, it is essential to understand the oppression of women to gain insight into some of the most persistent problems in nursing including those highlighted in this study. Nursing, being an oppressed group has been well documented (Roberts, 1983). Roberts (1983) draws from feminist literature, theories of oppression and previous nursing literature

addressing problems in nursing from a feminist perspective. In her analysis, she documents characteristics of nursing that are typical of oppressed groups. Roberts (1983) acknowledges that nurses sometimes recognises these traits are undesirable, but feels powerless to effect more positive course. The negative feelings demonstrated by the critical care nurses in this study relating to the lack of appreciating and acknowledging the skills and knowledge of critical care nurses may reflect what Roberts (1983) identified and reported four decades ago. The findings of this study may be a sign that now is the time to change some of the historical notions associated with nursing and value, appreciate and acknowledge nurses' skills and knowledge. Bringing this change in the organisational structure in a misogynistic society where nurses are valued, paid appropriately and their voices heard will require collective efforts by critical care nurse leaders and professional organisations.

Most of the issues identified in this study are a result of a lack of leadership and could be improved through effective leadership and management. For example, bringing an organisational change to give nurses a voice and value and appreciate critical care nurses' skills and knowledge will require effective leadership. Traditionally, nurses have been over-managed and poorly led despite facing unprecedented challenges (Doody and Doody, 2012) and leadership is of central importance in the resolution of many problems in the nursing profession (Wardani, 2017) alongside other strategies discussed earlier. The following section explains how lack of effective leadership could be linked to some of the findings identified by this study that are associated with nurses' ITL.

7.3 Leadership in Critical Care Nursing

Leadership can be perceived in different ways (Northouse, 2010) potentially leading to ambiguity (Wardani, 2017). Bass (1985) suggests a broad definition of leadership which focuses on a group process and that leadership is a matter of personality and its effects, the inducement of compliance, the exercise of influence, the involvement of particular behaviours, a form of persuasion, a power relationship, a tool to obtain goals, an effect of interaction, the initiation of structure and a differentiated role. Bass's definition may be helpful for a general understanding of the meaning of leadership, but it remains too broad. More specific definitions have also been suggested. Yukl (2002) assessed nine definitions considered to be among the best. These include: 'the behaviour of an individual directing the activities of a group toward a shared goal' (Hemphil & Coons, 1957, p.7); "leadership is exercised when a person mobilises institutional, political, psychological, and other resources to arouse, engage, and satisfy, the motives of followers" (Burns, 1978, p.18); and "the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organisation" (House *et al.,* 2004, p.184). These definitions reveal a dynamic view of the concept of leadership which encompasses a person as the leader: the mobilisation of a group of followers, the involvement of influence to engage others, and a shared goal (Wardani, 2017). Leadership thus seems to be a continuous process of engaging other people in a certain direction. A leader needs to occupy people's attention by influencing them and so influence is the basis of the leader-and-follower relationship, a concept that could be crucial in resolving the issues identified by this study.

Perspectives on the concept of leadership have changed over time. Early leadership theories included the trait theory which was focused on the quality characteristics possessed by great social, political and military leaders who were for the most part male (Kao & Kao, 2007). Behavioural theory resulted from the shortfalls of the trait theory and focused on examining certain behaviours that can be learned (ibid). Under situational and contingency theory, leadership style is mediated by situational factors such as culture, leader-staff relationship and motivation. Both situational factors and contingency have been advocated by various scholars, but they were later combined because of their close conceptual relationship. The situational and contingency model includes contributions from Hersey and Blanchard's (1982) situational theory that a particular leadership style will be effective in a specific external circumstance; Fiedler's (1964) contingency theory that a leader's effectiveness relies on the relationship between them and the group, the structure of the task and the power of the leader; and House's (1971) path-goal theory which is based on the idea that the leader's job is to help followers develop paths and ways that will lead them to achieve their objectives.

Leadership studies have evolved, shifting our understanding of leadership from one based upon individual and trait characteristics to one that recognises context and leader-staff relationships. Personality dimensions as traced in traits theory rely heavily on the traits and motives of the leader but fail to address environmental factors which may also contribute. Regardless of whether a leader has a task- or relational-motivated style of leadership, it will be of no value unless the situation matches their leadership style. According to Northouse (2010), leaders' behaviour is largely dependent on their personalities, the situation in which they find themselves and the type of followers. There is no ideal leader described in the theories; however,

in today’s world of change, there is a growing interest in leadership approaches capable of tackling turbulent situations in organisations such as those identified in this study. A new model of leadership was introduced in the 1970s that not only explored leaders’ effective performance but also extended to how they were capable of developing extraordinary performance, providing visionary leadership and they are boosting the team’s commitment to achievements with outstanding outcomes. This novel approach to leadership was later categorised as the contemporary theory of leadership and further developed into the Full Range of Leadership theory (FRL) (Wardani, 2017). The FRL model consists of three leadership styles: laissez-faire, transactional and transformational.

The laissez-faire style is a hands-off approach and is the most passive form of leadership (Antonakis, Avolio & Sivasubramaniam, 2003). In this style of leadership, authority is not in use and the leader provides no feedback and has no responsibility to help their followers. Northouse (2010) argued that the laissez-faire approach is not a form of leadership. A hands-off leader has no concern for their followers’ performance and the achievement of results is not something that they care about. This leader allows the work to flow in whatever way the followers prefer since guidance is absent. Another term for the same type of leadership is avoidant leadership (Jackson *et al*., 2013). There is evidence to suggest that concerns raised by nurses and other healthcare professionals may not always be dealt with by their leaders, thus demonstrating avoidance leadership (Hutchinson *et al*., 2008). Identified by this study such as devaluing and unpleasant behaviours, concerns regarding off duty issues and lack of support have not been dealt with effectively by the nurse managers and leaders in critical care and this could be due to avoidance leadership, among other factors.

Transactional leadership is based on the primary concepts of social exchange theory. The principle of social exchange is that individuals engage in an interaction that involves the giving and receiving of social, political and psychological rewards; the exchange basis is to provide economic benefits to both leaders and followers. Bass and Riggio (2006) illustrate transactional leadership by analogy to the politician who promises not to raise taxes should they be elected. In engaging in a transaction, leaders and followers maintain the performance and reward until both parties view the exchange as no longer of value. Before the initiation of this transaction, it is necessary to assess the parties' best interests. Leaders are successful when they meet the needs of followers and use rewards to motivate staff loyalty and performance; this exchange creates a balanced system within an organisation (Sullivan & Decker, 2009). Transactional leadership could help in resolving some of the issues identified by this study such as using rewards to stimulate staff loyalty that could resolve the feeling of dissatisfaction among critical care nurses due to the lack of appreciation and acknowledgement of their specialist knowledge and skills.

In examining leadership models, Burns conceptualised two types: transactional and transformational (Bass & Riggio, 2006). The transformational leadership model emphasises intrinsic motivation (ibid) and the charismatic and affective aspects of leadership (Bryman, 1992). The transformational theory emphasises interpersonal relationships rather than social exchange to transform and achieve change in organisations and human services. In this approach to understanding leadership, leaders and followers merge their interests and values to attain common goals. The principle of being a transformative leader is to encourage the staff's commitment rather than focusing on individual self-interest. A transformative leader engages with others and through this connection raises motivation and morality for leader and

followers; this leader is highly attentive to their followers' needs and attempts to help them reach their full potential (Northouse, 2010). Transformational leaders are defined as 'value-driven change agents who make followers more conscious of the importance and value of task outcomes. They provide followers with a vision and motivate them to go beyond self-interest for the good of the organization' (Borkowski, 2005, p. 261).

There are five critical strategies in transformational leadership performance (Bass & Avolio, 1994): the idealised influence that incorporates employees' pride in vision and mission; the leader's behavioural influence on employees in exhibiting vision and mission; inspirational motivation; intellectual stimulation; and the leader's individualised consideration expressing appreciation when goals are achieved. According to DeGees *et al.* (2003), these strategies allow leaders to promote a constructive atmosphere by valuing staff involvement in the organisation. Idealised influence describes leaders as role models for followers. This approach provides vision and generates trust and strong emotional attachment between leaders and followers. These leaders are highly respected because of their capabilities and determination and can be counted on to do the right things. They argue that through inspirational motivation, transformative leaders attempt to communicate high expectations to followers. By motivating and inspiring followers, leaders raise team enthusiasm and commitment to meet organisational goals. Inspirational motivation also plays a key part in lifting team spirit in the organisation (Bass & Avolio, 1994). Together with intellectual stimulation, transformational leadership promotes innovation and creativity, discourages a blame culture and raises consensus in response to problems (Bass & Avolio, 1994). Bass and Riggio (2006) have argued that transformational leaders recognise the uniqueness of team members and

coaching and mentoring as a feature of transformational leadership are also important (Northouse, 2010). All these characteristics are essential to resolving the issues identified by this study.

Force (2005) suggests that management behaviours and leadership styles are strongly correlated to nurses' intention to leave or stay in the organisation. Evidence of nursing leadership practices and their effects on the workforce is well documented (Chiok, Foong & Loke, 2001; Fallis & Altimier, 2006). Leadership has a direct influence on staff satisfaction, performance and intention to leave (Medley & Larochelle, 1995; Robbins & Davidhizar, 2007). Among the studies on nursing leadership, Cummings *et al.* (2010) provide some of the strongest evidence of the influence of leadership on the nursing workforce. In their meta-analysis, nursing job satisfaction was the most frequently examined leadership outcome; 22 studies found that the highest job satisfaction was correlated with transformational leadership. The rest reported leadership outcomes such as staff relationships with work, staff health and wellbeing, and work environment. The identification of leadership in nursing was noted as a key factor that offers possible solutions to workforce issues in Magnet-certified institutions. The Magnet Recognition Programme (MRP) is the highest level of certification for healthcare organisations in recognising excellence in nursing practice (Morgan, Lahman & Hagstrom, 2006). The purpose of the Magnet designation is to offer a potential solution to nursing workforce issues by attracting and retaining nurses in all healthcare settings (Brady-Schwartz, 2005). The model has been applied broadly worldwide (Kelly, McHugh & Aiken, 2011) and more health institutions are now obtaining certification or are on their way to doing so. The role of nursing leadership and outcomes are the main focus of its approach; this has been concluded in several comparative studies.

Upenieks (2002), for example, determined that differences in nursing outcomes in Magnet and non-Magnet hospitals were linked to nursing leadership behaviour, which was related to how visible and responsive the leaders were to their staff.

All three leadership styles affect the issues identified by this study. However, some elements of transformational leadership seem more relevant to the critical care work environment and could influence the complex issues identified. These include the idealised influence that incorporates employees' pride in vision and mission; the leader's behavioural influence on employees in exhibiting vision and mission; inspirational motivation; intellectual stimulation; and the leader's individualised consideration expressing appreciation when goals are achieved (Bass & Avolio, 1994). According to DeGees *et al.* (2003), these elements allow leaders to promote a constructive atmosphere by valuing staff involvement in the organisation. However, despite its strengths, transformational leadership has some flaws in that it focuses on the needs and objectives of the organisation (Jackson *et al*., 2013). Thus, the leader aims to build constituent allegiance to organisational objectives and the role of the constituent is to pursue the goals of the organisation (Stone *et al*., 2004). Some elements of transformational leadership such as motivating and rewarding could help in resolving some of the issues identified by this study. It is also clear that some of the issues identified are aligned with the flaws of transformational leadership such as its focus on the objectives of the organisation.

Another leadership style servant leadership (Jackson *et al*., 2013) may be more relevant to resolve the issues identified. There are similarities between servant and transformational leadership styles such as valuing and empowering people (Smith *et al*., 2004), but servant leadership focuses on the needs of the constituent and the

needs of the organisation are secondary (Stone *et al*., 2004). Ten characteristics are associated with servant leaders: listening, empathy, healing, awareness, persuasion, conceptualisation, foresight, stewardship, growth and building community (Spears, 2004). It is used to co-create a passionate, flexible, supportive, inclusive and encouraging environment characterised by teamwork, nurturance and valuing constituents (Jackson, 2008). Based on the qualities of servant leadership and its focus on the needs of the constituents rather than the organisation, it may be best suited to resolve the issues identified.

Leadership is a process; it involves influence, it occurs in groups and there are common goals (Northouse, 2010). These concepts are all applicable to nursing leadership, including in critical care, in that nurses hold the key to enhancing patients' and organisational outcomes and exert an influence in driving the organisation towards the desired objectives (Jones & Gosling, 2005). However, to gain leadership capabilities, nurses must first view themselves as leaders and have the competency to lead. These competencies exist in a continuous process of learning which can be obtained through education, training, experience and working closely with expert mentors (Jones & Gosling, 2005). Addressing the operational and management issues and the negative workforce behaviours and relationship issues identified in this study demands professionally qualified nurse leaders. Regardless of the style of leadership, it is clear that there is a need to strengthen the quality of leadership in critical care to resolve these issues. Leadership styles can be developed and the focus should be on appointing nurse managers with strong, passionate and effective leadership styles. Training needs to be developed for those who are already working as managers so they can develop the desired

leadership styles to face the challenges of the critical care work environment, address the issues identified and thus improve nurse retention.

The factors reported by this study which are associated with critical care nurses' ITL may be linked to critical incidents. Due to the complex nature of critical care nursing, nurses working in critical care areas, are at risk of encountering a critical incident (Harvey and Tapp, 2020). A critical incident is an unexpected work-related experience that is considered traumatic because it is perceived as threating and overwhelms typically used coping abilities (Everly and Mitchell, 1999 and 2008). It has been suggested that critical care nurse's exposure to work-related critical incident leads to critical incident stress (de Boer, van Rikxoort and Smit, 2013). Furthermore, all of those who are exposed to a critical incident will experience some degree of distress and 9% to 45% of those individuals may develop significant dysfunction (Everly and Mitchell, 2008). Critical incident stress has been explained in the literature on the basis of philosophical hermeneutics developed by Hans-George Gadamer (1960-2013) (Harvey and Tapp, 2020). Gadamer referred to hermeneutics as an art and interpretive practice used to enhance the meaning of phenomena that require further understanding. Critical incident stress is an experience that is considered personalised, situational and underpinned by human subjectivity (Appleton, 1994). Harvey and Tapp (2020) whilst exploring the meaning of critical incident stress in a qualitative study reported that critical incident stress has implications for nurses and health care system. The findings of this study whilst agreeing with the findings of Harvey and Tapp (2020), highlighted the need for understanding the meaning of critical incident in view of critical care nursing and suggest developing strategies to provide timely interventions following traumatic and stressful incidents to support critical care nurses. This will not be possible without effective leadership which further

highlights the importance of effective leadership to resolve the issues raised by this study within the adult critical care settings.

It is also worth mentioning that improving the areas identified by individual themes will also help in reducing critical care nurse turnover and may improve critical care work environment. For example, flexibility in the off duty may be more important to some critical care nurses and providing that flexibility may influence their ITL. Education and career progression may be more important to others than to a flexible roster and hence will influence their ITL. This means that making small improvements in different areas may help in the overall improvement of the critical care work environment and hence critical care nurses' ITL.

7.4 Chapter Summary

This chapter discussed the study findings concerning contemporary literature, addressing those factors influencing nurses' ITL adult critical care areas. The findings identified operational and management issues associated with critical care nurses' ITL. These include the provision or otherwise of education, development and career progression opportunities; rostering issues such as a lack of work-life balance; nurses' empowerment and autonomy; and providing support, especially to novice critical care nurses. This study also highlighted some of the more toxic aspects of the critical care nursing work environment and workforce behaviour including judgemental attitudes towards colleagues, anti-intellectualism, racist or ageist remarks and non-supportive and, at times, bullying behaviour towards the junior workforce. Another interesting finding was the feeling among the critical care nurses regarding the general lack of appreciation and acknowledgement for their specialist knowledge and skills which are required to work within this specialised area. It was highlighted that critical care nurse

managers lack leadership qualities and developing strong, passionate and effective leadership styles within the critical care nurse managers could address and resolve the issues identified. Nurse leaders and critical care nurse managers need to consider these findings when developing strategies to reduce nurses' ITL and thus ameliorate nursing turnover and shortages in the critical care environment. Another important contribution of this mixed-method study is the validation of some of the theories of ITL developed years ago but which have not been acted upon since such as the two-factor motivation-hygiene theory, social exchange theory and job embeddedness theory.

CHAPTER EIGHT: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

This chapter presents the main conclusions from the research, including the strengths and weaknesses of the current study and the consequences of these issues on the research findings. Finally, this chapter includes several recommendations from the current study for further research and practice concerning critical care nurses' ITL adult critical care areas.

8.0 Conclusions from the research

In chapter one, nursing shortages and high nursing turnover was presented in nursing in general including their impacts on resources and quality of patient care. It was established that critical care areas are more vulnerable to high turnover and nursing shortages with significant impacts on resources and quality patient outcomes. This is because a specialist workforce with advanced knowledge and skills is required to work in the adult critical care settings to care for critically ill patients with complex medical conditions. It takes much longer and requires more resources to replace and train a critical care nurse to a level where he/she could safely and independently care for a critically ill patient as compared to other non-critical care areas. Additionally, a large number of critical care nurses are required in critical care areas due to elevated nurse to patient ratio as patients in the critical care settings require one to one nursing for their safety due to their complex medical and nursing needs. It was suggested that one of the main reasons for high turnover and nursing shortages is nurses' ITL. A link was established between intention to leave and turnover and a need were therefore identified in exploring factors that may influence critical care nurses' ITL so strategies could be developed to reduce nurses' ITL and thus high turnover and nursing shortages within the adult critical care settings.

Chapter two provided a mixed-method systematic literature review on factors influencing nurses' ITL adult critical care areas. Evidence was collected and analysed from 15 studies (13 cross-sectional and 2 qualitative studies). The literature review identified a gap in the current literature regarding nurses' ITL adult critical care settings and suggested exploring this issue further. Previously published studies carried out on the subject of nurses' turnover intention in adult critical care settings have explored a single factor associated with nurses' ITL adult critical care areas rather than investigating this issue holistically to get an in-depth understanding of the factors that influence critical care nurses' ITL. Furthermore, current studies regarding the number of nurses expressing their ITL adult critical care areas in the future are limited. The unavailability of this information makes it challenging to get an understanding of the extent of the problem and thus attracting the attention of nurse leaders towards the issue of nurse retention within the adult critical care settings. In addition, previous research on the subject of nurse retention in critical care areas is restricted to cross-sectional studies, which lack in-depth understanding such as knowing why and how certain factors influence critical care nurses' ITL. Thirteen out of fifteen studies included in the literature review were cross-sectional, and two were qualitative studies. To the best of my knowledge, so far, no mixed-method studies have been carried out exploring nurses' ITL adult critical care areas. This study aimed to fill the gaps identified by this literature review and thus make a novel contribution to research and practice.

Chapter three presented the methodology and methods that were followed to address the research aim: to explore possible factors that may influence nurses' ITL adult critical care areas and nurses' views and experiences about their working conditions. In phase one, quantitative data was collected from all nurses currently working in adult

critical care areas across England via a cross-sectional survey. In phase two, qualitative data were collected via in-depth telephone interviews from a sample of nurses currently working in adult critical care areas. In phase three, data from phases one and two were integrated using a joint display and narrative weaving approach.

Chapter four presented the survey findings in phase one. Data regarding the number of nurses' who expressed intention to leave their current job and/or nursing profession in the next 1-5 years have been presented. Findings of statistical data analysis showed that a large number of experienced critical care nurses expressed their ITL not just in critical care areas but more worryingly nursing profession too. This data is significant as it shows the extent of the problem and thus hoping to attract the attention of critical care nurse leaders in developing strategies to improve turnover by reducing nurses' ITL. Furthermore, statistical data analysis identified four factors that were statistically significantly associated with nurses' intention to leave. These factors include autonomy, work environment, relationships and professional development. Content analysis of qualitative comments has also been presented, which shows that findings of content analysis of qualitative comments are similar to the findings of survey results which further enhances the reliability of the findings overall.

Chapter five presented the findings from the second phase of this mixed-method study, which sought to explore how and why factors identified in phase one influenced nurses' ITL adult critical care settings. This objective was achieved through the collection and analysis of qualitative data from semi-structured in-depth telephone interviews held with a sample of nurses currently working in the adult critical care settings across England who expressed ITL and participated in phase one. The findings from the qualitative analysis identified three main themes associated with

critical care nurses' ITL. The main themes were sub-divided into a number of sub-themes. These findings provide a detailed exploration of the factors that are associated with critical care nurses' ITL and therefore need to be considered when strategies are developed to improve nurse retention in the adult critical care areas.

Chapter six presented the findings from the integration phase of this mixed-method study. Integration was achieved through joint display using a Pillar Integration Process. This was followed by a narrative weaving approach to report the findings of the quantitative and qualitative phases following integration. Integration resulted in eight out of nine factors being matched, which adds credibility to the findings. The mixed-method integration enabled a complete exploration and in-depth understanding of the issue of nurses' ITL within the adult critical care settings. This detailed insight will help in developing strategies to improve the work environment in adult critical care areas that may reduce nursing turnover and hence nursing shortages within this specialised area.

Chapter seven discussed the findings of this study with reference to the existing wider literature and theory on factors influencing nurses' ITL adult critical care areas. Overall, the findings of the current study while supporting previous literature on nurses' retention in general, show that retention of critical care nurses is a major issue and more concerning compared to other non-critical care areas given the amount of time and resources required to replace and train critical care nurses. Furthermore, an increased number of nurses is required in the critical care areas compared to other non-critical care areas due to an elevated nurse to patient ratio worsening the issue of retention. This study has identified some key operational and management issues that are associated with critical care nurses' ITL. These issues/factors include the provision of education, development and career

progression opportunities, rostering issues such as lack of work-life balance, nurses' empowerment and autonomy and providing support, especially to novice critical care nurses. This study also highlighted some of the toxic aspects of the critical care nursing work environment and workforce behaviours. These negative aspects of critical care nursing culture included judgemental attitudes towards other colleagues, anti-intellectualism, racial, ageist remarks towards others and non-supportive and at times bullying behaviour towards the junior workforce. Another interesting finding was the feeling among the critical care workforce that they should get preferential treatment compared to other non-critical care areas such as financial incentives and accelerated career pathways due to the specialist knowledge and skills required to work in this specialised area. Nurse leaders and critical care nurse managers need to consider these findings when developing strategies to reduce nurses' ITL and thus improve nursing turnover and nursing shortages in the critical care environment. Another important contribution of this mixed-method study is the reinforcement and validation of the theories of intention to leave.

8.1 Strengths and Limitations

The following sections provide a discussion of the strengths and limitations of the quantitative and qualitative phases of this study and the mixed-method study design.

8.1.1 Quantitative Phase

A key strength of the quantitative phase of this mixed-method study was its analysis of data from a high-quality dataset, comprising a nationally diverse representative sample of critical care nurses, currently working in the adult critical care settings across England. A cross-sectional survey enabled the analysis of factors that influence

nurses' ITL adult critical care areas. Another unique aspect of the quantitative phase was the collection of data regarding the number of nurses who intend, in the next five years, not only to leave their current organisation but the nursing profession. This data is significant as this may help in the understanding of the extent of the problem and in turn, alert policy-makers to take preventive measures to improve nurse retention. Furthermore, the factor analysis validated the conceptually derived subsets of the NWI-R tool. The four new factors (autonomy, work environment, relationships, and professional development) resulting from the factor analysis were similar to the four conceptually derived factors of NWI-R, as described by Aiken and Patrician (2000); these were nurse-physician relationships, control over practice settings, autonomy, and support for caregivers. Control over practice settings and autonomy in NWI-R relates to autonomy, nurse-physician relationships relate to relationships, and support for caregivers relates to the work environment, which means that the factor analysis validated the NWI-R tool.

There are some weaknesses of the quantitative phase of this study. For example, no power calculation was done on the advice of the statistician as the survey was sent to the whole population (all critical care nurses currently working across England). Although power calculation was not undertaken on the advice of a statistician, it could be considered as a weakness. Secondly, the survey was sent to all nurses currently working in adult critical care areas via the national lead of the critical care network who then cascaded it down to the nurses through their local managers. There was no way of knowing the accurate number of surveys distributed and the number of participants who received the survey; therefore, it was not possible to calculate a response rate. Although as discussed previously, response rate alone is considered a poor indicator of response bias in the literature, it could still be considered as a weakness. Thirdly, a

comparison of the salary bands in both the study and population sample using a percentage method indicated mixed representativeness. For example, despite the highest percentages in both the research and population samples, there was a significant difference between the percentages in salary band 5s in both samples. Salary band 6s, on the other hand, were close (difference of 0.9%) in both study and population sample indicating representativeness of the research sample. The remaining response rates were leaning towards the higher bands (bands 7, and 8 and above) which represents the senior workforce and indicate over-representation of this group may be due to a response bias.

8.1.2 Qualitative Phase

A notable strength of the qualitative phase of this mixed-method study was in the success of the recruitment strategy. A large number of nurses offered to participate in qualitative interviews, which enabled a purposive sample consisting of participants that best provided the detail needed to explain and expand on the findings of the quantitative phase. Purposive sampling was successfully achieved by including nurses from all salary bands (ranging from band 5 to band 8b), levels of education (ranging from nursing diploma to PhD), and years of experience (ranging from one to twenty), ensuring that interview data were collected from a diverse sample of critical-care nurses. The use of semi-structured interviews using open-ended questions enabled the collection of rich data. A conscious effort was made by the researcher to ensure that the participants were free to express their views by asking open-ended questions using semi-structured interviews. Findings were strengthened by providing a narrative illustrated by concrete examples drawn from the participant’s experience, in the form of rich quotes from transcripts. With respect to the findings from qualitative analysis, a selection of techniques including constant comparison, analysis and peer

debriefing was employed, as described in chapter 3, to maximise the credibility of findings.

Like any qualitative research, there were some weaknesses of the qualitative research in phase two. Firstly, the sample comprised mainly female participants which nursing being a female dominant profession, was representative of the population, but their views might not necessarily have reflected those of their male colleagues. Secondly, qualitative research is dependent on the role and skills of the researcher, and although, strategies were developed to minimise personal biases, there may still be a risk of personal influence. Thirdly, due to the open-ended and perspective-based nature of qualitative research, findings can't be measured and verified objectively. Furthermore, qualitative data were collected using in-depth interviews and hence are not generalisable to the wider populations as the findings of the research are not tested to find out whether they are statistically significant or not. Also, while established measures were employed to ensure the trustworthiness of findings, respondent validation could have been added to enhance the credibility of findings, by providing confirmation from participants themselves. Data saturation was achieved after fifteen interviews as explained in the methodology chapter, however looking at some of the contradictions in the findings; more interviews may have helped to present a range of views.

8.1.3 Mixed-Method Design

A major strength of the current study was that it used a mixed-method research design to explore factors influencing nurses' ITL. The integration of quantitative and qualitative methods effectively enabled a more comprehensive understanding, of the factors influencing nurses' ITL, than if either of the methods alone had been employed.

As discussed in chapter 3, the sequential explanatory design was effective in meeting the research objectives of the study. The first, quantitative, phase of the study successfully identified the factors that influence ITL. The second, qualitative, phase of the study was able to capture rich insights into the factors identified in phase one. The quantitative findings were complemented by the in-depth understandings and lived experiences revealed in the qualitative interviews, thus providing a comprehensive understanding of the factors that influence critical care nurses' ITL. Another contribution of the mixed-method study was the use of a relatively new approach to joint display, called the pillar integration process (PIP), to integrate both quantitative and qualitative data. This further validated the PIP approach to joint display. Furthermore, in contrast to previous studies, this study holistically explored the factors influencing ITL, rather than limiting the study to a single factor. The findings of this mixed-method study should, therefore, make an important contribution to the development of strategies to counteract the problem of high turnover and nursing shortages, by taking steps to improve retention of adult critical-care nurses.

8.2 Future Research

A key strength of the current study was that it used a mixed-method research design to explore the factors influencing nurses' ITL. It would, however, be useful to carry out the same mixed-method study in other parts of the world, and in different settings, to compare the results. Furthermore, the current research literature on some of the themes such as appreciation of, and acknowledgement for the specialist skills and knowledge of the critical care nurses and sending critical care nurses for help to non-critical care areas was found to be non-existent. It would, therefore, be useful to explore these themes further. A longitudinal study would also be helpful to follow those

who expressed ITL in their organisation and/or profession to see how many nurses leave their organisation and/or profession. This will further strengthen the link between ITL and actual turnover and may help in identifying the factors that might have influenced them to change their decisions.

8.3 Recommendations

Drawing on the key findings and the strengths and limitations of the study, the following sections put forward a number of recommendations with relevance to future research, policy, and practice. These recommendations were put forward based on the themes that resulted from the findings of this mixed-method study.

8.3.1 Feeling Demoralised due to Lack of Appreciation and Acknowledgement

As the issue of the lack of appreciation and acknowledgement for the specialist skills and knowledge of critical care nurses and the misperception regarding the workload of critical care nursing is based on their perception of how others think of their job. Exploring how colleagues in other areas think of critical care nursing was not the aim of this study, future research would therefore be beneficial to explore this issue further. To acknowledge the specialist skills and knowledge of critical care nursing, it needs to be recognised as a speciality, like midwifery and physiotherapy. Critical care nurses could be given extra financial incentives and specialist titles such as 'specialist nurse in critical care' to acknowledge their skills and knowledge, similar to other specialities. These steps may help in alleviating the feelings of critical care nurses regarding their perceived unfair treatment and the lack of appreciation and acknowledgement and may boost their morale. This may also help in establishing parity across the profession. It is worth highlighting that providing extra financial incentives and specialist titles for critical care nurses only could create more fractures in the profession as nurses

working in other areas would feel that they too should be recognised for their highly specialist skills. It is, therefore, important that financial incentives and specialist titles are given equally across the professions according to their specialist skills and not just to critical care nurses to ensure fairness across the professions.

8.3.2 Promoting Nurse Autonomy and a Culture of Shared Governance

Nurses expressed their frustrations about the lack of involvement in matters that directly affect them, such as managing rosters and providing training and education opportunities. The perception among the critical care nurses is that management has been pulled away from the clinical areas due to the demands of their roles. This means that they may not be fully aware of the issues faced by nurses on day to day basis. This issue is further compounded by the fact that there is a limited representation of the critical care nurses, especially the junior workforce, in any of the decision-making forums. Consequently, decisions are made by those who may not have the correct and up-to-date information about the issues faced by the majority of nurses. The following actions, therefore, needs to be taken to resolve this issue.

- The managers of critical care areas need to involve those nurses in the decision-making process who have current clinical exposure and who are aware of the issues faced by them and their colleagues. This could be achieved by providing representation to all grades of nurses in the decision-making forums, both at local and executive levels. This is to make sure the views of nurses with current clinical experience are heard, and they are involved in decision making. An example of representation may be that a salary band five nurses which is the lowest salary band in the UK attend the monthly meetings of senior nurses and then share the details with their colleagues from the same

band. The representation could be rotated so every month a different person gets a chance to attend the meeting. Similarly, they could also be given representation in other decision-making forums such as clinical governance and mortality and morbidity forums. Similar shared decision-making forums have been trialled in some hospitals in the UK such as the shared decision-making councils. The findings of this study provide evidence to support such forums; it will be worth exploring this further to try to identify similarities and differences.

- Another aspect of autonomy was nurses' involvement in decisions around patient care. This was mainly about including nurses in the discussions during ward rounds, and decisions around end-of-life care and treatment withdrawal. Nurses especially those who were junior felt that despite looking after the patient and their family for an extended period of time, they were not involved when decisions were made by doctors regarding important issues such as treatment withdrawal and continuity of care. Nurses found this demoralising; strategies, therefore, need to be developed to ensure nurses are involved when decisions are made regarding patient care. These strategies may include, improving interdisciplinary collaboration, this may be achieved through better communication, multidisciplinary education at all levels, and a multidisciplinary approach to meetings with families regarding stopping or continuing treatment. Furthermore, nurse managers need to ensure that junior nurses are encouraged and supported in the discussions during ward rounds. They also need to encourage their medical colleagues to involve junior nurses in the discussions during ward rounds.

- The senior nurses felt that junior nurses did not understand the meaning and importance of autonomy, and it is the lack of their understanding and lack of awareness that sometimes is a problem. To counteract this issue, training courses designed for junior nurses should include aspects of autonomy in their curriculum, including what autonomy means and the strategies used to improve nurse autonomy. As discussed in chapter seven, autonomy was linked with other themes, such as workforce behaviours and wellbeing, which means that improving nurse autonomy may improve interprofessional relations, nurse-physician collaboration, and nurses' wellbeing. Nurse leaders, therefore, need to put autonomy at the centre of their strategic plans for their areas of practice.

8.3.3 Providing a Supportive Work Environment and a System of Wellbeing

As previously noted, advanced skills and knowledge is required to work in the critical care environment, which demands extra training and extended time as compared to other areas of nursing. To ensure critical care nurses of all bands are appropriately trained to care for critically ill patients safely, the following actions are recommended.

- Nurse managers need to develop a structured training and education programme for novice critical care nurses in their first two years, ensuring that they can independently and safely care for critically ill patients. Additionally, allocating a 'buddy' for each novice critical care nurse may be beneficial who could provide guidance and support, especially in the first two years until they settle into the new environment. The 'buddy' should be a neutral person who is not directly involved in the line management of novice critical care nurses nor their mentor or supervisor. This is, so the relationship between novice critical care nurses and their buddies remain informal; otherwise, novice critical care

nurses will not feel comfortable discussing their problems with their buddies and this will turn into another managerial layer. Furthermore, this buddy support should continue alongside the structured training and education programme specially designed for novice critical care nurses. The buddy system could be achieved without spending extra resources such as one buddy could be allocated to about five new starters who could meet with them once every few weeks if needed or communicate via emails. This will provide a point of contact for new starters in case of any concerns/issues/worries. The routine formal support could still be provided by their line managers and mentors.

- The second part of this theme was about the lack of focus on the wellbeing of nurses, especially following traumatic and stressful incidents. The perception was that managers did not take the well-being of their nurses seriously. Managers were dismissive of the concerns of their team members, saying that critical care may not be appropriate for them rather than identifying the root causes of their concerns. To resolve this issue, nurse managers need to develop a system of wellbeing in their respective work environments by acknowledging the concerns of critical care nurses and take appropriate actions. There is a need to factor wellbeing strategies into hospital policies to highlight its importance and embedding it within the hospital culture.
- Nurses felt that the informal short debrief sessions following traumatic and stressful incidents, such as end-of-life care and treatment withdrawal scenarios, were not enough and did not add any value. This is because these debrief sessions are facilitated by staff with no appropriate skills or psychological experience, and hence not effective. It was reported that traumatic and stressful incidents have lasting psychological effects on nurses, especially if they occur

frequently. The recommendation, therefore, is to appoint a clinical psychologist in each unit who could provide professional psychological support following stressful and traumatic incidents and facilitate effective debrief sessions. If appointing a psychologist is not possible due to financial constraints or other reasons, staff with interests in this area and who facilitate the current debrief sessions could get training on how to facilitate a debrief session ensuring these sessions are effective rather than a tick box exercise.

8.3.4 Enhancing Workforce Relationships and Multidisciplinary Collaboration

Disagreements and conflicts with members of the multidisciplinary team, especially doctors, could be very stressful for nurses with negative effects on their health, such as stress and anxiety. Relationships of nurses with their medical colleagues are linked with nurses' involvement in decision-making regarding the care of the patients, and discussions during ward rounds. Consequently, autonomy and interprofessional relationships are linked as discussed previously. An aspect of nurses' relationships with doctors reported in this study was bullying and threatening behaviours of doctors towards nurses. Nurse managers need to take this issue seriously and don't avoid taking actions as reported by nurses that it is usually 'put under the carpet' by their managers. Nurses' in general but especially junior nurses may not feel comfortable dealing with and confronting this issue by themselves, it is, therefore, the responsibility of nurse managers and other senior colleagues to make sure that nurses' concerns are taken seriously and acted upon. This issue could also be tackled by improving nurses' relationships with doctors through multidisciplinary training from both junior and senior levels. Training and learning together will not only improve relationships and teamwork between doctors and nurses but will also enhance the skills and knowledge of critical care nurses and thus improve the quality of care. This could be

achieved through mixing and putting together some of the existing training for doctors and nurses which currently happens separately.

The characteristics of a manager, how he or she interacts with their team members play a key part in the development of positive working relationships. Conflicts and disagreements with managers were reported, in the findings of this study, to have been associated with stress, anxiety and ITL. It is, therefore, important that nurse managers improve their relationships with team members specifically and workplace relations in general by taking the following actions.

- Nurse managers need to take steps to develop positive traits of leadership and develop skills and strategies to enhance the wellbeing of their staff when dealing with conflicts and disagreements.
- Hospital management needs to arrange training and development programmes for managers such as leadership and development courses to ensure that managers are equipped with appropriate leadership skills to support and further develop their workforce.
- How nurses related to their colleagues was also an important factor associated with ITL. Managers should develop, encourage and promote a culture of good team working and support. This could be achieved through factoring in a culture of teamwork in the already existed training and education programme and through role modelling without spending any extra resources.
- Relationships with patients and their families were also important to critical-care nurses. Conflicts and disagreements with patients and their relatives, about aspects of care, were a source of stress for nurses and influenced their ITL. Nurse managers need to arrange training sessions for nurses regarding how to

deal with disagreements and conflicts with patients and relatives. Furthermore, nurse managers need to ensure that novice critical care areas are supported when they are involved in disagreements and conflict scenarios with patients and their relatives. A multidisciplinary team approach alongside appropriate training needs to be developed to deal with conflicts and disagreements with patients and their relatives.

8.3.5 Lack of Education, Development and Career Progression Opportunities

A structured training and education programme was demanded by novice critical care nurses, which would enable them to care safely for critically ill patients and help them in dealing with the stresses of critical care nursing. This issue has been discussed earlier in this chapter. Other recommendations related to the issues identified in this theme are given below.

- To maintain the specialist skills and knowledge of critical care nurses at all time, a continuous education and development programme is needed for nurses of all levels of experience. This will help the nursing staff in keeping their skills up-to-date and current and will also enable them to train and develop novice critical care nurses appropriately to maintain quality of care. This could be achieved through organising a development day each year for critical care nurses thus keeping their critical care skills up-to-date. Team building exercises could be incorporated into these study days which will improve teamwork and working relationships.
- Critical care nurse leaders need to think ‘outside the box and take steps to provide individualised development and career progression opportunities, such as master’s and PhD degrees and raising individual profiles of nurses by

developing guidelines and protocols and then presenting them at conferences rather than relying just on mandatory training. This is considered an investment in their workforce which may boost the morale of nurses, raise the profile of their practice area and may improve nurse retention.

- An education and development plan should be developed and presented to nurses at the time of their recruitment, so they know what a practice area could offer in terms of professional development and career progression. This may be used as one of the strategies to retain nurses.

8.3.6 Providing Flexibility and Maintaining Work/Life Balance When Managing Roster

The following actions are recommended to tackle the rostering and work-life balance issues.

- Organisations should encourage a family-friendly rostering system to avoid work/family conflicts. Considering that a high percentage of critical care nurses are female, nurse managers need to develop a rostering system that is accommodating to the needs of female staff, especially of those with young children. This may sound challenging considering the already low staffing levels but this is an important factor associated with nurses' ITL and keeping this experienced critical care workforce will not only improve staffing in general but could also play a crucial role in the development of the junior workforce and hence quality of care.
- Maintain a balanced shift pattern to ensure contracted hours are equally distributed across weeks. This may not suit everyone but will ensure fairness which in the long term could improve nurses' retention.

- A system needs to be developed, which discourages extra hours being worked on a regular basis, beyond the contractual hours to prevent nurses' fatigue and high sickness level. This doesn't mean that nurses shouldn't be allowed to do extra hours but it is important that a system is developed to ensure flexibility and safety of the staff is maintained by ensuing enough rest time to avoid fatigue and exhaustion.
- Ensuring enough breaks to recover from night shifts before returning today-shifts are needed to make sure nurses get enough rest. This will again prevent nurses from getting tired and may reduce sickness level.

8.3.7 Acknowledging Nurses' Level of Experiences when Managing Teams

Nurse managers and the senior nursing workforce need to acknowledge the intergenerational differences and viewpoints of nurses with varying level of age and experience. These varying viewpoints and generational differences need to be considered when developing training and education programmes for novice critical care nurses and managing the roster. This theme is linked with enhancing workforce relationships discussed in section 8.3.4, providing a supportive work environment discussed in section 8.3.3 and promoting nurse autonomy in section 8.3.2. This means that improving one aspect will have a positive impact on the other and vice versa. Nurse leaders also need to take actions to alleviate the toxic culture in the critical care nursing work environment such as non-supportive and bullying behaviour towards junior members of the team, judgemental attitudes towards other colleagues, anti-intellectualism, racial and ageist remarks towards others. Taking appropriate actions to alleviate these negative aspects will be crucial to create a healthy work environment and thus reduce nurses' ITL adult critical care areas, especially in the junior workforce.

8.3.8 Experiencing Stress and Anxiety because of Workforce Shortages

This theme is linked with critical care nurses being sent to other areas for help on a regular basis. This issue is a major source of stress for critical care nurses, especially the junior workforce and associated with their ITL. This is because critical care nurses feel vulnerable and unsupported when they are sent to the ward. Various strategies could be developed to ensure that critical care nurses are supported when sent to other areas for help, so they don't feel vulnerable.

- Arranging a rotation programme for critical care nurses to spend some time in the wards similar to the one discussed in section 8.3.1. This will give the critical care nurses the opportunity to familiarise themselves with the area and help them in understanding the stresses of the wards. This way, they may not feel stressed and vulnerable when they are sent to those areas for help in the future. A similar type of rotation system was developed during the COVID-19 pandemic where colleagues from other non-critical care areas and management were redeployed to support critical care services including spending time in the critical care areas for shorter periods. Whilst acknowledging that this was a crisis, it is encouraging to see that a similar strategy could be applied to develop a system of collaboration in the post-COVID-19 era
- Another way to ease the pressure on critical care nurses, a system needs to be developed where the same group of nurses are not sent to the ward on regular basis and instead the rotation is distributed equally among all critical care nurses. Nurses don't mind being sent to the ward occasionally, but it is the regular occurrence that causes stress and anxiety. Distributing the workload equally among nurses alongside having the opportunity to familiarise

themselves with the area as discussed earlier could work well in alleviating the stress and anxiety related to being sent to the ward. Also, it is usually the junior nurses that are sent to the ward repeatedly; this impacts their development and they feel that they are left behind in their learning. It is, therefore, advisable that senior nurses are also sent to the ward If it doesn't compromise patient safety on their unit.

- As previously noted, it is sometimes not appropriate or safe to send critical care staff to other areas as it increases the workload of critical care nurses, but due to the lack of understanding from the hospital management such as not taking into account confused patients or those in the side rooms requiring one to one care, they were insisting on sending the staff. This issue is made worse when new patients are admitted to the critical care area, and the nurses who sent to the ward are not allowed to come back and help on their unit thus compromising patient safety. To ensure, critical care nurses are sent to the ward in a safe manner without compromising patient safety in the critical care areas; a risk assessment could be completed when hospital management asks to send critical care staff to other areas. This may help them in making an informed decision and could include sending the nurses back when needed on short notice.
- Critical care nurses are expected to work independently in a new, unfamiliar environment on short notice. To ease the stress and anxiety of critical care nurses, they could be asked to work as helpers, rather than being allocated to care for a caseload of their patients independently.

8.3.9 Loss of Experienced Workforce

The findings in phase one indicated that a large proportion of the experienced critical care nursing workforce would be lost in the next five years. This is highly significant in the critical care context, as specialist knowledge and skills are required to care for critically ill patients with complex medical conditions. This means developing the skills and knowledge required to work in the critical care environment takes much longer, as compared to other, non-critical, care areas; it is therefore much harder to replace the experienced critical care nursing workforce. Critical care nurse leaders, therefore, need to develop strategies to enable the experienced nursing workforce to transfer their knowledge and skills to their junior colleagues before retirement. Additionally, steps need to be taken to retain the senior workforce that is being lost through early retirement due to poor working conditions.

8.3.10 Redirecting Resources Appropriately

This theme was about thinking outside the box to try to save money. This could then be used on workforce development, rather than making cuts to workforce funding to save money. One suggestion could be to improve procurement services and reduce waste in the national health services. Savings made through these improvements could be used on workforce development. Secondly, improving services in the community, such as mental health and elderly services, would reduce the pressure on acute services (including critical care) thus reducing the workload of critical care nurses and in turn may influence their job satisfaction and ITL.

The solution to most of the problems identified in this study in relation to critical care nurses' ITL could be the manager's leadership styles alongside all the other strategies discussed in chapter seven. Addressing the operational and management issues and

the negative workforce behaviours and relationship issues identified in this study require professionally qualified nurse leaders. There is a need to strengthen the quality of leadership in the critical care settings to resolve the issues identified in this study. It is also important to highlight that, leadership styles can be developed and the focus, therefore, should be on appointing nurse managers with effective and passionate leadership styles. Training needs to be arranged for those who are already working as managers so they can develop the desired leadership styles to face the challenges of the critical care work environment and address the issues identified in this study and thus improve nurse retention.

REFERENCES

Adams, L.Y and Maykut, C.A. (2015,p-769) 'Bullying: the antithesis of caring, acknowledging the dark side of the nursing profession. *International Journal of Caring Sciences*, *8*(3), pp.765-773.

Adams, A. M. N., Chamberlain, D. and Giles, T. M. (2019a) 'The perceived and experienced role of the nurse unit manager in supporting the wellbeing of intensive care unit nurses: an integrative literature review', *Australian Critical Care,* 32(4), pp. 319-329. doi: https://doi.org/10.1016/j.aucc.2018.06.003.

Adams, A. M. N., Chamberlain, D. and Giles, T. M. (2019b) 'Understanding how nurse managers see their role in supporting ICU nurse well-being: a case study, *Journal of Nursing Management*, 27(7), pp. 1512-1521. doi: https://doi.org/10.1111/jonm.12837.

Aiken, L.H., Smith, H.L. and Lake, E.T.(1994) 'Lower medicare mortality among a set of hospitals known for good nursing care, *Medical Care*,32(8), pp.771-787.

Aiken, L.H. and Sloane, D.M. (1997a) 'Effects of organizational innovations in AIDS care on burnout among urban hospital nurses', *Work and Occupations*, *24*(4), pp.453-477. https://doi.org/10.1177/0730888497024004004.

Aiken, L.H. and Sloane, D.M.(1997b) 'Effects of specialization and client differentiation on the status of nurses: the case of AIDS', *Journal of Health and Social Behavior*, 38(3), pp.203-222.

Aiken, L. and Patrician, P. (2000) 'Measuring organisational traits of hospitals: the revised nursing work index', *Nursing Research,* 49(3), pp. 146-153.

Aiken, L.H., Cerón, C., Simonetti, M., Lake, E.T., Galiano, A., Garbarini, A., Soto, P., Bravo, D. and Smith, H.L. (2018) 'Hospital nurse staffing and patient outcomes', *Revista Médica Clínica Las Condes,* 29(3), pp. 322-327. doi: https://doi.org/10.1016/j.rmclc.2018.04.011.

Alilu, L., Zamanzadeh, V., Valizadeh, L., Habibzadeh, H. and Gillespie, M. (2017) 'A grounded theory study of the intention of nurses to leave the profession', *Revista Latino-Americana de Enfermagem,* 25, pp. e2894, doi: http://dx.doi.org/10.1590/1518-8345.1638.2894.

American Nurses Association. (2015,p-1) '*Bullying and workplace violence* (Online). Available from: http://www.nursingworld.org/BullyingWorkplace-Violence (Accessed: 6th August, 2020.

American Nurses Credentialing Centre (2016) '*Magnet Model'.* Available at: http://www.nursecredentialing.org.magnet.programoverview/new-magnet-model (Accessed: 14th November, 2019).

Antonakis, J., Avolio, B. J & Sivasubramaniam, N. (2003) 'Context and leadership: an examination of the nine-factor full-range leadership theory using the multifactor leadership questionnaire', *The Leadership Quarterly*, 14(3), pp. 261-295. doi: 10.1016/s1048-9843(03)00030-4.

Appleton, L (1994) 'What's a critical incident?', *Canadian Nurse,* 90/8, pp-23-26

Arabi, Y. M; Phua, J; Koh, Y; Du, B; Faruq, M. O; Nishimura, M; Fang, Wen-Feng; Gomersall, C; Al Rahma, H; Tamim, H; Al-Dorzi, H; Al-Hameed, F. M; Adhikari, N. K. J; and Sadat, M. (2016) 'Structure, organization, and delivery of critical care in Asian ICUs', *Critical Care Medicine,* 44(10), pp. e940-e948. doi: https://doi.org/10.1097/CCM.0000000000001854.

Atrostic, B.K., Bates, N., Burt, G., and Silberstein, A. (2001) 'Nonresponse in U.S. government household surveys: consistent measures, recent trends, and new insights, *Journal of Official Statistics*, 17, pp. 209-226.

Aveyard, H. and Bradbury-Jones, C. (2019) 'An analysis of current practices in undertaking literature reviews in nursing: findings from a focused mapping review and synthesis', *BMC Medical Research Methodology,* 19(1), pp. 105. doi: https://doi.org/10.1186/s12874-019-0751-7.

Bagley, C., Abubaker, M. and Sawyerr, A. (2018) 'Personality, work-life balance, hardiness, and vocation: a typology of nurses and nursing values in a special sample of English hospital nurses', *Administrative Sciences,* 8(4), pp. 79. doi: https://doi.org/10.3390/admsci8040079.

Bahm, A. J. (1993) '*Axiology: the science of values',* Amsterdam, Atlanta: Rodopi B. V.

Balsanelli, A. P. and Cunha, I. (2013) 'The work environment in public and private intensive care units', *Acta Paulista de Enfermagem,* 26(6), pp. 561-8. doi: https://doi.org/10.1590/S0103-21002013000600009.

Bambling, M., King, R., Raue, P., Schweitzer, R. and Lambert, W. (2006) 'Clinical supervision: its influence on client-rated working alliance and client symptom reduction in the brief treatment of major depression, *Psychotherapy Research*, *16*(03), pp. 317-331. https://doi.org/10.1080/10503300500268524.

Bambacas, M. and Kulik, T.C. (2013) ' Job embeddedness in China: how HR practices impact turnover intentions', *The International Journal of Human Resource Management*, *24*(10), pp.1933-1952.

Bandura, A. and Adams, N. E. (1977) 'Analysis of self-efficacy theory of behavioural change', *Cognitive Therapy and Research,* 1(4), pp. 287-310. doi: https://doi.org/10.1007/BF01663995.

Barnes, D & Murphy S. (2009) 'Reproductive decisions for women with HIV: motherhood's role in envisioning a future', *Qualitative Health Research*, 19(4), pp 481–491.

Bass, B. (1985) '*Leadership and performance beyond expectations*, New York, NY: Free Press.

Bass, B & Avolio, B. J. (1994) '*Improving organizational effectiveness through transformational leadership*, Thousand Oaks; CA: Sage Publications, Inc.

Bass, B & Riggio, R. E. (2006) '*Transformational leadership'* (2nd edn). Mahwah, NJ: Lawrence Erlbaum.

Batey M.V. & Lewis F.M. (1982) 'Clarifying autonomy and accountability in nursing service: part 1', *Journal of Nursing Administration,* 12(9), pp. 13-18.

Batt, R and Valcour, M. (2003) 'Human resources practices as predictors of work-family outcomes and employee turnover, *Industrial Relations,* 42(2), pp. 189-220. https://doi.org/10.1111/1468-232X.00287.

Bazeley, P. and Jackson, K. (2013) '*Qualitative data analysis with NVivo',* 2nd edn: Sage

Bazeley, P. (2018) '*Integrating analyses in mixed methods research,* Melbourne: Sage.

Bazeley, P. (2018,p-7) '*Integrating analyses in mixed methods research,* Melbourne: Sage.

Behnia, O; Hosseinpour, M; and Zara, k. (2016) 'The analysis of the team working, facilitating factors among nurses working in training centres affiliated with the university of Jondi-sha-pour in Ahvaz', *Avicenna Journal of Nursing and Midwifery Care*, 24(4), pp. 247-55.

Berndt, T. J. (1981,p-1) 'Effects of friendship on prosocial intentions and behaviour', *Child Development,* 52(2). doi: 10.2307/1129184.

Berger, P.L. and Luckman, T. (1967) '*The social structure of reality'*. *Alien lane. L*.

Berger, R. (2015) 'Now I see it, now I don’t: researcher’s position and reflexivity in qualitative research, *Qualitative Research*, *15*(2), pp.219-234. https://doi.org/10.1177/1468794112468475.

Bergman, M. M. (2008) 'The straw men of the qualitative-quantitative divide and their influence on mixed methods research'. In Bergman, M. M. (Ed.) *Advances in mixed methods research.* London: Sage Publications.

Bergbom, B., Vartia-Vaananen, M. and Kinnunen, U. (2015) 'Immigrants and natives at work: exposure to workplace bullying', *Employee Relations*, 37(2), pp.158-175. https://doi.org/10.1108/ER-09-2014-0101.

Berry, P.A., Gillespie, G.L., Gates, D. and Schafer, J. (2012) 'Novice nurse productivity following workplace bullying', *Journal of Nursing Scholarship*, *44*(1), pp. 80-87. https://doi.org/10.1111/j.1547-5069.2011.01436.x

Bethlehem, J. G and Kersten, M.P. (1985) 'On the treatment of nonresponse in sample surveys', *Journal of Official Statistics,* 1 (3), pp. 287-300.

Bianchi, S. M., Milkie, M. A., Sayer, L. C., and Robinson, J. P. (2000) 'Is anyone doing the housework? trends in the gender division of household labour', *Social Forces,* 79(1), pp. 191-228. https://doi.org/10.1093/sf/79.1.191.

Bloor, M. (1978) 'On the analysis of observational data: a discussion of the worth and uses of inductive techniques and respondent validation', *Sociology*, *12*(3), pp.545-552.

Bogdan, R.C. and Biklen, S.K.(2007,p-35) '*Research for education: an introduction to theories and methods,* (5th edn).Pearson.

Booth, A., Noyes, J., Flemming, K., Gerhardus, A., Wahlster, P., Van Der Wilt, G.J., Mozygemba, K., Refolo, P., Sacchini, D., Tummers, M. and Rehfuess, E. (2016) '*Guidance on choosing qualitative evidence synthesis methods for use in health technology assessments of complex interventions',* Integrate-HTA. Available at: https://www.integrate-hta.eu/wp-content/uploads/2016/02/Guidance-on-choosing-qualitative-evidence-synthesis-methods-for-use-in-HTA-of-complex-interventions.pdf. (Accessed: 3rd November, 2019).

Booth, A., Sutton, A. and Papaioannou, D. (2016) '*Systematic approaches to a successful literature review',* 2nd edn: Sage.

Borkowski, N. (2005, p-261) '*Organizational behaviour in health care*, Sudbury, MA: Jones & Barlett Publishing.

Brady-Schwartz, D. (2005) 'Further evidence on the magnet recognition program: implications for nursing leaders', *The Journal of Nursing Administration*, 35(9), pp. 397-403.

Bradshaw, C., Atkinson, S. and Doody, O. (2017) 'Employing a qualitative description approach in health care research', *Global Qualitative Nursing Research*, *4(1)*, pp.2333393617742282. https://doi.org/10.1177/2333393617742282.

Bradbury-Jones, C., Breckenridge, J.P., Clark, M.T., Herber, O.R., Jones, C. and Taylor, J. (2019) 'Advancing the science of literature reviewing in social research: the focused mapping review and synthesis', *International Journal of Social Research Methodology,* 22(5), pp. 451-462. doi: https://doi.org/10.1080/13645579.2019.1576328.

Braun, V. and Clarke, V. (2006) 'Using thematic analysis in psychology, *Qualitative Research in Psychology,* 3(2), pp. 77-101.

Breau, M. and Rhéaume, A. (2014) 'The relationship between empowerment and work environment on job satisfaction, intent to leave, and quality of care among ICU nurses', *Dynamics,* 25(3), pp. 16-24.

Brewerton, P. M. and Millward, L. J. (2001) '*Organizational research methods: a guide for students and researchers,* Sage.

Brick, J.M. (2013) 'Unit nonresponse and weighting adjustments: a critical review', *Journal of Official Statistics*, *29*(3), pp.329-353.

Broome, M. E. (1993) 'Integrative literature reviews for the development of concepts', in L., B. & Rodgers, K.A.K. (eds.) *Concept development in nursing: foundations, techniques and applications.* 2nd edn. Philadelphia: Saunders, pp. 231-50.

Broom, A. and Willis, E. (2007) 'Competing paradigms and health research in Saks M and Allsop J (edns) *Researching Health: Qualitative, Quantitative and Mixed Methods*, pp.16-30.

Brunges, M. and Foley-Brinza, C. (2014) 'Projects for increasing job satisfaction and creating a healthy work environment', *AORN Journal,* 100(6), pp. 670-681. doi: https://doi.org/10.1016/j.aorn.2014.01.029.

Bryman, A. (1992) '*Charisma and leadership in organizations*, London: Sage Publications.

Bryman, A. (2006) 'Integrating quantitative and qualitative research: how is it done?', *Qualitative Research,* 6(1), pp. 97-113. doi: https://doi.org/10.1177/1468794106058877.

Bryman, A. (2008) '*Social research methods'*.5th edn: Oxford University Press.

Buchan, J., Charlesworth, A., Gershlick, B. and Seccombe, I (2019) 'A critical moment: NHS staffing trends, retention and attrition'. *London: The Health Foundation*.

Budhwar, P. S., Wickramasinghe, V. and Jayabandu, S. (2007) 'Towards workplace flexibility: flexitime arrangements in Sri Lanka', *Employee Relations,* 29(6), pp.554-574. https://doi.org/10.1108/01425450710826087.

Burns, J.M. (1978,p-18) *'Leadership*', New York: Harper and Row.

Burns, R. B. (1997) '*Introduction to research methods,* 3rd edn. Longman: Addison Wesley.

Burke, R. J., Koyuncu, M. and Fiksenbaum, L. (2006) 'Organisational practices supporting women's career advancement and their satisfaction and well-being in Turkey', *Women in Management Review*, 21(8), pp. 610-624. https://doi.org/10.1108/09649420610712018.

Burns, N. and Grove, S. K. (2009) 'The practice of nursing research: appraisal', in Burns, N. & Grove, S.K. (eds.) *Synthesis and generation of evidence.* 6th edn: Elsvier/Saunders.

Cachia, M. and Millward, L. (2011) 'The telephone medium and semi-structured interviews: a complementary fit', *Qualitative Research in Organizations and Management,* 6(3), pp. 265-277. https://doi.org/10.1108/17465641111188420.

Cannon, B., Steeh, C. and Kirgis, N. (2001) 'Are they really as bad as they seem? nonresponse rates at the end of the twentieth century, *Journal of Official Statistics*, *17*(2), pp.227-248.

Canadian Association of Critical Care Nurses (2018) '*Position statement: patient and family centred care*. Available at: https://www.caccn.ca/files/062018PSPFCCare.pdf (Accessed: 2nd November, 2019).

Carr, E. C. (2000) 'Exploring the effect of postoperative pain on patient outcomes following surgery', *Acute Pain,* 3(4), pp. 183-193. doi: https://doi.org/10.1016/S1366-0071(00)90003-2.

Carr, T (2008) Mapping the processes and qualities of spiritual nursing care. *Qualitative Health Research*, *18*(5), pp.686-700.

Carson, D., Gilmore, A., Perry, C. and Gronhaug, K. (2001) 'Philosophy of Research' in (edn) Carson D; Gilmore A; Perry C & Gronhaug K*, Qualitative Marketing Research*, pp.1-20.

Cassell, C. and Symon, G. (2004) '*Essential guide to qualitative methods in organizational research,* Sage.

Cavanagh S. J. (1991) 'The conflict management style of staff nurses and nurse managers', *Journal of Advanced Nursing*, 16(10), pp. 1254-1260. https://doi. org/10.1111/j. 1365-2648. 1991. tb01536. x.

CC3N (2017) ' *Moving Critical Care nursing staff to a different clinical area'*. Available at:https://www.noeccn.org.uk/resources/Documents/National%20Meeting/Moving%20Critical%20Care%20Staff%20to%20other%20clinical%20areas-%20Best%20Practice%20Principles%20FINAL.pdf. (Accessed: 9th August 2020)

Chandler J., Cumpston M., Thomas J., Higgins JPT., Deeks JJ., Clarke MJ., Chapter I. (2020) 'Introduction. In: Higgins JPT., Thomas J., Chandler J., Cumpston M., Li T., Page MJ., Welch VA (editors) *Cochrane handbook for systematic reviews of interventions* version 6.1. Cochrane, 2020. Available from www.training.cochrane.org/handbook. (Accessed, 14th October 2020).

Chamberlain, D., Pollock, W. and Fulbrook, P. (2018) 'ACCCN workforce standards for intensive care nursing: systematic and evidence review, development, and appraisal', *Australian Critical Care,* 31(5), pp. 292-302. doi: https://doi.org/10.1016/j.aucc.2017.08.007.

Chapman, G. and White, P. (2019) '*The 5 languages of appreciation in the workplace: empowering organizations by encouraging people*. Moody Publishers.

Chen, I.H., Brown, R., Bowers, B.J. and Chang, W.Y. (2015) 'Work-to-family conflict as a mediator of the relationship between job satisfaction and turnover intention', *Journal of Advanced Nursing,* 71(10), pp. 2350-2363. https://doi.org/10.1111/jan.12706.

Chen, H., Li, G., Li, M., Lyu, L. and Zhang, T. (2018) 'A cross-sectional study on nurse turnover intention and influencing factors in Jiangsu province, China', *International Journal of Nursing Sciences*, 5(4), pp. 396-402. doi: https://doi.org/10.1016/j.ijnss.2018.09.012.

Cherian, U. (2016) '*Impact of meaningful recognition on nurses' work environment in ICU: a comparative exploration of nurse leaders and staff nurses' perception',* The University of North Carolina.

Chiok Foong Loke, J. (2001) 'Leadership behaviours: effects on job satisfaction, productivity and organizational commitment', *Journal of Nursing Management, 9*(4), pp. 191-204.

Cho, S.H., June, K.J., Kim, Y.M., Cho, Y.A., Yoo, C.S., Yun, S.C. and Sung, Y.H. (2009) 'Nurse staffing, quality of nursing care and nurse job outcomes in intensive care units', *Journal of Clinical Nursing,* 18(12), pp. 1729-1737. doi: https://doi.org/10.1111/j.1365-2702.2008.02721.x.

Cho, Y. J., & Lewis, G. B. (2012) 'Turnover Intention and turnover behaviour: implications for retaining federal employees', *Review of Public Personnel Administration*, *32*(1), pp. 4-23. https://doi.org/10.1177/0734371X11408701.

Chung, M.H., Liu, W.I., Lee, H.L. and Hsu, N.(2013) 'Selected neurophysiological, psychological, and behavioural influences on subjective sleep quality in nurses: a structural equation model', *PloS One,* 8(11), pp. e79529. doi: 10.1371/journal.pone.0079529.

Clark, V. L. P. (2019) 'Meaningful integration within mixed methods studies: identifying why, what, when, and how, *Contemporary Educational Psychology,* 57(1), pp. 106-111. doi: https://doi.org/10.1016/j.cedpsych.2019.01.007.

Classen, S., Lopez, E.D., Winter, S., Awadzi, K.D., Ferree, N. and Garvan, C.W. (2007) 'Population-based health promotion perspective for older driver safety: a conceptual framework to intervention plan', *Clinical Interventions in Aging,* 2(4), pp. 677-693.

Clayton-Hathway, K.*, et al.* (2020) '*Gender and nursing as a profession–valuing nurses and paying them their worth*'. England: Royal College of Nursing and Oxford Brookes University

Cohen, L., Manion, L. and Morrison, K. (2007) '*Research methods in education'.* 6th edn. London and New York: Routledge.

Cohen, G., Blake, R. S., & Goodman, D. (2016) 'Does turnover intention matter? evaluating the usefulness of turnover intention rate as a predictor of actual turnover rate', *Review of Public Personnel Administration*, 36(3), pp. 240-263. https://doi.org/10.1177/0734371X15581850.

Comrey AL . (1973) '*A first course in factor analysis*, New York: Academic Press, Inc.

Campo, M. A., Weiser, S., & Koenig, K. L (2009) 'Job strain in physical therapists', *Physical therapy*, *89*(9), 946–956. https://doi.org/10.2522/ptj.20080322.

Corley M.C. (1998) 'Ethical dimensions of nurse-physician relations in critical care', *The Nursing Clinics of North America, 33(2),* pp*. 325-337.*

Corbett, J., Day, J., Doig, M., Dowling, S., Martin, S. and Stannard, A. (2014) '*The Scottish health survey 2013 edition'*, Technical report. Edinburgh: The Scottish Government.

Corry, M., Porter, S. and McKenna, H. (2019) 'The redundancy of positivism as a paradigm for nursing research', *Nursing Philosophy,* 20(1), pp. e12230. doi: https://doi.org/10.1111/nup.12230.

Creswell, J. W. (2003) '*Research design, qualitative, quantitative and mixed methods,* 2nd edn: Sage.

Creswell, J. W., Fetters, M. D., and Ivankova, N. V. (2004) 'Designing a mixed-method study in primary care, *The Annals of Family Medicine,* 2(1), pp. 7-12. doi: https://doi.org/10.1370/afm.104.

Creswell, J. W. (2011) 'Controversies in mixed methods research, in Norman, K.D. & Yvonna, S.L. (eds.) *The sage handbook of qualitative research*: Sage pp. 269-284.

Creswell, J. W. (2011,p.269-284) 'Controversies in mixed methods research, in Norman, K.D. & Yvonna, S.L. (eds.) *The sage handbook of qualitative research*: Sage.

Creswell, J. W. and Clark, V. L. P. (2011) '*Designing and conducting mixed methods research,* 2nd edn: Sage.

Creswell, J.W., Klassen, A.C., Plano Clark, V.L., and Smith, K.C. (2011) '*Best practices for mixed methods research in the health sciences*, 2013, pp. 541-545.

Creswell, J. W. and Plano Clark, V. (2011) 'Choosing a mixed methods design', in Creswell, J.W. & Plano Clark, V. (eds.) *Designing and conducting mixed methods research,* 2nd edn: Sage, pp. 53-106.

Creswell, J. W. (2014) '*Research design (international student edition): qualitative, quantitative, and mixed methods approaches,* 4th edn: Sage.

Creswell, J. W. (2014,p.4) *'Research design (international student edition): qualitative, quantitative, and mixed-method approaches',* 4th edn: Sage.

Creswell, J. W. and Clark, V. L. P. (2018) '*Designing and conducting mixed methods research,* 3rd edn: Sage.

Cronin, P., Ryan, F. and Coughlan, M. (2008) 'Undertaking a literature review: a step-by-step approach, *British Journal of Nursing,* 17(1), pp. 38-43. doi: https://doi.org/10.12968/bjon.2008.17.1.28059.

Cropanzano, R. and Mitchell, M. S. (2005) 'Social exchange theory: an interdisciplinary review', *Journal of Management,* 31(6), pp. 874-900. doi: https://doi.org/10.1177/0149206305279602.

Crotty, M. (2003,p-10) '*The Foundations of social research: meaning and perspectives in the research process*, 3rd edn. London: Sage Publications,

Crotty, M. (2003,p-3) '*The Foundations of social research: meaning and perspectives in the research process*, 3rd edn. London: Sage Publications.

Crowe, S., Howard, A.F., Vanderspank-Wright, B., Gillis, P., McLeod, F., Penner, C. and Haljan, G (2021) 'The effect of COVID-19 pandemic on the mental health of Canadian critical care nurses providing patient care during the early phase pandemic: a mixed-method study', *Intensive and Critical Care Nursing*, *63*, p.102999.

Cummings, G., MacGregor, T., Davey, M., Lee, H., Wong, C. A., Lo, E. and Stafford, E. (2010) 'Leadership styles and outcome patterns for the nursing workforce and work environment: a systematic review', *International Journal of Nursing Studies*, 47(3), pp. 363-385.

Curtin L. (1982) 'Autonomy, accountability and nursing practice', *Topics in Clinical Nursing'* 4(1), pp. 7-13.

Daly, M (2016) '*Gyn/ecology: the metaethics of radical feminism'*. Beacon Press.

Daniel, B.K. (2019) 'What constitutes a good qualitative research study? fundamental dimensions and indicators of rigour in qualitative research: the TACT framework'. In *proceedings of the European conference of research methods for business & management studies,* pp. 101-108.

Darawsheh, W. and Stanley, M. (2014,p-567) 'Reflexivity in research: promoting rigour, reliability and validity in qualitative research, *International Journal of Therapy and Rehabilitation*, *21*(12), pp.560-568.

Deal, J. J.((2007) '*Retiring the generation gap: how employees young and old can find common ground'*, San Francisco, CA, USA: John Wiley & Sons.

De Angulo, J.M. and Losada, L.S. (2015) 'Health paradigms shifts in the 20th Century', *Christian Journal for Global Health*, *2*(1). https://doi.org/10.15566/cjgh.v2i1.37.

de Boer, j, van Rikkxoort, S , Bakker, AB, and Smith, B.J (2013) 'Critical incidents among intensive care nurses and their need for support:explorative inetrviews', *Nursing in Critical Care*, 19/4, pp-166-174.

Deci, E. L. and Ryan, R. M. (2000) 'The" what" and" why" of goal pursuits: human needs and the self-determination of behaviour', *Psychological Inquiry,* 11(4), pp. 227-268. doi: https://doi.org/10.1207/S15327965PLI1104_01.

Dechawatanapaisal, D. (2018 a) 'The moderating effects of demographic characteristics and certain psychological factors on the job embeddedness - turnover relationship among Thai health-care employees', *International Journal of Organizational Analysis*, 26(1), pp. 43-62. doi: 10.1108/IJOA-11-2016-1082.

Dechawatanapaisal, D. (2018b) 'Nurses' turnover intention: the impact of leader-member exchange, organizational identification and job embeddedness', *Journal of Advanced Nursing,* 74(6), pp. 1380-1391. doi: https://doi.org/10.1111/jan.13552.

DeGees, S., Claessens, P., Longerich, H., & Schubert, M. (2003) 'Special editorial: transformational leadership: worthwhile the investment; *European Journal of Cardiovascular Nursing*, 2, pp. 3-5.

De Heer, W. and De Leeuw, E. (2002) 'Trends in household survey nonresponse: a longitudinal and international comparison in De Heer, W. and De Leeuw, E (eds) *Survey Nonresponse*, pp.41-54.

Dempster, J.S. (1994) 'Autonomy: a professional issue of concern for nurse practitioners', *Nurse Practitioner Forum*, 5 (4) pp. 227-232.

Denscombe, M. (2002) '*Ground rules for social research,* 2nd edn. Maidenhead: Open University Press.

Denzin, N. K. and Lincoln, Y. S. (2008) '*Collecting and interpreting qualitative materials,* 3rd edn: Sage.

Devonish, D. (2013) 'Workplace bullying, employee performance and behaviours: the mediating role of psychological well being', *Employee Relations*, 35(6), pp.630-647. https://doi.org/10.1108/ER-01-2013-0004.

Dewanto, A. and Wardhani, V.(2018) 'Nurse turnover and perceived causes and consequences: a preliminary study at private hospitals in Indonesia', *BMC Nursing*, *17* (2), pp.52. https://doi.org/10.1186/s12912-018-0317-8.

Dick, R. (1990) '*Convergent interviewing',* Brisbane, Australia: Interchange.

Dilig-Ruiz, A., MacDonald, I., Varin, M.D., Vandyk, A., Graham, I.D. and Squires, J.E (2018) 'Job satisfaction among critical care nurses: a systematic review', *International Journal of Nursing Studies,* 88, pp. 123-134. doi: https://doi.org/10.1016/j.ijnurstu.2018.08.014.

Doucet, S. A., Letourneau, N. L. and Stoppard, J. M. (2010) 'Contemporary paradigms for research related to women's mental health', *Health Care for Women International,* 31(4), pp. 296-312. doi: https://doi.org/10.1080/07399330903518509.

Dodek, P.M., Wong, H., Norena, M., Ayas, N., Reynolds, S.C., Keenan, S.P., Hamric, A., Rodney, P., Stewart, M. and Alden, L. (2016) 'Moral distress in intensive care unit professionals is associated with the profession, age, and years of experience', *Journal of Critical Care,* 31(1), pp. 178-182. doi: https://doi.org/10.1016/j.jcrc.2015.10.011.

Doody, O and Doody, C.M (2012) 'Transformational leadership in nursing practice', *British Journal of Nursing*, *21*(20), pp.1212-1218.

Dowling, M. (2006) 'Approaches to reflexivity in qualitative research, *Nurse Researcher*, *13*(3), pp.17-21. doi**:** 10.7748/nr2006.04.13.3.7.c5975.

Drever, E. (1995) '*Using semi-structured interviews in small-scale research: A teacher's guide',* Scottish Council for Research in Education.

Driscoll, A., Grant, M.J., Carroll, D., Dalton, S., Deaton, C., Jones, I., Lehwaldt, D., McKee, G., Munyombwe, T. and Astin, F. (2018) 'The effect of nurse-to-patient ratios on nurse-sensitive patient outcomes in acute specialist units: a systematic review and meta-analysis, *European Journal of Cardiovascular Nursing,* 17(1), pp. 6-22. doi: https://doi.org/10.1177/1474515117721561.

Duffield, C.M., Roche, M.A., Homer, C., Buchan, J. and Dimitrelis, S. (2014) 'A comparative review of nurse turnover rates and costs across countries, *Journal of Advanced Nursing,* 70(12), pp. 2703-2712. doi: https://doi.org/10.1111/jan.12483.

Duncan, E. A. and Nicol, M. M. (2004) 'Subtle realism and occupational therapy: an alternative approach to knowledge generation and evaluation', *British Journal of Occupational Therapy,* 67(10), pp. 453-456. doi: https://doi.org/10.1177/030802260406701006.

Einarsen, S., Skogstad, A., Rørvik, E., Lande, Å.B. and Nielsen, M.B. (2018) 'Climate for conflict management, exposure to workplace bullying and work engagement: a moderated mediation analysis, *The International Journal of Human Resource Management*, *29*(3), pp. 549-570. https://doi.org/10.1080/09585192.2016.1164216.

Ellen, R. F. (1984,p.9) '*Ethnographic research: a guide to general conduct',* The University of Michigan: Academic Press.

Embree, J. L., & White, A.H. (2010) 'Concept analysis: nurse-to-nurse lateral violence', *Nursing Forum*, 45(3),pp-166-173. https://doi.org/10.1111/j.1744-6198.2010.00185.x.

Endacott, R., Jones, C., Bloomer, M.J., Boulanger, C., Nun, M.B., Egerod, I. and Blot, S. (2015) 'The state of critical care nursing education in Europe: an international survey', *Intensive Care Medicine,* 41, pp. 2237-2240. doi: https://doi.org/10.1007/s00134-015-4072-y.

Eriksson, U., Starrin, B & Janson, S (2008) 'Long-term sickness absence due to burnout': absentees' experiences', *Qualitative Health Research*, 18(5), pp. 620-632.

Eriksen, M.B. and Frandsen, T.F (2018) 'The impact of patient, intervention, comparison, outcome (PICO) as a search strategy tool on literature search quality: a systematic review', *Journal of the Medical Library Association: JMLA*, *106*(4), p. 420.

Estabrooks, C.A., Tourangeau, A.E., Humphrey, C.K., Hesketh, K.L., Giovannetti, P., Thomson, D., Wong, J., Acorn, S., Clarke, H. and Shamian, J.(2002) 'Measuring the hospital practice environment: a Canadian context', *Research in Nursing & Health*, *25*(4), pp.256-268. https://doi.org/10.1002/nur.10043.

European federation of Critical Care Nursing Associations -EfCCNa (2007) '*Position statement on workforce requirements in critical care units',* Available at https://www.efccna.org/images/stories/publication/2007_ps_workforce_requirements_neu.pdf (Accessed: 1st November, 2019).

Everly, G.S, and Mitchell, J.T (1999) ' *Critical incident stress management: a new era and standard of care in crisis inetrvention*', Elliot City, MD: Chevron.

Everly, G.S, and Mitchell, J.T (2008) ' *Integartive crisis intervention and disaster mental health',* Columbia, MD: Chevron.

Fagerström, L., Kinnunen, M. and Saarela, J. (2018) 'Nursing workload, patient safety incidents and mortality: an observational study from Finland', *BMJ Open,* (8), pp. e016367. doi: 10.1136/BMJ open-2017-016367.

Fallis, K. and Altimier, L. (2006) 'Shared leadership: leading from the bottom up', *Newborn and Infant Nursing Reviews*, *6*(1), pp.3-6.

Falender, C. A., & Shafranske, E. P. (2008) 'Casebook for clinical supervision: a competency-based approach, American Psychological Association. https://doi.org/10.1037/11792-000.

Farr R. (1982) 'Interviewing: the social psychology of the interview. In: *psychology for occupational therapists, psychology for professional groups'*. Palgrave, London. https://doi.org/10.1007/978-1-349-16882-8_9.

Farooq, M. B. (2015) 'Qualitative telephone interviews: strategies for success, *18th Annual Waikato Management School Student Research Conference*. Hamilton, New Zealand.

Fardid, M., Hatam, N. and Kavosi, Z. (2018) 'A path analysis of the effects of nurses' perceived organizational justice, organizational commitment, and job satisfaction on their turnover intention', *Nursing and Midwifery Studies*, 7(4), pp. 157-162. http://www.nmsjournal.com/text.asp?2018/7/4/157/24.

Faye G. & Yarandi H.N. (2004) 'Depression among southern rural African American women: a factor analysis of the Beck Depression Inventory-II', *Nursing Research,* **53**, pp. 251-259.

Fenig, S., Levav, I., Kohn, R. and Yelin, N. (1993) 'Telephone vs face-to-face interviewing in a community psychiatric survey', *American Journal of Public Health,* 83(6), pp. 896-898.

Fetters, M. D., Curry, L. A. and Creswell, J. W. (2013) 'Achieving integration in mixed methods designs-principles and practices', *Health Services Research,* 48(6pt2), pp. 2134-2156. doi: https://doi.org/10.1111/1475-6773.12117.

Fetters, M. D. and Freshwater, D. (2015) 'The 1+ 1= 3 Integration Challenge', *Journal of Mixed Methods Research,* 9(2), pp. 115-117. doi: https://doi.org/10.1177/1558689815581222.

Fiedler, F. (1964) 'A contingency model of leadership effectiveness'; in *Advances in Experimental Social Psychology*. vol 1, 149-190.

Finley, S. (1998) '*Teacher education faculty as researchers: composing lives in context, a blend of form and content'*. PhD thesis. Available at: http://gateway.proquest.com/openurl?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation&res_dat=xri:pqm&rft_dat=xri:pqdiss:9840534 (Accessed, 29th September 2019).

Fisch, M.H. (1982) 'The range of Peirce's relevance (Continued)', *The Monist*, *65*(2), pp.123-141. Oxford University Press. Available online at https://www.jstor.org/stable/27902743 (Accessed 12th June 2020).

Fitzpatrick, J.J., Campo, T.M., Graham, G. and Lavandero, R. (2010) 'Certification, empowerment, and intent to leave the current position and the profession among critical care nurses', *American Journal of Critical Care,* 19(3), pp. 218-226. doi: https://doi.org/10.4037/ajcc2010442.

Flick, U. (2009,p-69) '*An introduction to qualitative research* (4th edn)', Sage Publications Ltd.

Fontana, A. and Frey, J. H. (2005) 'The interview: from a neutral stance to political involvement', in Denzin, N.K.L., S.K (eds.) *The sage handbook of qualitative research*: Sage pp. 695–727.

Force, M (2005) 'The relationship between effective nurse managers and nursing retention'; *The Journal of Nursing Administration*, 35(7-8), pp. 336.

Forero, R., Nahidi, S., De Costa, J., Mohsin, M., Fitzgerald, G., Gibson, N., McCarthy, S. and Aboagye-Sarfo, P. (2018) 'Application of four-dimension criteria to assess the rigour of qualitative research in emergency medicine, *BMC Health Services Research*, *18*(1), pp.120.

Fowler H.W. & Fowler, E.G. (1995,p-85) '*The concise Oxford dictionary of current English*', 8th edn'. Clarendon, Oxford.

Frone, M.R., Russell, M. and Cooper, M.L. (1992) 'Prevalence of work-family conflict: is work and family boundaries asymmetrically permeable?', *Journal of Organizational Behavior*, *13*(7), pp.723-729.

Fusch, P.I., Ness, L.R.(2015) 'Are we there yet? Data saturation in qualitative research, *Qualitative. Report*. 20(9), pp.1408–1416.

Gale, R.M. (2005) 'The cognitive pragmatism of Nicholas Rescher'. in: *contemporary pragmatism*, *2*(2), pp.1-7. https://doi.org/10.1163/18758185-90000012.

Gale, N.K., Heath, G., Cameron, E., Rashid, S. and Redwood, S (2013) 'Using the framework method for the analysis of qualitative data in multi-disciplinary health research', *BMC Medical Research Methodology,* 13(1), pp. 117. doi: https://doi.org/10.1186/1471-2288-13-117.

Gall, M. D., Borg, W. R. and Gall, J. P. (2003) *Educational research: an introduction'.* 7th edn. Boston: Pearson.

Gall, M. D., Borg, W. R. and Gall, J. P. (2003,p.13) *Educational research: an introduction.* 7th edn. Boston: Pearson.

Galletta, M., Portoghese, I., Battistelli, A. and Leiter, M.P (2013) 'The roles of unit leadership and nurse-physician collaboration on nursing turnover intention', *Journal of Advanced Nursing,* 69(8), pp. 1771-1784. doi: https://doi.org/10.1111/jan.12039.

García-Sierra, R. and Fernández-Castro, J. (2018) 'Relationships between leadership, structural empowerment, and engagement in nurses', *Journal of Advanced Nursing,* 74(12), pp. 2809-2819. doi: https://doi.org/10.1111/jan.13805.

Geelan, D. R. (2015) 'While Heisenberg is not looking: the strength of ‘weak measurements’ in educational research, *The Australian Educational Researcher,* 42, pp. 395-404. doi: https://doi.org/10.1007/s13384-015-0169-0.

Georgiou, E., Papathanassoglou, E. D. and Pavlakis, A. (2017) 'Nurse-physician collaboration and associations with perceived autonomy in Cypriot critical care nurses', *Nursing in Critical Care,* 22(1), pp. 29-39. doi: https://doi.org/10.1111/nicc.12126.

Giorgi, F., Mattei, A., Notarnicola, I., Petrucci, C. and Lancia, L (2018) 'Can sleep quality and burnout affect the job performance of shift-work nurses? a hospital cross-sectional study', *Journal of Advanced Nursing,* 74(3), pp. 698-708. doi: https://doi.org/10.1111/jan.13484.

Given, L. M. (2008) '*The sage encyclopedia of qualitative research methods,* Sage.

Glaser, B.G., Strauss, A.L.(1967) '*The discovery of grounded theory: strategies for qualitative research*, Aldine, Chicago.

Glaser, B.G., Strauss, A.L.(1967,p-60) '*The discovery of grounded theory: strategies for qualitative research*, Aldine, Chicago.

Glesne, C. (2006) 'Making words fly: developing understanding through interviewing', in Glesne, C (eds), *Becoming qualitative researchers: an introduction*. Bosten: Pearson, pp. 246.

Global Health Workforce Alliance and World Health Organization (2013) '*A universal truth: no health without a workforce, a third global forum on human resources for a health report'.* Report: WHO. Available at: https://www.who.int/workforcealliance/knowledge/resources/hrhreport2013/en/ (Accessed: 1st November, 2019).

Gorsuch RL. (1983) '*Factor analysis*', Hillsdale, NJ: Erlbaum.

Gorsuch, R. L. (1988) 'Exploratory factor analysis, in Gorsuch, R.L. (eds.) *Handbook of multivariate experimental psychology*: Springer, pp. 231-258.

Graen, G., Dansereau Jr, F. and Minami, T. (1972) 'Dysfunctional leadership styles', *Organizational Behavior and Human Performance',* 7(2), pp. 216-236. doi: https://doi.org/10.1016/0030-5073(72)90016-5.

Grant, M. J. and Booth, A. (2009) 'A typology of reviews: an analysis of 14 review types and associated methodologies', *Health Information & Libraries Journal,* 26(2), pp. 91-108. doi: https://doi.org/10.1111/j.1471-1842.2009.00848.x.

Greenhaus, J. H. and Beutell, N. J. (1985) 'Sources of conflict between work and family roles', *Academy of Management Review,* 10(1), pp. 76-88. doi: https://doi.org/10.5465/amr.1985.4277352.

Greene, J. C., Caracelli, V. J. and Graham, W. F. (1989) 'Toward a conceptual framework for mixed-method evaluation designs', *Educational Evaluation and Policy Analysis,* 11(3), pp. 255-274. doi: https://doi.org/10.3102/01623737011003255.

Greenhaus, J. H. and Powell, G. N. (2006) 'When work and family are allies: a theory of work-family enrichment, *Academy of Management Review,* 31(1), pp. 72-92. https://doi.org/10.5465/amr.2006.19379625.

Griffeth, R. W., Hom, P. W. and Gaertner, S. (2000) 'A meta-analysis of antecedents and correlates of employee turnover: update, moderator tests, and research implications for the next millennium', *Journal of Management,* 26(3), pp. 463-488. doi: https://doi.org/10.1177/014920630002600305.

Grix, J. (2004) '*The foundations of research'*. New York, NY: Palgrave Macmillan.

Grove, A., Johnson, R., Clarke, A. and Currie, G (2016) 'Evidence and the drivers of variation in orthopaedic surgical work: a mixed-method systematic review', *Health System and Policy Research,* 3(1). http://wrap.warwick.ac.uk/78073.

Grubb, V. M. (2016) '*Clash of the generations: managing the new workplace reality.* Hoboken, New Jersey: Wiley.

Guba, E.G. and Lincoln, Y.S. (1982) 'Epistemological and methodological bases of naturalistic inquiry, *ECTJ, 30*(4), pp.233-252. https://doi.org/10.1007/BF02765185.

Guba, E.G. and Lincoln, Y.S. (1982,p-3,4) 'Epistemological and methodological bases of naturalistic inquiry, *ECTJ*, *30*(4), pp.233-252. https://doi.org/10.1007/BF02765185.

Guba, E.G. and Lincoln, Y.S. (1989) '*Fourth generation evaluation'*, Sage.

Guba, E. G. (1990) 'The alternative paradigm dialgue', *The paradigm dialgue*. California: Sage.

Guba, E., & Lincoln, Y. (1994) 'Competing paradigm in qualitative research'. In Denzin, N. & Lincoln, Y. (eds.). *Handbook of qualitative research* (PP.99-136). Sage Publications.

Guest, G., Bunce, A. and Johnson, L. (2006) 'How many interviews are enough? an experiment with data saturation and variability', *Field Methods,* 18(1), pp. 59-82. https://doi.org/10.1177/1525822X05279903.

Guest, G., Bunce, A. and Johnson, L. (2006,p-60) 'How many interviews are enough? an experiment with data saturation and variability', *Field Methods,* 18(1), pp. 59-82. https://doi.org/10.1177/1525822X05279903.

Guetterman, T. C., Fetters, M. D. and Creswell, J. W. (2015) 'Integrating quantitative and qualitative results in health science mixed methods research through joint displays', *The Annals of Family Medicine,* 13(6), pp. 554-561. doi: https://doi.org/10.1370/afm.1865.

Ha, H.J. and Kim, E.A. (2020) 'A convergence study about the influence of job embeddedness and nursing work environment on turnover intention of clinical nurses', *Journal of the Korea Convergence Society*, *11*(7), pp, 389-397. https://doi.org/10.15207/JKCS.2020.11.7.389.

Habermas J.(2003) 'Consciência moral e agir comunicativo', 2ª edn. Rio de Janeiro: Tempo Brasileiro.

Hall, R.H. (1968) 'Professionalization and bureaucratization', *American Sociological Review*, 33(9), pp.92-104.

Hall, J.M. and Stevens, P.E. (1991) 'Rigor in feminist research, *Advances in Nursing Science*, *13*(3), pp.16-29.

Halm, M. (2019) 'The Influence of appropriate staffing and healthy work environments on patient and nurse outcomes, *American Journal of Critical Care,* 28(2), pp. 152-156. doi: https://doi.org/10.4037/ajcc2019938.

Hammersley, M. (1992) '*Deconstructing the qualitative-quantitative divide'*, Aldershot, England: Avebury.

Hammersley, M. and Atkinson, P. (1995, p-18) '*Ethnography: principles in practice,* 2nd ed. New York: Routledge.

Hammarberg, K., Kirkman, M. and de Lacey, S. (2016) 'Qualitative research methods: when to use them and how to judge them', *Human Reproduction*, *31*(3), pp.498-501. https://doi.org/10.1093/humrep/dev334.

Hanson, W.E., Creswell, J.W., Clark, V.L.P., Petska, K.S. and Creswell, J.D (2005) 'Mixed methods research designs in counselling psychology, *Journal of Counseling Psychology,* 52(2), pp. 224-235. doi: https://doi.org/10.1037/0022-0167.52.2.224.

Hansen, J.-I. C. and Leuty, M. E. (2012) 'Work values across generations', *Journal of Career Assessment,* 20(1), pp. 34-52.
doi:https://doi.org/10.1177/1069072711417163.

Harkins, P. J. (1998,p-74) ' Why employees stay -or go', *Workforce,* 77(10).

Hart, S.m (2006) 'Generational diversity: impact on recruitment and retention of registered nurses, *Journal of Nursing Administration*, 36(1), pp.10-12. https://doi.org/10.1097/00005110-200601000-00004

Harden, A. (2010) 'Mixed-methods systematic reviews: integrating quantitative and qualitative findings, *Focus,* 2010(25), pp. 1-8.

Harris, J., Grafton, K. & Cooke, J (2020) 'Developing a consolidated research framework for clinical allied health professionals practising in the UK'. *BMC Health Serv Res* **20,** 852, https://doi.org/10.1186/s12913-020-05650-3.

Harvey, G. and Tapp, D.M (2020) 'Exploring the meaning of critical incident stress experienced by intensive care unit nurses', *Nursing Inquiry*, *27*(4), p.e12365.

Hauck, A., Quinn Griffin, M. T. and Fitzpatrick, J. J. (2011) 'Structural empowerment and anticipated turnover among critical care nurses, *Journal of Nursing Management,* 19(2), pp. 269-276. doi: https://doi.org/10.1111/j.1365-2834.2011.01205.x.

Hayajneh, Y.A., AbuAlRub, R.F., Athamneh, A.Z. and Almakhzoomy, I.K. (2009) 'Turnover rate among registered nurses in Jordanian hospitals: an exploratory study, *International Journal of Nursing Practice*, *15*(4), pp. 303-310.https://doi.org/10.1111/j.1440-172X.2009.01758.x.

Hayes, L.J., O'Brien-Pallas, L., Duffield, C., Shamian, J., Buchan, J., Hughes, F., Laschinger, H.K.S., North, N. and Stone, P.W. (2006) 'Nurse turnover: a literature review', *International Journal of Nursing Studies,* 43(2), pp. 237-263. doi: https://doi.org/10.1016/j.ijnurstu.2005.02.007.

Hayes, L.J., O'Brien-Pallas, L., Duffield, C., Shamian, J., Buchan, J., Hughes, F., Laschinger, H.K.S. and North, N. (2012) 'Nurse turnover: a literature review-an update', *International Journal of Nursing Studies,* 49(7), pp. 887-905. doi: https://doi.org/10.1016/j.ijnurstu.2011.10.001.

Health Workforce Australia, (2014) ' Australia future health workforce -nurses overview report', available at : https://www1.health.gov.au/internet/main/publishing.nsf/Content/34AA7E6FDB8C16AACA257D9500112F25/%24File/AFHW%20-%20Nurses%20overview%20report.pdf. (Accessed, 2nd November 2018.

Heffetz, O. and Rabin, M. (2013) 'Conclusions regarding cross-group differences in happiness depend on the difficulty of reaching respondents', *American Economic Review*, *103*(7), pp.3001-21.

Hegney, D., Plank, A. and Parker, V. (2006) 'Extrinsic and intrinsic work values: their impact on job satisfaction in nursing', *Journal of Nursing Management,* 14(4), pp. 271-281. doi: https://doi.org/10.1111/j.1365-2934.2006.00618.x.

Hemphill, J.K. and Coons, A.E. (1957,p.7) '*Development of the leader behaviour description questionnaire, leader behaviour: its description and measurement*'. pp. 6-38. Columbus: Bureau of Business. Ohio State University.

Hendricks, J. M. and Cope, V. C. (2013) 'Generational diversity: what nurse managers need to know, *Journal of Advanced Nursing,* 69(3), pp. 717-725. doi: https://doi.org/10.1111/j.1365-2648.2012.06079.x.

Herzberg, F. M. and Mausner, B. (1959) '*The motivation to work',* New York: Willey.

Herzberg, F. (1968) 'One more time, how do you motivate employees: not by improving work conditions, raising salaries and shuffling tasks', *Harvard Business Review*, pp.87-96.

Hersey, P & Blanchard, K. (1982) '*Management of Organizational Behaviour: utilising human resources*', New Jersey: Prentice Hall, Inc.

Heesakkers, H., Zegers, M., van Mol, M.M. and van den Boogaard, M (2021) 'The impact of the first COVID-19 surge on the mental well-being of ICU nurses: a nationwide survey study', *Intensive and Critical Care Nursing*, p. 103034.

Heyvaert, M., Hannes, K., Maes, B. and Onghena, P (2013) 'Critical appraisal of mixed methods studies, *Journal of Mixed Methods Research,* 7(4), pp. 302-327. doi: https://doi.org/10.1177/1558689813479449.

Hickman, L. and Alexander, T.M. (1998) '*The essential Dewey: pragmatism, education, democracy'*. Indiana University Press.

Hightower T. (1986) 'Subordinate choice of conflict-handling modes', *Nursing Administration Quarterly,* 11, pp. 29-34.

Hinshaw A.S. (1999) 'Evolving nursing research traditions: influencing factors. *In* (eds) Hinshaw A.S., Feetham S.L. & Shaver J.F.*Handbook of Clinical Nursing*, Sage, Thousand Oaks, CA, USA, pp. 19–30.

Himle, D. P., Jayaratne, S. and Thyness, P. A. (1989) 'The buffering effects of four types of supervisory support on work stress', *Administration in Social Work,* 13(1), pp. 19-34. doi: https://doi.org/10.1300/J147v13n01_02.

Ho, G.J., Liew, S.M., Ng, C.J., Hisham Shunmugam, R. and Glasziou, P. (2016) 'Development of a search strategy for an evidence-based retrieval service', *PloS One*, *11*(12), pp.e0167170. https://doi.org/10.1371/journal.pone.0167170.

Hobfoll, S.E. (1989) 'Conservation of resources: A new attempt at conceptualizing stress', *American Psychologist*, *44*(3).pp. 513-524.

Hobfoll, S.E. (1989,p-513) 'Conservation of resources: A new attempt at conceptualizing stress', *American Psychologist*, *44*(3).pp. 513-524.

Hoffe, O. (1994) '*Immanuel Kant*', Suny Press.

Holloway, I. and Wheeler, S. (1995) 'Ethical issues in qualitative nursing research, *Nursing Ethics*, *2*(3), pp.223-232.

Holloway, I. and Todres, L. (2003) 'The status of method: flexibility, consistency and coherence', *Qualitative Research,* 3(3), pp. 345-357. doi: https://doi.org/10.1177/1468794103033004.

Holt, A. (2010) 'Using the telephone for narrative interviewing: a research note', *Qualitative Research,* 10(1), pp. 113-121. doi: https://doi.org/10.1177/1468794109348686.

Hong, S.W., Kim, J. and Bang, H.L. (2020) 'Validity and reliability of the life transition scale in parents of disabled children across the life transition process', *Child Health Nursing Research*, *26*(3), pp.338-347. https://doi.org/10.4094/chnr.2020.26.3.338.

Homans, G. C. (2017) '*The human group',* New York: Routledge.

Hoover, R. S. and Koerber, A. L. (2009) 'Using NVivo to answer the challenges of qualitative research in professional communication: benefits and best practices tutorial', *Transactions on Professional Communication*, 54(1), pp. 68-82. doi: 10.1109/TPC.2009.2036896.

Horsfield, C. (2018) '*National critical care nursing and outreach workforce survey*', Available at: https://www.cc3n.org.uk/uploads/9/8/4/2/98425184/national_critical_care_nursing_and_outreach_workforce_survey_report_2018_final.pdf (Accessed: 2nd November, 2019).

Hosmer, D. W., Lemeshow, S. and May, S. (2008) '*Applied survival analysis: regression modelling of time-to-event data',* Hoboken (NJ): Wiley.

House, R. J (1971) 'A path-goal theory of leader effectiveness'; *Administrative Science Quarterly*, 16(3), pp. 321-339.

House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W. & Gupta, V (2004,p.184) '*Culture, Leadership, and Organizations*, Thousand Oaks; California: Sage Publications, Inc.

Houghton, C., Casey, D., Shaw, D. and Murphy, K. (2013) 'Rigour in qualitative case-study research', *Nurse Researcher*, *20*(4).pp. 12-17.
doi: 10.7748/nr2013.03.20.4.12.e326.

Howcutt, S., Barnett, A., Barbosa Bouças, S. and Smith, L. (2017) 'Patterns of response by sociodemographic characteristics and recruitment methods for women in UK population surveys and cohort studies, *Women & Health*, 58(4), pp. 365-386. https://doi.org/10.1080/03630242.2017.1310170.

Hsieh, H.-F. and Shannon, S. E. (2005) 'Three approaches to qualitative content analysis, *Qualitative Health Research,* 15(9), pp. 1277-1288. doi: https://doi.org/10.1177/1049732305276687.

Hutchinson, M., Jackson, D., Wilkes, L. and Vickers, M.H (2008) 'A new model of bullying in the nursing workplace: organizational characteristics as critical antecedents',*Advances in Nursing Science*, *31*(2), pp.E60-E71.

Huppert, F. A. (2009) 'Psychological well-being: evidence regarding its causes and consequences', *Applied Psychology: Health and Well-Being,* 1(2), pp. 137-164. doi: https://doi.org/10.1111/j.1758-0854.2009.01008.x.

Huppke, R. (2013) '*Chicago's top workplaces: it's not about the gravy'*, Available at: http://articles.chicagotribune.com/2013-11-12/business/ct-biz-tw-assurance-benefits-20131112_1_gravy-workplaces-benefits (Accessed 4th July, 2020)

Hussain, T. and Asif, S. (2012) 'Is employees' turnover intention driven by organizational commitment and perceived organizational support', *Journal of Quality and Technology Management,* 8(2), pp. 1-10.

Hussein, R., Salamonson, Y., Hu, W. and Everett, B. (2019) 'Clinical supervision and ward orientation predict new graduate nurses' intention to work in critical care: findings from a prospective observational study, *Australian Critical Care,* 32(5), pp. 397-402. doi: https://doi.org/10.1016/j.aucc.2018.09.003.

Huysse-Gaytandjieva A.; Bos A.E; Alberts H.J.E.M; Meesters C and Hom P.W. (2016) 'Dark side of job embeddedness', Available at: https://www.researchgate.net/profile/Anna_Huysse-Gaytandjieva/publication/301338976_Dark_side_of_job_embeddedness/links/57126e1708ae39beb87a447d.pdf (Accessed 2nd November, 2019).

Hyde-Wyatt, J. and Garside, J. (2020) 'Critical care outreach: a valuable resource', *Nursing in Critical Care,* 25(1), pp. 16-23. doi: https://doi.org/10.1111/nicc.12453.

IBM (2018) '*Downloading IBM SPSS analytic server 2.0.* IBM'. Available at: https://www.ibm.com/support/pages/downloading-ibm-spss-analytic-server-20 (Accessed: 30th June, 2018).

Ibrahim, A.D., Price, A., Khalfan, M. and Dainty, A. (2010) 'Construction procurement strategies of National Health Service in the UK: a critical review', *Journal of Public Procurement,* 10(1), pp. 31-67.

Ikäheimo, H. (2014) 'Hegel's concept of recognition: what is it?. In Ikäheimo, H(eds) *Recognition-german idealism as an ongoing challenge'.* (pp.11-38).Brill. https://doi.org/10.1163/9789004262607_003.

Ikäheimo, H. (2014,p-11-38) 'Hegel's concept of recognition: what is it?. In Ikäheimo, H(eds) *Recognition-german idealism as an ongoing challenge* (pp. 11-38). Brill. https://doi.org/10.1163/9789004262607_003.

Inwood, M (1992,p-245-47) '*A Hegel dictionary'*, Oxford: Blackwell.

Information Commissioner's Office. (2018) '*Guide to the general data protection regulations*'; Available at https://www.gov.uk/government/publications/guide-to-the-general-data-protection-regulation (Accessed, 1st August, 2020).

Intensive Care Society (2013) '*Core standards for ICUs',* Available at https://www.ics.ac.uk/ICS/ICS/GuidelinesAndStandards/ICSGuidelines.aspx (Accessed: 1st November, 2019).

Internal Council of Nursing (2020) '*The global nursing shortage and nurse retention*. Available at https://www.icn.ch/sites/default/files/inline-files/ICN%20Policy%20Brief_Nurse%20Shortage%20and%20Retention.pdf (Accessed 26th March 2021)

Ivankova, N. V., Creswell, J. W. and Stick, S. L. (2006) 'Using mixed-methods sequential explanatory design: from theory to practice', *Field Methods,* 18(1), pp. 3-20. https://doi.org/10.1177/1525822X05282260.

Ivankova, N. V., Creswell, J. W. and Stick, S. L. (2006,p.15) 'Using mixed-methods sequential explanatory design: from theory to practice', *Field Methods,* 18(1), pp. 3-20.

Ivankova, N. V., Creswell, J. W. and Stick, S. L. (2006,p.16) 'Using mixed-methods sequential explanatory design: from theory to practice', *Field Methods,* 18(1), pp. 3-20.

Jabeen, F., Friesen, H. L. and Ghoudi, K. (2018) 'Quality of work life of Emirati women and its influence on job satisfaction and turnover intention', *Journal of Organizational Change Management,* 31(2).pp. 352-370. https://doi.org/10.1108/JOCM-01-2017-0016.

Jackson, D (2008) 'Servant leadership in nursing: a framework for developing sustainable research capacity in nursing', *Collegian*, *15*(1), pp.27-33.

Jackson, D., Hutchinson, M., Peters, K., Luck, L. and Saltman, D (2013) 'Understanding avoidant leadership in health care: findings from a secondary analysis of two qualitative studies', *Journal of Nursing Management*, *21*(3), pp.572-580.

Jang, E.E., McDougall, D.E., Pollon, D., Herbert, M. and Russell, P. (2008) 'Integrative mixed methods data analytic strategies in research on school success in challenging circumstances', *Journal of Mixed Methods Research,* 2(3), pp. 221-247. doi: https://doi.org/10.1177/1558689808315323.

Jarden, R.J., Sandham, M., Siegert, R.J. and Koziol-McLain, J. (2019) 'Strengthening workplace well-being: perceptions of intensive care nurses', *Nursing in Critical Care,* 24(1), pp. 15-23. doi: https://doi.org/10.1111/nicc.12386.

Jeon, L., Buettner, C.K. and Grant, A.A. (2018) 'Early childhood teachers' psychological well-being: exploring potential predictors of depression, stress, and emotional exhaustion, *Early Education and Development*, *29*(1).pp. 53-69. https://doi.org/10.1080/10409289.2017.1341806.

Johnson, R. B. and Onwuegbuzie, A. J. (2004) 'Mixed methods research: a research paradigm whose time has come', *Educational Researcher,* 33(7), pp. 14-26. doi: https://doi.org/10.3102/0013189X033007014.

Johnson, R. B., Onwuegbuzie, A. J. and Turner, L. A. (2007) 'Toward a definition of mixed methods research, *Journal of Mixed Methods Research,* 1(2), pp. 112-133. doi: https://doi.org/10.1177/1558689806298224.

Johnson, R. B., Onwuegbuzie, A. J. and Turner, L. A. (2007,p-128) 'Toward a definition of mixed methods research, *Journal of Mixed Methods Research,* 1(2), pp. 112-133. doi: https://doi.org/10.1177/1558689806298224.

Johnson, R. E., Grove, A. L. and Clarke, A. (2019) 'Pillar integration process: a joint display technique to integrate data in mixed methods research, *Journal of Mixed Methods Research,* 13(3), pp. 301-320. doi: https://doi.org/10.1177/1558689817743108.

Jones, S., & Gosling, J (2005) '*Nelson's Way: leadership lessons from the great commander*', Clerkenwell, London: Nicholas Brealey Publishing.

Jones, T. L. (2011) *Effects of motivating and hygiene factors on job satisfaction among school nurses',* PhD thesis.Walden University. Available at: https://search.proquest.com/openview/7a75bd2b119433782efe1659bbc65f6b/1?pq-origsite=gscholar&cbl=18750&diss=y (Accessed: 14th June 2019).

Jootun, D., McGhee, G. and Marland, G.R. (2009) 'Reflexivity: promoting rigour in qualitative research, *Nursing Standard*, *23*(23), pp.42-46.

Jupp, V. (2006) '*The sage dictionary of social research methods*: Sage.

Kaba, A. (2017) 'Library employment: satisfaction, opportunities, challenges, and future actions as perceived by academic librarians', *Library Management,* 38(8-9), pp. 511-527. doi: 10.1108/LM-03-2017-0036.

Kacel, B., Miller, M. and Norris, D. (2005) 'Measurement of nurse practitioner job satisfaction in a midwestern state', *Journal of the American Academy of Nurse Practitioners,* 17(1), pp. 27-32. doi: https://doi.org/10.1111/j.1041-2972.2005.00007.x.

Kanter, R. (1993) '*Men and women of the corporation',* New York: Basic books.

Kane, R.L., Shamliyan, T.A., Mueller, C., Duval, S. and Wilt, T.J. (2007) 'The association of registered nurse staffing levels and patient outcomes: systematic review and meta-analysis', *Medical Care,* 45(12), pp. 1195-1204.

Kao, P. H & Kao, H (2007) 'Taiwanese executives' leadership styles and their preferred decision-making models used in Mainland China'; *Journal of American Academy of Business*, Cambridge, 10(2), pp.71-79.

Karanikola, M.N., Papathanassoglou, E.D., Mpouzika, M. and Lemonidou, C. (2012) 'Burnout syndrome indices in Greek intensive care nursing personnel', *Dimensions of Critical Care Nursing*, *31*(2), pp. 94-101. doi: 10.1097/DCC.0b013e3182445fd2

Karanikola, M.N., Albarran, J.W., Drigo, E., Giannakopoulou, M., Kalafati, M., Mpouzika, M., Tsiaousis, G.Z. and Papathanassoglou, E.D. (2014) 'Moral distress, autonomy and nurse-physician collaboration among intensive care unit nurses in Italy', *Journal of Nursing Management,* 22(4), pp. 472-484. doi: https://doi.org/10.1111/jonm.12046.

Kaur, Mohindru and Pankaj (2013) 'Antecedents of turnover intentions: a literature review', *Global Journal of Management and Business Studies,* 3(10), pp. 1219-1230.

Kelly, L. A., McHugh, M. D & Aiken, L. H (2011) 'Nurse outcomes in Magnet® and nonmagnet hospitals', *The Journal of Nursing Administration,* 41(10), pp. 428.

Kelly, D.M., Kutney-Lee, A., McHugh, M.D., Sloane, D.M. and Aiken, L.H. (2014) 'Impact of critical care nursing on 30-day mortality of mechanically ventilated older adults', *Critical Care Medicine,* 42(5), pp. 1089-1095. doi: 10.1097/CCM.0000000000000127.

Khan, N., Jackson, D., Stayt, L. and Walthall, H (2019) 'Factors influencing nurses' intentions to leave adult critical care settings', *Nursing in Critical Care,* 24(1), pp. 24-32. doi: https://doi.org/10.1111/nicc.12348.

Khademian, Z., Mohebi, N. and Khademian, M.H. (2020) 'Effects of training on knowledge and attitudes of coronary care unit nurses in relation to teamwork: a quasi-experimental study, *Journal of Vascular Nursing*, 38(3), pp.132-136 https://doi.org/10.1016/j.jvn.2020.05.004.

Kim, N. (2014) 'Employee turnover intention among newcomers in the travel industry, *International Journal of Tourism Research,* 16(1), pp. 56-64. doi: https://doi.org/10.1002/jtr.1898.

Kim, J.K. and Cho, Y.M. (2020) 'A study of nurse's stress, symptoms and turnover intention', *Journal of the Korean Applied Science and Technology*, *37*(3), pp. 543-550. https://doi.org/10.12925/jkocs.2020.37.3.543.

King, N. (2004) 'Using templates in the thematic analysis of text', in Cassell C and Symon G (eds), *Essential guide to qualitative methods in organizational research*: Sage, pp. 256.

Kirkevold M. (1997) 'Integrative nursing research: an important strategy to further the development of nursing science and nursing practice', *Journal of Advanced Nursing,* 25 (5), pp. 977-984. https://doi.org/10.1046/j.1365-2648.1997.1997025977.x.

Knudsen, H.K., Ducharme, L.J. and Roman, P.M. (2008) 'Clinical supervision, emotional exhaustion, and turnover intention: a study of substance abuse treatment counsellors in the clinical trials network of the national institute on drug abuse', *Journal of Substance Abuse Treatment*, *35*(4), pp. 387-395. https://doi.org/10.1016/j.jsat.2008.02.003.

Koch, T. (1994) 'Establishing rigour in qualitative research: the decision trail', *Journal of Advanced Nursing*, *19*(5), pp.976-986. https://doi.org/10.1111/j.1365-2648.1994.tb01177.x.

Kondracki, N. L., Wellman, N. S. and Amundson, D. R. (2002) 'Content analysis: a review of methods and their applications in nutrition education, *Journal of Nutrition Education and Behavior,* 34(4), pp. 224-230. doi: https://doi.org/10.1016/S1499-4046(06)60097-3.

Kosel, K.C. and Olivo, T.(2002) 'The business case for workforce stability, *VHA-2002 Research Series*, *7*, pp.1-16. Available at: https://www.leg.state.nv.us/Session/72nd2003/Interim/StatCom/HealthCareDelivery/exhibits/11617K.pdf (Accessed, 20th February 2020).

Kramer, M. and Hafner, L. P. (1989) 'Shared values: impact on staff nurse job satisfaction and perceived productivity, *Nursing Research,* 38(3), pp. 172-177. doi: https://doi.org/10.1097/00006199-198905000-00019.

Kramer, M. and Schmalenebrg, F.C. (1991) 'Job satisfaction and retention insights for the'90s part 2', *Nursing2020*, *21*(4), pp.51-55.

Krathwohl, D. R. (1993) *Methods of educational and social science research: an integrated approach,* Addison Wesley Longman.

Kramer, M., & Schmalenberg, C (2003) 'Securing “good” nurse-physician relationships', *Nursing Management*, 34(7), 34-38.

Kramer, M., Maguire, P. and Schmalenberg, C. E. (2006) 'Excellence through evidence: the what, when, and where of clinical autonomy', *The Journal of Nursing Administration,* 36(10), pp. 479-491.

Krefting, L. (1991) 'Rigor in qualitative research: The assessment of trustworthiness', *American Journal of Occupational Therapy*, *45*(3), pp.214-222.

Kreuter, F. (2013) 'Facing the nonresponse challenge', *Annals of the American Academy of Political and Social Science*; 645 (1),p,23-35. doi:10.1177/0002716212456815.

Kuhn, T. S. (1962) '*The structure of scientific revolutions,* The University of Chicago Press.

Kutney-Lee, A., Germack, H., Hatfield, L., Kelly, M.S., Maguire, M.P., Dierkes, A., Del Guidice, M.M. and Aiken, L.H. (2016) 'Nurse engagement in shared governance and patient and nurse outcomes, *The Journal of Nursing Administration,* 46(11), pp. 605-612. doi: 10.1097/NNA.0000000000000412.

Labrague, L.J., Gloe, D., McEnroe, D.M., Konstantinos, K. and Colet, P. (2018) 'Factors influencing turnover intention among registered nurses in Samar Philippines', *Applied Nursing Research,* 39, pp. 200-206. doi: https://doi.org/10.1016/j.apnr.2017.11.027.

Lai, H.L., Lin, Y.P., Chang, H.K., Wang, S.C., Liu, Y.L., Lee, H.C., Peng, T.C. and Chang, F.M. (2008) 'Intensive care unit staff nurses: predicting factors for career decisions, *Journal of Clinical Nursing,* 17(14), pp. 1886-1896. doi: https://doi.org/10.1111/j.1365-2702.2007.02180.x.

Lake, E.T. (2002) 'Development of the practice environment scale of the nursing work index', *Research in Nursing & Health*, *25*(3), pp.176-188.

Lambert, J.R., Brown, L.W. and Nava, C.T. (2020) 'But who will help 'them'? the effect of ethical leadership on bullying, burnout, and turnover', *Academy of Management Proceedings*, *Academy of Management Briarcliff Manor,* NY 10510. https://doi.org/10.5465/AMBPP.2020.17250abstract.

Laschinger, H.K.; Leiter, M., Day, A and Gilin, D. (2009) 'Workplace empowerment, incivility, and burnout: impact on staff nurse recruitment and retention outcomes, *Journal of Nursing Management,* 17(3), pp. 302-311. doi: https://doi.org/10.1111/j.1365-2834.2009.00999.x.

Lasiter, S., Oles, S.K., Mundell, J., London, S. and Khan, B. (2016) 'Critical care follow-up clinics: a scoping review of interventions and outcomes, *Clinical Nurse Specialist* 30(4), pp. 227-237. doi: 10.1097/NUR.0000000000000219.

Latimer, M. A., Johnston, C. C., Ritchie, J. A., Clarke, S. P., & Gilin, D (2009) 'Factors affecting the delivery of evidence-based procedural pain care in hospitalized neonates', *Journal of Obstetrics and Gynecological Neonatal Nursing*, 38(2), 182- 194.

Lavoie-Tremblay, M., Paquet, M., Duchesne, M.A., Santo, A., Gavrancic, A., Courcy, F. and Gagnon, S. (2010) 'Retaining nurses and other hospital workers: an intergenerational perspective of the work climate', *Journal of Nursing Scholarship,* 42(4), pp. 414-422. doi: https://doi.org/10.1111/j.1547-5069.2010.01370.x.

Lavender, V., Mawhinney, M. and Aveyard, H. (2016) ' Using 'List, Keep and Delete' to identify search terms for systematic health care reviews', *RCN International Nursing Research Conference*. UK: RCN.

LeGreco, M & Tracy, S. J (2009) 'Discourse tracing as qualitative practice', *Qualitative Inquiry*, 15(9), pp.1516-1543.

Lehmann-Willenbrock, N., Lei, Z. and Kauffeld, S. (2012) 'Appreciating age diversity and German nurse well-being and commitment: co-worker trust as the mediator', *Nursing & Health Sciences,* 14(2), pp. 213-220. doi: https://doi.org/10.1111/j.1442-2018.2012.00681.x.

Lewin, S., Glenton, C. and Oxman, A. D. (2009) ' Use of qualitative methods alongside randomised controlled trials of complex healthcare interventions: methodological study', *BMJ,* 339, pp. b3496. doi: https://doi.org/10.1136/bmj.b3496.

Lincoln, Y. and Guba, E. (1985) '*Naturalistic observation',* CA: Thousand Oaks.

Lincoln, Y. S., and E. G. Guba (2003) 'Paradigmatic controversies, contradictions, and emerging confluences'. In N.K. Denzin, & Y. S. Lincoln (eds.). *The landscape of qualitative research. theories and issues.* (2nd edition). Thousand Oaks, CA: Sage Publications.

Lincoln, Y. S., and E. G. Guba (2003,p-258) 'Paradigmatic controversies, contradictions, and emerging confluences'. In N.K. Denzin, & Y. S. Lincoln (eds.). *The landscape of qualitative research. theories and issues.* (2nd edition). Thousand Oaks, CA: Sage Publications.

Li, Y.F., Lake, E.T., Sales, A.E., Sharp, N.D., Greiner, G.T., Lowy, E., Liu, C.F., Mitchell, P.H. and Sochalski, J.A. (2007) 'Measuring nurses' practice environments with the revised nursing work index: evidence from registered nurses in the veterans' health administration', *Research in Nursing & Health*, *30*(1), pp.31-44. https://doi.org/10.1002/nur.20172.

Li, J. and Lambert, V. A. (2008) 'Workplace stressors, coping, demographics and job satisfaction in Chinese intensive care nurses', *Nursing in Critical Care,* 13(1), pp. 12-24. doi: https://doi.org/10.1111/j.1478-5153.2007.00252.x.

Lipscomb, M (2020) '*Critical realism and realist pragmatism in mixed methods: problematics of event identity and abductive inference (evolving paradigms in mixed methods research*, Paper kindly presented on Dr Lipscomb's behalf.

Liu, L.F., Lee, S., Chia, P.F., Chi, S.C. and Yin, Y.C. (2012) 'Exploring the association between nurse workload and nurse-sensitive patient safety outcome indicators', *Journal of Nursing Research,* 20(4), pp. 300-309. doi: 10.1097/jnr.0b013e3182736363.

Liu, S. and Onwuegbuzie, A. J. (2012) 'Chinese teachers' work stress and their turnover intention', *International Journal of Educational Research,* 53, pp. 160-170. doi: https://doi.org/10.1016/j.ijer.2012.03.006.

Liu, X., Zheng, J., Liu, K., Baggs, J.G., Liu, J., Wu, Y. and You, L. (2018) 'Hospital nursing organizational factors, nursing care left undone, and nurse burnout as predictors of patient safety: a structural equation modelling analysis, *International Journal of Nursing Studies,* 86, pp. 82-89. doi: https://doi.org/10.1016/j.ijnurstu.2018.05.005.

Lizarondo, L., Stern, C., Carrier, J., Godfrey, C., Rieger, K., Salmond, S., Apostolo, J., Kirkpatrick, P. and Loveday, H. (2020) Chapter 8: mixed-methods systematic reviews. In: Aromataris E, Munn Z (Editors)*. JBI Manual for Evidence Synthesis.* JBI, 2020. Available from https://synthesismanual.jbi.global. https://doi.org/10.46658/JBIMES-20-09.

Lobo, V.M., Fisher, A., Baumann, A. and Akhtar-Danesh, N. (2012) 'Effective retention strategies for midcareer critical care nurses: a Q-method study', *Nursing Research,* 61(4), pp. 300-308. doi: 10.1097/NNR.0b013e31825b69b1.

Lofland, J., & Lofland, L. H. (1995) 'Analyzing social settings: a guide to qualitative observations and analysis', (3rd ed.) Belmont, CA: Wadsw.

Long, T. and Johnson, M. (2000) 'Rigour, reliability and validity in qualitative research, *Clinical Effectiveness in Nursing*, *4*(1), pp.30-37.

Long, T. and Johnson, M. (2000,p-30,31) 'Rigour, reliability and validity in qualitative research, *Clinical Effectiveness in Nursing*, *4*(1), pp.30-37.

Mackenzie, N. and Knipe, S. (2006) 'Research dilemmas: paradigms, methods and methodology, *Issues in Educational Research,* 16(2), pp. 193-205.

Maidani, E. A. (1991) 'Comparative study of Herzberg's two-factor theory of job satisfaction among public and private sectors', *Public Personnel Management,* 20(4), pp. 441-448. doi: https://doi.org/10.1177/009102609102000405.

Manojlovich, M., Kerr, M., Davies, B., Squires, J., Mallick, R., & Rodger, G. L. (2014) 'Achieving a climate for patient safety by focusing on relationships', *International Journal for Quality in Health Care*, 26(6), pp. 579-584. https://doi.org/10.1093/intqhc/mzu068.

Mansour, S. and Tremblay, D.G. (2018) 'Work-family conflict/family-work conflict, job stress, burnout and intention to leave in the hotel industry in Quebec (Canada): moderating role of need for family-friendly practices as “resource passageways”', *The International Journal of Human Resource Management,* 29(16), pp. 2399-2430. doi: https://doi.org/10.1080/09585192.2016.1239216.

Margalit, A (2001,p-128-129) ‘Recognition: recognizing the brother and the other', *The Aristotelian society: supplementary volume*, 75(1), pp. 127-139. https://doi.org/10.1111/1467-8349.00082.

Maruyama, A., Suzuki, E. and Takayama, Y. (2016) 'Factors affecting burnout in female nurses who have preschool-age children, *Japan Journal of Nursing Science,* 13(1), pp. 123-134. doi: https://doi.org/10.1111/jjns.12096

Marshall, J.C., Bosco, L., Adhikari, N.K., Connolly, B., Diaz, J.V., Dorman, T., Fowler, R.A., Meyfroidt, G., Nakagawa, S., Pelosi, P. Zimmerman J and Vincent, J.L. (2017) 'What is an intensive care unit? a report of the task force of the World Federation of Societies of Intensive and Critical Care Medicine, *Journal of Critical Care,* 37(1), pp. 270-276. doi: https://doi.org/10.1016/j.jcrc.2016.07.015.

Maslow, A. H. (1958) 'A dynamic theory of human motivation', in DeMartino, C.L.S.M. (eds), *Understanding human motivation*: Howard Allen Publishers, pp. 26-47.

Maxwell, J. A. (2012) '*Qualitative research design: an interactive approach,* Sage.

McClure, M.L., Poulin, M.A., Sovie, M.D. and Wandelt, M.A.(1983) 'Magnet hospitals: attraction and retention of professional nurses', *American Academy of Nursing*. Task Force on Nursing Practice in Hospitals.

McCrudden, M. T. and McTigue, E. M. (2019) 'Implementing integration in an explanatory sequential mixed-methods study of belief bias about climate change with high school students, *Journal of Mixed Methods Research,* 13(3), pp. 381-400. doi: https://doi.org/10.1177/1558689818762576.

McDermid, D. (2006) '*The varieties of pragmatism: truth., realism, and knowledge from James to Rorty.* Available online at https://pdfs.semanticscholar.org/6d47/f03b1fa9073a40e96e6061970366117de493.pdf?_ga=2.35081697.134443588.1599067913-248109174.1599067913 (Accessed 20th April 2018).

McEvan, M., and Will E. (2006) '*Theoretical basis for nursing'*, Philadelphia, PA: Lippincott.

McGynn, K.A.R.E.N., Griffin, M.Q., Donahue, M. and Fitzpatrick, J.J. (2012) 'Registered nurse job satisfaction and satisfaction with the professional practice model', *Journal of Nursing Management,* 20(2), pp. 260-265. https://doi.org/10.1111/j.1365-2834.2011.01351.x.

McKay P.S. (1983) 'Interdependent decision making: redefining professional autonomy', *Nursing Administration Quarterly* 7(4), pp. 21-30.

McLinton, S.S., Loh, M.Y., Dollard, M.F., Tuckey, M.M., Idris, M.A. and Morton, S. (2018) 'Benchmarking working conditions for health and safety in the frontline healthcare industry: perspectives from Australia and Malaysia', *Journal of Advanced Nursing,* 74(8), pp. 1851-1862. doi: https://doi.org/10.1111/jan.13580.

Meadors, P. and Lamson, A. (2008) 'Compassion fatigue and secondary traumatization: provider self-care on intensive care units for children, *Journal of Pediatric Health Care,* 22(1), pp. 24-34. doi: https://doi.org/10.1016/j.pedhc.2007.01.006.

Mealer, M.L., Shelton, A., Berg, B., Rothbaum, B. and Moss, M. (2007) 'Increased prevalence of post-traumatic stress disorder symptoms in critical care nurses', *American Journal of Respiratory and Critical Care Medicine,* 175(7), pp. 693-697. doi: https://doi.org/10.1164/rccm.200606-735OC

Mealer, M., Jones, J., Newman, J., McFann, K.K., Rothbaum, B. and Moss, M. (2012) 'The presence of resilience is associated with a healthier psychological profile in an intensive care unit (ICU) nurses: results of a national survey', *International Journal of Nursing Studies,* 49(3), pp. 292-299. doi: https://doi.org/10.1016/j.ijnurstu.2011.09.015.

Mealer, M. and Jones, J. (2014) 'Methodological and ethical issues related to qualitative telephone interviews on sensitive topics', *Nurse Researcher*, *21*(4), p. 32-37. doi: 10.7748/nr2014.03.21.4.32.e1229.

Medley, F. & Larochelle, D. R. (1995) 'Transformational leadership and job satisfaction; *Nursing Management*, 26(9),p. 64-47.

Mertens, D. M. (2005,p-8) '*Research methods in education and psychology: integrating diversity with quantitative approaches'*. (2nd ed.). Thousand Oaks: Sage.

Mertens, D. M. (2007) 'Transformative paradigm: mixed methods and social justice', *Journal of Mixed Methods Research,* 1(3), pp. 212-225. doi: https://doi.org/10.1177/1558689807302811.

Mertens, D. M. (2014) '*Research and evaluation in education and psychology: integrating diversity with quantitative, qualitative, and mixed methods,* 4th edn: Sage.

Mill, J.S. (1961) 'The Philosophy of John Stuart Mill: ethical, political, and religious', New York Modern Library.

Miles, M.B. and Huberman, A.M. (1994) '*Qualitative data analysis: An expanded sourcebook'*, sage.

Milkie, Melissa A., Mattingly, Marybeth J., Nomaguchi, Kei M., Bianchi, Suzanne M., Robinson, John P. (2004,p-757) 'The time squeeze: parental statuses and feelings about time with children, *Journal of Marriage and Family*, 66: pp. 739–61. https://doi.org/10.1111/j.0022-2445.2004.00050.x.

Ministry of Health and Welfare Korea. (2018) 'Measures to improve nursing work environment and treatment of nurses', *Ministry of Health and Welfare Korra.* Available at: http://www.mohw.go.kr/react/al/sal0301vw.jsp?PAR_MENU_ID=04&MENU_ID=0403&CONT_SEQ=344262 (Accessed: 6th August, 2020).

Mitchell, T.R., Holtom, B.C., Lee, T.W., Sablynski, C.J. and Erez, M. (2001) 'Why people stay: Using job embeddedness to predict voluntary turnover', *Academy of Management,* 44(6), pp. 1102-1121. doi: https://doi.org/10.5465/3069391.

Moher, D; Liberati, A; Tetzlaff, J and Altman D.G. (2009) 'Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement, *Annals of Internal Medicine,* 151(4), pp. 264-269. doi: https://doi.org/10.7326/0003-4819-151-4-200908180-00135.

Moloney-Harmon, P. (2010) 'Retaining a most valuable resource in a healthcare crisis-critical care nurses', *Australian Critical Care,* 23(1), pp. 2-3. doi:https://doi org/10.1016/i aucc.2009.08.002

Moore, A. (2017) 'Nursing shortages: how bad will it get?', *Nursing Standard* 31(37), pp. 26. doi:10.7748/ns.31.37.26.s24.

Morse, J. M. (1991) 'Approaches to qualitative-quantitative methodological triangulation, *Nursing Research,* 40(2), pp. 120-123.

Morgan, S., Lahman, E., & Hagstrom, C (2006) 'The magnet recognition program: transforming healthcare through excellence in nursing services'; *Journal of Nursing Care Quality*, 21(2), pp. 119.

Morin E. (2008) '*On complexity (advances in systems theory, complexity, and the human sciences)'*, Cresskill, NJ: Hampton Press.

Nagle L. & Mitchell G.J. (1991) 'Theoretical diversity: evolving paradigmatic issues in research and practice', *Advances in Nursing Science;* 14(1), pp,17–25.

Nantsupawat, A., Kunaviktikul, W., Nantsupawat, R., Wichaikhum, O.A., Thienthong, H. and Poghosyan, L. (2017) 'Effects of nurse work environment on job dissatisfaction, burnout, intention to leave', *International Nursing Review,* 64(1), pp. 91-98. doi: https://doi.org/10.1111/inr.12342.

Nastasi, B.K., Hitchcock, J., Sarkar, S., Burkholder, G., Varjas, K. and Jayasena, A (2007) 'Mixed methods in intervention research, *Journal of Mixed Methods Research,* 1(2), pp. 164-182. doi: https://doi.org/10.1177/1558689806298181.

Nazarko, L. (2001) 'Bullying and harassment, *Nursing Management,* 8(1),pp-14-15.

Ng, E. S. W., Lyons, S. T. & Schweitzer, L. (2012) 'Managing the New Workforce', Cheltenham, UK. Edward Elgar Publishing Limited. Available at https://books.google.nl/books?hl=en&lr=&id=0gilDVt6bDQC&oi=fnd&pg=PA1&dq=millennials+1980&ots=SjWRVx8YBz&sig=I7lysodRUisk19eUg0oYzP6Q1Mo#v=onepage&q=millennials%201980&f=false (Accessed 20th July 2019)

Ngo-Henha, P. E. (2017) 'A review of existing turnover intention theories', *International Journal of Economics and Management Engineering,* 11(11), pp. 2751-2758.

Nie, A; Su, X; Zhang, S., Guan, W. and Li, J. (2020) 'Psychological impact of COVID-19 outbreak on frontline nurses: a cross-sectional survey study, *Journal of Clinical Nursing*, 29(21-22), pp. 4217-4226.

NICE (2012a) *'Appendix F Quality appraisal checklist - quantitative intervention studies'*: Available at: https://www.nice.org.uk/process/pmg4/chapter/appendix-f-quality-appraisal-checklist-quantitative-intervention-studies (Accessed: 20th February, 2017).

NICE (2012b) '*Appendix H quality appraisal checklist - qualitative studies'.* Available at: https://www.nice.org.uk/process/pmg4/chapter/appendix-h-quality-appraisal-checklist-qualitative-studies (Accessed: 8th February, 2017).

Nichols, A., Grose, J., Bennallick, M. and Richardson, J. (2013) 'Sustainable healthcare waste management: a qualitative investigation of its feasibility within a county in the south-west of England', *Journal of Infection Prevention,* 14(2), pp. 60-64. doi: https://doi.org/10.1177/1757177412471411.

Northouse, P (2010) '*Leadership'* (5th ed.). Thousand Oaks, CA: Sage Publications, Inc.

Novick, G. (2008) 'Is there a bias against telephone interviews in qualitative research?', *Research in Nursing & Health,* 31(4), pp. 391-398. doi: https://doi.org/10.1002/nur.20259.

Nowell, L.S., Norris, J.M., White, D.E. and Moules, N.J. (2017) 'Thematic analysis: striving to meet the trustworthiness criteria', *International Journal of Qualitative Methods,* 16(1). doi: https://doi.org/10.1177/1609406917733847.

Nowell, L., Norris, J.M., Mrklas, K. and White, D.E. (2017) 'A literature review of mentorship programs in academic nursing'. *Journal of Professional Nursing*, *33*(5), pp.334-344.

Nursing Solutions (2019) *'National Health Care Retention & RN Staffing Report',* Available at http://www.nsinursingsolutions.com/Files/assets/library/retention-institute/2019%20National%20Health%20Care%20Retention%20Report.pdf (Accessed: 31st October, 2019).

O'brien-Pallas, L.I.N.D.A., Murphy, G.T., Shamian, J., Li, X. and Hayes, L.J (2010) 'Impact and determinants of nurse turnover: a pan-Canadian study', *Journal of Nursing Management,* 18(8), pp. 1073-1086. doi: https://doi.org/10.1111/j.1365-2834.2010.01167.x.

O'Cathain, A., Murphy, E. and Nicholl, J. (2010) 'Three techniques for integrating data in mixed methods studies, *BMJ,* 341, pp. c4587. doi: https://doi.org/10.1136/bmj.c4587.

Odena, O. (2013) 'Using software to tell a trustworthy, convincing and useful story', *International Journal of Social Research Methodology,* 16(5), pp. 355-372. doi: https://doi.org/10.1080/13645579.2012.706019.

Oh, J. and Chhinzer, N. (2020) 'The roles of transformational leadership and collective turnover on employee turnover decisions'. In Oh, J. and Chhinzer, N(eds) *Academy of Management Proceedings*, no. 1, pp.17360). Briarcliff Manor, NY 10510: Academy of Management. https://doi.org/10.5465/AMBPP.2020.17360abstract.

O' Leary, K. J., Haviley, C., Slade, M. E., Shah, H. H., Lee, J., & Williams, M. V (2011) 'Improving teamwork: impact of structured interdisciplinary rounds on a hospitalist unit'. *Journal of Hospitalist Medicine*, 6(2), 88-93.

Onwuegbuzie, A. J. and Teddlie, C. (2003) 'A framework for analyzing data in mixed methods research, in Onwuegbuzie, A.J. & Teddlie, C. (eds.) *Handbook of mixed methods in social and behavioural research*: Sage, pp. 351-358.

Onwuegbuzie, A. J., Bustamante, R. M. and Nelson, J. A. (2010) 'Mixed research as a tool for developing quantitative instruments', *Journal of Mixed Methods Research,* 4(1), pp. 56-78. doi: https://doi.org/10.1177/1558689809355805.

Onwuegbuzie, A. J. and Frels, R. (2016) '*Seven steps to a comprehensive literature review: a multimodal and cultural approach',* Sage.

Owen, K., Hopkins, T., Shortland, T. and Dale, J (2019) 'GP retention in the UK: a worsening crisis. Findings from a cross-sectional survey'. *BMJ Open*, *9*(2), p.e026048.

Pallant, J. (2013) '*SPSS survival manual'.* Maidenhead: Open University Press.

Panunto, M. R. and Guirardello, E. d. B. (2013) 'Professional nursing practice: environment and emotional exhaustion among intensive care nurses', *Revista Latino-Americana de Enfermagem,* 21(3), pp. No pages. doi: https://doi.org/10.1590/S0104-11692013000300016.

Papathanassoglou, E.D., Karanikola, M.N., Kalafati, M., Giannakopoulou, M., Lemonidou, C. and Albarran, J.W. (2012) 'Professional autonomy, collaboration with physicians, and moral distress among European intensive care nurses, *American Journal of Critical Care*, *21*(2), pp.e41-e52.

Parse, R. R. (2000) 'Paradigms: a reprise', *Nursing Science Quarterly,* 13(4), pp. 275-276.

Parry, E., & Urwin, P. (2011) 'Generational differences in work values: a review of theory and evidence', *International Journal of Management Reviews*, **13**, pp.79-96. https://doi.org/10.1111/j.1468-2370.2010.00285.x

Patton, M.Q.(2002) 'Two decades of developments in qualitative inquiry: a personal, experiential perspective', *Qualitative Social Work*, *1*(3), pp.261-283.

Patton, M.Q.(2002,p,261-283) 'Two decades of developments in qualitative inquiry: a personal, experiential perspective', *Qualitative Social Work*, *1*(3), pp.261-283.

Peeters, M.C., Montgomery, A.J., Bakker, A.B. and Schaufeli, W.B. (2005) 'Balancing work and home: how job and home demands are related to burnout', *International Journal of Stress Management,* 12(1), pp. 43-61. doi: https://doi.org/10.1037/1072-5245.12.1.43.

Pett, M. A; Lackey, N. R; Sullivan, J. J. (2003) '*Making sense of factor analysis: the use of factor analysis for instrument development in health care research*, California: Sage Publications Inc.

Petticrew, M., Rehfuess, E., Noyes, J., Higgins, J.P., Mayhew, A., Pantoja, T., Shemilt, I. and Sowden, A. (2013) 'Synthesizing evidence on complex interventions: how meta-analytical, qualitative, and mixed-method approaches can contribute', *Journal of Clinical Epidemiology,* 66(11), pp. 1230-1243. doi: https://doi.org/10.1016/j.jclinepi.2013.06.005.

Peters, M.D., Godfrey, C.M., Khalil, H., McInerney, P., Parker, D. and Soares, C.B. (2015) 'Guidance for conducting systematic scoping reviews', *International Journal of Evidence-Based Healthcare,* 13(3), pp. 141-146. doi: 10.1097/XEB.0000000000000050.

Phelps, R., Fisher, K. and Ellis, A. (2007) '*Organizing and managing your research: a practical guide for postgraduates*', Sage.

Pluye, P. and Hong, Q. N. (2014) 'Combining the power of stories and the power of numbers: mixed methods research and mixed studies reviews', *Annual Reviews,* 35, pp. 29-45. doi: https://doi.org/10.1146/annurev-publhealth-032013-182440.

Plüddemann, A., Aronson, J.K., Onakpoya, I., Heneghan, C. and Mahtani, K.R. (2018) 'Redefining rapid reviews: a flexible framework for restricted systematic reviews', *BMJ Evidence-Based Medicine,* 23(6), pp. 201-203. doi: http://dx.doi.org/10.1136/bmjebm-2018-110990.

Pole, K. (2007) 'Mixed method designs: a review of strategies for blending quantitative and qualitative methodologies', *Mid-Western Educational Researcher*, *20*(4), pp.35-38.

Polit, D. F. and Beck, C. T. (2009) '*Essentials of nursing research: appraising evidence for nursing practice',* Lippincott Williams & Wilkins.

Polit, D. F. and Beck, C. T. (2010) 'Generalization in quantitative and qualitative research: myths and strategies', *International Journal of Nursing Studies,* 47(11), pp. 1451-1458. doi: https://doi.org/10.1016/j.ijnurstu.2010.06.004.

Poncet, M.C., Toullic, P., Papazian, L., Kentish-Barnes, N., Timsit, J.F., Pochard, F., Chevret, S., Schlemmer, B. and Azoulay, E. (2007) 'Burnout syndrome in critical care nursing staff', *American Journal of Respiratory and Critical Care Medicine,* 175(7). doi: https://doi.org/10.1164/rccm.200606-806OC.

Popper, K. (1989) *Conjectures and refutations: the growth of scientific knowledge'.* Revised edition. London, New York: Routledge.

Pope, C., Mays, N. and Popay, J. (2007) '*Synthesising qualitative and quantitative health evidence: a guide to methods.* Maidenhead, England: Open University Press.

Porter, S. (1993) 'Nursing research conventions: objectivity or obfuscation?', *Journal of Advanced Nursing*, *18*(1), pp. 137-143. https://doi.org/10.1046/j.1365-2648.1993.18010137.x.

Porritt, K., Gomersall, J. and Lockwood, C. (2014) 'JBI's systematic reviews: study selection and critical appraisal', *The American Journal of Nursing,* 114(6), pp. 47-52. doi: 10.1097/01.NAJ.0000450430.97383.64.

QRS International (2018) '*NVivo 12,QRS international*'. Available at: https://www.qsrinternational.com/nvivo/nvivo-products/nvivo-12-plus (Accessed: 2nd July, 2018).

Qu, S.Q. and Dumay, J. (2011) 'The qualitative research interview', *Qualitative Research in Accounting & Management*,8(3), pp.238-264. https://doi.org/10.1108/11766091111162070.

Rahman, W. and Nas, Z. (2013, p-568) 'Employee development and turnover intention: theory validation', *European Journal of Training and Development,* 37(6), pp. 564-579. https://doi.org/10.1108/EJTD-May-2012-0015.

Rao, A. D., Kumar, A. and McHugh, M. (2017) 'Better nurse autonomy decreases the odds of 30-day mortality and failure to rescue', *Journal of Nursing Scholarship,* 49(1), pp. 73-79. doi: https://doi.org/10.1111/jnu.12267.

RCN (2019) '*Definition of a critical care nurse',* Available at https://www.rcn.org.uk/library/subject-guides/critical-care-and-in-flight-nursing (Accessed: 2nd November, 2019).

RCN (2020) '*Redeployment, being moved from your normal area*', Available at https://www.rcn.org.uk/get-help/rcn-advice/being-moving-staff. (Accessed: 9th August 2020)

Rehman, A. A. and Alharthi, K. (2016) 'An introduction to research paradigms', *International Journal of Educational Investigations,* 3(8), pp. 51-59. http://www.ijeionline.com/.

Rhoades, L. and Eisenberger, R. (2002) 'Perceived organizational support: a review of the literature, *Journal of Applied Psychology,* 87(4), pp. 698-714.

Richards, K. (2003) '*Qualitative inquiry in TESOL',* Basingstoke: Palgrave, Macmillan.

Ritchie, J. and Spencer, I. (1994) 'Qualitative data analysis for applied policy research, in Ritchie, J. & Spencer, I. (eds.) *Analysing Qualitative Data*: Routledge, pp. 187-208.

Roberts, Susan Jo (1983)' Oppressed group behavior', *Advances in Nursing Science*, 5/4 ,pp 21-30.

Robbins, B., & Davidhizar, R (2007) 'Transformational leadership in health care today; *The Health Care Manager*, 26(3), pp. 234.

Robson, A. and Robson, F. (2016) 'Investigation of nurses' intention to leave: a study of a sample of UK nurses', *Journal of Health Organization and Management,* 30(1), pp. 154-173. doi: 10.1108/JHOM-05-2013-0100.

Roche, M.A., Duffield, C.M., Homer, C., Buchan, J. and Dimitrelis, S. (2015a) 'The rate and cost of nurse turnover in Australia', *Collegian,* 22(4), pp. 353-358. doi: https://doi.org/10.1016/j.colegn.2014.05.002.

Roche, M.R., Duffield, C.M., Dimitrelis, S. and Frew, B (2015b) 'Leadership skills for nursing unit managers to decrease intention to leave', *Nursing Research and Reviews,* 5, pp. 57-64. Available online at https://ro.ecu.edu.au/ecuworkspost2013/1875 (Accessed, 10th July 2020).

Rodwell, J., McWilliams, J. and Gulyas, A. (2017) 'The impact of characteristics of nurses' relationships with their supervisor, engagement and trust, on performance behaviours and intent to quit', *Journal of Advanced Nursing,* 73(1), pp. 190-200. doi: https://doi.org/10.1111/jan.13102.

Rogowski, J.A., Staiger, D., Patrick, T., Horbar, J., Kenny, M. and Lake, E.T. (2013) 'Nurse staffing and NICU infection rates', *JAMA Pediatrics,* 167(5), pp. 444-450. doi: 10.1001/jamapediatrics.2013.18.

Roux, G., & Halstead, J. A. (2009) '*Issues and trends in nursing: essential knowledge for today and tomorrow'*, Sudbury, CA: Jones & Bartlett Publishers.

Rowell, P. (2005) 'Being a target at work: or William tell and how the apple felt', J*ournal of Nursing Administration*,35(9), pp. 377-379.

Rowley, J. (2012) 'Conducting research interviews', *Management Research Review*, 35(3/4), pp. 260-271. https://doi.org/10.1108/01409171211210154.

Ruiz, P. B. D. O., Perroca, M. G. and Jericó, M. d. C. (2016) 'Cost of nursing turnover in a teaching hospital', *Revista da Escola de Enfermagem da USP,* 50(1), pp. 101-108. doi: https://doi.org/10.1590/S0080-623420160000100014.

Ryan, G. S. (2020) 'Postpositivist critical realism: philosophy, methodology and method for nursing research', *Nurse Researcher,* 28(2). doi: 10.7748/nr.2019.e1598.

Sala, E., Burton, J. and Knies, G. (2012) 'Correlates of obtaining informed consent to data linkage: respondent, interview, and interviewer characteristics', *Sociological Methods & Research*, *41*(3), pp.414-439.

Sandelowski, M. (1986) 'The problem of rigour in qualitative research, *Advances in Nursing Science*,8(3),p. 27-37. https://doi.org/10.1097/00012272-198604000-00005.

Sandelowski, M. (1993) 'Rigor or rigour Mortis: the problem of rigour in qualitative research, *Advances in Nursing Science*, *16*(2), pp.1-8.

Sandelowski, M. and Barroso, J. (2006) '*Handbook for synthesizing qualitative research',* New York: Springer.

Sandelowski, M., Voils, C. I. and Barroso, J. (2006) 'Defining and designing mixed research synthesis studies', *Research in the Schools: a nationally referred journal sponsored by the Mid-South Educational Research Association and the University of Alabama,* 13(1), pp. 29.

Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H. and Jinks, C. (2018) 'Saturation in qualitative research: exploring its conceptualization and operationalization', *Quality & Quantity,* 52(4), pp. 1893-1907. https://doi.org/10.1007/s11135-017-0574-8.

Schullery, N. M. (2013) 'Workplace engagement and generational differences in values', *Business and Professional Communication Quarterly*, 76, pp. 252–265. https://doi.org/10.1177/1080569913476543.

Schwandt, T. A. (2003) 'Three epistemological stances for qualitative inquiry. In Denzin, N. K. & Y. S. Lincoln (eds.). *The landscape of qualitative research. theories and issues'* (2nd edition). Thousand Oaks, CA: Sage Publications.

Sherman, R. O. (2008) 'Lost knowledge: confronting the challenges of an ageing nursing workforce', *Nurse Leader,* 6(5), pp. 45-47. doi: https://doi.org/10.1016/j.mnl.2008.07.006.

Shehawy, Y. M., Elbaz, A. and Agag, G. M. (2018) 'Factors affecting employees' job embeddedness in the Egyptian airline industry', *Tourism Review,* 73(4), pp. 548-571. https://doi.org/10.1108/TR-03-2018-0036.

Shields, P. M. (1998) 'Pragmatism as a philosophy of science: a tool for public administration', in White, J.D. (eds) *Research in Public Administration*: JAI Press Inc., pp. 195-225.

Shuy, R. W. (2002) 'In-person versus telephone interviewing', in Gubrium, J.F. & Holstein, J.A. (eds.) *Handbook of interview research: context and method*: Sage pp. 537-555.

Siffleet, J., Williams, A.M., Rapley, P. and Slatyer, S. (2015) 'Delivering best care and maintaining emotional wellbeing in the intensive care unit: the perspective of experienced nurses', *Applied Nursing Research,* 28(4), pp. 305-310. doi: https://doi.org/10.1016/j.apnr.2015.02.008.

Silverman, D. (2005) 'Instances or sequences? improving the state of the art of qualitative research, *Forum: Qualitative Social Research,* 6(3). doi: http://dx.doi.org/10.17169/fqs-6.3.6.

Skår, R. (2010,p-2226) 'The meaning of autonomy in nursing practice', *Journal of Clinical Nursing*, *19*(15-16), pp.2226-2234. https://doi.org/10.1111/j.1365-2702.2009.02804.x.

Skalland, B. (2011,p-89) 'An alternative to the response rate for measuring a survey's realization of the target population', *Public Opinion Quarterly*, *75*(1), pp.89-98. https://doi.org/10.1093/poq/nfq072.

Slater, P. and McCormack, B. (2007) 'An exploration of the factor structure of the nursing work index', *Worldviews on Evidence-Based Nursing*, *4*(1), pp.30-39. https://doi.org/10.1111/j.1741-6787.2007.00076.x.

Slåtten, T., Svensson, G. and Sværi, S. (2011) 'Service quality and turnover intentions as perceived by employees: antecedents and consequences', *Personnel Review,* 40(2), pp. 205-221. https://doi.org/10.1108/00483481111106084.

Smith, B.N., Montagno, R.V. and Kuzmenko, T.N (2004) 'Transformational and servant leadership: content and contextual comparisons'. *Journal of Leadership & Organizational Studies*, *10*(4), pp.80-91.

Smith, P., McKeon, A., Blunt, I. and Edwards, N. (2014) '*NHS hospitals under pressure: trends in acute activity up to 2022'*, London: Nuffield trust.

Snow, J. and Mann, M. (2013) '*Qualtrics survey software: a handbook for research professionals',* Utah, 84604, USA: Qualtrics lab.

Social Research Association. (2020)' Ethical Guidelines', Available at https://the-sra.org.uk/common/Uploaded%20files/ethical%20guidelines%202003.pdf (Accessed 1st August, 2020)

Somekh, B. and Lewin, C (2005,p346) '*Research methods in the social sciences,* Sage.

Sousa, V. D., Zauszniewski, J. A. and Musil, C. M. (2004) 'How to determine whether a convenience sample represents the population, *Applied Nursing Research,* 17(2), pp. 130-133. doi: https://doi.org/10.1016/j.apnr.2004.03.003.

Souza, G.C.D., Peduzzi, M., Silva, J.A.M.D. and Carvalho, B.G. (2016) 'Teamwork in nursing: restricted to nursing professionals or an interprofessional collaboration?', *Revista da Escola de Enfermagem da USP*, *50*(4), pp.642-649.

Spears, L, C (2004) 'Practicing servant leadership'. *Leader to Leader*, 34,7-11.

Spender, D. and Gaze, J (1982) '*Women of ideas and what men have done to them: from Aphra Behn to Adrienne Rich'* (pp. 3-19). London: Routledge & Kegan Paul.

Speziale, H. S., Streubert, H. J. and Carpenter, D. R. (2011) '*Qualitative research in nursing: advancing the humanistic imperative',* 5th edn.: Lippincott Williams & Wilkins.

Srivastava, S. and Agarwal, S.(2020) 'Workplace bullying and intention to leave: a moderated mediation model of emotional exhaustion and supervisory support', *Employee Relations: the International Journal*, 42 (6), pp.1547-1563. https://doi.org/10.1108/ER-07-2019-0293.

Stauss, W. and Howe, N. (1992) '*Generations: the history of America's future, 1584 to 2069.* Harper Collins.

Starks, H., Trinidad, S.B. (2007) 'Choose your method: a comparison of phenomenology, discourse analysis, and grounded theory, *Qualitative Health Research*. 17(10), pp. 1372–1380. https://doi.org/10.1177/1049732307307031.

Stephens, N. (2007) 'Collecting data from elites and ultra elites: telephone and face-to-face interviews with macroeconomists', *Qualitative Research,* 7(2), pp. 203-216. doi: https://doi.org/10.1177/1468794107076020.

Stedman, R.C., Connelly, N.A., Heberlein, T.A., Decker, D.J. and Allred, S.B. (2019) 'The end of the (research) world as we know it? understanding and coping with declining response rates to mail surveys, *Society & Natural Resources*,32(10), pp. 1139-1154. doi: 10.1080/08941920.2019.1587127.

Stevanin, S., Palese, A., Bressan, V., Vehviläinen-Julkunen, K. and Kvist, T. (2018) 'Workplace-related generational characteristics of nurses: a mixed-method systematic review', *Journal of Advanced Nursing*, *74*(6), pp.1245-1263. https://doi.org/10.1111/jan.13538.

Stoop, I.A. (2005) 'Non-response in sample surveys: *the hunt for the last respondent',* Social and Cultural Office of the Netherland.

Stone, A.G., Russell, R.F. and Patterson, K (2004) 'Transformational versus servant leadership: a difference in leader focus'. *Leadership & Organization Development Journal*, 25(4),349-361.

Stone, P.W., Larson, E.L., Mooney-Kane, C., Smolowitz, J., Lin, S.X. and Dick, A.W. (2006) 'Organizational climate and intensive care unit nurses’ intention to leave', *Critical Care Medicine,* 34(7), pp. 1907-1912. doi: 10.1097/01.CCM.0000218411.53557.29.

Stone, P.W., Mooney-Kane, C., Larson, E.L., Pastor, D.K., Zwanziger, J. and Dick, A.W. (2007) 'Nurse working conditions, organizational climate, and intent to leave in ICUs: an instrumental variable approach, *Health Services Research*, *42*(3p1), pp.1085-1104. **https://doi.org/10.1111/j.1475-6773.2006.00651.x**.

Strauss, A. and Corbin, J. (1998) '*Basics of qualitative research: techniques and procedures for developing grounded theory*: Sage.

Sturges, J. and Guest, D. (2004) 'Working to live or living to work? work/life balance early in the career', *Human Resource Management Journal,* 14(4), pp. 5-20. doi: https://doi.org/10.1111/j.1748-8583.2004.tb00130.x.

Sturges, J. E. and Hanrahan, K. J. (2004) 'Comparing telephone and face-to-face qualitative interviewing: a research note', *Qualitative Research,* 4(1), pp. 107-118. doi: https://doi.org/10.1177/1468794104041110.

Suzuki, Y. (2007) 'Truck driver turnover: what rate is good enough?', *International Journal of Physical Distribution & Logistics Management,* 37(8), pp. 612-630. https://doi.org/10.1108/09600030710825685.

Sullivan, E. J., & Decker, P. J (2009) '*Effective Leadership and Management in Nursing* (7th ed.). Upper Saddle River, NJ: Prentice-Hall.

Sundin, L., Hochwälder, J. and Lisspers, J. (2011) 'A longitudinal examination of generic and occupational specific job demands, and work-related social support associated with burnout among nurses in Sweden', *Work,* 38(4), pp. 389-400. doi: 10.3233/WOR-2011-1142.

Suter, E., Arndt, J., Arthur, N., Parboosingh, J., Taylor, E. and Deutschlander, S. (2009) 'Role understanding and effective communication as core competencies for collaborative practise', *Journal of Interprofessional Care,* 23(1), pp. 41-51. doi: https://doi.org/10.1080/13561820802338579.

SURE (2016) '*Questions to assist with the critical appraisal of cross-sectional studies.* Available at: http://www.cardiff.ac.uk/insrv/libraries/sure/checklists.html (Accessed: 1st January, 2017).

Tabachnick, B. G. and Fidell, L. S. (2000) '*Computer-assisted research design and analysis',* Needham Heights, MA, United States: Allyn & Bacon, Inc.

Tabachnick BG, Fidell LS (2007) '*Using multivariate statistics*', Boston: Pearson Education, Inc.

Tabak, N. and Orit, K. (2007) ' Relationship between how nurses resolve their conflicts with doctors, their stress and job satisfaction, *Journal of Nursing Management*, *15*(3), pp.321-331. https://doi.org/10.1111/j.1365-2834.2007.00665.x.

Takase, M., Oba, K. and Yamashita, N. (2009) 'Generational differences in factors influencing job turnover among Japanese nurses: an exploratory comparative design', *International Journal of Nursing Studies,* 46(7), pp. 957-967. doi: https://doi.org/10.1016/j.ijnurstu.2007.10.013.

Tanova, C. and Holtom, B.C. (2008) ' Using job embeddedness factors to explain voluntary turnover in four European countries, *The International Journal of Human Resource Management*, *19*(9), pp. 1553-1568. https://doi.org/10.1080/09585190802294820.

Tao, H., Ellenbecker, C.H., Wang, Y. and Li, Y. (2015) 'Examining perception of job satisfaction and intention to leave among ICU nurses in China, *International Journal*

of Nursing Sciences, 2(2), pp. 140-148. doi: https://doi.org/10.1016/j.ijnss.2015.04.007.

Tashakkori, A., Teddlie, C. and (1998) *Mixed methodology: combining qualitative and quantitative approaches*: Sage. Applied social research methods series.

Tashakkori, A. and Teddlie, C. (2003) 'The past and future of mixed methods research: from data triangulation to mixed-model designs', in Tashakkori, A. & Teddlie, C. (eds.) *Handbook of mixed methods in social and behavioural research*: Sage, pp. 671-701.

Tashakkori, A. and Creswell, J. W. (2007) 'Exploring the nature of research questions in mixed methods research, *Journal of Mixed Methods Research,* 1(3), pp. 207-2011. doi: 10.1177/1558689807302814.

Tashakkori, A. and Teddlie, C. (2010) '*Sage handbook of mixed methods in social & behavioural research.* 2nd edn: Sage.

Teddlie, C. and Tashakkori, A. (2009) '*Foundations of mixed methods research: integrating quantitative and qualitative approaches in the social and behavioural sciences.* Thousands Oak, CA: Sage.

Ten Hoeve, Y., Castelein, S., Jansen, G. and Roodbol, P. (2017) 'Dreams and disappointments regarding nursing: student nurses' reasons for attrition and retention: a qualitative study design', *Nurse Education Today,* 54, pp. 28-36. doi: https://doi.org/10.1016/j.nedt.2017.04.013.

Tett, R. P. and Meyer, J. P. (1993, p-260) 'Job satisfaction, organizational commitment, turnover intention, and turnover: path analyses based on meta-analytic findings', *Personnel Psychology,* 46(2), pp. doi: https://doi.org/10.1111/j.1744-6570.1993.tb00874.x.

The Faculty of Intensive Care Medicine (2019) '*Guidelines for the Provision of Intensive Care Services V2'.* Available at: https://www.ficm.ac.uk/standards-research-revalidation/guidelines-provision-intensive-care-services-v2 (Accessed: 18th October, 2019).

The Faculty of Intensive Care Medicine (2021) '*Mentoring, buddying and coaching'*. Available at: https://www.ficm.ac.uk/managing-career-icm/mentoring-buddying-coaching#:~:text=Mentoring%20is%20a%20more%20formal,mentor%20to%20a%20novice%20mentee (Accessed 4th April 2021)

Thomas, S.P. (2003) 'Anger: the mismanaged emotion', *Medsurg Nursing*, *12*(2), pp. 103-110.

Thorne, S. (2000) 'Data analysis in qualitative research', *Evidence-Based Nursing,* 3(3), pp. 68-70. doi: http://dx.doi.org/10.1136/ebn.3.3.68.

Treat-Jacobson D. & Lindquist R.A. (2004) 'Functional recovery and exercise behaviour in men and women, 5 to 6 years following coronary artery bypass graft (CABG) surgery, *Western Journal of Nursing Research*, 26(5), pp. 479-496. https://doi.org/10.1177/0193945904265400.

Tunarosa, A. and Glynn, M. A. (2017) 'Strategies of integration in mixed methods research: insights using relational algorithms', *Organizational Research Methods,* 20(2), pp. 224-242. doi: https://doi.org/10.1177/1094428116637197.

Ulrich, B.T., Lavandero, R., Woods, D. and Early, S. (2014) 'Critical care nurse work environments 2013: a status report', *Critical Care Nurse,* 34(4), pp. 64-79. doi: https://doi.org/10.4037/ccn2014731.

Upenieks, V (2002) 'Assessing differences in job satisfaction of nurses in magnet and nonmagnet hospitals'; *The Journal of Nursing Administration*, 32(11), pp. 564.

Urquhart, C. (2013) '*Grounded theory for qualitative research: a practical guide*'. Sage, Thousand Oaks.

U.S. Department of Health and Human Services (2014) '*The future of the nursing workforce: national-and state-level projections, 2012-2025*'. Available at: https://bhw.hrsa.gov/sites/default/files/bhw/nchwa/projections/nursingprojections.pdf (Accessed: 23rd October, 2019).

Vance, C. and Olson, R.K (1998) '*The mentor connection in nursing'*. Springer Publishing Company.

van Dam, K., Meewis, M. and van der Heijden, B. I. (2013) 'Securing intensive care: towards a better understanding of intensive care nurses' perceived work pressure and turnover intention', *Journal of Advanced Nursing,* 69(1), pp. 31-40. doi: https://doi.org/10.1111/j.1365-2648.2012.05981.x.

Van Osch, M., Scarborough, K., Crowe, S., Wolff, A.C. and Reimer-Kirkham, S. (2018) 'Understanding the factors which promote registered nurses' intent to stay in emergency and critical care areas', *Journal of Clinical Nursing,* 27(5-6), pp. 1209-1215. doi: https://doi.org/10.1111/jocn.14167.

Vanderspank-Wright, B., Lalonde, M., Smith, C.A., Wong, S. and Bentz, J.A. (2019) 'New graduate nurse transition into the intensive care unit: qualitative insights from a longitudinal study-part 1', *Research and Theory for Nursing Practice,* 33(4), pp. 428-444. doi: 10.1891/1541-6577.33.4.428.

Verdinelli, S and Scagnoli, N.I (2013) 'Data display in qualitative research, *International Journal of Qualitative Methods*, *12*(1), pp.359-381.

Vermeir, P., Blot, S., Degroote, S., Vandijck, D., Mariman, A., Vanacker, T., Peleman, R., Verhaeghe, R. and Vogelaers, D. (2018) 'Communication satisfaction and job satisfaction among critical care nurses and their impact on burnout and intention to leave: a questionnaire study, *Intensive and Critical Care Nursing,* 48, pp. 21-27. doi: https://doi.org/10.1016/j.iccn.2018.07.001.

Vesterinen, S., Suhonen, M., Isola, A. and Paasivaara, L. (2012) 'Nurse managers' leadership styles in Finland', *Nursing Research and Practice*, 2012, pp. 8. doi: https://doi.org/10.1155/2012/605379

Wåhlin, I., Ek, A.-C. and Idvall, E. (2010) 'Staff empowerment in intensive care: nurses' and physicians' lived experiences', *Intensive and Critical Care Nursing,* 26(5), pp. 262-269. doi: https://doi.org/10.1016/j.iccn.2010.06.005.

Walusimbi M. & Okonsky J.G. (2004) 'Knowledge and attitudes of nurses caring for patients with HIV/AIDS in Uganda', *Applied Nursing Research*; 17(2), pp. 92-99. https://doi.org/10.1016/j.apnr.2004.02.005.

Walter, M. (2006,p-35) 'The nature of social science research. *Social research methods: an Australian perspective*. Available at: https://www.oup.com.au/media/documents/higher-education/he-samples-pages/he-teacher-ed-landing-page-sample-chapters/walter_9780190310103_SC.pdf. (Accessed, 11th July 2019).

Wan, Q., Li, Z., Zhou, W. and Shang, S. (2018) 'Effects of the work environment and job characteristics on the turnover intention of experienced nurses: the mediating role of work engagement', *Journal of Advanced Nursing,* 74(6), pp. 1332-1341. doi: https://doi.org/10.1111/jan.13528.

Wardani, E (2017) '*Nursing Leadership': a Case of Indonesia* (Doctoral dissertation, University of Sheffield). Available online at http://etheses.whiterose.ac.uk/16357/1/thesis%20ewardani.pdf (accessed, 7th December 2020).

Warshawsky, N. E. and Havens, D. S. (2011) 'Global use of the practise environment scale of the nursing work index', *Nursing Research,* 60(1), pp. 17-31. doi: 10.1097/NNR.0b013e3181ffa79c.

Wargo-Sugleris, M., Robbins, W., Lane, C.J. and Phillips, L.R. (2018) 'Job satisfaction, work environment and successful ageing: determinants of delaying retirement among

acute care nurses', *Journal of Advanced Nursing,* 74(4), pp. 900-913. doi: https://doi.org/10.1111/jan.13504.

Weaver, K. and Olson, J. K. (2006) 'Understanding paradigms used for nursing research, *Journal of Advanced Nursing,* 53(4), pp. 459-469. doi: https://doi.org/10.1111/j.1365-2648.2006.03740.x.

Weeks, K.P., Weeks, M. and Long, N. (2017) 'Generational perceptions at work: in-group favouritism and out-group stereotypes', *Equality, Diversity and Inclusion: an International Journal*,36(1), pp. 33-53 https://doi.org/10.1108/EDI-07-2016-0062.

Wey Smola, K. and Sutton, C. D. (2002) 'Generational differences: revisiting generational work values for the new millennium, *Journal of Organizational Behavior,* 23(4), pp. 363-382. doi: https://doi.org/10.1002/job.147.

Wheelan, S. A., Burchill, C. N. and Tilin, F. (2003) 'The link between teamwork and patients' outcomes in intensive care units, *American Journal of Critical Care,* 12(6), pp. 527-534. doi: https://doi.org/10.4037/ajcc2003.12.6.527.

Whittemore, R. and Knafl, K. (2005) 'The integrative review: updated methodology', *Journal of Advanced Nursing,* 52(5), pp. 546-553. doi: https://doi.org/10.1111/j.1365-2648.2005.03621.x.

Whitehead, D. and Schneider, Z. (2007) 'Mixed-methods research', in Whitehead, D. and Schneider, Z (eds*) Nursing and midwifery research: methods and appraisal for evidence-based practice (*5th edn): Elsevier, pp. 249-267.

Whiting, L.S. (2008) 'Semi-structured interviews: Guidance for novice researchers', *Nursing Standard*, *22*(23), pp.35-40.

White, P. (2014) 'Improving staff morale through authentic appreciation, *Development and Learning in Organizations,*28(5), pp. 17-20. https://doi.org/10.1108/DLO-05-2014-0034.

WHO (2018) '*Nursing and midwifery: key facts,* Available at https://www.who.int/news-room/fact-sheets/detail/nursing-and-midwifery (Accessed: 2nd November,2019).

Wieck, K. L., Dols, J. and Landrum, P. (2010) 'Retention priorities for the intergenerational nurse workforce', *Nursing Forum,* 45(1), pp. 7-17. doi: https://doi.org/10.1111/j.1744-6198.2009.00159.x.

Williams, G., Schmollgruber, S. and Alberto, L. (2006) 'Consensus forum: worldwide guidelines on the critical care nursing workforce and education standards', *Critical Care Clinics,* 22(3), pp. 393-406. doi: https://doi.org/10.1016/j.ccc.2006.03.010.

Wisdom, J. and Creswell, J.W. (2013) '*Mixed methods: integrating quantitative and qualitative data collection and analysis while studying patient-centred medical home models*. Rockville, MD: Agency for Healthcare Research and Quality.

Wong, G., Greenhalgh, T., Westhorp, G., Buckingham, J. and Pawson, R. (2013) 'RAMESES publication standards: realist syntheses', *BMC Med,* 11(1), pp. 21. doi: https://doi.org/10.1186/1741-7015-11-21.

Wright, G. (2015,p-306) 'An empirical examination of the relationship between nonresponse rate and nonresponse bias', *Statistical Journal of the IAOS*; 31 (2), pp. 305-15. doi:10.3233/sji-140844.

Wright, G. (2015) 'An empirical examination of the relationship between nonresponse rate and nonresponse bias', *Statistical Journal of the IAOS*; 31 (2), pp. 305–15. doi:10.3233/sji-140844.

Wuest J. (1994) 'Professionalism and the evolution of nursing as a discipline: a feminist perspective', *Journal of Professional Nursing,* 10(6), pp. 357-367. https://doi.org/10.1016/8755-7223(94)90039-6.

Yang, H., Lv, J., Zhou, X., Liu, H. and Mi, B. (2017) 'Validation of work pressure and associated factors influencing hospital nurse turnover: a cross-sectional investigation in Shaanxi province, China', *BMC Health Services Research,* 17(1), pp. 112. doi: https://doi.org/10.1186/s12913-017-2056-z.

Yin, R. K. (2003) '*Case study research: design and methods.* 3rd edn: Sage, Applied social research methods series.

Yin, R. K. (2006) 'Mixed methods research: are the methods genuinely integrated or merely parallel', *Research in the Schools,* 13(1), pp. 41-47. Mid-South Educational Research Association.

Yukl, G (2002) '*Leadership in Organizations* (5th edn); Upper Saddle River, NJ: Prentice-Hall.

Zamawe, F. C. (2015) 'The implication of using NVivo software in qualitative data analysis: evidence-based reflections', *Malawi Medical Journal,* 27(1), pp. 13-15. doi: 10.4314/mmj.v27i1.4.

Zhang, X.C., Huang, D.S. and Guan, P. (2014) 'Job burnout among critical care nurses from 14 adult intensive care units in northeastern China: a cross-sectional survey', *BMJ Open,* 4(6), pp. e004813. doi: 10.1136/BMJ open-2014-004813.

Zhang, Y., Wu, J., Fang, Z., Zhang, Y. and Wong, F.K.Y. (2017) 'Newly graduated nurses' intention to leave in their first year of practice in Shanghai: a longitudinal study, *Nursing Outlook,* 65(2), pp. 202-211. doi: https://doi.org/10.1016/j.outlook.2016.10.007.

Zito, M., Emanuel, F., Molino, M., Cortese, C.G., Ghislieri, C. and Colombo, L. (2018) 'Turnover intentions in a call centre: the role of emotional dissonance, job resources, and job satisfaction, *PloS One,* 13(2), pp. e0192126. doi: 10.1371/journal.pone.0192126.

APPENDICES

Appendix 2.1: Search strategy (List, Keep and Delete Approach)

Topic:

What factors influences the nurse's intention to leave the adult critical care settings?

Using List, Keep and Delete

List: What factors influence the nurse's intention to leave the adult critical care settings?

Keep: Intention to leave, nurses, adult critical care

Delete: Other words

keywords

- Intention to leave
- Nurses
- Adult
- Critical Care

Combining keywords

1- "intention to leave*" or Quit* or Leave* or Abandon* or resign* or Terminate*

2- "Intensive Care Nurs*"or "Critical Care Nurs*" or "Intensive therapy nurs*" or "Adult intensive care Nurs*" or "Cardiac critical care nurs*" or "Neuro ICU nurs*" or "ITU Nurs*" or "ICU Nurs*" or "HDU Nurs*" or "CCU Nurs*"

3 – "Critical Care unit*" or "Intensive Care unit*" or "Intensive Therapy Unit*" or "High dependency unit*" or "Adult intensive care unit*" or ICU* or HDU* or AICU* or CCU* or "Cardiac ICU*" or "Neuro ICU*"

4-2 and 3

5-1 and 4

Excluding

-Primary data from non-critical care, Neonatal and paediatric critical care areas

-Only including data from Jan 2005

Choose your databases

Databases

- BNI
- CINAHL
- PubMed
- PsycINFO
- HMIC
- Embase via NHS
- Health B Elite

Supplementary searching

- DOH
- NMC
- RCN
- BACCN
- ICS
- AACCN
- ACCCN
- Journal of advanced nursing
- Intensive and critical care nursing
- Journal of clinical nursing
- British Journal of Nursing
- Clinical nursing research
- Journal of nursing management
- Nursing times
- NICE evidence search

Appendix 2.2: SURE checklist

Citation : van Dam *et al* (2013)	
Are there other companion papers from the same study?	**No**
1. Is the study design clearly stated?	**Yes** Cross sectional correlational study
2. Does the study address a clearly focused question? Consider: Population; Exposure (defined and accurately measured?); Outcomes.	**Yes** P-Nurses in Netherland E-Working in an ICU O- To provide insight into the factors that are related to intensive care nursing staff perceptions of work pressure and turnover
3. Are the setting, locations and relevant dates provided? Consider: recruitment period; exposure; data collection.	**Yes** Survey method clear, date of the survey provided
4. Were participants fairly selected? Consider: eligibility criteria; sources & selection of participants.	**Can't tell** The Head nurse distributed the questionnaires, potential for recruitment/sampling bias
5. Are participant characteristics provided? Consider if: sufficient details; a table is included.	**Yes** No table included
6. Are the measures of exposures & outcomes appropriate? Consider if the methods of assessment are valid & reliable.	**Yes** Validated tools used
7. Is there a description of how the study size was arrived at?	**Can't tell** Aimed for all ICUs in Netherland, no power calculation
8. Are the statistical methods well described? Consider: How missing data was handled; were potential sources of bias (confounding factors) considered/controlled for.	**Yes** Head nurse handing and collecting surveys, although anonymous, data analysed only by the author Regression analysis was done

9. Is information provided on participant flow? Consider if following provided: flow diagram; numbers of participants at each stage; details of drop-outs; details of missing participant data; numbers of outcome events.	**Yes** No flow diagram but information on numbers approached
10. Are the results well described? Consider if: effect sizes, confidence intervals/standard deviations provided; the conclusions are the same in the abstract and the full text.	**Yes** Means, SDs and p values. Brief abstract
11. Is any sponsorship/conflict of interest reported?	**Yes**
12. Finally, did the authors identify any limitations and, if so, are they captured above?	**Yes** Different structures and styles in ICU in Netherland, factors relating to work pressure

Appendix 2.3: Published literature review

A published article has been removed from this version of the thesis due to copyright restrictions:

Khan N, Jackson D, Stayt L, Walthall H (2019). Factors influencing nurses' intentions to leave adult critical care settings. Nursing in Critical Care: 24(1):24 - 32. doi:10.1111/nicc.12348

Appendix 3.1: Invitation letter Phase 1 & 2

Invitation letter for phase 1 and 2

Nadeem Khan August 2017

PhD student

Oxford Institute of Nursing, Midwifery and Allied Health Research

Faculty of Health and Life Sciences, Oxford Brookes University , The Colonnade, Gipsy Lane, Headington, Oxford, OX3 0BP

Phone no: 01865484158

Supervisory team: Dr Helen Walthall, Dr Louise Stayt and Prof Debra Jackson

Email address: 15129052@brookes.ac.uk

Name of the study: To explore nurses' views and experiences about their working conditions in adult critical care areas

Dear critical care nurse

I am a critical care nurse currently undertaking a study as a PhD student at the Oxford Brookes University, Faculty of Health and Life Sciences.

This study aims to explore the views and experiences of nurses about their working conditions in adult critical care areas and possible factors that may influence staff nurses' decisions to continue or discontinue their employment. The study aims to inform critical care leaders/managers to develop strategies to improve retention. This may contribute to a more stable critical care nursing workforce.

You have been invited to take part because your critical care nursing workplace is part of the Critical care Network. The research team are interested in finding out your views and experiences of working in the adult critical care environment and the factors that may influence your intention to stay or leave the adult critical care area. The study will seek the views of nurses who currently work in adult critical care areas across England. This study will be completed in two phases. Taking part in this study involves completing a questionnaire in phase 1 and participating in a telephone interview in phase 2. Further details have been provided in the participant information sheets for both phases.

FREC Number: 2016/56 Date: August 2017 Version: 2

Participating in this study is voluntary so it will be up to you to decide whether or not you would want to take part. The participant information sheet is attached for your information. If you have any further questions regarding the research, please feel free to contact me either through email at 15129052@brookes.ac.uk or via my phone number-01865484348

Thank you for reading this letter and the information sheet and I hope you will consider participating in this study.

Yours sincerely

Nadeem Khan PhD student

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FREC Number: 2016/56 Date: August 2017 Version: 2

Appendix 3.2: Participant information sheet Phase 1

Participant Number:

Title of the project: To explore nurses' views and experiences about their working conditions in adult critical care areas

Participant information sheet

Phase 1: The survey

I would like to invite you to take part in a research study. Before deciding whether or not to take part, it is important for you to understand why the research is being conducted and what it will involve. Please take your time to read the following information sheet carefully, talk to others about the study and contact us if there is anything that isn't clear.

What is the purpose of the study?

This study aims to explore the views and experiences of nurses about their working conditions in adult critical care areas and possible factors that may influence staff nurses' decisions to continue or discontinue their employment. This study is needed as high turnover and nurse retention has been an ongoing issue for many decades. Although all areas of nursing are affected, critical care areas are especially vulnerable to recruitment and retention issues. High nurse turnover in critical care areas has resource implications related to recruitment and retention of nurses and impacts on staff morale, productivity, patient safety and quality patient outcomes.

A literature review undertaken recently to inform this study has identified areas requiring further research. Therefore, it is important to explore this further. The study will be undertaken in two phases;

Phase 1: The survey

Phase 2: Qualitative interviews with approximately 20-30 participants

Why have I been invited to participate?

You have been invited to take part because you are part of the adult critical care nursing workforce and your workplace is part of the critical care network. We would like to know your views about the critical care work environment and the factors that may influence your intentions to stay or leave the adult critical care area. The study will seek the views of nurses who currently work in the adult critical care areas across England. All relevant information about the study will be sent to you via

FREC Number: 2016/56 Date: August 2017 Version: 2 1

your unit manager by the critical care network lead. This has been agreed by the national lead for critical care network.

Do I have to take part?

Participation is voluntary so it will be up to you to decide whether or not you would want to take part. All records will be coded and will only be available to the researchers involved in the study. Return of the survey is anonymous. All data from the study will be owned by Oxford Brookes University and will be retained and kept securely in accordance with the University's policy of Academic Integrity for a period of ten years.

What will happen to me if I take part?

If you are happy to take part you are asked to complete the online questionnaire sent by the critical care network lead. Reading the documents and completing the survey will take approximately 30 minutes. This questionnaire will ask for your views and experiences of working in the adult critical care environment and factors that may influence your intentions to stay or leave the adult critical care area. The completion and return of the questionnaire will imply as consent.

What are the possible disadvantages of taking part?

There are no direct disadvantages to you, however you may experience uncomfortable feelings about the recall of events when completing the survey. Here are the details of organisations for support if needed;

Royal College of Nursing at https://www.rcn.org.uk/get-help/member-support-services/counselling-service and Phone number: 03457726100

British Association of Critical Care Nurses (BACCN at; http://baccn.org/index.php/members and Phone number: 08448008843. Other avenues e.g. GP services or occupational health referrals could be explored if you are not a member of these organizations.

What are the possible benefits of taking part?

The information we get from the study will hopefully help us to identify those factors that influence nurses' intentions to stay or leave the adult critical care areas. The data gained may contribute to the development of strategies to improve retention, therefore may contribute to a more stable critical care nursing workforce.

Will what I say in this study be kept confidential?

All information collected about you will be kept strictly confidential. The questionnaire data will be anonymised. Any personal information supplied for the purposes of phase 2 will be held separately from the questionnaire data and disposed of as soon as the telephone interviews have taken place. The research data will be retained for 10 years. Only researchers directly involved in the study will

have access to your personal data. The data will be analysed under the supervision of Dr Helen Walthall, Dr Louise Stayt, and Professor Debra Jackson at Oxford Brookes University.

What will happen to the results of the research study?

The results will be presented as part of a PhD thesis and the data published will be anonymised. In addition, the results will be published in peer-reviewed journals and presented at meetings and conferences. Participants will not be identified in any publications. A copy of the published research study will be made available on the website of Oxford Institute for Nursing, Midwifery and Allied Health Research (www.OxINMAHR.com) and Oxford Brookes University library services.

Who is organising and funding the research?

This research is being conducted as a PhD student under the supervision of Dr Helen Walthall, Dr Louise Stayt, and Professor Debra Jackson at the Faculty of Health and Life Sciences at Oxford Brookes University.

Who has reviewed the study?

The research has been approved by the Faculty Research Ethics Committee, Oxford Brookes University. Should you have any questions or concerns regarding the conduct of the study please contact the Chair of the Faculty Research Ethics Committee via the administrator at tgeorgescu@brookes.ac.uk.

Information regarding phase 2 of the study

Phase 1 of the study will be followed by phase 2 which will involve in-depth interviews about nurse's experiences in the critical care environment and factors influencing nurse's intentions to leave the adult critical care areas. At the end of the online questionnaire, you will be invited to participate in phase 2 of the study. If interested, you will be given the opportunity to provide contact details to be followed up to participate. You will be sent participant information sheet, invitation letter and consent form for phase 2 nearer the time. The researcher will be available to answer any questions you may have before signing the consent form for phase 2.

Contact for Further Information

You could contact a member of the research team at any time if you have any questions or concerns. Here are the details;

Nadeem Khan, PhD student, Faculty of Health and Life Sciences, Oxford Brookes University

Email-15129052@brookes.ac.uk

Phone-01865484348

Helen Walthall, Director of studies, Faculty of Health and Life Sciences, Oxford Brookes University
Email-hewalthall@brookes.ac.uk
Phone-01865482603

Thank you very much for reading this information sheet

Date: August 2017

Appendix 3.3: NWI-R

The Nursing work index-Revised tool

(Adapted

For each item in this section, please indicate the extent to which you agree that the following items are present in your current job. Indicate your degree of agreement by circling the appropriate number.

Present in Current Job	*Strongly Agree*	*Somewhat Agree*	*Somewhat Disagree*	*Strongly Disagree*
1. Adequate support services allow me to spend time with patients.	1	2	3	4
2. Physicians and nurses have good relationships.	1	2	3	4
3. A good orientation programme for newly employed nurses.	1	2	3	4
4. A supervisory staff that is supportive of nurses.	1	2	3	4
5. A satisfactory salary.	1	2	3	4
6. Nursing controls its own practice.	1	2	3	4
7. Active in-service/continuing education programme for nurses.	1	2	3	4
8. Career development/clinical ladder opportunity.	1	2	3	4
9. Opportunity for staff nurses to participate in policy decisions.	1	2	3	4
10. Support for new and innovative ideas about patient care.	1	2	3	4
11. Enough time and opportunity to discuss patient care problems with other nurses.	1	2	3	4
12. Enough registered nurses to provide quality patient care.	1	2	3	4
13. A nurse manager who is a good manager and leader.	1	2	3	4
14. Flexible or modified work schedules are available.	1	2	3	4
15. Enough staff to get the work done.	1	2	3	4
16. Freedom to make important patient care and work decisions.	1	2	3	4

Aiken, L. H., & Patrician, P. A. (2000). Measuring organizational traits of hospitals: The Revised Nursing Work Index. *Nursing Research*, *49*(3), 146-153.

FREC Number-2016/56 August 2017 Version-2

17. Praise and recognition for a job well done.	1	2	3	4
18. Good relationship with other departments and members of the multidisciplinary team	1	2	3	4
19. Not being placed in a position of having to do things that are against my nursing judgement.	1	2	3	4
20. High standard of nursing care is expected by the administration.	1	2	3	4
21. A chief nursing officer is equal in power and authority to other top-level hospital executives.	1	2	3	4
22. Much team work between nurses and doctors.	1	2	3	4
23. Nursing staff is supported in perusing degrees in nursing	1	2	3	4
24.Working with nurses who are clinically competent	1	2	3	4
25. The nursing staff participates in selecting the new equipment.	1	2	3	4
26. A nurse manager backs up the nursing staff in decision making.	1	2	3	4
27. An administration that listens and responds to employee concerns.	1	2	3	4
28. An active quality assurance programme.	1	2	3	4
29. Staff nurses are involved in internal governance of the unit and hospital (e.g. practice and policy committees).	1	2	3	4
30. Collaboration between nurses and physicians.	1	2	3	4
31. A preceptor programme for newly hired nurses.	1	2	3	4
32. Staff nurses have the opportunity to serve on hospital and nursing committees.	1	2	3	4
33. The contribution that nurses make to patient care is publically acknowledged.	1	2	3	4
34. Nurse managers consult with staff on daily problems and procedures.	1	2	3	4
35. The work environment is pleasant, attractive and comfortable.	1	2	3	4

Aiken, L. H., & Patrician, P. A. (2000). Measuring organizational traits of hospitals: The Revised Nursing Work Index. *Nursing Research*, *49*(3), 146-153.

FREC Number-2016/56 August 2017 Version-2

36. Patient assignments foster continuity of care (i.e. the same nurse cares for the patient from one day to another).	1	2	3	4
37. Regular, permanently assigned staff nurses never have to float to another unit.	1	2	3	4
38. Staff nurses actively participate in developing their work schedules (i.e. what days they work, days off etc.).	1	2	3	4
39. Standardised policies, procedures and ways for doing things.	1	2	3	4
40. Working with experienced nurses who know the unit/hospital.	1	2	3	4
41. I intend to leave my current job in the next 12 months.	1	2	3	4
42. I intend to leave my current job in the next three years.	1	2	3	4
43. I intend to leave the nursing profession in the next 1-5 years.	1	2	3	4

44. Give reasons for your intention to leave if you have circled "strongly agree" or "somewhat agree" to item 41-43 in the box below.

Information regarding phase 2 of the study

Phase 1 of the study will be followed by phase 2 which will involve in-depth interviews about nurse's experiences in the critical care environment and factors influencing nurse's intentions to leave the adult critical care areas. If you are interested, please provide your contact details to be followed up for interviews. You will be sent participant information sheet, invitation letter and consent form for phase 2.

Name:

Aiken, L. H., & Patrician, P. A. (2000). Measuring organizational traits of hospitals: The Revised Nursing Work Index. *Nursing Research*, *49*(3), 146-153.

Email:

Phone number:

Thank you for completing this questionnaire

Aiken, L. H., & Patrician, P. A. (2000). Measuring organizational traits of hospitals: The Revised Nursing Work Index. *Nursing Research*, *49*(3), 146-153.

Appendix 3.4: Ethics approval

E3/FH&LS

Oxford Brookes University

Faculty of Health and Life Sciences

Decision on application for ethics approval

The Departmental Research Ethics Officer (DREO) / Faculty Research Ethics Committee (FREC) has considered the application for ethics approval for the following project:

Project Title: To explore nurses' views and experiences about their working conditions in adult critical care areas

FREC Study Number: 2016/56

Name of Applicant: Nadeem Khan

Name of Supervisor: Dr Helen Walthall

Please tick one box

1. The Faculty Research Ethics Committee gives ethical approval for the research √ ☐

   Please note that the research protocol as laid down in the application and hereby approved must not be changed without the approval of the DREO / FREC

2. The Departmental Research Ethics Officer / Faculty Research Ethics Committee gives ethical approval for the research project, subject to the following: ☐

3. The Departmental Research Officer / Faculty Research Ethics Committee cannot give ethical approval for the research project. The reasons for this and the action required are as follows: ☐

Signed: …Hazel Abbott [signature] … ……………………………………………..…….…

Approval Date: ……22 August 2017 …………………..…..…………………………………..…….

Designation: Departmental Research Ethics Officer

(Signed on behalf of the Faculty Research Ethics Committee)

Date when application reviewed (*office use only*): 18 July 2017 …………..…….…….………..……

H&LS/FRec/E3 August 2011

Appendix 3.5: Explanation regarding Factor Analysis

The origin of Factor analysis dating back 100 years through the work of Pearson and Spearman (Pearson, 2010; Kilner, 2004), the practical application of this approach has been suggested to be a new occurrence. As Kieffer (1999), cited in Henson and Roberts (Henson and Roberts, 2006, p-2):

> *"Spearman, through his work on personality theory, provided the conceptual and theoretical rationale for both exploratory and confirmatory factor analysis. Despite the fact that the conceptual bases for these methods have been available for many decades, it was not until the widespread availability of both the computer and modern statistical software that these analytic techniques were employed with any regularity".*

Factor analysis is used in many fields such as behavioural and social sciences, medicine and economics and is considered the method of choice for interpreting self-reporting questionnaires (William, Onsman and Brown, 2010). Factor analysis is a multivariate statistical procedure that has many uses, such as reducing a large number of variables into a smaller set of variables (factors). Factor analysis establishes underlying dimensions between measured variables and latent constructs, thereby allowing the formation and refinement of theory and it provides construct validity evidence of self-reporting scales (Nunnally, 1978), cited in Thompson (2004, p-5). There are two main techniques of factor analysis: Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) (Yong and Pearse, 2013). CFA aims to confirm hypotheses and uses path analysis diagrams to represent variables and factors. Aligned with the aim and objectives of this mixed-method study, EFA, on the other hand, tries to uncover complex patterns by testing prediction and exploring the dataset (Child, 2006), hence was appropriate to use. EFA is used when a researcher needs to discover the number of factors influencing variables and to analyze which variables 'go together' (DeCoster, 1998). As discussed in the methods chapter, a 43

items NWI-R tool was used for the survey; a factor analysis was therefore needed to assemble common variables into smaller descriptive categories for easy interpretation. A recommended sample size for factor analysis is 300 participants (Yong and Pearse, 2013) and the number of surveys returned was 345, another reason indicating the appropriateness of factor analysis.

Appendix 3.6: Participant information sheet phase 2

Title of the project: To explore nurses' views and experiences about their working conditions in adult critical care areas

Participant information sheet

Phase 2: Interviews

I would like to invite you to take part in a research study. Before deciding whether or not to take part, it is important for you to understand why the research is being conducted and what it will involve. Please take your time to read the following information sheet carefully, talk to others about the study and contact us if there is anything that isn't clear.

What is the purpose of the study?

This study aims to explore the views and experiences of nurses about their working conditions in adult critical care areas and possible factors that may influence staff nurses' decisions to continue or discontinue their employment. This study is needed as high turnover and nurse retention has been an ongoing issue for many decades. Although all areas of nursing are affected, critical care areas are especially vulnerable to recruitment and retention problems. High staff turnover affects hospital productivity, quality of patient care and have financial implications. As retention is preferable to recruiting, employing and training new staff, therefore it is important to explore factors influencing nurses' intentions to leave or stay within adult critical care areas. A literature review undertaken to inform this study has identified areas requiring further research. Therefore, it is important to explore this further.

Why have I been invited to participate?

You have been invited to take part because you have expressed an interest in phase 1 of this study to participate in a telephone interview. We would like to know your views about the critical care work environment and the factors that may influence your intentions to stay or leave the adult critical care area. The study will seek the views of nurses who currently work in the adult critical care areas across England

Do I have to take part?

Participation is voluntary so it will be up to you to decide whether or not you would want to take part. All records will be coded and will only be available to the researchers involved in the study. Your name will never appear in any published work. All data from the study will be owned by Oxford Brookes University and will be retained and kept securely in accordance with the University's policy of Academic Integrity for a period of ten years. You are free to withdraw from the study at any time, without giving a reason.

What will happen to me if I take part?

If you are happy to take part please contact the researcher Nadeem Khan who will arrange a telephone interview at a time convenient for you. Prior to your participation, the researcher will explain the study further and will answer any questions you may have regarding the study. The interview will take approximately an hour and will involve you telling the researcher about your views and experiences of working in the adult critical care environment. The interview will be conducted in English and will be audio-taped. If, for whatever reason, and at any stage of the process you decide that you would not want to take part then you are free to withdraw without giving a reason. Any data already supplied will be destroyed if you decide to withdraw from the study.

What are the possible disadvantages of taking part?

You may experience uncomfortable feelings and become distressed when talking about your views and experiences. If you become upset, the interviewer will be sensitive to your needs. You will be asked whether you wish to continue the interview and if needed the interviewer will give you information about organisations for support e.g.

Royal College of Nursing at https://www.rcn.org.uk/get-help/member-support-services/counselling-service and Phone number: 03457726100

British Association of Critical Care Nurses (BACCN at; http://baccn.org/index.php/members and Phone number: 08448008843. Other avenues e.g. GP services or occupational health referrals will be explored if you are not a member of these organizations.

What are the possible benefits of taking part?

The information we get from the study will hopefully give us information regarding critical care nurses working conditions and help us identify those factors that influence nurses' intentions to stay or leave the adult critical care areas. The data gained may contribute to the development of strategies to improve retention and therefore, may contribute to a more stable nursing workforce.

Will what I say in this study be kept confidential?

All information collected about you will be kept strictly confidential. Your personal data will be securely encrypted with a password at Oxford Brookes University. Data in paper or electronic form will be de-identified by a code and kept securely for a period of 10 years after the completion of this research project. Only researchers directly involved in the study will have access to your personal data. The data will be analysed under the supervision of Dr Helen Walthall, Dr Louise Stayt, and Professor Debra Jackson at Oxford Brookes University.

What will happen to the results of the research study?

The results will be presented as part of a PhD thesis and the data presented will be anonymised. In addition, the results will be published in peer-reviewed journals and presented at meetings and conferences. Participants will not be identified in any publications. A copy of the published research study will be made available on the website of Oxford Institute for Nursing, Midwifery and Allied Health Research (www.OxINMAHR.com) and Oxford Brookes University library services.

Who is organising and funding the research?

This research is being conducted under the supervision of Dr Helen Walthall, Dr Louise Stayt, and Professor Debra Jackson at the Faculty of Health and Life Sciences at Oxford Brookes University.

Who has reviewed the study?

The research has been approved by the Faculty Research Ethics Committee, Oxford Brookes University. Should you have any questions or concerns regarding the conduct of the study please contact the Chair of the Faculty Research Ethics Committee via the administrator at tgeorgescu@brookes.ac.uk.

Contact for Further Information

You could contact a member of the research team at any time if you have any questions or concerns. Here are the details;

Nadeem Khan, PhD student, Faculty of Health and Life Sciences, Oxford Brookes University
Email-15129052@brookes.ac.uk
Phone-01865484348
Helen Walthall, Director of studies, Faculty of Health and Life Sciences, Oxford Brookes University
Email-hewalthall@brookes.ac.uk
Phone-01865482603

Thank you very much for reading the information sheet

Date: August 2017

Appendix 3.7: Interview questions

Interview Schedule

Q1. Tell me a little bit about yourself/your career so far?

Q2. Tell me about your experiences of working in the adult critical care environment?

Q3. Tell me about the quality and different aspects of your working environment?

Q4. What are the impacts of the different aspects of work environment, both positive and negative?

Q5. Tell me about the nature of working relationships within the area of your work?

Q6. Tell me about any traumatic and stressful workplace experiences you may have experienced?

Q7. Tell me about the training, education and development opportunities in your work area?

Q8. Do you have any plans to leave your critical care area within the next 1-5 years?

Q9. If the answer is yes, what would be your reasons for wanting to leave?

www.oxinmahr.com

Appendix 3.8: Consent form

CONSENT FORM

Full title of Project: To explore nurses' views and experiences about their working conditions in adult critical care areas

Name, position and contact address of Researcher:
Nadeem Khan: PhD student

Oxford Institute of Nursing, Midwifery & Allied Health Research (OxINMAHR) Oxford Brookes University, Faculty of Health & Life Sciences, The Colonnade, Gipsy Lane, Headington, Oxford, OX3 0BP
Phone-01865484348

Supervisory team:

Dr Helen Walthall, Principal Lecturer/Programme Lead, Department of Nursing, Oxford Brookes University,
Phone: (0)1865 482603, Email- hewalthall@brookes.ac.uk

Dr Debra Jackson, Director, Oxford Institute of Nursing, Midwifery & Allied Health Research (OxINMAHR),
Phone: (0)1865 482736, Email- djackson@brookes.ac.uk

Dr Louise Stayt, Senior Lecturer, Faculty of Health and Life Sciences, Oxford Brookes University,
Phone: 01865 482612
Email- lstayt@brookes.ac.uk

Please initial box

1. I confirm that I have read and understood the information sheet for the above study and I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason. ☐
3. I agree that my data gathered in this study may be stored (after it has been anonymised) in a specialist data centre at Oxford Brookes University and may be used for future research. ☐
4. I understand and agree that I will be interviewed about the topic above and this interview will be audio-recorded and transcribed for the purpose of this study. ☐
5. I understand that the record of interview may be looked at by individuals from Oxford Brookes University who are members of the research team. I give permission for these individuals to have access to anonymised data only. ☐
6. I agree to take part in the above study ☐

7. I agree to the use of anonymised direct quotations in the reporting of the findings

Y	N
☐	☐

Name of the participant	Date	Signature

Name of the researcher	Date	Signature

Appendix 3.9: Framework matrix

Main and sub themes emerged from the data analysis of semi-structured interviews including codes from transcripts

Main themes	**Feeling appreciated and acknowledged for their specialist knowledge and skills**	**Providing overall support and developing a system of wellbeing following stressful incidents**	**Acknowledging the importance of organisational and operational aspects of management in the delivery of care**
Sub-themes	Feeling demoralised due to misperception regarding the workload of critical care nurses Raising awareness about the specialist nature of critical care nursing Rewarding critical care nurses' specialist knowledge and skills	Demanding a structured training and education programme for novice critical care nurses Providing opportunities for professional development and career progression Enhancing workforce behaviours and multidisciplinary collaboration Focusing on wellbeing following stressful and traumatic incidents	Maintaining work-life balance while managing the roster Promoting nurse autonomy and a culture of shared governance Acknowledging nurses' level of experiences when managing teams Experiencing stress and anxiety because of workforce shortages
Transcript numbers & codes **1**	Acknowledging critical care as a specialist area would improve the morale of critical care nurses (p.27) Critical care nursing is very different from other areas of nursing, and this	Experienced workforce is replaced by juniors due to high turnover without appropriate training (p.8)	Changing the grading system from D, E, F to 5,6 and 7 has frustrated a lot of nurses (p.26)

	has not been acknowledged by colleagues from non-critical care areas and managers (p.9) Critical care staff should get extra financial incentives and specialist titles to acknowledge their skills and knowledge (p.9, 11 & 12) Strategies needs to be developed to raise the profile of critical care in public (p.28) Our manager is supportive, appreciate and acknowledge the hard work of staff (p.11 & 22) There is a lack of understanding about the workload in critical care by the nursing staff who work in non-critical care areas (p.9) Working in critical care gives nurses a strong foundation and make them all-around nurses which is great for their CV and future career (p.22) It takes much longer to train a new member of staff in critical care as	Having knowledgeable senior colleagues to settle in as a new starters is important in critical care (p.21) Having s strong social network with colleagues outside work and a supportive circle of friends and family is important to deal with the stressful job of critical care (p.23-25) Having supportive and nice senior colleagues is important as a new starter. When I started as a new starter, my seniors were knowledgeable but not nice (p.3) Junior nurses are not aware of how to get involved in the discussions during ward rounds (p.17) Lack of support and increased workload is having psychological impacts on staff (p.6-7) More focus on wellbeing is needed for critical care nurses to improve retention (p.27) Structured psychological support is needed for critical care staff after stressful incidents (p.20)	I have given up after multiple attempts of trying to change things to improve the quality of care (p.5-6) Good teamwork have a positive impact on the work environment (p.13-14) Inappropriate promotion of junior staff to senior roles having an impact on the quality of care and training of the new starters. This situation is worsened by high turnover and poor retention (p.3,5,18 & 19) Inappropriately promoted senior staff don't have the knowledge and skills to improve quality of care and provide training to their juniors (p.6) There is too much focus on academia and less on basic nursing care during nurse training now, and this needs to change (p.27-28) Unbalanced shift pattern and lack of work-life balance is having an impact on staff (p.10,11 and 13)

	compared to non-critical care areas (p.9)	There is a lack of educational support due to high turnover (p.18)	Work-life balance is an issue that needs resolving, and the high turnover and poor skill mix has made this worse (p.12) Nurse autonomy has declined with the decline of relationships between nurses and consultants as well as because of the increased junior workforce due to high turnover (p.15-16) Treatment withdrawal and not getting nurses involved in the decision making during treatment withdrawal is stressful for nurses (p.20-21)
2	Critical care is a very busy and specialised area with the use of advanced medical technology; therefore, critical care nurses require extra training to be able to work in this environment (p 2 & 3) There is no incentives to do the training, and the management of the hospital don't understand what critical care is all about (p.8)	Apart from the cut in the CPD funding, the roster also get scrutinised for study leave, and because of this we are only able to provide the very essential training despite the fact that the nurses who work in critical care areas require high-level training to be able to do their job (p.5 & 6) Due to the cut in CPD funding, it is very challenging to provide essential training courses like the critical care course which is compulsory (p.3 & 4) I am worried about the future of nurses when I look at the way the nurses are	Nurses on the shop floor/current clinical nurses need to be involved in the decision-making process as they feel that the hospital management don't care about what they think/how they feel? (p.10, 11 & 15) Our physical environment is not ideal as we have two units on two different floors and the actual physical space is too small (p.5) Sending critical care staff to other non-critical care areas for help on a

viewed, the issue with CPD funding and the way the nurses are trained (p.14)

Reducing the disparity between doctors and nurses in CPD funding, restarting the bursaries and providing more incentives to nurses will help raise the profile of nursing and improve retention (p.14 & 15)

Staff feels that the matron job has changed and they are pulled away from the clinical area and as a consequence not aware of the day to day problems that nurses face (p.11 & 12)

Supporting each other and having a good debrief system after stressful incidents and involving nurses in the decision making helps to deal with the stressful incidents (p.13)

The current workforce is very junior due to high turnover; therefore, we have developed a buddy system to make sure the junior staff are guided and well supported until they settle in the new environment which could take up to 18 months (p.12)

regular basis is a huge problem and making nurses leave critical care (p.9)

The things that would make the critical care staff happy are good work-life balance, training and professional development and similar funding to their medical colleagues (p.8)

There is a need for better collaboration between universities and clinical areas (p. 16)

There is a very flexible system of off duty and shift pattern and because of that staff are generally quite happy (p.5,6 & 7))

		Collaboration between nurses and doctors is important to improve teamwork and relationships among members of the MDT (p.11)	
3	A rewarding aspect of working in critical care is looking after very sick patients and seeing them getting better but also a dignified death and supporting the families at that difficult time (p.4) Appreciating and saying a personal thank you to the staff at the end of the shift is important (p.21) Critical care is a unique area as the nurse can provide a holistic all-around care to one patient and his or her family (p.3) The follow-up and outreach services could play a vital role in bridging the gap between the critical care and non-critical care areas and raising the profile of critical care (p.13)	Having national standards like step 1 and 2 competencies would help raise the profile of critical care and highlight the need for education (p. 16 & 17) It takes much longer for a new starter to settle in the critical care environment due to the specialist knowledge and skills required to work here (p.14) It's important to have a neutral well-being person to support new starters who is not their direct manager or mentor but a 3rd person like an educator who could listen to them, guide and support them in the first couple of years whilst they settling in critical care (p.17, 18 & 20) More courses and training are required for the nurses if they want to go up the ladder in critical care as compared to non-critical care areas which make it harder to get promotion (p.12)	Fairness, flexibility and maintaining work-life balance when managing the off duty is important to keep the workforce happy (p.10 & 11) Moving staff to other non-critical care areas could be stressful, but we have taken steps to ease that stress for example not doing medicine rounds and not being in charge of a group of patients in an unfamiliar environment (p.9 & 10) Nurses are involved in decision making, and both nurses and doctors work really well together. This could be due to the fact that we are a smaller team and know each other well (p.5 7 6) Nurses have more autonomy in smaller units as compared to big teaching hospitals because the teams are smaller and know each other well (p.4 & 6)

		Not involving nurses in the discussions during ward rounds and during treatment withdrawal is stressful and the junior nurses need to be supported by the management about how to deal with this (p.14 & 15) Supporting junior staff and having a structured career progression programme would encourage nurses to stay in critical care (p.17) There is better teamwork in smaller hospitals as everyone knows each other and therefore support each other (p.5)	The turnover and recruitment issues in the smaller hospitals are not as bad as they are in the big teaching hospitals (p.22) There is a need for national guidelines regarding staffing level and safe staffing as it is not consistent (p. 16) There is a problem with temperature control in regard to the physical environment which makes working here challenging (p.7) We need to focus on things which don't cost money, for example, supporting each other and appreciate the hard work of our colleagues which could make a big difference (p.19) Working across different sites and doing more overtime could be stressful for staff as they are not getting enough time off to relax (p.8)
4	Critical care nurses should have higher pay to acknowledge their specialist skills and knowledge	Having structured career progression opportunities and focus on wellbeing is important	Balancing the off duty, maintaining fairness and work-life balance is the key to keep the workforce happy

		There is too much focus on academia and less on basic nursing care, and this needs to change to improve nurse retention	Autonomy and empowerment of nurses is important to keep nurses happy Recruiting the right people into the critical care environment is the key to improve retention
5	New starters in critical care put stress on themselves because they have to learn so much and want to know everything but this takes time and sometimes the senior colleagues put pressure on them because they have unrealistic expectations from the new starters (p.7 & 8)	Due to increased workload, the seniors are unable to support the junior nurses to prepare them to take over (p.14 & 15) Having more junior nurses due to high turnover put pressure on the senior nurses as they have to train and support too many nurses (p.11) Lack of training, education and career progression opportunities frustrates nurses, and they leave (p.10, 11 & 12) Nurse training needs to be financially supported if we want to increase the number of nurses and improve student retention (p. 16) Nurses leave due to lack of professional development opportunities (p.17)	Inappropriate allocation of patient and increased workload is stressful for nurses (p.9) Our manager is very fair when it comes to allocating AL and maintaining work-life balance when managing the off duty, therefore, everyone is happy with the way the off duty is managed, and they stay (p.3) Sending critical care nurses to the ward make them unhappy (p.13) Senior nurses have different stress; they have stress from above, i.e. management while the junior have stresses of learning too many new things (p.8) Staff are happy with the off duty because it's fair and flexible (p.1 & 2)

		Nurses stay here because they are well looked after, well supported and have a good off duty (p.17 & 18) The senior nurses need to let go and train the juniors to take over from them before retirement and more focus is needed on student nurse retention (p.12, 13 & 14) We support junior nurses during treatment withdrawal (p.8)	The consultants are friendly and encourage nurses to get involved in the decision making (p.5) The nurses are involved in the discussions during ward rounds, and during treatment withdrawal, this make the collaboration among members of the team much better, and juniors are supported to develop skills to speak up (p.4 & 5)
6	Critical care nurses should have a better pay and higher bands to acknowledge their specialist skills and knowledge (p.13)	A good teamwork among members of the MDT, training and a good support system make the treatment withdrawal and end of care incidents easier to deal with (p.8 & 9) Cuts into education funding is a national issue, and it makes it very challenging to fund training and education even the compulsory courses like the critical care course (p.6) It's important to have a structured education programme that is adaptable according to the local needs (p.12) The relationship and team dynamics are very good because everyone regardless of what band they are in has a voice and	Having a good reputation being a friendly hospital, there are no retention issues here (p.10) Hospitals should start growing their own nurses to deal with nursing shortages and turnover issues (p.10) Managing the off duty in a smaller unit is less challenging as compared to the big units and hospitals (p.5) Physical aspects, for example, the design of the unit could have an impact on staff allocation and teamwork (p.5 & 6) Too many changes at the same time could be challenging (p.2,3 & 4)

		conflicts are dealt with straight away when they arise (p.7 & 8)	We are lucky that the off duty is reasonably flexible focusing on work-life balance (p.4 & 5)
7	………………………………………… ………………………………………… ………………………………………..	Lack of resources and not following the standards increase workload and causes stress of the staff (p.6 & 7) Nurses are not trained appropriately to do their jobs due to a lack of resources (p.7 & 8) Nurses have been promoted without appropriate qualifications just to tick the box (p.8) There are significant concerns in regard to education and development because the funding has been cut and staff are appointed into the senior roles without appropriate qualifications and experience (p.16,17 & 18) The attitude and way of working of the new generation of nurses is very different from the old one (p.20 & 21) The right people needs to be recruited into nurse training in the first place (p.22 & 23)	Changes in governments and policies have an impact on health care services including critical care (p.5 & 6) Nurses are not trained fast enough due to the lack of funding, and this is causing a shortage of nurses (p.9) Concerning moving critical care staff to the ward, there are risks associated with this, it also means that resources are being used inappropriately by asking an experienced critical care nurse to work on wards, it increases pressure on CC, and it is associated with nurses leaving the critical care (p.10,11,12, 13,14) Flexibility in the off duty has to be balanced both ways to make sure all shifts are covered. Nurses in the old days were more flexible than the current generations as they want more weekends off (p.15 & 16)

	To train the nurses properly, the teachers needs to be current clinicians, there is a need for better coordination between university and placements, and the focus needs to be shifted back to basic nursing rather than academia (p.24, 25 & 26) Nurses with higher qualifications would have better relationships with medical colleagues and have more respect (p.26 & 27) Unpleasant relationships with medical colleagues could be very stressful for nurses with negative effects on health and associated with intentions to leave (p.27-32) Nurses have pressures from the management on a daily basis, and they feel threatened (p.32) Higher education and qualification gives you confidence with stressful and traumatic incidents and the junior staff needs to be supported to deal with stressful incidents at work (p.33-35) More focus is needed on education and development by increasing the number of	We are losing senior workforce and replacing them with very junior without appropriate qualification and experience (p.19 & 20) To tackle the issue of shortage of nurses, we need to recruit the right people into nursing who don't necessarily have strong academic backgrounds, but love nursing because having a degree doesn't necessarily make you a good nurse (p.36) The following needs to be done to improve things in NHS in general, appropriate resourcing, more education and improving the work environment (p.37-39)

		clinical educators to improve retention (p.37) The stresses of personal and home life also have an impact on how nurses function at work (p.40)	
8	Colleagues from non-critical care areas don't understand the stresses of critical care areas which is demoralising (p.11) The management doesn't understand and appreciate the stresses and workload of critical care when they allocate resources (p.12 & 13) We need to get the public on board by raising more public awareness about NHS in general and critical care specifically (p. 16 & 17)	The type of patients have changed recently from generally an old population to a mixed both old and young which is impacting on critical care staff and causing burnout (p.2) Having a supportive management and supporting each other off and on work helps us to deal with the stresses of critical care (p.3 & 4) The critical care workload has increased in the past few years (p.3) Good relationships among members of the MDT protects us from burnout (p.3) Due to limited support from the trust, as a unit, we teach and educate each other and as a unit use internal resources to support education (p.6 & 7) Lack of education and development make nurses unhappy (p.7)	Pressure from outside like A+E and bed blocking impact on critical care in terms of increasing workload (p.2) Improving support services in the community for example elderly and mental health services would reduce pressures on critical care (p.4 & 5) Redirecting resources appropriately and reducing layers of management would improve nurse retention (p.5) Our management is very good at making sure the off duty is flexible with the better turnaround from nights to days ensuring enough break to recover (p.6) Sending critical care nurses to the ward on a regular basis is stressful for nurses and associated with intentions to leave (p.13 & 14)

	A good relationship between nurses and doctors is important to have a pleasant working environment (p.8) Treatment withdrawal and end of life care is stressful for nurses (p.9) Dealing with unrealistic expectations of relatives is stressful, and nurses need support to deal with this (p.10) Due to increased workload, nurses are taking extra shifts which is causing sickness, burnout and affects retention (p. 3, 4,11 & 12) The bursary system needs to be restarted to increase the number of nurses, and the focus needs to be shifted back to developing basic nursing skills (p.15) The new generations of nursing students have a different attitude as the focus is too much on academia and less on basic nursing care (p.15 & 16) Increased workload and lack of resources compromise safety (p.18)	The younger generation of nurses deal with stressful incidents differently as compared to the old generation of nurses (p.10 & 11)

9	Critical care needs to be acknowledged as a specialist area due to the knowledge and skills required to work in this area (p.5) A rotation or secondment between the critical care and non-critical care areas will help nurses to understand and appreciate what's critical care is all about and raise the profile of critical care (p.6) Public education and awareness is needed about unrealistic expectations of the public from NHS and critical care to use the resources appropriately (p.8)	There is an investment in training, but there are no career progression opportunities due to the small size of the unit, single hospital in an isolated area and hence no movement (p.1 & 2) End of life care and treatment withdrawal incidents are stressful for nurses (p.4)	There are always vacancies due to the high turnover of junior staff (p.3) The management is accommodating in regard to the off duty (p.3) There is a good relationship between nurses and doctors and nurses are listened to by their medical colleagues (p.3) More resources and improving services in the community will reduce pressures on the acute settings and improve the workforce (p.7) Resources would be saved and used to improve the workforce by improving the procurement system and reducing waste (p.7)
10	……………………………………… ……………………………………… …………..	There is no structured educational support system for new starters (p.2) The environment is generally supportive that's why I like working in critical care (p.3) Most of the new starters feel isolated and singled out because of the attitude of some of the senior colleagues and are leaving	Keeping a balance in the off duty is challenging when the turnover is high (p.3) The off duty is rubbish because of the short turnaround from nights to days (p.3)

	because of the lack of support from senior colleagues (p.4,6,15 & 16) I would like to see a structured education programme and support for the new starters in the first year (p.5) The senior nurses feel frustrated because of the lack of career progression opportunities (p.5) As a new starter it's very challenging to work in critical care if the senior colleagues are not approachable and friendly (p.6) Treatment withdrawal is stressful in critical care, and support is needed especially for new starters to manage these incidents (p.7, 8 & 9) Psychological support and follow up would be beneficial for nurses after traumatic and stressful incidents (p.8) Lack of education and development opportunities frustrates nurses and influence intentions to leave (p.10, 11 & 14) The important thing is to provide support and education to the new starters until they	To make the off duty better, it has to be flexible with a focus on work-life balance (p.4) Nurses are involved in the decision making during ward rounds (p.9)

		start feeling confident in critical care which could take up to a year (p.11 & 12) Nurses are leaving because of the lack of support (p.14)	
11	Financial incentives should be given to nurses working in critical care areas to acknowledge and appreciate their knowledge and skills (p.10 & 11) The public is not aware of how critical care works (p.11) Colleagues from non-critical care areas don't understand the stresses of critical care areas (p.12) The nature and work of critical care areas need to be highlighted in the media to raise the profile of critical care (p.12) Families appreciate the work of critical care nurses but only when they have a relative admitted to critical care (p.12) Bed managers don't understand how critical care works when they pull staff away to help other areas (p.13 & 14)	Critical care is a great place to work because as a nurse you could give a holistic care to one patient, but at the same time it is physically tiring and mentally draining (p.1 & 2) The reason I like working in critical care because nurses are valued here, and there are education and development opportunities (p.2 & 3) Due to the physical and mental challenges and stresses of critical care, I am unable to do a full-time job just to make sure I get enough break (p.3) There is a good relationship among members of the MDT; however, nurses usually have problems in their relationship with managers (p.5 & 6) End of life care and treatment withdrawal is stressful and complex due to conflicts between nurses, doctors, and families (p.7 & 8)	Management should listen to nurses request in regard to the flexibility when finalising the off duty (p.4) Nurses leave critical care because of no flexibility in the off duty and lack of work-life balance (p.4) Listening to nurses and act on feedback is the key to improve the nurse-manager relationship (p.6) Nurses need to be involved in the decision making in regard to the care of the patient (p.8 & 9) Nurses who are sent to the ward to help feel vulnerable and threatened (p.13) Work-life balance when finalising the off duty is important for retention (p.15)

		Not getting support when looking after a sick patient could be very stressful in critical care (p.9) Supporting each other is important to deal with the workload of critical care (p.10) Education and development is important to retain staff (p. 16) Good communication and supporting each other is important for good team dynamics (p.5)	Listening to staff and good communication is the key to have a happy workforce (p.17)
12	There should be more remuneration for being a critical care nurse as the skills and knowledge of critical care nurses have not been acknowledged at all (p.10) Critical care needs to be re categorised as a specialist area to appreciate and acknowledge the knowledge and skills required to work in critical care (p.12)	Apart from structural changes, critical care areas are busier than before due to increased workload and sicker patients (p.2) Better understanding and communication between nurses, doctors and families is essential to better manage end of life care and treatment withdrawal scenarios (p.7) Debrief, follow up and support nurses after stressful and traumatic incidents is necessary as these incidents impact nurses (p.7 & 8)	Balancing the off duty is challenging, and the younger generations of nurses struggle to cope with the change over from nights to days due to the short turnaround without enough break (p.2 & 3) Work-life balance becomes more of an issue when nurses have children (p.4) Working across different sites is stressful for nurses and impact team dynamics and relationships (p.5, 6 & 8) Getting nurses involved in the decision making regarding patient care is

		Nurse training should be supported by the government to increase the number of nurses and identifying those who want to work in critical care during training who will then stay in critical care for a longer period (p.14) I am thinking of leaving critical care because of working too many nights and weekends and lack of career progression opportunities (p.14 & 15)	important for a good team relationship (p.6) To avoid sending critical care staff to other non-critical care areas, we have a system where we send them home, and they then pay those hours back at another time, and they could be called back any time if needed (p.9) The following steps would help to improve retention in critical care, remuneration and pay increase, keeping the critical care nurses protected and not sending them to the ward and improve work-life balance by reducing the number of night shifts (p.13)
13	Extra qualifications and education is needed to get promotion in critical care which may not be the case in other non-critical care areas (p.9) The extra courses and specialist knowledge and skills required to work in critical care is not acknowledged (p.9 & 10) The managers of the hospital don't really understand the workload and	Critical care is a very stressful environment; the current workforce is very junior due to high turnover and shortage of nurses requiring a lot of support (p.1 & 2) Nurses are leaving critical care because of the lack of support in a very stressful environment (p.2) Educational support is important in critical care to improve retention (p.4)	The off duty has to be fair to keep the workforce happy (p.2& 3) Nurses are burnout due to the quick turnaround from nights to days without appropriate break to recover (p.3) Nurses are doing extra shifts for money and due to shortage of nurses which then cause sickness and staff then worry about the sickness policy (p.3)

	stresses of critical care when they pull critical care staff away to other areas which are very frustrating (p.10 & 11) Increasing pay is a big factor, but support and education play a massive part in the retention of critical care nurses (p.12) Nurses in critical care areas need to be recognised and valued for doing a stressful job (p.12 & 13) A rotation into the critical care areas for the ward nurses would raise the profile and understanding of critical care (p.13)	A fair manager and friendly atmosphere make it a nice place to work (p.5) The poor relationship among colleagues and poor teamwork makes it a stressful place to work (p.5) End of life care and treatment withdrawal is very stressful for nurses (p.6) There is no follow up and support for nurses after stressful incidents for example end of life care and treatment withdrawal (p.7 & 8) More support and resources are needed in NHS in general but in critical care specifically (p.13) Focus on nurse training needs to be shifted back to basic nursing skills rather than academia (p.14)	Asking critical care staff to work in other areas on a short notice is very stressful especially for the newly qualified, a standard has been developed to clarify what they should and should not do when they go to other areas for help to try to ease that stress (p.11)
14	People who don't work in critical care don't understand and appreciate how critical care works which could be demo lairising for those who work in critical care (p.11) Public and management of the hospital don't have exposure to critical care because it is a closed	Critical care is a fast-paced environment that is more busier now than before, a lot more technical and patients are more sicker which increases workload and adds to the stresses of critical care (p.2&3) Good teamwork and support helps nurses to get through the shift, but if it's busy every day then it breaks their resilience and	Staff are happy with the off duty because of its self-roster and very flexible (p.4) A physical working environment like having all rooms as side rooms could have an impact on teamwork as more nurses are required to help and

	area; hence they don't understand the stresses of critical care (p.11 & 12) Having a rotation programme for nurses from other areas to spend some time in critical care would raise the profile and help them understand how critical care works (p.12)	leaves nurses vulnerable and stressed (p.3) Listening to staff and developing a structured education, development and career progression programme has positively influenced nurse retention (p.5 & 6) Following feedback from staff, we are working on appointing a clinical psychologist to support nurses after traumatic and stressful incidents (p.6 & 7) Retention of nurses has improved after developing a structured education, development, and career progression programme (p.13, 14 & 15) Making staff feeling valued and focusing on their well-being is the key to retain critical care nurses (p.14&16)	support the nurses in the side room (p.4) Getting the nurses involved in the decision making regarding the care and treatment of the patient is important (p.9) A happy workforce and a good teamwork and relationship is important to provide a good quality of care (p.10) Staffing in critical care should be protected and not moved to other areas (p.12&13)
15	Working in critical care is rewarding because of the holistic care given to one patient and their family (p.2) Nurses who want to work in critical care should get specialist training before joining critical care (p.3)	The focus during training should be on basic nursing skills as the current student nurses are lacking these basic nursing skills (p.3) Nurse training is too academic, and the focus on basic nursing skills is lacking (p.3 & 4)	Recruiting the right people into nursing by giving them exposure to health care before joining may improve nurse retention (p.5) Inflexibility, lack of work-life balance and quick turnaround from nights to days is upsetting, frustrating for staff

Nurses should be given financial incentives to do nursing which will raise the profile of nursing (p.4,5 & 6)

Critical care nurses should get a band 6 pay like the physiotherapist to acknowledge their specials skills and knowledge (p.20)

The nature of work and stresses of critical care has not been acknowledged or appreciated by colleagues from non-critical care areas, managers and the public (p.20-22)

Critical care needs to be recognised as a specialism and being reflected in pay because of the specialist training, skills and knowledge required to look after the sickest patients in the hospital (p.21)

Financial incentives should be given to retain critical care nurses (p.24 & 25)

There should be extra pay for unsocial hours (p.25)

Conflicts and disagreements with managers are associated with nurses leaving critical care (p.9)

Devaluating own staff and favouritism by managers frustrate staff and is associated with intentions to leave (p.12)

Education has improved following pressure on management (p.13)

Staff feel devalued and not appreciated due to the lack of career progression (p.13)

In regard to working relationships, some senior colleagues pick on juniors and don't accept their input just to show that they are in charge (p.14 & 15)

Good teamwork and support makes the stressful job in critical care easier (p.15)

Having too many junior nurses due to high turnover is scary, compromises safety and put pressure on a small group of senior nurses (p. 16)

Due to the inflexibility of the management, senior nurses are leaving critical care, and and is one of the causes for increased sickness and intentions to leave (p.7,8, 10 & 11)

Critical care nurses are expected to go to the ward and work on a short notice (p.20)

Flexibility in the off duty will help improve retention of critical care nurses (p.23)

Nursing students should get paid rather than paying for nurse training as they support nurses in looking after patients during their placements (p.24)

Nurses should not pay for their NMC registration and car parking at the hospital (p.25 & 26)

Those with good sickness record should be given incentives (p.28 & 29)

Not valuing and appreciating staff is positively associated with intentions to leave (p.13 & 14)

there are no serious efforts to stop them (p. 16)

Incidents of end of life care especially in young age and conflicts between staff and families regarding treatment withdrawal are very stressful with psychological impacts on critical care nurses (p.17 & 18)

Psychological and structured support and wellbeing is needed for nurses after traumatic and stressful incidents (p.18)

Nurses also support stressed relatives as there is no support system for the families of the patients in critical care (p.19)

Junior nurses will get frustrated and will leave if they are not given educational support and training (p.22)

I am planning to leave critical care due to the unsupportive attitude of the managers but unable to as there are no other critical care units in the area (p.26 & 27)

Unsupportive manager at the time of sickness is stressful and upsetting for staff (p.27 & 28)

Appendix 5.1: Examples from field notes

Extract examples from field notes	My reflection	How did it inform the theme?
"The participant spoke very passionately about the importance of education and development especially in the critical care context due to the specialised nature of critical care nursing and the type of patients they have to care for and became quite upset when talking about the lack of educational and development opportunities."	On reflection, education and development were extremely important to the nurse because of the realisation that education and development were enabling them to work in the critical care environment safely and effectively. I also sensed anger and frustration.	It highlighted the importance of education and development and how their anger and frustration then resulted in their ITL.
"The participant seemed extremely frustrated about the issues she was having with her shift pattern and inflexibility. This was made worse by the lack of support and unprofessional behaviour of their manager"	On reflection, the participant seemed very angry and frustrated because her shift pattern was getting worse because of inflexibility and lack of work-life balance. What made her angrier was the negative attitude of her manager who told her to leave if she was not happy with the shift pattern and did not consider that she has been working in that unit for 20 years.	These field notes highlighted a few issues that have caused the participant to ITL. • Lack of work-life balance • Inflexibility • The negative, unhelpful and unprofessional attitude of her manager.