The role of patient involvement in the promotion of hand hygiene among nurses in the hospital setting

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ABSTRACT

Aim: To understand the role of patient involvement in the promotion of hand hygiene among nurses in the hospital setting. **Methods**: This qualitative PhD thesis is comprised of two studies; focus group discussions with nurses and interviews with patients. *In the first study*, focus group discussions (n = 7) were completed with nurses from Jordan and the UK (n=36) to explore nurses' views and experiences with patient involvement in hand hygiene. Data from nurses were analysed using thematic analysis. *In the second study*, semi-structured telephone interviews were completed with patients from Jordan (n = 21) to understand their experiences of asking nurses to wash their hands. Data from patients were analysed by critical incident analysis resulting in the identification and analysis of 116 critical incidents. **Results**: The analysis of the focus group and critical incident discussions resulted in four overarching themes. Although both nurses and patients acknowledged the patients' right to ask, both groups reported concerns that asking about hand hygiene could have an adverse impact on the nurse-patient relationship. Patients reported that the promotion of hand hygiene was not only offensive and upsetting for nurses, but also embarrassing for patients. Patients reported negative reactions from nurses when promoting handwashing, and these encounters became stressful and confrontational though both groups indicated that this could be mediated if the patient asked in the 'right way'. It is not clear what the 'right way' might be. **Discussion**: Patients are likely to encounter confrontation if they prompt hand hygiene unless they do so in the 'right way'. Patients seem to be discouraged from taking an active role in their care and this needs to be considered when planning patient involvement strategies. **Conclusion**: Findings from this study show that patients are expected to be passive, grateful and remain silent when observing non-compliance to hand hygiene practices among nurses. It could be that hospitals have not predicated the negative encounters or else they would not encourage patients to remind nurses to wash their hands. Therefore, more work needs to be done to ensure that patients can speak out and raise concerns without fearing the negative consequences when asking nurses to wash their hands. Nurses suggested a need for a new hospital culture of patient involvement in ensuring patient safety through the promotion of hand hygiene compliance.

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LIST OF ABBREVIATIONS

CDC	Centers for Disease Control and Prevention
C. difficile	*Clostridium difficile*
CINAHL	Citation Index for Nursing and Allied Health Literature
CRE	Carbapenems-resistant enterobacteriaceae
EBSCO	Elton B. Stephens Co.
ESBL	Extended-spectrum beta (β)-lactamase gram-negative organisms
FGDs	Focus Group Discussions
FREC	Faculty Research Ethics Committee
REC	Research Ethics Committee
HCAIs	Healthcare-associated infections
HCPs	Healthcare professionals
ICUs	Intensive-care units
K. pneumonia	*Klebsiella pneumonia*
MDROs	Multidrug-resistant organisms
MEDLINE	Medical Literature Analysis and Retrieval System Online
MeSH	Medical Subject Headings
MoH	Ministry of Health
MRAB	Multi-resistant *Acinetobacter baumannii*
MRSA	Methicillin-resistant *Staphylococcus aureus*
NHS	National Health Service
NICE	National Institute for Health and Care Excellence
NMC	Nursing and Midwifery Council
P1	Participant number 1
P. aeruginosa	*Pseudomonas aeruginosa*
PPI	Patient and Public Involvement
PRISMA	Preferred Reporting Items for Systematic reviews and Meta-Analyses
RCTs	Randomised Control Trials
UK	United Kingdom
VRE	Vancomycin-resistant e*nterococci*
WHO	World Health Organization
#	Number
GP	General Practitioner

LIST OF DISSEMINATION OUTCOMES

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CHAPTER 1: INTRODUCTION

1.0 Overview

British National Health Service (NHS) founded by Aneurin Bevan in the aftermath of the Second World War in July 1948 under the principles of universality, free at the point of delivery and equity (Gorsky, 2008; Kingsfund, 2017). The United Kingdom (UK) NHS is among the nine high income healthcare systems with over 1.3 million staff and a budget of over £90 billion (Papanicolas et al., 2019; Stoye and Zaranko, 2019). The British healthcare system comprises two main broad sections dealing with (1) strategy, policy and management, and (2) actual medical/clinical care. The second board divided into primary [community care, general practitioner (GP), Dentists, Pharmacists], secondary [hospital-based care accessed through GP referral] and tertiary care [specialist hospitals] (Grosios, Gahan and Burbidge, 2010).

Jordan is a low-middle income country located in Arabian Peninsula, west of Asia (The World Bank, 2017). The Ministry of Health (MoH) in Jordan was established in 1921 to regulate health affairs in the Kingdom (Ministry of Health, 2021). The Jordanian healthcare system is one of the most developed in the Arab region with a total annual spending of approximately £1.89 billion on health (Nazer and Tuffaha, 2017). In 2018, the MoH reported a total number of 22,540 Registered Nurses and 23,756 Physicians in the country (Al-Ja'afreh, 2019). The Jordanian healthcare system is divided between public and private institutions. In the public sector, the MoH operates 1245 primary care centres, 27 hospitals and another 11 hospitals managed by the Royal Medical Services. The private sector distributed amongst 56 accredited hospitals (Nazer and Tuffaha, 2017).

Globally, the prime goal for healthcare institutions in low, middle, and high-income countries is to ensure optimal and safe care is delivered to patients and services users (World Health Organization, 2017). In both countries [Jordan and UK], nurses and other group of healthcare professionals receive continuous training and education on infection prevention and control to minimise the risk associated with the spread of nosocomial infections within a hospital setting.

Healthcare-associated infections (HCAIs) and nosocomial infections are those acquired by patients as a result of their presence within a hospital setting, or because a person has been in contact with a hospital (Revelas, 2012; NICE, 2014). HCAIs include infections that occur 48 hours after hospital admission or within three days of hospital discharge (Revelas, 2012; Edwardson and Cairns, 2019). HCAIs are a continuing challenge in hospitals and are a leading cause of morbidity and mortality worldwide (Umscheid *et al.*, 2011). The chance of contracting these infections grows with increased length of hospital stay (Aliyu, Furuya and Larson, 2019) and their presence increases human suffering (Stone, 2009) and healthcare costs (Zimlichman *et al.*, 2013). The World Health Organization (WHO) estimates the gross number of people who are affected by HCAIs to be 1.4 million worldwide (WHO, 2019). Infection prevention and control departments around the globe continue to explore new interventions within their facilities to prevent or decrease the number of infections (Watson, 2016).

The UK NHS has reported that HCAIs negatively impact on the physical, social and psychological well-being of patients and their relatives (Loveday *et al.*, 2014). The United States' Centre for Disease Control (CDC) has reported that one in 25 hospitalised patients acquire at least one HCAI (CDC, 2016b). The prevalence of HCAIs in England is estimated to be 6.6% (Public Health England, 2018). The

National Institute for Health and Care Excellence (NICE) estimates that 300,000 patients a year in England alone acquire an HCAI as a result of care within the NHS (NICE, 2014). The Department of Health has reported that infections caused only by *Escherichia coli* at NHS facilities were responsible for the deaths of more than 5,500 patients, and it estimated that *E. coli* infections to cost £2.3 billion in 2018 (Department of Health, 2016).

Across all hospital settings, patients are prone to different types of infections. These include: bloodstream infections (Gray, Oppenheim and Mahida, 2018); surgical-site infections (Hoang *et al.*, 2019); urinary-tract infections (Walsh and Collyns, 2017); chest or respiratory infections (Tzelepis, 2018); and gastrointestinal infections (Sell and Dolan, 2018). The agents involved in these infections include microbes and multidrug-resistant organisms (MDROs) such as methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant e*nterococci* (VRE), extended-spectrum beta (β)-lactamase gram-negative organisms (ESBL), carbapenem-resistant enterobacteriaceae (CRE), multi-resistant *Acinetobacter baumannii* (MRAB), *Pseudomonas aeruginosa (P. aeruginosa), Klebsiella pneumoniae* (*K. pneumoniae*)*,* and *Clostridium difficile* (*C. difficile*) (Magiorakos *et al.*, 2012; Simmons and Larson, 2015; Moure *et al.*, 2016; Neumann *et al.*, 2016).

In recent years, HCAIs have become recognised as largely preventable, and healthcare institutions are working to minimise their occurrence (Collins, 2008; Umscheid *et al.*, 2011; Musuuza *et al.*, 2016). There is widespread agreement that effective hand hygiene is a pivotal strategy to minimise the risk associated with contracting a HCAI (Pittet *et al.*, 2006; Allegranzi and Pittet, 2009; Pincock *et al.*, 2012). The hands of healthcare professionals (HCPs) are the host and mode of transmission for most organisms (Luft and Dettenkofer, 2010; Spicknall *et al.*, 2010;

Chamchod and Ruan, 2012; White *et al.*, 2015). The cross-transmission of these organisms to patients occurs when HCPs' hands become contaminated either directly by touching a patient or indirectly by touching contaminated surfaces (Suleyman, Alangaden and Bardossy, 2018).

Hand hygiene is performed either by washing the hands with plain or antimicrobial soap and water, or by rubbing them with an alcohol-based formulation (WHO, 2009). Effective hand hygiene is a cornerstone in infection prevention and control, and most quality-improvement initiatives embrace it as a vital component of their strategies (Barker *et al.*, 2014; Pittet, 2017). Hand hygiene should be performed by HCPs before and after contact with patients, before performing clean or aseptic procedures, after touching patients' surroundings, and after the risk of exposure to blood or body-fluids (WHO, 2009). The "five moments of hand hygiene" were introduced by the WHO in 2009 and define the key moments at which HCPs should comply with hygiene rules while making contact with patients or their surroundings (Figure 1.1).

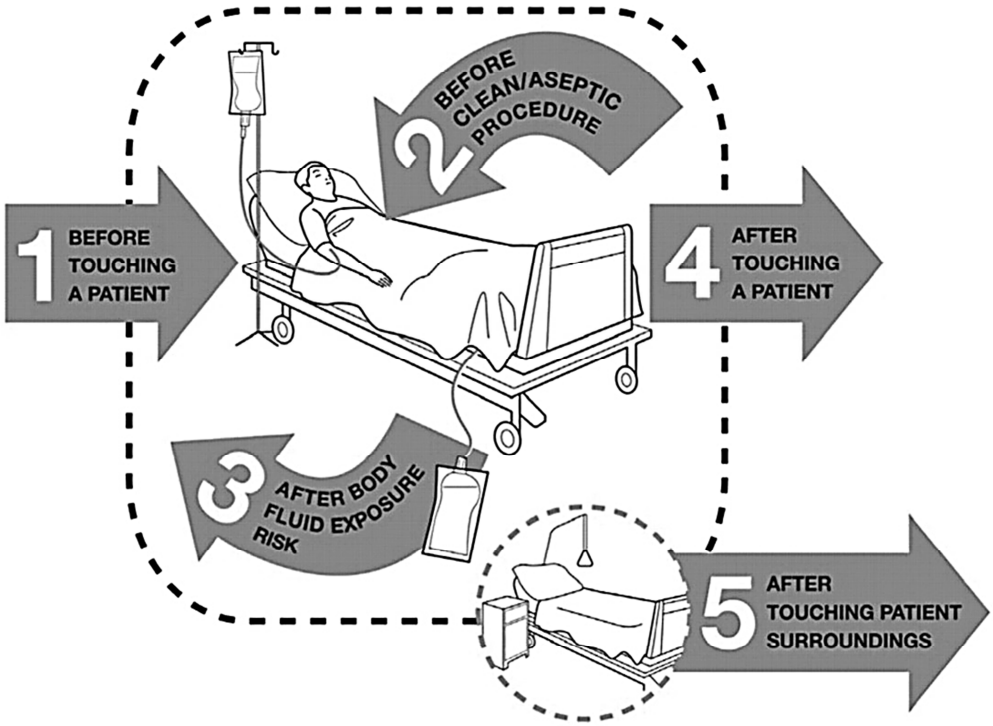


Figure 1.1: The World Health Organization's "five moments of hand hygiene."

Simple infection prevention and control procedures such as hand hygiene can help to prevent up to 50% of HCAIs (Pittet *et al.*, 2009; Cowling *et al.*, 2013). There is wide agreement that enhancement of compliance with good hand- hygiene practice, known as hand-hygiene compliance, has been shown to reduce incidence rates of certain MDRO infections (Marimuthu, Pittet and Harbarth, 2014; von Lengerke *et al.*, 2019; Schuler *et al.*, 2019). However, the rates of compliance with hand-hygiene recommendations obtained in healthcare settings, hereafter referred to as hand-hygiene compliance rates, are unclear as researchers found them to be either under-reported or overestimated (Pan *et al.*, 2013a; Contzen, De Pasquale and Mosler, 2015; Mearkle *et al.*, 2016). The following sections describe in more detail the issues surrounding hand-hygiene practice including compliance rates, reasons why compliance rates remain low, and approaches to measure and enhance hand-hygiene compliance.

1.1 Hand-hygiene compliance rates

An overall median compliance rate, based on evidence taken from a systematic review of 96 empirical studies of hand-hygiene compliance, has been estimated at only 40% (Erasmus *et al.*, 2010). Insufficient and very low compliance rates have been reported in several studies as evidence of suboptimal hand-hygiene practices (Allegranzi and Pittet, 2009; Ward *et al.*, 2014; Musu *et al.*, 2017). Despite many initiatives, campaigns and efforts to enhance hand-hygiene compliance, several studies have estimated that approximately 61% of HCPs do not comply with best-practice recommendations (WHO, 2016).

Calculated hand-hygiene compliance rates by HCPs vary from one study to another, due to variations in methodologies, such as data collection methods. Not only is the standard of hand hygiene difficult to assess with accuracy, but many factors affect compliance, such as the scarcity of resources in some countries (Santosaningsih *et al.*, 2017); the setting in which levels of hand hygiene were monitored, such as critical-care units or wards (Allegranzi and Pittet, 2009); the group of health professionals under scrutiny, such as nurses or physicians (Azim, Juergens and McLaws, 2016); and the methods used to monitor hand-hygiene compliance, such as direct observation, self-reporting or electronic methods (Marra *et al.*, 2010; Boyce, 2011). However, overall, a lower rate of hand-hygiene compliance is associated with a greater prevalence of HCAIs (Marimuthu, Pittet and Harbarth, 2014; Haque *et al.*, 2018).

The burden of HCAIs varies between countries and hospital settings. In low-income countries, the rate of HCAIs among patients is estimated at 11.6% compared with 5.1% in high-income countries (Allegranzi *et al.*, 2011; WHO, 2013). In critical-care

settings, hand-hygiene compliance rates ranged from 6% to 65% (Marra *et al.*, 2010; Sahay *et al.*, 2010). In intensive-care units (ICUs), compliance with good hygiene practice has been demonstrated to be at a lower rate (30–40%) than in other hospital settings (50–60%) (Erasmus *et al.*, 2010). One study suggests that, nurses have been observed to be 1.5 times more likely to follow good hand-hygiene practice than physicians (Azim, Juergens and McLaws, 2016). The rates at which physicians were observed to follow hand-hygiene recommendations were only 55.7%, compared with a rate of over 80% recorded for nurses (Mortell *et al.*, 2013). There is a need to understand the reasons for these figures, to offer possible explanations and develop solutions.

1.2 Reasons for low rates of hand-hygiene compliance

Several reasons have been suggested to explain the low compliance rates among HCPs. For instance, the lack of knowledge and training in effective hand hygiene (Abdella *et al.*, 2014; Teker *et al.*, 2015); understaffing (Jansson, Syrjälä and Ala-Kokko, 2019; Zhang *et al.*, 2019); skin irritation caused by handwashing agents (Lytsy *et al.*, 2016; Baloh *et al.*, 2019); high patient to nurse ratios (Hanh, Tham and Cong, 2015; Zhang *et al.*, 2019); limited access to washbasins or supplies (Zellmer *et al.*, 2015; Sadule-Rios and Aguilera, 2017); and glove use considered as a replacement for handwashing (Fuller *et al.*, 2011; Acquarulo *et al.*, 2018).

1.3 Different approaches to the measurement of hand-hygiene compliance

Several methodologies have been used to measure levels of compliance with hand-hygiene recommendations, including; direct observation by trained observers or infection-control specialists (Stewardson *et al.*, 2011); self-reporting or individual self-assessment (Diwan *et al.*, 2016); indirect measurement based on consumption of

alcohol-based hand-rub products or handwash products (Mu *et al.*, 2016); and more recently, through video monitoring and electronic surveillance (Tejada, 2018). Further details of each approach can be found in Appendix 1.1.

1.4 Different approaches to the enhancement of hand-hygiene compliance

The WHO stated in 2009 that no sole intervention would enhance hand-hygiene compliance, but rather a set of multimodal-improvement schemes called the *Multimodal Hand-Hygiene Strategy* could be utilised together to enhance compliance rates (WHO, 2009). These strategies have been instituted through system changes, education and training, audit and performance feedback, reminders in the workplace, and promotion of an institutional safety climate. Table 1.1 below describes each of the multimodal strategies for optimal hand-hygiene practice.

Table 1.1: Potential of the multimodal hand-hygiene strategy

Strategy	Description
System change	• The fair distribution of alcohol-based hand-rub bottles at points of care: fixed to patients' beds, carried around with staff, or as wall-mounted dispensers. • Water and soap made available at points of care in an affordable, easy-to-access and practical way. • The core aim is to make hand hygiene easy, convenient and accessible (Allegranzi, Sax and Pittet, 2013).
Education and	• Continual staff training and education over the short-, medium- and long-term.

training	• Availability of different forms of educational materials including: slide presentations, pocket leaflets, hand-hygiene brochures, manuals for observers, and training films. Education on hand-hygiene practices as a simple, low-cost, infection-prevention and control activity (Mathur, 2011).
Audit and performance feedback	• Immediate hand-hygiene compliance feedback and a written report provided to staff. • Feedback methods must be designed to keep staff informed of their hand-hygiene compliance rates at all times. • Instant feedback offers a minor but potentially important improvement, and has enhanced hand-hygiene compliance rates among HCPs (Ivers *et al.*, 2012; Hurst, 2013; Walker *et al.*, 2014; Geilleit *et al.*, 2018).
Reminders in the workplace	• The commonly used methods to remind HCPs to wash their hands are “how to” and “five moments” visuals. The most common form of reminder is posters, which include: “How to hand-rub”, “How to handwash”, and “My Five Moments” posters. • Various types of reminder have been introduced to promote hand-hygiene compliance such as visual (McGuckin *et al.*, 2011; Gaube *et al.*, 2018), olfactory (Pellegrino, Crandall and Seo, 2016) and audio reminders (Knighton *et al.*, 2018).
Promotion of an	• Permeation of a safety climate throughout an institution must

institutional safety climate

include all hospital staff from the executive levels of chief executive, chief medical officer/medical superintendent and chief nurse. Hand hygiene should be an institutional priority requiring appropriate leadership, administrative and financial support.

- Such a safety culture has been associated with several positive outcomes, such as fewer adverse events (Luiz *et al.*, 2015), and enhanced perceptions among frontline staff of patient safety (Rosen *et al.*, 2010).

1.5 Considerations for improvement

Formulation of effective strategies to enhance hand-hygiene compliance is difficult due to the complexities and challenges in the accurate measurement of hand-hygiene compliance rates, the monitoring of staff adherence and current low compliance rates. These difficulties act as obstacles to infection prevention and control, and staff as they work to enhance hand-hygiene compliance across countries, between hospital settings, and among different groups of HCPs. No single strategy is applicable to meet all the needs of different healthcare settings around the globe, and there is a diversity of methods available to promote hand hygiene and enhance compliance rates. Hence, it is not appropriate to favour one strategy over others.

Patient involvement in hand hygiene

One additional strategy is to encourage HCPs and patients to work in collaboration as partners to enhance hand-hygiene compliance (Kim *et al.*, 2015; Alzyood *et al.*, 2018), and thereby provide and receive safe care (Hrisos and Thomson, 2013). Such partnership could include patient prompting of hand hygiene. Partnership between HCPs and patients could be important as there is some evidence that patients are willing to be active participants to ensure their receipt of safe care (Ringdal *et al.*, 2017). However, such collaboration between HCPs and patients should include the development of interventions specifically designed to increase patient motivation to be involved without concerns for their own safety (Tobiano *et al.*, 2016) or possible staff retaliation (O'Daniel and Rosenstein, 2008). There is little evidence about the role of patient involvement in promoting hand hygiene (Alzyood *et al.*, 2018). The following three sections address the notion of patient involvement [1.6], the issues that surround wide-ranging patient involvement in their safety [1.7], and ways in which patients can be involved in the promotion of good hand hygiene by reminding HCPs to wash their hands [1.8].

1.6 Introduction to the concept of patient involvement

The role of patient involvement in healthcare has its origins in the introduction of the White Paper *"Working for Patients"* in 1989. This paper discussed patient choice in service delivery (Department of Health, 1989). Subsequently, the *Patient Partnership Strategy* was introduced by the UK Government in 1996. This strategy explicitly recognised that patient involvement was needed in decisions about their care (Department of Health, 2004). Recently, there has been renewed interest in patient involvement that the NHS increase its responsiveness to the needs of patients

(Ovens, Letovsky and Foote, 2016) and improve service quality (Armstrong *et al.*, 2013). However, there is a need to understand the concept of patient involvement.

Patient involvement requires the encouragement of patients to communicate their views and opinions on healthcare and their feelings regarding their treatment (Vahdat *et al.*, 2014). Forms of patient involvement occur informally during daily interactions between HCPs and patients when the patient encourages, warns, persuades, or reminds a HCP (Shortus *et al.*, 2013; Skagerström *et al.*, 2017). Patient involvement is about the active engagement of patients to enhance service delivery, and translate their experiences into improved quality of care (Bombard *et al.*, 2018). Investigation of healthcare studies show that the concept of involvement is complex, and the word "involvement" has been used interchangeably with other terminologies such as "participation", "engagement", "collaboration", "empowerment" and "partnership" to describe the role of patients in different aspects of healthcare and in interactions with HCPs (Thompson, 2007; Longtin *et al.*, 2010; Vahdat *et al.*, 2014; Alzyood *et al.*, 2018).

Despite wide-ranging and complex definitions and utilisations of the phrase "patient involvement" in healthcare, the core principle of patient involvement is the formation of a partnership between HCPs and patients to drive improved quality in care (WHO, 2018). The mission of The King's Fund is to improve care by positioning patients at the heart of healthcare, and "putting patients first" has taken precedence for policy-makers from the UK and across the world (The King's Fund, 2014). The involvement of patients is vital to empower them to have a strong voice in hospitals and enhance subsequent health outcomes (The King's Fund, 2014; Renedo *et al.*, 2015; Hoddinott *et al.*, 2018; National Institute for Health Research, 2019). For instance, patients are usually the first people to report any deterioration or changes in their signs or

symptoms to the HCPs, and communicate their experience in healthcare (Severinsson and Holm, 2015). Additionally, patients play a key role in ensuring that care and treatment are appropriately delivered, monitored and adhered to, and in the reporting of any unsafe incidents, near misses or safety concerns (Vincent and Coulter, 2002; Ward *et al.*, 2011; Valderas Martinez *et al.*, 2016).

1.7 Patient involvement in the improvement of their own safety

> *"Risk and uncertainty are constant companions in healthcare, and therefore patient involvement in safety should be a way forward for patients and HCPs to come together in a dialogue. It is the patient's right to receive safe care and to prevent all avoidable harm with honesty, openness and transparency (London Declaration, 2006)".* (WHO, 2006)

In addition to patient involvement in care, there have been initiatives to involve patients in safe delivery of their care. Patient involvement in the support of their own safety in healthcare has been discussed globally (Davis *et al.*, 2007; WHO, 2009; Schwappach, 2010; Berger *et al.*, 2013; Prey *et al.*, 2013; Vaismoradi, Jordan and Kangasniemi, 2015). Patients have a role in the improvement of safe care through three dimensions: helping to ensure their own safety while receiving care; working at organisation and unit level with the healthcare organisation to improve safety; and advocating as members of the public to report and hold HCPs accountable for their performances inside healthcare settings (Vincent, Burnett and Carthey, 2014). The Health Foundation (2013) explored 75 empirical studies on the involvement of patients in safety improvement, and found that patients were able to safeguard their wellbeing and to promote changes to protect their safety through three main approaches, which were: the provision of retrospective feedback on safety issues; assistance in the planning of broad service change; and being offered encouragement to help to identify risks while receiving care (Health Foundation,

2013). Hence, patient prompting handwashing could be a useful strategy to promote hand hygiene compliance.

Other work has shown that patients are also involved in efforts to prevent medical errors, to notice adverse events, to promote and improve the culture of safety, and to ensure safe care is delivered (Agency for Healthcare Research and Quality, 2019). Brabcová *et al.* (2014) suggest that patients are encouraged to be vigilant and alert therefore reminding HCPs about possible medication errors that have or could occur during their hospitalisation. Patients can contribute to providing feedback and taking a more proactive role in the delivery of safe care to reduce diagnostic errors and minimise the risk associated with malpractice in the hospital settings (McDonald, Bryce and Graber, 2013).

However, there is a lack of clarity regarding patients' willingness to be involved in the improvement of safety in healthcare (Longtin *et al.*, 2010b). There is a need to explore the role of patient involvement in safety in respect of their rights, and how phenomena such as trust, shared responsibility, and accountability would impact on their participation in the provision of safe care (Severinsson and Holm, 2015). There is uncertainty and a dearth of research evidence regarding the best approach to support patient involvement to enable improvements in their safety whilst receiving care (Lawton *et al.*, 2017). Furthermore, patients' and HCPs' experiences of involvement in the prevention of infection transmission and whether patients feel safe or their patient's experiences and concerns were ignored during their hospitalisation have yet to be fully explored (Ringdal *et al.*, 2017; Fernandes Agreli *et al.*, 2019).

Several studies have reported examples of initiatives to promote safety in the hospital setting involving patients. For instance, findings from a UK multi-centre study of 2,471 inpatients reported that patients could provide insights into their own safety and identify any unintended or unexpected safety incidents (O'Hara *et al.*, 2018). In this study, patients provided feedback about their experiences of safety in the hospital setting within 33 wards across three English NHS Trusts. This study also found that patients were willing to provide feedback about the safety of the care received in the ward environment (O'Hara *et al.*, 2018).

A research programme by Wright (2016) incorporated a tool for patients to report incidents in order to protect themselves against unintended harm caused by HCPs. Wright (2016) reported patients were willing to participate in initiatives to prevent adverse safety incidents and unintended harm in the hospital setting. Importantly, patients were asked to report any safety concerns or experiences related to problems with infection prevention and control (such as staff not washing their hands) (Wright, 2016). The monitoring of hand-hygiene compliance is a tangible example of a practice that is inextricably linked with patient safety (WHO, 2009; Aziz, 2014). Patient involvement can play a pivotal role in patient safety schemes since the patients can observe clinical practice and report adverse events (Barnett, Mehrotra and Jena, 2016) including any failure of HCPs to perform hand hygiene (Lastinger *et al.*, 2017). In summary, although research in this area is still developing there is an ongoing interest and commitment to the evaluation of patient involvement in safety programmes with more focus on how patients may help in ensuring their own safety in the hospital settings. It seems logical then to explore whether this extends directly into patient safety in prompting hand hygiene.

1.8 Patient involvement in safety regarding hand hygiene

Although patient involvement in safety issues is an emerging subject, major organisations, such as the WHO, the Centers for Disease Control and Prevention (CDC), and the Joint Commission, are enlisting the help of patients to remind HCPs to wash their hands (Lastinger *et al*., 2017). The WHO campaign "*Save Lives Clean Your Hands*" acknowledged that patient involvement is a core strategy to improve hand hygiene compliance among HCPs (WHO, 2009). The CDC campaign "*Clean Hands Count*" advised patients and HCPs to discuss staff hand hygiene compliance. The campaign aimed to empower patients to play a role in their care by asking or reminding HCPs to wash their hands, therefore HCPs should inform their patients "*It's Ok To Ask"* about hand hygiene (CDC, 2016a). The Joint Commission campaign "*Speak Up: To Prevent Infection*" focused on patient involvement and education to prevent medical errors including promoting hand hygiene compliance among HCPs (The Joint Commission, 2018). The campaign advised patients to remind HCPs to wash their hands "*as soon as they enter the room*" (The Joint Commission, 2018). Another Joint Commission campaign "*Patient Safety Solutions*" included requests that encouraged HCPs to wash their hands in the presence of the patient prior to touching the patient, and invited patients to ask HCPs if they have cleaned their hands before treatment (The Joint Commission, 2007). However, the role of patient involvement in hand hygiene is not fully evaluated and understood. For instance, far too little attention has been paid to how patients and HCPs perceive or experience conversations regarding handwashing.

To date, there is a wealth of evidence showing that patients have been invited to be involved in the promotion of hand hygiene, but far less evidence that this invitation for involvement in this aspect of patient safety has been thoroughly thought through,

(McGuckin and Govednik, 2013; Alzyood *et al.*, 2018). Questions remain as to how acceptable this is to staff and patients alike and what happens when patients do prompt hand washing.

The importance of hand hygiene to patient safety and patient involvement in safety initiatives as well as the promoting of hand hygiene compliance among HCPs have been explored. I will now explain the motivation for this thesis on the role of patient involvement in the promotion of hand hygiene among nurses in the hospital setting.

1.9 Motivation for the thesis

The hands of HCPs are the most likely vectors and causative agents for pathogen transmission. An understanding of the prevalence of pathogens would increase knowledge of the risk of transfer by HCPs' hands to patients (Montoya *et al.*, 2018). The identification of the HCPs who most frequently make contact with patients and the surrounding environment (contaminated surfaces) (Otter *et al.*, 2013) is important to understand the means of transmission, the points of entry and exit of infection and, therefore, to break the chain of infection (Bloomfield, Carling and Exner, 2017) (Figure 1.2).

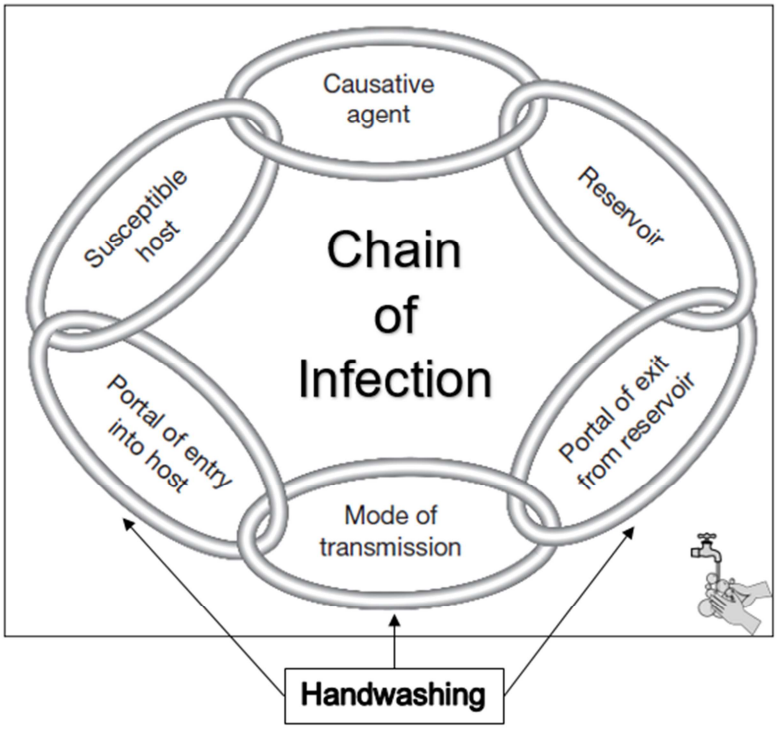


Figure 1.2: Handwashing and chain of infection (Damani, 2003)

As discussed earlier in this chapter, the improvement of HCPs' hand-hygiene behaviours is a vital step to the control and minimisation of the risks associated with HCAIs. Hand cleaning is regarded as a crucial component of preventive strategies that can significantly reduce the risk of infection. Liao *et al.* (2019) indicated that HCPs are at high risk of infection as well as patients than the general public because of their close contact and interaction with sources of infections in hospital settings. Nurses have the most frequent patient care interactions, and thus more opportunities to practice hand hygiene (Sands and Aunger, 2020), because they provided first-line care to patients, and spent more contact time with patients and in their surrounding environment (Liao *et al.,* 2019).

It is well established that nurses are the HCPs who have most frequent direct contact with patients in the hospital setting (Cohen *et al.*, 2012). Nurses spend one third of

their time in direct-care activities with patients (Westbrook *et al.*, 2011). Hence, the role played by nurses is fundamental to minimising directly the risk of the transmission of microorganisms not only from one patient to another but also between visitors and fellow staff members (Patterson, 2015; Rebmann and Carrico, 2017).

During the last decade, my clinical and academic background in nursing and infection prevention and control has led me to conclude that healthcare institutions worldwide spend enormous effort, time and money to promote good hand hygiene. Nowadays, hand hygiene is a main component of every patient-safety campaign conducted around the world. Yet there is little evidence regarding the best methods to promote hand-hygiene compliance and which method could best improve and sustain hand-hygiene compliance rates. Various strategies have been tested to improve hand-hygiene compliance rates, but which is the most effective strategy remains unclear.

It is vital to recognise that patients are not passive bodies and they can support HCPs to improve patient safety via active engagement and involvement. Therefore, the motivation for this thesis is a desire to understand what constitutes effective patient involvement in the promotion of hand-hygiene compliance among nurses in the hospital setting. Such information would inform collaboration between patients and nurses, so that patients may be part of the solution by reminding nurses to wash their hands.

1.10 Aim of the research

Despite increasing frequency of discussions regarding the role of patients in the management of their own safety, this subject remains an emerging topic. The

involvement of patients in safety measures and the perceptions of quality and safety have previously been under-researched (Furniss *et al.*, 2016). Little attention has been given to the role of patients in prompting HCPs to wash their hands (Alzyood *et al.*, 2018). Consequently, this doctoral study aims to provide a thorough understanding of the experiences of nurses and patients when patients prompt hygiene in the hospital setting in order to explore whether this is currently a feasible practice and, if not, what needs to be done create an environment in which patient prompting hand hygiene can be added to our armoury of resources to promote hand hygiene.

1.11 Objectives of the research

- To review the literature regarding patient involvement in the promotion of hand-hygiene compliance among healthcare professionals in hospitals.
- To explore the attitudes, views and experiences of nurses regarding patients asking or reminding them to clean their hands.
- To gain insight into patients' experiences of asking nurses to perform hand-hygiene, through the use of critical incidents.
- To discuss the results of both sets of data to understand the impact on both patients and nurses, when patients prompt nurses to wash their hands.

1.12 Organisation of the thesis

The topic under study is the role of patient involvement in the promotion of hand-hygiene compliance among nurses in the hospital setting. The thesis consists of seven chapters: the introduction (Chapter One); the literature review (Chapter Two); methodology (Chapter Three); results from nurses (Chapter Four); results from

patients (Chapter Five); discussion (Chapter Six); and conclusion and recommendations (Chapter Seven).

Chapter Two contains a review of the literature on the role of patients in the promotion of hand-hygiene compliance among HCPs in hospitals. This chapter reviews research that discusses barriers to and facilitators for patient involvement in the promotion of hand-hygiene compliance among HCPs. This chapter includes data from empirical studies to review the subject critically. This chapter includes detailed reference to the published integrative literature review (Alzyood *et al.*, 2018) which was fully updated at the end of the project.

Chapter Three provides an overview and critical analysis of the research methodology and method. The chapter consists of three parts. In the first part, fundamental perspectives on methodology, including the research paradigm on which the methods are based, and qualitative research are explained. Secondly, there is a description of research design and procedure, research participants, practical methods of data collection, the process of selecting and gaining access to the study site, and analysis of data that were used in this project. In terms of data collection and analysis, both general guidelines and specific examples of each tool are provided. In the last part, ethical issues, data management and the research quality of this project are examined.

The findings from the study are presented in Chapters Four and Five.

Chapter Four presents results from focus-group discussions in two countries. The aim of the focus groups was to explore nurses' views and experiences of being asked by patients to wash their hands in the hospital setting. The main body of this

chapter presents the data collected regarding nurses' experiences when patients reminded them to wash their hands and how they managed the situation.

Chapter Five reports results from interviews conducted with patients. These interviews employed critical-incident methods and were conducted to gain insight into and to document patients' experiences of their involvement in asking nurses to perform hand hygiene. The main body of this chapter presents data collected from patients' descriptions of situations in which they asked nurses to wash hands, or in which they wanted to ask nurses to wash hands, but did not. In the next part of the chapter, categories and subcategories present data on these patient experiences.

Chapter Six is a discussion of the findings from both sets of data and these are compared with the wider theoretical literature. Evidence from the literature review is limited to the exploration of the views and perceptions of what nurses say they would do rather than what they actually do or experience when patients ask nurses to wash their hands. For instance, nurses say patients have the right to ask, but when patients did ask, they were often confronted and challenged after asking. Findings from this PhD study provides in-depth understanding of the experiences of nurses and patients when patients asked nurses to wash their hands in hospital settings. Both nurses and patients found that prompting hand hygiene leads to unexpected confrontation and stressful encounters between patients and nurses.

The discussion chapter is comprised of three sections. In the first section, perceptions and experiences from both patients' and nurses' when patients promote handwashing are discussed. This include the surprisingly similar perceptions from both nurses and patients in both geographically and culturally diverse areas on "*the right but not responsibility*" of patients to ask nurses to wash their hands. The

discussion then turns to explore challenges and concerns that faced patients when they asked nurses to wash their hands. Finally, this chapter includes further discussion on the need to hear patients' voice without engendering anger; to empower and encourage patients to speak up and raise concerns, and to promote a culture of patient safety that include a culture of readiness for patients to ask nurses to perform hand hygiene.

In **Chapter Seven**, conclusions that are aligned to the research aim and objectives, and the theoretical, empirical and practical implications airing from this study, are presented. It concludes with recommendations for future nursing research concerning patient involvement in their own safety through promoting hand hygiene compliance among HCPs in the hospital settings.

1.13 Chapter summary

This chapter has demonstrated the effectiveness of hand hygiene and the international importance of compliance with good hand-hygiene practice. Compliance rates from different countries, hospital settings and different groups of HCPs have been provided. A discussion has been presented of reasons why hand hygiene remains important and how the involvement of patients would help in prompting HCPs to wash their hands. This discussion considers the amount of research and number of initiatives that have been undertaken globally. Consideration has been made of the role of the patient in his or her own safety in hospital and how prompting hand hygiene can be considered to be part of this ongoing initiative. The chapter has set out the aim of the study and defined key terms that are used in the thesis. The lead researcher's personal motivation for the subject has also been described. The next chapter will explore the perceptions of patients and HCPs

towards patient involvement in the promotion of hand-hygiene compliance in the hospital setting and how these have changed during the last decade.

CHAPTER 2: LITERATURE REVIEW

Abstract

The aim of this chapter is to review the current literature on the perceptions of patients and healthcare professionals (HCPs) regarding patient involvement in the promotion of hand-hygiene compliance in the hospital setting. **Background**: Initiatives continue to emphasise the importance of involving patients in their safety at the point of care. A patient-centred care approach aimed to empower patients to become active members of the healthcare team. However, understanding the perceptions of patients and HCPs of patient involvement in promoting hand hygiene compliance among HCPs has yet to be fully explored. **Design**: Integrative literature review. **Methods**: A five-stage review process informed by Whittemore and Knafl's methodology was conducted. MEDLINE and CINAHL databases were first searched for papers published between 1st January 2009 and 31st July 2017 followed with a second search of literature published between 1st August 2017 and 31st March 2019. Data were extracted manually, organised using NVivo 11 and analysed using thematic analysis. **Results**: A total number of 23 papers were included in this literature review as result of the two database searches. Thematic analysis revealed two main themes with four related subthemes across the main themes. Both patients

and HCPs hold mixed *views* about patient involvement in hand hygiene. Patient involvement viewed as confrontational, embarrassing and a potential threat to the patient-provider relationship. **Conclusion**: There is limited evidence regarding actual experiences from patients and HCPs concerning asking HCPs to wash their hands, and some evidence that patients are reluctant to do so. Further research is required to understand this area thoroughly, including identifying situations in which patients would feel more empowered to speak up.

2.0. Introduction

This chapter begins by setting out the methods by which the previously published integrative literature review (Alzyood *et al.*, 2018) was completed and how the review was updated on completion of this thesis in 2020. The remainder of the chapter is devoted to the findings of the literature review, which are presented in two sections that consider patients' and HCPs' views of patient involvement in hand hygiene. In this case, "involvement" requires patients to remind HCPs to wash their hands. Subsequently, gaps in the literature and difficulties encountered during comparisons of studies are outlined. Overall, the completion of the integrative literature review will be discussed in depth. The full text of the published review can be found in Appendix 2.1.

2.1. The literature review design

An integrative literature review was adopted as the most appropriate method by which to undertake a literature review to investigate the area of enquiry: patients' and HCPs' perceptions of patient involvement in hand hygiene. The five-stage framework to enhance rigour in the integrative literature review, informed by Whittemore and Knafl (2005) methodology, was adhered to. The five stages included: (1) problem

formulation; (2) data collection or literature search; (3) evaluation of data; (4) data analysis; and (5) interpretation and presentation of results. Figure 2.1 below illustrates the application of Whittemore and Knafl's (2005) five-stage framework to this integrative literature review.

An integrative literature review enables the inclusion of literature that reports diverse methodologies, such as experimental and non-experimental research, and both quantitative and qualitative studies (Whittemore and Knafl, 2005). Furthermore, an integrative literature review has the potential to inform evidence-based practice through its inclusion of multiple studies regarding a specific clinical problem to inform clinical nursing practice (Whittemore and Knafl, 2005). In summary, the benefit of an integrative literature review is that findings can be reported in a unified and integrated conclusion regarding the research problem, which comprises a summary statement that links back to the review's aim.

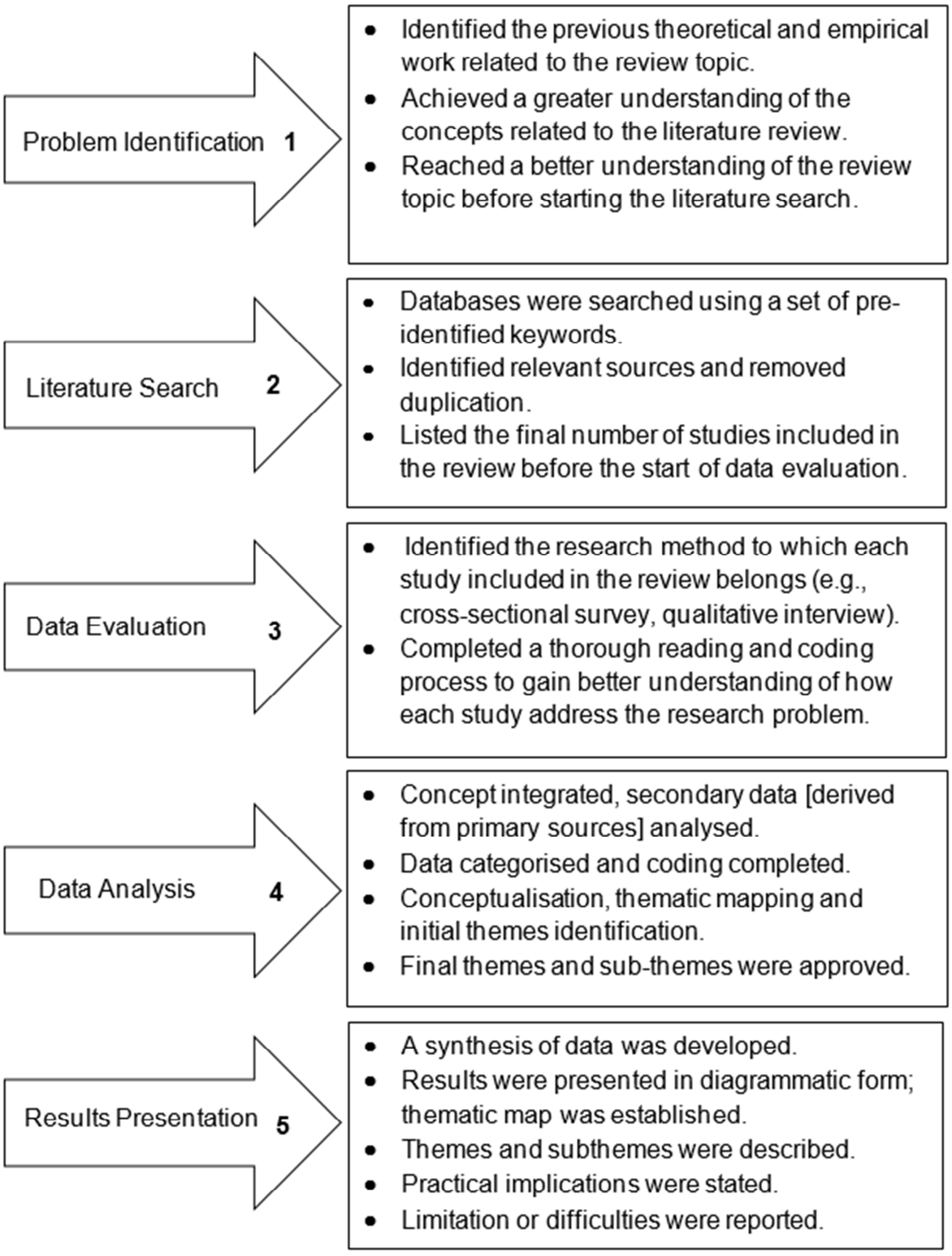


Figure 2.1: The five-stage review process according to Whittemore and Knafl (2005)

2.2. Method employed to search the literature

2.2.1. The search technique

The search criteria originally included papers published between 1st January 2009 and 31st July 2017 [first search], and then was later updated to include papers published between 1st August 2017 and 31st March 2019 [second search]. The first search commenced at the beginning of the PhD study in October 2015 and was followed by an up-to-date search at the beginning of the writing-up stage in March 2019. The main aim of the second search was to include any papers published after the first search had been completed or during the process of data collection for this PhD study [two years]. These literature searches are integrated into a Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) statement using a flow diagram (Figure 2.2).

To ensure a thorough literature search process, two steps were followed to identify relevant papers: online database searching and hand-searching of reference lists. First, a systematic search was developed for the electronic databases provided by EBSCO Information Services, including Medical Literature Analysis and Retrieval System Online (MEDLINE) accessed via PubMed, and the Citation Index for Nursing and Allied Health Literature (CINAHL). Second, manual searching was performed through the reference lists of the relevant studies identified in the search of the electronic databases. These two searches were necessary to promote inclusion and to avoid any biased search outcomes (Vassar, Atakpo and Kash, 2016). The results of these two searches are presented in Figure 2.2.

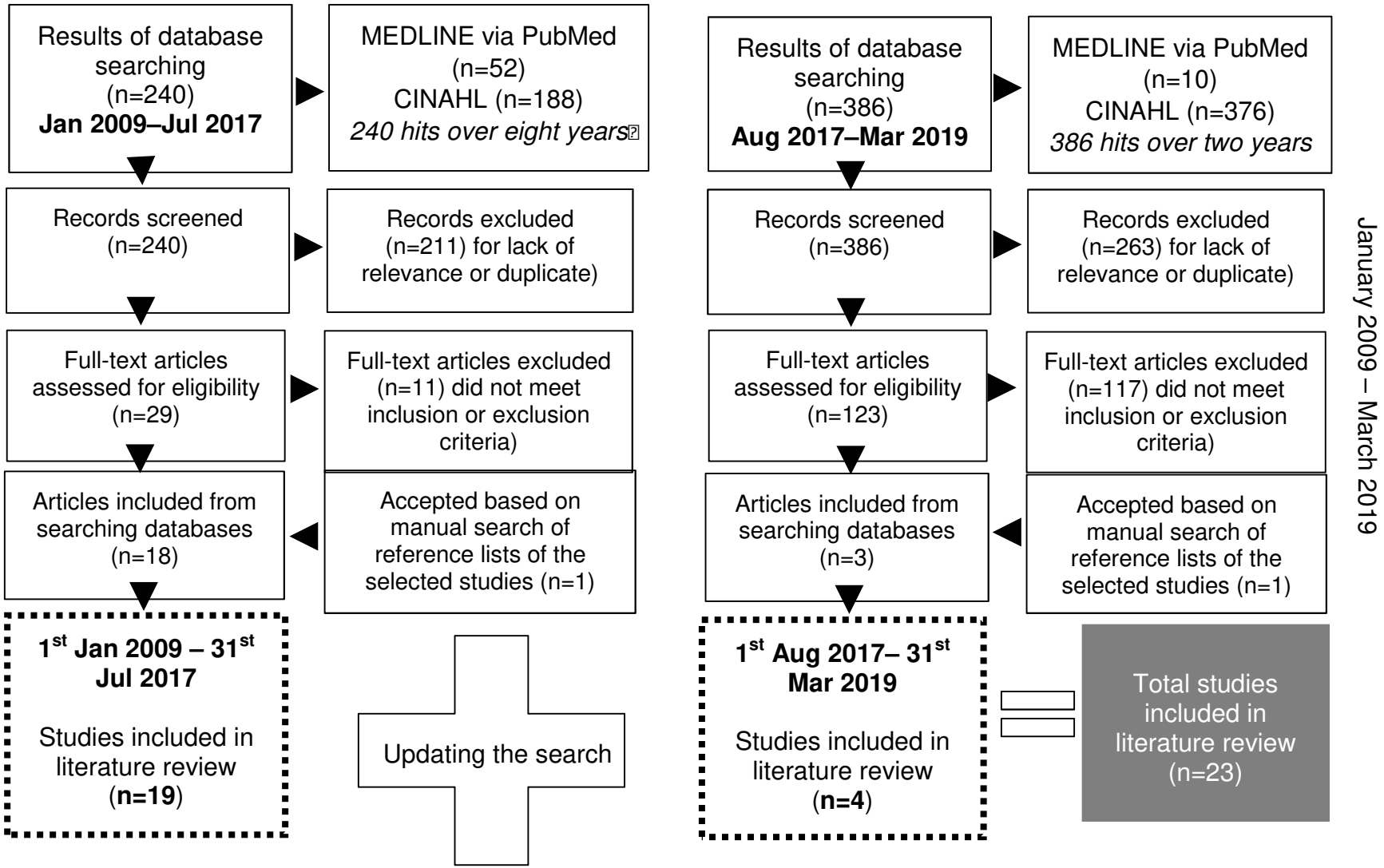


Figure 2.2: PRISMA diagram: search process and study identification

As described in the previous chapter, many different terms have been used to describe patient "involvement" in the literature. The search strategy in this review included several similar terms [synonyms] used to describe the phenomenon [patient involvement] and to capture all relevant literature (Table 2.1). The search strategy involved a five-stages iterative process (Figure 2.3), which used keywords related to "patient involvement" and "hand hygiene" with the help of Medical Subject Headings (MeSH) and the subject headings list. The online library systems enabled the connection of keywords through the use of Boolean operators (AND, OR, NOT) to narrow or broaden the search criteria and to enable efficient and successful searching (Bramer *et al.*, 2018). The keywords used to search all databases are as follows: (("patient involvement" *OR* "participation" *OR* "empowerment" *OR* "engagement") *AND* ("hand hygiene")). The search terms used were related directly to the purpose of the review. They are presented in Table 2.1.

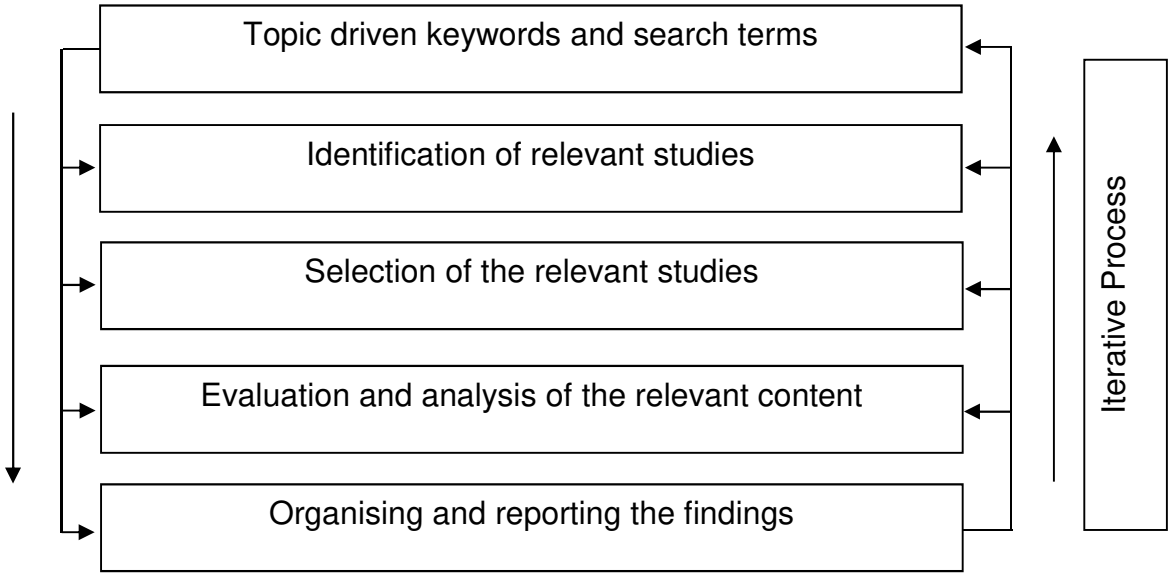


Figure 2.3: Iterative search process

Table 2.1: Keywords including MeSH terms used in the literature search

Database	Mesh Terms and Subject Headings List	Search Strategy
CINAHL and PubMed	<u>Patient Involvement:</u> Participation, Patient Patient Involvement Involvement, Patient Patient Empowerment Empowerment, Patient Patient Participation Rates Participation Rates, Patient Patient Participation Rate Patient Activation Activation, Patient Patient Engagement Engagement, Patient <u>Hand Hygiene:</u> Disinfection, Hand Hand Saniti*ation Saniti*ation, Hand Handwashing Hand Washing Hand Washings Washing, Hand Washings, Hand <u>Other Major Headings:</u> Cross Infection Infection control Guideline Adherence Quality Improvement Patient Safety Disease Transmission Gels, Soaps	(“hand hygiene’ OR ‘hand washing’ OR ‘hand sanitising’ OR ‘hand disinfection”) AND (“patient involvement’ OR ‘engagement’ OR ‘participation’ OR ‘collaboration’ OR ‘empowerment’ OR activation”) <u>Limiters</u> <u>First Search:</u> Published Date: 20090101-20170731 Language: English Academic Journals <u>Second Search:</u> Published Date: 20170801-20190331 Language: English Academic Journals

2.2.2. Inclusion and exclusion criteria

The previously published integrative review (Alzyood *et al.*, 2018) sought to include studies to understand fully the phenomenon of patient involvement in the promotion of hand-hygiene compliance in hospital settings. This was consistent with the integrative literature review approach. This review included all papers that reported evidence from empirical research studies (both quantitative and qualitative). The search was limited to studies that had been published in English between 1st January 2009 and 31st March 2019. This review included only published peer-reviewed studies and did not seek unpublished papers, grey literature such as oral presentations, leaflets, magazines or newspapers, nor did it involve internal reports or minutes of meetings due to concerns about the reliability or the quality of evidence in such reports. Additionally, it excluded commentaries, discussion papers, editorials and any type of literature review, though where such papers were identified, the reference list was scanned for additional papers. Studies were also excluded if the experience of patient involvement was not related to hand hygiene. For instance, studies on patient and public involvement (PPI) in healthcare research and patient involvement in clinical decision-making were excluded. Studies that explored medical and nursing students' perceptions of patient involvement in hand hygiene were also excluded.

2.2.3. Identification of relevant studies

A screening process was conducted to assess the eligibility of each study to be included in this review. The screening process was completed in four stages: identification of relevant studies; screening against inclusion criteria; removal of duplications; and finally, the inclusion or rejection of studies. The result of the

screening process is presented above in the PRISMA diagram (Figure 2.2). The first two stages included screening of papers by title, abstract and then full manuscripts against the inclusion criteria. The original screening was undertaken by the first-named author of this review (MA) and was verified by my supervision team (JB and HA). Finally, articles were included in this review if the inclusion criteria were met.

2.2.4. Quality assessment: critiquing the research

The critical appraisal comprised a set of tools which were chosen to assess the quality of evidence in each of the included studies based on the study's type (Purssell, 2020). The quality of each study was assessed based on two quality appraisal tools. The Critical Appraisal Skills Programme (CASP) checklists were used to assess the quality of RCT (CASP, 2018a) and qualitative studies (CASP, 2018b). The quality assessment checklists developed by the National Institute for Health and Care Excellence (NICE) were used to assess the quality of quantitative survey (NICE Checklist, 2014) and intervention studies (NICE Checklist, 2012). The quality appraisal tools assess the methodology and strength of evidence that the studies provided in their assessments of patients' and HCPs' perceptions of patient involvement in hand hygiene. The researcher appraised the quality of the 23 papers critically, as described in section 2.2.5 below.

Studies to be included in this review employed different methodological approaches such as cross-sectional surveys, qualitative cross-sectional studies, quantitative intervention studies, and randomised control trials (RCTs). These studies were completed in different countries, healthcare systems and hospital settings, and were published in 20 different journals with diverse author guidelines. Prior to the final selection, the relevance, value and potential contribution of each study to the topic of

this integrative review were established (Aveyard, 2014). The findings of this appraisal and the final decision of whether or not to include these studies were confirmed by my supervision team (DJ, HA and JB).

2.2.5. Results of the quality appraisal

After completion of the appraisal process, studies were chosen for inclusion if they had been published in peer-reviewed journals and if they were based on relevant evidence. Therefore, studies were included based on the relevance of the information provided to the aim of this review. Consequently, all literature that met the inclusion/exclusion criteria was included in the data analysis. The quality of studies was taken into consideration when the results of this review were presented. Hence, studies were included if they achieved a high score on the quality assessment tools. For instance, a study was included when the answer to most of the quality reporting questions was either “Yes” in CASP quality appraisal tools or “++” in NICE quality appraisal tools.

The results of the critical appraisal for *quantitative survey studies* (n = 15) showed that all studies provided a clear statement of purpose with aim or objectives (Table 2.2). The studies included a clear description of their design including the methodology, method, recruitment, sampling, data collection, data analysis and ethical considerations. The recruitment strategy was explained and appeared to be appropriate to the purpose of the research. Finally, the researchers provided a clear, detailed and vivid statement of the findings. The authors in these 15 studies identified gaps in the literature and explained why quantitative surveys were suitable for the study to explore HCPs and patients views and perception is relevant, timely and important. The majority of the studies (n = 13/15) fully met each of the appraisal

criteria and therefore received an overall “Yes”. However, in two studies (n = 2/15), there was a lack of description of the studies contexts as well as concise conclusions and interpretations of the findings (Pittet *et al.,* 2011; Zhang *et al.,* 2012) (Table 2.2).

The results of the critical appraisal for *qualitative studies* (n = 5) showed that the studies provided a clear statement of the aims of the research (Table 2.2). The studies (1) reported clear designs with suitable recruitment strategies to address the aims of the research, (2) produced in-depth descriptions of data collection methods including the samples, the settings and ethical considerations, (3) included clear statements of the relationships between the researchers and the participants. The majority of the studies (n = 4/5) fully met each of the appraisal criteria and therefore received an overall “Yes” categorisation. However, only one study (Cheng *et al.,* 2017) did not articulate why qualitative methods were adopted by the researchers to attain the research aim. For instance, the researchers relied heavily on the reporting of percentages, proportions and statistical significances with a lack of qualitative analysis of data from individual and group interviews with patients and HCPs. For the same study (Cheng *et al.,* 2017), the relationship between researcher and research participants was not adequately considered. Finally, Cheng *et al.* (2017) did not report any ethical considerations such as the receipt of ethical approval to gain access to the hospital setting to complete the interviews.

The results of the critical appraisal for *quantitative intervention studies* (n = 2) showed that most of the checklist criteria had been fulfilled (Table 2.2). Therefore, an overall “++” was given to each of the appraisal criteria. These two studies (Lent *et al.,* 2009; Davis *et al.,* 2012) provided detailed descriptions of the study populations regarding the selected participants, the settings or the locations where the studies

were completed. Davis *et al.* (2012) stated how they reduced bias in their study to enhance the internal validity of their findings. For instance, Davis *et al.* (2012) excluded patients who were employed in the medical sector as HCPs, as it was felt that they might offer biased views as 'lay patients'. These two studies (Lent *et al.,* 2009; Davis *et al.,* 2012) reported clear and appropriate analytical methods and outcome measures in relation to the studies' aims. Finally, these two studies reported concise interpretations of the findings and clear concluding statements.

The results of the critical appraisal for the *randomised controlled trial* (Seale *et al.,* 2015a) showed that the study fully met the criteria and therefore received an overall "Yes". Seale *et al.* (2015a) addressed a focused issue that was articulated in the study aim, background information, the results and the discussion of findings with the wider literature. The study reported a randomised assignment of patients to treatment as patients and HCPs were blinded to the treatment. Both intervention and control groups were similar at the start of the trial as all groups were treated equally. The study (Seale *et al.,* 2015a) reported a clear results section with a justification of why the trial findings were clinically important and considered the harms and costs of the intervention.

The results of the appraisal of the 23 papers included in this review are reported in Table 2.2 below.

Table 2.2: Results of the critical appraisal – NICE for quantitative survey studies

Code	Reference	1 Objectives	2 Design	3 Measurement and observation	4 Presentation of results	5 Analysis	6 Discussion	7 Interpretation	Comments
		Yes / Partly / No / Unclear / Not applicable (NA)							
1	Clare *et al.* (2013)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	Davis, Sevdalis and Vincent (2011)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	Davis *et al.* (2014a)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	Kim *et al.* (2015)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	Longtin *et al.* (2009)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	Michaelsen *et al.* (2013)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	Pan *et al.* (2013b)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	Pittet *et al.* (2011)	Yes	Yes	Yes	Yes	Yes	Yes	Partly	Lack of concise conclusion and interpretations (1.7).
12	Schwappach, Frank and Davis (2013)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
16	von Lengerke, Kröning and Lange (2017)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
17	Wu *et al.* (2013)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
18	Zhang *et al.* (2012)	Yes	Partly	Yes	Yes	Yes	Yes	Partly	Lack of clear description of context (2.2). Lack of concise

										conclusion and interpretations (7.1).
19	Lastinger *et al.* (2017)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
21	Sande-Meijide *et al.* (2019)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
23	Oliveira and Pinto (2018)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	

Quality appraisal checklist – NICE for quantitative survey studies

(1) **Objectives**

1.1 Are the objectives of the study clearly stated?

(2) **Design**

2.1: Is the research design clearly specified and appropriate for the research aims?
2.2: Is there a clear description of context?
2.3: If an existing tool was used, are references to the original work provided?
2.4: If a new tool was used, have its reliability and validity been reported?
2.5: Is there a clear description of the survey population and the sample frame used to identify this population?
2.6: Do the authors provide a description of how representative the sample is of the underlying population?
2.7: Did the subject represent the full spectrum of the population of interest?
2.8: Is the study large enough to achieve its objectives? Have sample size estimates been performed?
2.9: Were all subjects accounted for?
2.10: Were all appropriate outcomes considered?
2.11: Has ethical approval been obtained if appropriate?
2.12: What measures were made to contact non-responders?
2.13: What was the response rate?

(3) **Measurement and observation**

3.1: Is it clear what was measured, how it was measured and what the outcomes were?
3.2: Are the measurements valid?
3.3**:** Are the measurements reliable?
3.4**:** Are the measurements reproducible?

(4) **Presentation of results**
4.1: Are the basic data adequately described?
4.2: Are the results presented clearly, objectively and in sufficient detail
to enable readers to make their own judgement?
4.3: Are the results internally consistent, i.e. do the numbers add up properly?

(5) **Analysis**
5.1: Are the data suitable for analysis?
5.2: Is there a clear description of the methods of data collection and analysis?
5.3: Are the methods appropriate for the data?
5.4: Are any statistics correctly performed and interpreted?
5.5: Is the method for calculating response rate provided?
5.6: Are the methods for handling missing data provided?
5.7: Is information given on how non-respondents differ from respondents?

(6) **Discussion**
6.1: Are the results discussed in relation to existing knowledge on the subject and study objectives?
6.2: Are the limitations of the study (taking into account potential sources of bias) stated?
6.3: Can the results be generalised?
6.4: Have attempts been made to establish 'reliability' and 'validity' of analysis (appropriate to methodology)?

(7) **Interpretation**
7.1: Are the authors' conclusions justified by the data?
7.2: Do the researchers display enough data to support their interpretations and conclusions?

Yes	The study fully meets the criterion
Partly	The study largely meets the criterion but differs in some important respect
No	The study deviates substantively from the criterion
Unclear	The report provides insufficient information to judge whether the study complies with the criterion
NA	The criterion is not relevant in a particular instance

Results of the critical appraisal – CASP for qualitative studies

Code	Reference	Criteria	**SECTION A**: Are the results valid?	**SECTION B**: What are the results?	**SECTION C**: Will the results help locally?	Comments
			Yes / Can't Tell / No			
5	Garcia-Williams *et al.* (2010)		Yes	Yes	Yes	Yes
13	Seale *et al.* (2016)		Yes	Yes	Yes	Yes
15	Seale *et al.* (2015c)		Yes	Yes	Yes	Yes
20	Cheng *et al.* (2017)		Can't Tell	Can't Tell	Yes	Not clear why qualitative methodology in line with the research aim (2). The relationship between researcher and participants is not adequately considered (6). Ethical issues are not taken into

					consideration. 9) Lack of clear statement of findings (7).
22	Sutton, Brewster and Tarrant (2019)	Yes	Yes	Yes	

Quality appraisal checklist - CASP qualitative studies

SECTION A: Are the results valid?

1) Was there a clear statement of the aims of the research?
2) Is a qualitative methodology appropriate?
3) Was the research design appropriate to address the aims of the research?
4) Was the recruitment strategy appropriate to the aims of the research?
5) Was the data collected in a way that addressed the research issue?
6) Has the relationship between researcher and participants been adequately considered?

SECTION B: What are the results?

7) Have ethical issues been taken into consideration?
8) Was the data analysis sufficiently rigorous?
9) Is there a clear statement of findings?

SECTION C: Will the results help locally?

10) How valuable is the research?

Yes	The study fully meets the criterion
Partly	The study largely meets the criterion but differs in some important respect
No	The study deviates substantively from the criterion
Unclear	The report provides insufficient information to judge whether the study complies with the criterion
NA	The criterion is not relevant in a particular instance

Results of the critical appraisal – NICE for quantitative intervention studies

Code	Reference	Criteria	**Section 1:** Population	**Section 2:** Method of allocation to intervention (or comparison)	**Section 3:** Outcomes	**Section 4:** Analyses	**Section 5:** Summary	Comments
			++ / + / - / Not reported (NR) / Not applicable (NA)					
3	Davis *et al.* (2012)		++	++	++	++	++	++
7	Lent *et al.* (2009)		++	++	+	++	+	The setting does not reflect usual local practice (2.9, NA) The intervention or control comparison reflect usual local practice (2.10, NA)

Quality appraisal checklist – NICE for quantitative intervention studies

(1) **Section 1: Population**
1.1: Is the source population or source area well described?
1.2: Is the eligible population or area representative of the source population or area?
1.3: Do the selected participants or areas represent the eligible population or area?

(2) **Section 2: Method of allocation to intervention (or comparison)**
2.1: Allocation to intervention (or comparison). How was selection bias minimised?
2.2: Were interventions (and comparisons) well described and appropriate?

2.3: Was the allocation concealed?
2.4: Were participants or investigators blind to exposure and comparison?
2.5: Was the exposure to the intervention and comparison adequate?
2.6: Was contamination acceptably low?
2.7: Were other interventions similar in both groups?
2.8: Were all participants accounted for at study conclusion?
2.9: Did the setting reflect usual local practice?
2.10: Did the intervention or control comparison reflect usual local practice?

(3) **Section 3: Outcomes**
3.1: Were outcome measures reliable?
3.2: Were all outcome measurements complete?
3.3: Were all important outcomes assessed?
3.4: Were outcomes relevant?
3.5: Were there similar follow-up times in exposure and comparison groups?
3.6: Was follow-up time meaningful?

(4) **Section 4: Analyses**
4.1: Were exposure and comparison groups similar at baseline? If not, were these adjusted?
4.2: Was intention to treat (ITT) analysis conducted?
4.3: Was the study sufficiently powered to detect an intervention effect (if one exists)?
4.4: Were the estimates of effect size given or calculable?
4.5: Were the analytical methods appropriate?
4.6: Was the precision of intervention effects given or calculable? Were they meaningful?

(5) **Section 5: Summary**
5.1: Are the study results internally valid (i.e. unbiased)?
5.2: Are the findings generalisable to the source population (i.e. externally valid)?

++	All or most of the checklist criteria have been fulfilled, where they have not been fulfilled the conclusions are very unlikely to alter.
+	Some of the checklist criteria have been fulfilled, where they have not been fulfilled, or not adequately described, the conclusions are unlikely to alter.

-	Few or no checklist criteria have been fulfilled and the conclusions are likely or very likely to alter.

Results of the critical appraisal – CASP for RCT

Code	Reference	Criteria	**SECTION A**: Are the results valid?	**SECTION B**: What are the results?	**Section C**: Will the results help locally?	Comments
			Yes / Can't Tell / No			
14	Seale *et al.* (2015a)		Yes	Yes	Yes	Yes

Quality appraisal checklist - CASP for RCT

SECTION A: Are the results valid?

1) Did the trial address a clearly focused issue?
2) Was the assignment of patients to treatments randomised?
3) Were all of the patients who entered the trial properly accounted for at its conclusion?
4) Were patients, health workers and study personnel 'blind' to treatment?
5) Were the groups similar at the start of the trial
6) Aside from the experimental intervention, were the groups treated equally?

SECTION B: What are the results?

7) How large was the treatment effect?
8) How precise was the estimate of the treatment effect?

Section C: Will the results help locally?

9) Can the results be applied to the local population, or in your context?
10) Were all clinically important outcomes considered?
11) Are the benefits worth the harms and costs?

Yes	The study fully meets the criterion
Partly	The study largely meets the criterion but differs in some important respect
No	The study deviates substantively from the criterion
Unclear	The report provides insufficient information to judge whether the study complies with the criterion
NA	The criterion is not relevant in a particular instance

2.2.6. Data extraction

According to Whittemore and Knafl (2005), data extraction is complex and encompasses wide-ranging factors on which the researcher should consider to appropriately extract data from primary sources, including a well-specified review purpose, considering what variables, issues or populations the review aims to discuss. For the purpose of this integrative literature review, data were extracted using tabulation included a presentation of each study's aim and its key findings, as illustrated in Table 2.3. The data extraction reported information on general and other specific characteristics of each study such the full reference, type of participants, study country and setting, study design, and data collection tool, outcome measures as well as a summary of the main study findings.

Table 2.3: General studies' characteristics and key findings

Reference	Study aim(s)	Study design/data collection tool	Sample/location	Key findings/outcome measures
Clare *et al.* (2013)	To determine patients' level of assertiveness, and other factors influencing their comfort level in asking HCPs to wash their hands.	Cross-sectional pilot survey	50 patients *United States*	- 25%, who answered NO when asked assertive questions) said that they would ask their HCPs to wash their hands. - 68% (who answered YES when asked assertive questions) said that they would ask their HCPs to wash their hands. - Knowing HCPs' names increased patients' willingness to ask about hand washing to 79%.
Davis, Sevdalis and Vincent (2011)	To investigate medical and surgical patients' perceived willingness to participate in different safety-related behaviours and the potential impact of	Cross-sectional exploratory Qualitative	80 patients *United Kingdom*	<u>Interactional behaviours:</u> - Patients reported higher willingness to ask doctors factual questions, than questions which might challenge or notify them of problems or errors. - Patient reported higher willingness to notify nurses of problems or errors [medication]

	doctors'/nurses' encouragement on patient willingness levels.			than to ask them factual questions [washing hands]. <u>After receiving doctor or nurse encouragement:</u> - Patients reported more willingness to ask doctors questions and to notify doctors of problems or errors. - Patients reported greater willingness to ask nurses factual questions on hand hygiene.
Davis *et al.* (2012)	To examine patients' and HCPs' attitudes towards a video aimed at promoting patient involvement in safety-related behaviours.	Pre/post-intervention design was used using participant self-report surveys.	201 patients 95 HCPs: - 46 Doctors - 49 Nurses *United Kingdom*	- Patients are more willing to ask HCPs about hand washing after watching the PINK video [a patient safety video]. - A significant and notable disparity reported between patients' perceived importance of asking HCPs to wash their hands and their actual willingness to do so.
Davis *et al.* (2014a)	To investigate HCPs' attitudes toward patient involvement in safety-	Cross-sectional functional	4 hospitals 116 Doctors 100 Nurses	- HCPs reported more favourable intentions to report medication errors than failure to use hand sanitizers for hand hygiene.

	related behaviours.	fractional survey	*United Kingdom*	- Doctors view patient intervening less favourably than nurses. - The predictions were mainly focused on how patients would ask and how providers would respond. - A negative response from HCPs to the patient (irrespective of whether an error actually occurred); perceived as having negative effects on the patient-HCP relationship.
Garcia-Williams *et al.* (2010)	To evaluate laypersons and HCPs perception toward hand hygiene and willingness to ask HCPs to wash their hands before and after watching a video.	Four focus groups interviews Qualitative	18 laypersons 8 doctors 9 nurses *Georgia*	<u>Before watching the video:</u> - Laypersons with previous hospital experience are less likely to ask their nurse to wash their hands. <u>- Laypersons with hospital experience:</u> Asking about hand hygiene, depends on the situation 50%, fear of reprisal 16.7%, perception of need 16.7%, believe it's not their job to ask 16.7%. <u>Laypersons without hospital experience:</u>

Felt comfortable to ask: 71.4%.
Based on the situation: 100%, “if provider scratches his/her head or nose of something”.

HCPs (nurses and doctors):

- Over a 1-month period, they said that they had not been asked to wash their hands.

Comfortable being asked:

- Depends on the situation 58.5%: “how the patient asks”.
- Depends on the situation 55.6%.: “asking in the wrong time while I am very busy, it would irritate me”
- Nurses would feel embarrassed 75% or insulted 25% if asked.
- Nurses 55.6% were more comfortable than doctors 25% if been asked to wash their hands.

After watching the video:

- Laypersons with or without hospital experience reported more willingness to ask nurses to wash their hands “I am more

				encouraged now", "I am not scared anymore". - Laypersons were more likely to ask doctors than nurses about hand washing. - Laypersons with previous hospital experience reported that they would feel more likely to be scared "I'd still be scared or nervous", "I am still scared".
Kim *et al.* (2015)	To examine patients'/families' and HCPs' perception of patient participation in hand hygiene.	Cross-sectional survey	152 doctors 387 nurses 148 patients 177 families *South Korea*	**<u>Patients/families perceptions:</u>** - 75% of patients and 84% of their families reported that they should be aware of nurses' or doctors' hand hygiene. - 60% of patients/families reported that they observed HCPs washing their hands. - Less willingness to ask from patients/families was reported when the extent of the intention to ask was examined. <u>*when patients/families were asked why:</u> - It is not a patient's role (patients 72%, families 70%). - Threat to relationships with HCPs (patients

26%, families 39%).
- HPCs are too busy (patients 20%, families 28%).

HCPs' perceptions:

- More doctors (69%) than nurses (62%) reported the need for additional programmes for hand hygiene improvement.
- When HCPs were asked why they don't comply with hand hygiene recommendations: "too busy" (70%), "forgot" (26%), "skin trouble due to handrub" (15%), "annoyed" (9%), and "not motivated" (6%).
- Doctors (46%) and nurses (55%) anticipated less positive effect of patient participation in hand hygiene than patients (70%) or families (76%).
- 26% of doctors supported the idea of patients' participation.
- 31% of nurses reported their willingness to accept patient participation in hand washing.

				- 4% of nurses reported being reminded by patients. - 15% of doctors reported being reminded by patients.
Lent *et al.* (2009)	To assess patients' participation in the "Partners in Your Care" programme.	Before-after interventional study	193 patients. *United States*	<u>Of the 193 patients:</u> a) 3% of patients stated that they had asked at least one HCP to wash their hands. b) 8% of patients did not comment, although they have observed HCPs failing to wash their hands. c) 90% of patients reported that they did not ask HCPs to wash their hands as they had observed HCPs doing so. <u>After editing the script and providing 38 patients with script "Thanks for Washing":</u> a) 45% of patients reported that they had monitored HCPs' hand hygiene. b) 16% of patients reported not commenting on hand washing despite the fact they observed HCPs failing to wash their

				hands. c) 100% of patients presented script thanking HCPs to wash their hands. d) 0% of patients did comment on doctors' hand hygiene while working rounds. e) 7% of nurses reported they were asked to wash their hands.
Longtin *et al.* (2009)	To assess patients' perception to participate in programme aim to improve HCPs hand hygiene.	Cross-sectional survey	194 patients *Switzerland*	<u>Of the 194 patients:</u> a) 76.3% of patients would not feel comfortable to ask nurses to wash their hands. b) 77.3% of patients would not feel comfortable to ask doctors to wash their hands. <u>After receiving an explicit invitation from nurses and doctors:</u> a) Intention to ask nurses increased from 34.0% to 82.5%. b) Intention to ask doctors increased from 29.9% to 77.8%.

Michaelsen *et al.* (2013)	To seek understanding of patient involvement in reminding doctors to wash their hands. To determine which method of reminder would be acceptable for patients to prompt doctors to wash their hands.	Cross-sectional interview and survey. Mixed methods	250 patients *United States*	- 96% of patients thought it is very important that doctors wash their hands. - 78% of patients believed that they should remind doctors to wash their hands. - 66.67% of patients felt that doctors are not aware of their hand hygiene compliance rate. - 98% of patients believed reminding doctors to clean their hands might help prevent them from contracting an infection. - 32 of patients did not observe doctors washing their hands. <u>Reasons behind those less willing to discuss hand hygiene with their doctors:</u> - Feeling disrespectful 33%, feeling embarrassed or awkward 31%, not a patient's role 8%, fear of reprisal 5%, trust in the doctors 4%. - Patients would be more comfortable to discuss hand hygiene with their doctors if they receive an information pack on the risk associated with HCAIs (7% vs. 93%).

				- 84% of patients said that doctors should get reports on how often they clean their hands before touching patients.
Pan *et al.* (2013b)	To assess hand hygiene knowledge and the attitudes and intentions regarding patient empowerment among HCPs, patients'/families.	Cross-sectional survey based on questionnaire	115 patients 220 families 241 doctors 505 nurses 69 medical/ nursing students 65 technicians *Taiwan*	- 77.1% of patients/families observed that HCPs had washed their hands. - 96.5% of patients/families reported that they could help to remind HCPs to wash their hands. - 67.2% of patients/families stated that they would do it and remind HCPs to wash their hands. - Risk factors reported associated with less or no intention to ask were: female, illiteracy, and being patients/families in the paediatric department, age above 25 years old, and negative attitude toward patient empowerment. - Significant difference was reported among HCPs between positive attitude (81.1%) and positive intention regarding being reminded

				about hand hygiene (62.8%).
Pittet *et al.* (2011)	To assess the feasibility of the UK National Patient Safety Agency (NPSA) programme to promote patients to ask about hospital hand hygiene.	Telephone survey	254 HCPs 530 Members of public 210 Inpatients *United Kingdom*	<u>Of the 530 members of NPSA:</u> - 57% of the public were unlikely to question doctors about their hand hygiene. - 43% of inpatients reported that HCPs should already clean their hands as they assumed it had taken place. - 20% of inpatients did not want to be involved in asking HCPs to wash their hands, and they could be misunderstood that they want to question their professional ability to do their job correctly. - Interventions such as the reminder "It's OK to ask" attitude was one of the most useful interventions to counter the possible negative effect on the patient-HCP relationship.
Schwappach, Frank and Davis (2013)	To investigate how HCPs evaluate patients and how they responded	Cross-sectional functional	<u>1141 HCPSs</u> 876 nurses 161 doctors	- A survey of 2 error scenarios related to hand hygiene and medication error based on the following measures:

	to safety-related behaviours and potential error.	fractional survey	55 other professions *Switzerland*	a) Approval of patients' behaviours. b) HCPs response to patients. c) HCPs' support of being asked by a patient. d) An effective response to the vignettes. -Higher acceptance from patient to safety-related interventions. -Less correlation between being asked and patient-HCP relationship. -HCPs reported that patients exhibit more favourable attitudes toward patients. involvement in preventing medication errors than the use of hand sanitation to perform hand hygiene.
Seale *et al.* (2016)	To explore the knowledge and attitudes of HCPs toward the concept of patient empowerment focused on improving infection	Semi-structured interview. Qualitative	20 Nurses 9 HCPs *Australia*	-Unanimous agreement on patient engagement in preventing the risk associated with HCAIs. -The degree of patient responsibility and level of system engagement varied. -HCPs reported some barriers for patient

	control practices.			empowerment: a) Lack of hospital support. b) Busy workloads. c) Negative attitudes of staff members.
Seale *et al.* (2015b)	To explore the attitudes of hospital patients towards patient empowerment as one of the key components of patient engagement.	Semi-structured interview Qualitative	15 patients *Australia*	-Patients have a right to ask HCPs about infection control and/or asking them to wash their hands, and that they would feel comfortable and happy to do so. -Only one patient suggested that infection control should be an open issue and that patients should feel comfortable to ask, 'Have you washed your hands?' -Some other patients would find it challenging asking these questions to HCPs of the opposite gender and/or senior staff members. -What makes them less willing to engage are: feeling intimidated, embarrassed or shy. -Some patients reported that when asking staff about hand hygiene might upset or embarrass or annoy the staff members.

				-Active engagement by the patient was seen as an implied criticism of the work of the staff members and could cause patient harm. -More intention to talk to doctors and cleaners about hand hygiene than nurses. This is because nurses are already washing their hands and will be happy to do so if being asked. -Patients show more intention toward asking HCPs about hand hygiene if they saw member of staff (doctor, nurse) visiting the bathroom without performing hand washing. This would encourage them to intervene.
Seale *et al.* (2015a)	To examine the receptiveness of hospital patients toward a new empowerment tool aimed at increasing awareness and engagement of patients	A prospective, controlled intervention. Pre- and post-surveys. Randomised Control Trial	60 patients *Australia*	-Patients were more likely to be willing to ask a doctor or nurse a factual question than a challenging question related to the quality and safety of their healthcare. -95% of patients reported that they felt they will acquire infection when staff do not wash their hands before or after a procedure.

	in preventing HAI.			-3 participants asked an HCP if they had washed their hands. -70% of the patients reported that they did assume that HCPs are already washing their hands and trusted them.
von Lengerke, Kröning and Lange (2017)	To estimate the extent to which patients with type-2-diabetes intend to speak up for HCPs' hand hygiene during inpatient foot treatment.	Cross-sectional questionnaire survey.	473 patients *Germany*	<u>The study test:</u> -Whether motivation was given by the hospital would invite patients to speak up about hand hygiene. <u>The result of this study shows:</u> a) 41% of patients strongly intended to speak up. b) Institutional encouragement increases patient intention to speak up. c) Knowledge is an important start as patients will not be able to speak up about less hand hygiene compliance without knowledge.

Wu *et al.* (2013)	To better understand patients' attitudes and perceptions toward hand hygiene. To identify patients with the highest motivation to participate in hand hygiene.	Cross-sectional survey. Self-reporting questionnaire.	303 patients 556 family members *Taiwan*	<u>Patients' attitudes and perceptions toward hand hygiene in health care:</u> - 89.8% reported that hand hygiene is important. - 93.9% would feel comfortable knowing that HCPs performed hand hygiene before contact. - 75% reported that they did observe HCPs washing their hands. - 58.6% would prefer to see HCPs washing their hands within their field of vision. - 77.1% thought that HCPs should be reminded to perform hand hygiene whenever necessary. - 75.9% would consider hand hygiene when they chose hospital care. - 78.4% desire more information on hand hygiene. - 48.9%* was willing to remind a doctor to wash their hands. - 50.8%* was willing to remind a nurse to

				wash their hands. *If the HCP would appreciate the reminder, patients' willingness increased from 74.6% for doctors and 76.3% for nurses.
Zhang *et al.* (2012)	To investigate the baseline status of patients' awareness, knowledge, and attitudes to patient safety. To determine the factors that influence patients' involvement in their safety.	Cross-sectional survey based on questionnaire Quantitive	1000 patients *China*	<u>Questionnaire items included:</u> a) Medical errors. b) Infection prevention. c) Medication safety. d) Other patient safety aspects. <u>959 questionnaires collected from 1000 participants and resulted in:</u> a) 78% of patients thought that HCPs already wash their hands before the examination. b) 68% are willing to remind HCPs about the need for sanitation.
Lastinger *et al.* (2017)	To examine the attitudes of patients and parents toward a new patient empowerment tool	Cross-sectional survey	89 doctors 114 parents 108 patients	- Most parents (77.0% for doctors and 81.4% for nurses) and most patients (64.8% for doctors and 71.2% for nurses) felt comfortable using the PET to remind

(PET).	*United States*	HCPs to wash their hands. <u>114 surveys were completed by patients' parents:</u> -Parents were more likely than adult patients to feel that it is their role to speak up if a doctor (95.6% vs. 77.6%) or to a nurse (99.1% vs. 86.0%) if did not perform hand hygiene. - 22% of patients' parents would feel shy to speak up about hand hygiene. <u>108 surveys were completed by patients:</u> - Most patients reported it was their role to speak up about providers' hand hygiene compliance. <u>89 surveys were completed by doctors:</u> - 65.5% of doctors agreed on patient involvement in reminding them to wash their hands. - Doctors reported that patient involvement would have a positive effect on patient-HCP relationship. - Those who did not support patient involvement

				reported that it is not the patient role to remind the providers to wash their hands. - 54.9% of doctors felt that patients should be involved in reminding HCPs to perform hand hygiene. - Overall, doctors prefer that patients use words rather than the PET to remind them to perform hand hygiene.
(Cheng *et al.*, 2017)	To report the challenges faced during the implementation of patient empowerment programme in hand hygiene promotion in hospital settings in Hong Kong.	Interview	167 patients 248 HCPs *Hong Kong China*	- 167 of the 223 patients (74.9%) participated in patient empowerment programme to promote hand hygiene. - 248 HCPs including doctors (n=55), nurses (n=86), allied health staff (n=62), and supporting staff (n=45). - 196 patients (97.0%) had never asked HCPs to clean their hands, while only 75 patients asked HCPs to wash their hands. - 103 of 196 patients (52.6%) supported the programme. - HCPs reported positive responses towards

				patients who have asked them to wash hands. - Patients willingness to remind HCPs to wash their hands increased to 64.8% after receiving encouragement from infection control nurses. - Hand hygiene compliance enhanced due to the increase in volume of alcohol-based handrub consumption.
Sande-Meijide *et al.* (2019)	To examine the attitudes and perceptions of patients and HCPs and to establish which method they consider to be the most suitable for implementing an effective patient participation program to improve HH.	Cross-sectional survey	337 patients and family members 196 HCPs *Spain*	- 49.9% of patients and their families were willing to remind HCPs to wash their hands. - Only 31.6% of patients actually asked HCPs to wash their hands. - <u>Most common reasons why patients and their families did not ask HCPs:</u> - Fear of causing annoyance or receiving worse treatment as a consequence of asking (76%). - Doctors disagree with patient asking due to patient lack of knowledge (40%). Negative effect on patient-HCP relationship (40%). Nurses considered participation as unnecessary

				(58%).
Sutton, Brewster and Tarrant (2019)	To understand how hospital staff perceive the involvement of patients and relatives in the co-production of infection control in practice, and to highlight the main challenges that impact on collaborating with patients and relatives to reduce the threat of infection on hospital wards.	Interview	35 HCPs *Leicester, UK*	- Interviews with 35 frontline HCPs. - HCPs support patient and relatives' co-operation and involvement rather than confrontation between patients and HCPs. - HCPs were not able to work with patients on risk prevention, as these risks are created and perpetuated by patients. - It is the responsibility of HCPs to protect patients from harm, and therefore patients should not be responsible for error prevention. - Responsibility should be only on HCPs.
Oliveira and Pinto (2018)	To investigate the perception and attitude of HCPs regarding patient participation in hand hygiene, from the perspective of the	Cross-sectional survey	150 HCPs *Brazil*	- 83.3% of HCPs supported patient involvement in hand hygiene. - 48% reported they would feel uncomfortable with patients asking about hand hygiene. - There is limited knowledge among HCPs about hand hygiene.

patients.

2.2.7. Difficulties of comparison between studies

The difficulties that this integrative literature review surfaced mainly around challenges to combine and compare data from the studies included in this review. These challenges were due to three main factors, firstly different terms were used interchangeably to describe the process of patients asking HCPs to wash their hands; second, different types of HCP groups were included; third, different study designs made it hard to compare the evidence gathered through a wide range of data-collection methods with diverse measures of outcomes. These difficulties and how they were encountered are explained in depth in the following three subsections.

Different terms used to describe patient "involvement" in hand hygiene

Studies included in this review used different terminology to describe "patients asking HCPs to wash their hands" (Table 2.4).

Table 2.4: Different terminology described patients asking HCPs to wash their hands

Patient involvement	(Davis *et al.*, 2012; Zhang *et al.*, 2012; Michaelsen *et al.*, 2013; Davis *et al.*, 2014; Sutton *et al.*, 2019)
Patient participation	(Lent *et al.*, 2009; Kim *et al.*, 2015; Oliveira and Pinto, 2018; Sande-Meijide *et al.*, 2019)
Patient engagement	(Seale *et al.*, 2015a; Seale *et al.*, 2015b; Seale *et al.*, 2016)

Patient empowerment	(Pan *et al*., 2013; Seale *et al*., 2015a; Seale *et al*., 2015b; Seale *et al*., 2016; Cheng *et al*., 2017; Lastinger *et al*., 2017)

Patient empowerment was used to describe efforts to encourage patients to take control over their own safety and to be involved to increase hand-hygiene compliance among HCPs. *Patient engagement* was used to describe attempts to encourage patients to take active steps to prevent or report threats to their own safety, which included HCPs' failure to wash their hands. *Patient participation* referred to patients' active input in efforts to prevent infection by asking HCPs to wash their hands. *Patient involvement* was used to describe patients' active role in the promotion of hand-hygiene compliance by asking HCPs to wash their hands.

"In an effort to be inclusive and choose a unified terminology as discussed in the previous chapter [1.6.1], the concept of patient "involvement" incorporates multiple definitions and interrelated meanings. This was adopted as an "umbrella" term and a suitable concept for the purpose of this integrative literature review and the whole thesis.

Different types of study populations were included

There were variations in the descriptions of the HCP and patient groups involved in the studies included in the review (Table 2.5).

Table 2.5: Different terminology described HCP and patient groups

Nurses	(Davis *et al*., 2012; Pan *et al*., 2013; Davis *et al*., 2014; Kim *et al*., 2015; Seale *et al*., 2016; Cheng *et al*., 2017)
Doctors	(Davis *et al*., 2012; Pan *et al*., 2013; Davis *et al*., 2014; Kim *et al*., 2015; Seale *et al*., 2015b; Cheng *et al*., 2017; Lastinger *et al*., 2017)
Allied health professionals and supporting staff	(Cheng *et al*., 2017)
Patients	(Longtin *et al*., 2009; Pittet *et al*., 2011; Davis *et al*., 2012; Michaelsen *et al*., 2013; Pan *et al*., 2013; Kim *et al*., 2015)
Family members or *parents*	(Pan *et al*., 2013; Wu *et al*., 2013; Kim *et al*., 2015; Lastinger *et al*., 2017)
Member of public or *layperson*	(Garcia-Williams *et al*., 2010; Pittet *et al*., 2011)

The terms HCPs or healthcare workers (HCWs) were used to describe nurses, doctors, or allied health professionals in some studies. However, other studies used the term HCPs to describe nurses and doctors but without clear explanation of whether any other groups of HCPs were included. Inconsistencies were also noted regarding the descriptions of the groups who asked HCPs to perform handwashing. For instance, patients, members of the public, laypeople, parents and family members were all involved. Therefore, it was challenging to convey independent

views from patients or each group of HCPs. Hence, to improve precision, this integrative literature review applied the term “HCPs” to include views from nurses and doctors only. Additionally, the term “patients” was used to describe only the views of hospital inpatients [patients who are in hospital settings].

Difficulties in comparing the outcome measures of studies

The majority of the studies included in this review examined patients' and HCPs’ attitudes and perceptions towards patient involvement in hand hygiene. However, different outcome measures that considered different aspects of patient involvement in hand hygiene were incorporated, so it was difficult to draw conclusions from the studies. These outcome measures are listed in Table 2.6.

Table 2.6: Different outcome measures of studies

To examine, investigate, assess, understand, and explore patients' and HCPs’ attitudes	(Davis *et al.*, 2012; Zhang *et al.*, 2012; Pan *et al.*, 2013; Wu *et al.*, 2013; Davis *et al.*, 2014; Seale *et al.*, 2015; Seale *et al.*, 2016; Lastinger *et al.*, 2017; Oliveira and Pinto, 2018; Sande-Meijide *et al.*, 2019)
To assess, examine, investigate, understand, and evaluate patients’ and HCPs’ perceptions	(Longtin *et al.*, 2009; Garcia-Williams *et al.*, 2010; Wu *et al.*, 2013; Kim *et al.*, 2015; Oliveira and Pinto, 2018; Sande-Meijide *et al.*, 2019)
To investigate, assess, seek, and explore patients’ and HCPs’ knowledge, understanding and awareness	(Zhang *et al.*, 2012; Michaelsen *et al.*, 2013; Pan *et al.*, 2013)

To estimate and assess patients' and HCPs' intentions	(Pan *et al.*, 2013; von Lengerke, Kröning and Lange, 2016)

This section, in particular, indicates that there is a need for research that explores and gains insight into patients' and HCPs' actual *experiences* regarding patient involvement in hand hygiene. Hence, the exploration of patients' and HCPs' *experiences* regarding patient involvement is the principal aim of this PhD study.

2.2.8. Data analysis and synthesis

Once selected, papers were read and re-read multiple times to affirm understanding; identify and extract relevant information, and identify relationships between findings of the studies. This process was aided with highlighter pens and memos. Consequently, the initial codes were identified and integrated into a word-processing software (Microsoft Word 2016®) to aid further analysis [copy, paste, summarise and tabulate]. Richards and Richards (1991) suggested that the application of software to organise data might add to the rigour of qualitative research. Therefore, NVivo 11® was also used to organise and support the process of thematic data analysis and the construction of themes (Houghton *et al.*, 2017). All initial codes relevant to the review's aim were incorporated into initial themes (nodes). A thematic map as suggested by Braun and Clarke (2006) was developed to aid the generation of themes. NVivo® was used to develop the thematic map to help with visualisation of the links and relationships between themes. The use of NVivo® facilitated the organisation, management and access to the full-text PDF files of the studies included in this review and assisted in the search for single words or phrases during the coding process. After repeated and focused reading of the full-text articles included in this review, a list of emerging codes was constructed.

In the next step of the analysis, relationships, patterns, differences and similarities between data were established. Accordingly, data extracted from the literature enabled themes to be determined and conclusions to be drawn, which resulted in overarching themes. To ensure rigour, the supervision team who are expert researchers (DJ, JB and HA) and the student (MA) met regularly to discuss and consider congruence of themes. After consensus, final themes were confirmed.

2.3. The literature review main findings

The findings of the literature review reported two main themes and four related subthemes that identified as a result of the data analysis. The link between the main themes [MT], subthemes [ST], and the aim of this review was established as presented in the thematic map below (Figure 2.4). A full presentation of these themes and subthemes is discussed later in section 2.7.

Overall, the findings of this review are presented in five main subdivisions:

(1) result of the literature search and data evaluation [2.4];

(2) results from different countries: a country profile [2.5];

(3) results based on different methodological approaches [2.6];

(4) main themes and subthemes derived from the data [2.7]; and

(5) summary of the main findings [2.8].

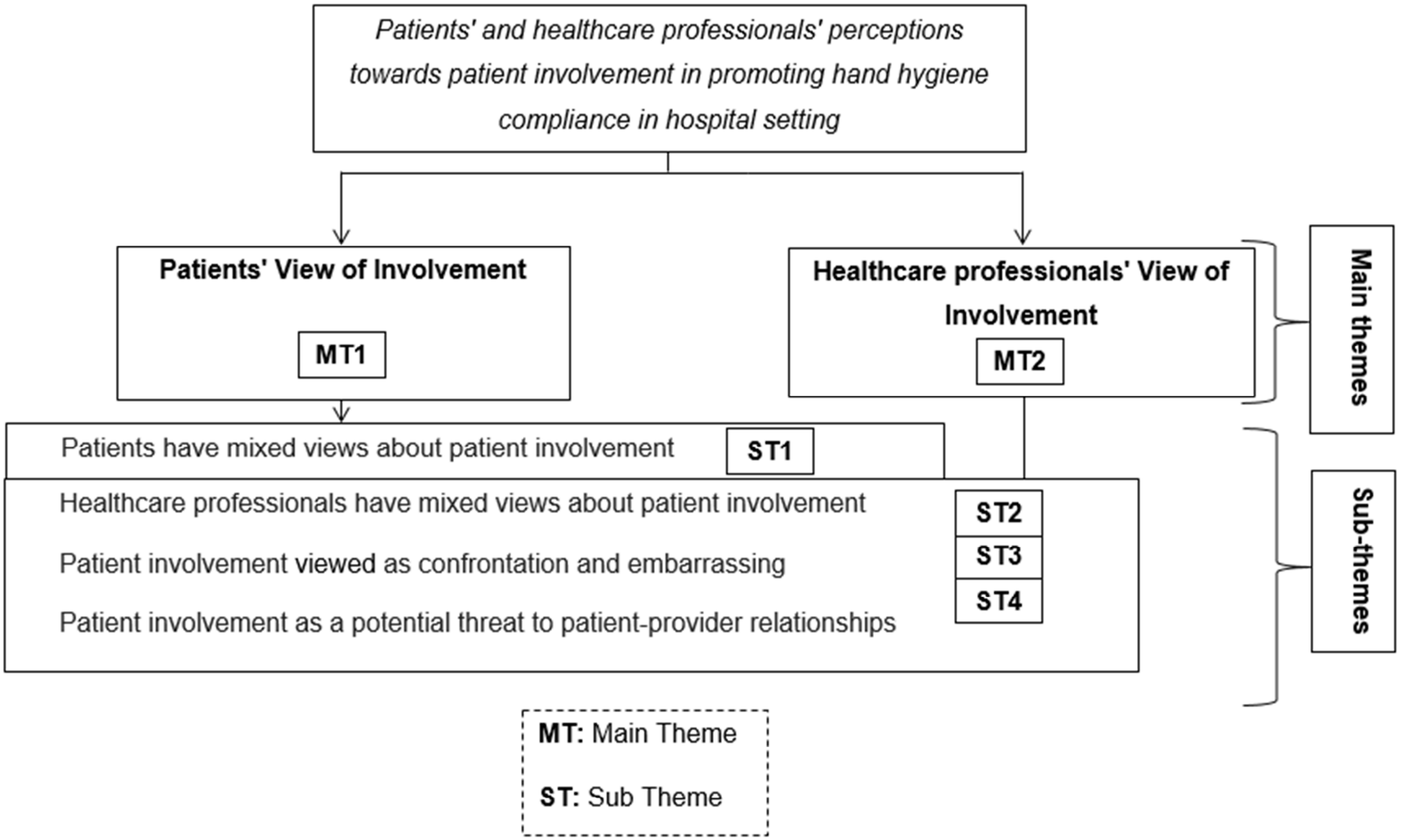


Figure 2.4: Thematic map

2.4. Results of literature search and data evaluation

The first literature search reported 240 hits over eight years. The 240 papers had been published between 1st January 2009 and 31st July 2017, of which 19 papers met the inclusion criteria and were therefore included in this review. The second search identified 386 hits over two years. The 386 papers published between 1st August 2017 and 31st March 2019, of which only four papers were additionally included in this review after consideration of the inclusion criteria. Consequently, the total number of papers that were included in this integrative literature review was 23 papers. As previously explained, articles were retrieved, screened and critically appraised, then presented in a PRISMA flowchart (Figure 2.2).

The papers included in this review have been published internationally and draw on a range of methods. The 23 papers represent data from 3,904 patients, 1,174 families/parents, and 3,706 HCPs. The studies were completed in the UK (n = 5), US (n = 4), Australia (n = 3), Switzerland (n = 2), China (n = 2), Taiwan (n = 2), Spain (n = 1), South Korea (n = 1) and Georgia (n = 1). Further details of these studies based on the country where the study was completed will be discussed in section 2.3.2. Additionally, the studies included in this review adopted different methods of analysis, including cross-sectional survey studies (n = 15), qualitative cross-sectional studies (n = 5), quantitative intervention studies (n = 2), and one RCT (n = 1). The majority of these studies included patients and different HCP groups [nurses and doctors] as research participants (Table 2.7). Further details regarding methodological approaches are discussed in section 2.6.

Table 2.7: Studies' characteristics

Code	Reference	Study participants	Country/setting	Study design/data collection tool
1	Clare *et al.* (2013)	P	US	Cross-sectional survey
2	Davis, Sevdalis and Vincent (2011)	P	UK	Cross-sectional survey
3	Davis *et al.* (2012)	P, N, D	UK	Before and after intervention
4	Davis *et al.* (2014a)	N, D	UK	Cross-sectional survey
5	Garcia-Williams *et al.* (2010)	N, D, MOP	Georgia	Focus group study
6	Kim *et al.* (2015)	P, N, D, FM	South Korea	Cross-sectional survey
7	Lent *et al.* (2009)	P	US	Before and after intervention
8	Longtin *et al.* (2009)	P	Switzerland	Cross-sectional survey
9	Michaelsen *et al.* (2013)	P	US	Cross-sectional survey
10	Pan *et al.* (2013b)	P, N, D, FM	Taiwan	Cross-sectional survey
11	Pittet *et al.* (2011)	P, HCPs, MOP	UK	Telephone survey
12	Schwappach, Frank and Davis (2013)	N, D	Switzerland	Cross-sectional survey
13	Seale *et al.* (2016)	N, HCPs	Australia	Interview
14	Seale *et al.* (2015a)	P	Australia	Randomised control trial
15	Seale *et al.* (2015c)	P	Australia	Interview
16	von Lengerke, Kröning and Lange (2017)	P	Germany	Cross-sectional survey
17	Wu *et al.* (2013)	P, FM	Taiwan	Cross-sectional survey
18	Zhang *et al.* (2012)	P	China	Cross-sectional survey
19	Lastinger *et al.* (2017)	P, D, FM	US	Cross-sectional survey
20	Cheng *et al*. (2017)	P, HCPs	China	Interview
21	Sande-Meijide *et al.* (2019)	P, HCPs	Spain	Cross-sectional survey
22	Sutton, Brewster and Tarrant (2019)	HCPs	UK	Interview
23	Oliveira and Pinto (2018)	HCPs	Brazil	Cross-sectional survey

P: patients, **HCPs:** Healthcare Professionals, **N:** Nurses**, D:** Doctors**, FM:** Family Members**. MOP:** Member of Public

P = 17 studies, **HCPs** = 13 studies, **N** = 7 studies, **D** = 7 studies, **FM** = 4 studies, **MOP** = 2 studies

2.5. Findings from different countries: a country profile

The UK:

The studies completed in the UK identified patients are more inclined to ask nurses, rather than doctors, to wash their hands (Davis, Sevdalis and Vincent, 2011; Pittet *et al.*, 2011; Davis *et al.*, 2012; Davis *et al.*, 2014a; Sutton, Brewster and Tarrant, 2019). Among these studies, patients reported a difference between their perception of how important it was to ask HCPs to wash their hands, and their actual intention to ask about hand hygiene. Patients' intention to ask HCPs to wash their hands increased after patients had been provided with an explicit invitation or authorisation to ask, such as the "It's OK to Ask" campaign (Pittet *et al.*, 2011); and after they had been educated regarding the importance of hand hygiene (Davis *et al.*, 2012). However, whether patients should have a role or not in asking HCPs to wash their hands was explored in a recent study by Sutton, Brewster and Tarrant (2019). In this study, patients considered infection prevention [asking HCPs to wash their hands] to be a responsibility of HCPs, and patients thought they should not be responsible for reducing their own risks of infection or monitoring staff hand-hygiene compliance (Sutton, Brewster and Tarrant, 2019).

The US:

The studies completed in the US reported that knowledge of the name of the HCP increased patient willingness to ask about hand hygiene (Lent *et al.*, 2009; Clare *et al.*, 2013; Michaelsen *et al.*, 2013; Lastinger *et al.*, 2017). Furthermore, US patients reported a greater intention to ask HCPs to wash their hands when they presented a "Thanks for Washing" notice (Lent *et al.*, 2009). Yet there were differences between

patients' willingness to ask HCPs and their actual intention to do so (Clare *et al.*, 2013). A study by Michaelsen *et al*. (2013) reported that the majority of patients who had participated in their study felt that doctors were unaware of their hand-hygiene compliance rate. Patients from another study reported that it was not the patients' role to remind HCPs to wash their hands (Lastinger *et al.*, 2017).

Australia:

The studies completed in Australia explored HCPs and patients knowledge of, and attitudes and receptiveness to, patient involvement in hand hygiene (Seale *et al.*, 2015c; Seale *et al.*, 2015a; Seale *et al*., 2016). The results indicated the presence of some barriers to patient involvement such as lack of hospital support, busy workloads and negative attitudes (Seale *et al.*, 2016). Some patients felt comfortable and happy to ask HCPs to wash their hands, while others reported some concerns (Seale *et al.*, 2015a). For instance, in one study, patients mentioned fear of "causing trouble" or "start[ing] fires", or they reported arguments when patients directly engaged with or confronted clinicians regarding their hand-hygiene behaviours. These issues inhibited patients who might otherwise have asked HCPs to wash their hands (Seale *et al.*, 2015a). Patients were willing to ask a doctor or nurse a question regarding their treatment (for instance, to seek advice on the signs patients should look for in regard to wound healing) rather than a challenging question (have you washed your hands?) (Seale *et al.*, 2015a).

China:

The findings from the studies complete in China reported disparities between patients' willingness and actual intention to ask HCPs to wash their hands during the course of care (Zhang *et al.*, 2012; Cheng *et al.*, 2017). Most HCPs who were

interviewed for these studies supported the idea that patients should be empowered to remind them to wash their hands (98.7%) (Cheng *et al.*, 2017). Similarly, more than half of the patients interviewed for another study in China were willing to remind HCPs about the need for sanitation when unsanitary conditions were observed (68%) (Zhang *et al.*, 2012). Conversely, the majority of patients had never asked HCPs to wash their hands (97.0%) (Cheng *et al.*, 2017). A reason for patients' reluctance to ask HCPs to wash their hands was that most patients thought HCPs had already washed their hands before the examination, and therefore there was no need for a reminder (78%) (Zhang *et al.*, 2012).

Switzerland:

The studies completed in Switzerland reported a variation in patients' willingness to ask different types of HCPs [nurses or doctors] to wash their hands (Longtin *et al.*, 2009; Schwappach, Frank and Davis, 2013). The majority of patients in one study felt uncomfortable about requesting HCPs to wash their hands (76.3%) (Longtin *et al.*, 2009). However, after receiving an explicit invitation from nurses and doctors, the intention of patients to ask nurses increased from 34.0% to 82.5%, and to ask doctors from 29.9% to 77.8% (Longtin *et al.,* 2009). In another study, HCPs reported that patients were more willing to report errors related to their safety, such as to prevent medication errors, than to report HCPs' failure to wash their hands (Schwappach *et al.*, 2013). HCPs reported that they felt at ease with patients who discussed medication errors with them [easy, comfortable, helpful, and less embarrassed] compared with when patients reminded them regarding hand hygiene (Schwappach *et al.*, 2013).

Other countries:

A study from Spain reported that half the patients who took part were willing to remind HCPs to wash their hands (49.9%), but fewer than this actually asked HCPs to wash their hands (31.6%) (Sande-Meijide *et al.*, 2019). The majority of patients from South Korea reported that it was not the patient's responsibility to remind HCPs to wash their hands (72%) (Kim *et al*., 2015). A study among Georgian laypersons [who had previously been hospitalised] reported that participants were willing to ask HCPs about hand hygiene but their willingness would depend on specifics related to hygiene, such as "if the (care) provider scratches his/her head or nose or something" (100%) (Garcia-Williams *et al*., 2010). In the same study, Georgian HCPs stated that their acceptance of a reminder from a patient would depend on "how the patient asks" (58.5%), or "asking at the wrong time while I am very busy, it would irritate me" (55.6%) (Garcia-Williams *et al*., 2010, p. 81). Further, the majority of Georgian nurses who participated in the study said they would feel embarrassed or insulted (75%) if asked by patients to wash their hands (Garcia-Williams *et al*., 2010).

In summary, findings from wide-ranging international studies show that the perception of patients and HCPs regarding patient involvement in hand hygiene varies between countries and from one study to another within the same country. The majority of the studies focused on patients' willingness, intention, and variations between their positive intention to ask and the actual action of asking HCPs to wash their hands. Furthermore, nurses from several countries reported positive attitudes towards patient involvement in hand hygiene compared with doctors. Similarly, patients reported more willingness and intention to ask nurses to wash their hands than to ask doctors.

The next section presents results from the 23 studies included in this review that were based on various methodological characteristics and employed different data-collection techniques.

2.6. Methodological approaches

Most studies included in this review (15/23) adopted either a self-reported questionnaire or a cross-sectional survey as the data-collection method to assess patients' and HCPs' perceptions of patient involvement in hand hygiene. Alongside methodological differences, only five studies used a qualitative approach based on individual interviews (n=4) and focus-group discussions (n=1) to explore the issue (Garcia-Williams *et al.*, 2010; Seale *et al.*, 2015c; Seale *et al.*, 2016; Sutton, Brewster and Tarrant, 2019; Cheng *et al.*, 2017).

Most studies included in this review relied on surveys that were designed by the authors of the studies. The content of these surveys was not presented in the published articles (15/23). None of the studies completed factor analysis on their surveys to identify the reliability and validity of the surveys. Dowrick *et al.* (2015) argue that reliance on non-validated surveys in the population of interest may result in measurement error. Therefore, researchers may draw a conclusion with less confidence due to increased opportunity for measurement bias (Dowrick *et al.*, 2015). In one study, patients and HCPs responded to written scenarios or were asked to select a suitable answer from a list of possible answers (Schwappach *et al.*, 2013). Thus, there was a lack of understanding of how participants would react to patient involvement in hand hygiene in a real-life context. For instance, one study reported that "speak-up behaviours" were not assessed and further studies to address responses to real-life settings were desirable (von Lengerke, Kröning and

Lange, 2016). Additionally, one study reported that measuring participants' intention did not always predict behaviours and patients' true willingness to be involved in hand hygiene (Seale *et al*., 2015b). The authors (Seale *et al*., 2015b) recommended further work based on qualitative and observational studies [using interviews and observations] to understand patients' willingness and behaviour towards asking HCPs to wash their hands.

The use of numerical data provided a clear idea of patients' and HCPs' attitudes, intentions, and willingness concerning patient involvement in hand hygiene. However, exclusive reliance on a quantitative approach is not sufficient to understand the considerations that surround patients and HCPs views, perceptions and experiences concerning patient involvement in hand hygiene. Therefore, there has been a lack of in-depth conversations and discussions with patients and HCPs to fully understand the essence of patient involvement in hand hygiene.

Another methodological consideration is the sample representation. For instance, only a few studies included in this review reported participant characteristics such as the constituents of HCP groups, the gender breakdown, ages, years of experience, patients' underlying conditions, and their history of previous hospitalisation. Further, there was a lack of clarity concerning the correlation between patients' or HCPs' demographics and patient involvement in hand hygiene. Overall, it was not clear whether patients' and HCPs' ages, gender, years of experience or history of hospitalisation affected their perceptions of patient involvement in hand hygiene.

The term "HCPs" was integrated in some studies to reflect the role of medical staff without explanation of which HPC groups were included. It was assumed that all

HCPs would have similar responses to patient involvement in hand hygiene (Pittet *et al*., 2011; Oliveira and Pinto, 2018; Sutton, Brewster and Tarrant, 2019).

In summary, the majority of studies adopted a quantitative stance to assess the willingness and intentions of patients and HCPs towards asking HCPs to wash their hands. There was a notable lack of qualitative and observational studies to explore patient and HCP perceptions towards patient involvement in hand hygiene. To improve understanding of this issue, the next subsection will introduce themes and subthemes that were developed as part of this integrative literature review.

2.7. Main themes and subthemes derived from the data

The following sections offer a detailed presentation of both patients' and HCPs' opinions of patient involvement in hand hygiene. The findings are divided into two Main Themes [MT1 and MT2] and four Sub-Themes [ST1, ST2, ST3 and ST4] as listed below.

(MT1): Patients' views of involvement

(ST1): Patients hold mixed views about patient involvement

(MT2): Healthcare professionals' views of patient involvement in hand hygiene

(ST2): Healthcare professionals hold mixed views about patient involvement

(ST3): Patient involvement viewed as confrontational and embarrassing

(ST4): Patient involvement as a potential threat to the patient-provider relationship

MT1: Patients' views of involvement

This main theme provides information regarding patient involvement in hand hygiene from the perspective of patients. This theme discusses the findings related to hospitalised patients or those within hospital settings. Therefore, patients from primary care or community settings, and family members, parents and laypersons, are not included in the discussion within this theme. Patients' views of involvement in hand hygiene were mixed, as described in the subtheme below.

ST1: Patients hold mixed views about patient involvement

Seventeen studies explored patients' views of involvement in asking HCPs to wash their hands (Table 2.8). These studies explored how patients would react to asking HCPs to wash their hands. These studies reported that patients held mixed views regarding their attitudes, perceptions, and understanding of patient involvement in hand hygiene, and therefore their intentions to ask HCPs to wash their hands. Some patients were willing to remind HCPs to wash their hands (Zhang *et al*., 2012; Pan *et al*., 2013b; Seale *et al*., 2015a; Cheng *et al*., 2017; Michaelsen *et al*., 2013) but many were reluctant to question HCPs' hand hygiene (Longtin *et al*., 2009). It was suggested that patients might be less willing to ask challenging questions, such as "Have you washed your hands?", than to ask factual questions regarding treatment, such as "How long will the pain last?" (Davis *et al*., 2011; Seale *et al*., 2015a). Other reasons for patient reluctance to remind HCPs to wash their hands were wide-ranging and included reasons for increased patient willingness to ask about hand hygiene, and reasons for increased patient intention to ask HCPs about hand hygiene as presented in Table 2.9.

Together, these results provide important insights into patients' views regarding involvement in reminding HCPs to wash their hands. Patients' views of involvement

in hand hygiene varied from one study to another, with wide-ranging reasons offered for their reluctance, intention or willingness to remind HCPs to wash their hands. However, to gain a holistic view and clear understanding of “patient involvement in hand hygiene”, there is a need to explore the perceptions of HCPs when patients remind them to wash their hands. Therefore, the next section explores the ways in which HCPs view patient involvement in hand hygiene.

Table 2.8: Total number of sub-themes reported across the studies

Code	Reference	Patients have mixed views about patient involvement	Healthcare professionals have mixed views about patient involvement	Patient involvement viewed as confrontation and embarrassing	Patient involvement as a potential threat to patient-provider relationships
1	Clare *et al.* (2013)	▯			
2	Davis, Sevdalis and Vincent (2011)	▯			
3	Davis *et al.* (2012)	▯	▯		
4	Davis *et al.* (2014a)		▯	▯	▯
5	Garcia-Williams *et al.* (2010)	▯	▯	▯	
6	Kim *et al.* (2015)	▯	▯		▯
7	Lent et al. (2009)	▯			
8	Longtin *et al.* (2009)	▯			
9	Michaelsen *et al.* (2013)	▯			
10	Pan *et al.* (2013b)		▯	▯	
11	Pittet *et al.* (2011)	▯	▯	▯	▯
12	Schwappach, Frank and Davis (2013)		▯	▯	▯
13	Seale *et al.* (2016)		▯	▯	▯
14	Seale *et al.* (2015a)	▯			
15	Seale *et al.* (2015c)	▯			
16	von Lengerke, Kröning and Lange (2017)	▯			
17	Wu *et al.* (2013)	▯			
18	Zhang *et al.* (2012)	▯			
19	Lastinger *et al.* (2017)	▯	▯	▯	▯
20	Cheng *et al.* (2017)	▯	▯		
21	Sande-Meijide *et al.* (2019)	▯	▯	▯	▯
22	Sutton, Brewster and Tarrant (2019)		▯	▯	▯
23	Oliveira and Pinto (2018)		▯	▯	
	Total number of sub-themes	**17**	**13**	**10**	**8**

Table 2.9: Reasons for patient reluctance to prompt handwashing

	Reason	Reference
Reason for patient reluctance to remind HCPs to wash their hands	Patients do not have a role in hand hygiene, which should always remain the responsibility of HCPs.	(Longtin *et al.*, 2009; Michaelsen *et al.*, 2013; Kim *et al.*, 2015)
	Patients assume and trust that HCPs have already cleaned their hands and therefore the reminder is not needed.	(Pittet *et al.*, 2011; Zhang *et al.*, 2012; Seale *et al.*, 2015a)
	Patients feel disrespectful, embarrassed, shy, awkward or ashamed.	(Longtin *et al.*, 2009; Garcia-Williams *et al.*, 2010; Michaelsen *et al.*, 2013; Seale *et al.*, 2015c; Lastinger *et al.*, 2017; Oliveira and Pinto, 2018; Sande-Meijide *et al.*, 2019; Sutton, Brewster and Tarrant, 2019)
	Patients feel intimidated and/or upset	(Seale *et al.*, 2015c; Lastinger *et al.*, 2017)

	Patients fear causing annoyance to HCPs, and therefore they are uncertain about asking.	(Seale *et al.*, 2015a; Sande-Meijide *et al.*, 2019; Zhang *et al.*, 2012)
	Patients fear reprisals as a result of asking.	(Longtin *et al.*, 2009; Garcia-Williams *et al.*, 2010; Michaelsen *et al.*, 2013; Seale *et al.*, 2015c; Sande-Meijide *et al.*, 2019)
	Patients fear creating conflicts with HCPs.	(Kim *et al.*, 2015; Cheng *et al.*, 2017)
	Patients fear that HCPs will assume that they are questioning the HCPs' professional ability to do their job correctly.	(Pittet *et al.*, 2011)
Reasons for increased patient willingness to ask about hand hygiene	If they know the name of the care provider.	(Clare *et al.*, 2013)
	If they have received an explicit invitation from nurses to ask about hand hygiene or receive encouragement from infection-control nurses.	(Longtin *et al.*, 2009; Cheng *et al.*, 2017)
	If the HCP would appreciate the reminder.	(Wu *et al.*, 2013)
Reasons for increased patient	If they know the name of the HCP.	(Lent *et al.*, 2009; Clare *et al.*, 2013;

intention to ask HCPs about hand hygiene		Michaelsen *et al.*, 2013; Lastinger *et al.*, 2017)
	If they receive encouragement or invitation from nurses or doctors to ask.	(Davis, Sevdalis and Vincent, 2011; Michaelsen *et al.*, 2013; Kim *et al.*, 2015; von Lengerke, Kröning and Lange, 2017; Cheng *et al.*, 2017)
	If they see a picture or poster with a reminder phrase to ask or using a patient empowerment tool.	(Lent *et al.*, 2009; Lastinger *et al.*, 2017)
	If they have a high level of hand-hygiene knowledge and awareness starting from school education, after watching a video, or being given a notice to show that states *Thanks for Washing.*	(von Lengerke, Kröning and Lange, 2017; Davis *et al.*, 2012; Lent *et al.*, 2009)
	If they observe HCPs going to the bathroom and not washing their hands.	(Seale *et al.*, 2015c)
	If they feel that the HCPs would appreciate the reminder.	(Wu *et al.*, 2013)
	If they have a history of previous hospitalisation.	(Garcia-Williams *et al.*, 2010)

MT2: Healthcare professionals' view of patient involvement

This theme reported findings from several studies that explored the views of HCPs regarding being asked by patients to wash their hands. The information included in this theme and its related subthemes was given by two main groups of HCPs: nurses and doctors. Therefore, views from any other HCP groups will not be discussed. Overall, HCPs reported several mixed views with multiple barriers and facilitators to patient involvement in hand hygiene. These views are discussed in subthemes below [ST2, ST3 and ST4].

ST2: Healthcare professionals hold mixed views about patient involvement

Thirteen studies explored HCPs' views of what they thought they might think or feel concerning patient involvement in reminding HCPs to wash their hands. They are illustrated in Table 2.8. The majority of HCPs held mixed views when asked about their attitudes, perceptions, and understanding of patient involvement in hand hygiene. Some HCPs had positive attitudes towards patient involvement in hand hygiene, and were willing to be reminded, and therefore would readily accept reminders to wash their hands (Pan *et al.*, 2013b; Oliveira and Pinto, 2018; Sande-Meijide *et al.*, 2019; Sutton, Brewster and Tarrant, 2019; Cheng *et al.*, 2017). For instance, HCPs reported a perceived benefit when patients reminded them to wash their hands, particularly when they were involved in a hectic and busy situation, and therefore they were more likely to forget (Seale *et al.*, 2016). However, HCPs reported more positive attitudes towards patient involvement in prevention of medication errors (Schwappach, 2010; Davies, 2014) or in helping with health decision-making (Sande-Meijide *et al.*, 2019) than towards being reminded by patients to perform hand hygiene.

HCPs offered several reasons why they might not support patient involvement in hand hygiene. These included patients' lack of knowledge, concerns about legal problems when patients asked them to wash their hands, and the undermining of their authority (Kim *et al*., 2015). Furthermore, HCPs did not want to be judged negatively by patients regarding their actions [such as failure to wash their hands] (Kim *et al*., 2015). Factors that negatively impacted on HCPs' attitudes towards patient involvement in hand hygiene were an increase in the workload, and lack of support from the hospital management (Kim *et al*., 2015; Seale *et al*., 2016). Negative HCP attitudes towards patient involvement in hand hygiene were the leading cause of their negative intentions to accept reminders from patients (Pan *et al*., 2013b). However, this appeared to be dependent also on the way in which the patient asked (Garcia-Williams *et al*., 2010).

A recurrent theme among HCPs was the difference between the views of doctors and nurses regarding patient involvement in hand hygiene. One study reported that 41.8% of doctors and 24.8% of nurses agreed with patient involvement in hand hygiene (Sande-Meijide *et al*., 2019). Similarly, 54.9% of doctors (49/89) felt that patients should be involved in reminding HCPs to wash their hands (Lastinger *et al*., 2017). The most common reason that doctors gave for their lack of support for patient involvement in hand hygiene was the patients' likely lack of knowledge related to hand hygiene. Nursing staff considered patient involvement in hand hygiene as unnecessary because hand hygiene is a usual practice inherent to their work (Sande-Meijide *et al*., 2019). Importantly, Seale *et al*. (2016) argue that nurses should take an active role to facilitate patient involvement in hand hygiene because they spend longer face-to-face time with patients than other HCP groups.

Findings from several studies among HCPs reported various approaches to enhance patients' willingness to ask HCPs to wash their hands (Davis *et al*., 2012; Seale *et al*., 2016; von Lengerke, Kröning and Lange, 2016; Cheng *et al*., 2017). There were some suggestions that institutional support was necessary to increase patient intention to speak up about hand hygiene (von Lengerke, Kröning and Lange, 2016). It was also suggested that use of different forms of reminders such as visual aids or verbal reminders (Cheng *et al*., 2017), a poster or badge was worn by HCPs that stated *Ask Me If I've Washed My Hands* (Seale *et al*., 2016), or watching a video would encourage patient involvement from HCPs' perspectives (Davis *et al*., 2012).

In summary, HCPs reported mixed opinions regarding patient involvement in hand hygiene. These views varied from one study to another and between different HCP groups. These results raise important questions regarding HCPs' perceptions of patient involvement in hand hygiene. For instance, the views of nursing staff showed enhanced willingness to respond positively if patients asked and positive attitudes towards patient involvement in hand hygiene compared with doctors. However, both nurses and doctors reported several concerns related to patient involvement in hand hygiene as discussed in subthemes [ST3 and ST4] below.

ST3: Patient involvement viewed as confrontational and embarrassing

Ten studies reported that HCPs perceived or anticipated patient reminders as confrontational and embarrassing (Table 2.8). Many HCPs reported that they would feel irritated, embarrassed or insulted if patients asked them to wash their hands (Garcia-Williams *et al*., 2010; Seale *et al*., 2016; Lastinger *et al*., 2017) and were concerned that tension could develop as a result of patient involvement in hand hygiene (Pittet *et al*., 2011). HCPs were less willing to engage in safety-related

behaviours that could be perceived as “confrontational” and “challenging” than in “inquiring” behaviours shown by patients (Schwappach *et al*., 2013). For instance, HCPs reported that patients exhibited more favourable attitudes toward patient involvement in prevention of medication errors than in asking about hand hygiene (Schwappach *et al*., 2013). Similarly, HCPs reported unfavourable attitudes towards patient involvement in error prevention, including hand-hygiene reminders, when patients were challenging HCPs’ practice (Davis *et al*., 2014b).

Several other examples of confrontation and embarrassment were reported by HCPs regarding patient involvement in hand hygiene. For instance, HCPs perceived patient involvement as confrontational and a "slap on the face" (Seale *et al*., 2016, p. 266). A study by Pan *et al*. (2013) reported that nurses and doctors would feel ashamed if they were reminded to wash their hands. An example of this is the study carried out by Garcia-Williams *et al*. (2010), in which patients chose the wrong time or asked in the “wrong way” – one nurse described how she had “turned red in the face” after being asked by a patient to perform hand hygiene. Another HCP stated that “Asking at the wrong time while I am very busy, it would irritate me” (Garcia-Williams *et al*., 2010, p. 82). Patient involvement in hand hygiene was described by one nurse as confrontation that patients should avoid “If patients ask HCPs then it would become like an issue, and so you don't want that confrontation” (Sutton, Brewster and Tarrant, 2019, p. 4).

Several other opinions were reported by HCPs in response to the idea of patient involvement in hand hygiene. For example, HCPs felt embarrassed, shy, shocked and uncomfortable with patient involvement in hand hygiene (Pittet *et al*., 2011; Seale *et al*., 2016). HCPs also reported that being asked by a patient to perform

hand hygiene was frustrating, and HCPs interpreted patient involvement as patients questioning their professional ability (Seale *et al*., 2016). HCPs felt degraded, incompetent and annoyed to be asked frequently by patients to wash their hands (Seale *et al*., 2016). A recent study by Sande-Meijide *et al*. (2019) reported that half of the nurses in the study (58%, 68/117) did not support patient involvement in hand hygiene and described this initiative as "unnecessary" (Sande-Meijide *et al*., 2019, p. 49). Similarly, patient involvement in hand hygiene has been described as embarrassing, unnecessary, and not a patient's role (Oliveira and Pinto, 2018).

In summary, there is strong evidence to support claims that HCPs hold negative perceptions of patient involvement in hand hygiene, as the majority of HCPs viewed the notion of patients asking about hand hygiene as confrontational and embarrassing. Nurses and doctors view patient involvement in hand hygiene differently, and therefore their perceptions vary accordingly. Overall, the majority of HCPs felt uncomfortable with patients asking them to wash their hands. Patient involvement in hand hygiene was not only perceived by HCPs as confrontational and embarrassing but also as a threat to the patient-provider relationship, as discussed below.

ST4: Patient involvement as a potential threat to patient-provider relationship

Eight studies reported that HCPs considered patient reminders to represent threats to the patient-HCP relationship (Table 2.8). A common view among HCPs was that patient involvement in hand hygiene would threaten the patient-HCP relationship and cause tension between patients and their care provider. Several studies reported that HCPs perceived patient involvement in hand hygiene to have a negative impact on the therapeutic relationship, and on the mutual trust and respect

between patients and HCPs (Kim *et al*., 2015; Seale *et al*., 2016; Sande-Meijide *et al*., 2019; Sutton, Brewster and Tarrant, 2019). However, there is limited understanding of ways in which patient involvement in hand hygiene could affect the patient-HCP relationship in a working environment in the hospital setting. The aforementioned studies reported different factors that could shape the ways in which patient involvement in hand hygiene could influence the patient-HCP relationship. First, the existence of a disparity between the views of nurses and doctors concerning patient involvement in hand hygiene. Second, how HCPs respond to the patient reminder would determine the impact on the patient-HCP relationship. These two factors are discussed thoroughly below.

Interestingly, not all HCPs [nurses or doctors] felt the same towards the impact of patient involvement on the patient-HCP relationship and how patient prompting of hand hygiene was necessarily disruptive. For instance, nurses who accepted prompts by patients to wash their hands perceived this to have a positive effect on the patient-nurse relationship (Davis *et al*., 2014). Among doctors who supported patient involvement in hand hygiene, the majority cited a positive effect on the patient-doctor relationship as a primary reason for their support (Lastinger *et al*., 2017). The close relationship between doctors and patients in certain cultures leads to the conclusion that doctors have a more positive attitude towards patient involvement than nurses (Sande-Meijide *et al*., 2019). However, in one study, both nurses and doctors reported similar concerns over the threat that patient involvement could cause to the patient-HCP relationship (Sande-Meijide *et al*., 2019).

A primary concern correlated with patient involvement in hand hygiene and its impact on a patient-HCP relationship was the “way” in which patients approach HCPs while

asking about hand hygiene. Sometimes, HCPs responded to patients in a discouraging way which could disrupt the therapeutic patient-HCP relationship, irrespective of whether errors had occurred (Davis *et al*., 2014a). The most important predictor of HCPs' attitudes towards patient involvement in hand hygiene and the impact of this initiative on the patient-HCP relationship was the "way in which an HCP responds to a patient intervening about a potential error" (Davis *et al*., 2014a, p. 17). Schwappach *et al*. (2013) found that HCPs supported patient involvement in hand hygiene if asked in an appropriate way that caused no offence to the HCPs and considered that this could have a positive effect on the therapeutic patient-HCP relationship.

Overall, HCPs disagreed with the notion of patient involvement in hand hygiene due to the negative effect it could have on the patient-HPC relationship. In one study, HCPs reported findings that patient involvement in hand hygiene would damage the trust between doctor and patient, and create conflicts between patients and HCPs (Kim *et al*., 2015). Similarly, HCPs who took part in another study expected that a potential change to the nature of the patient-HCP relationship and undermining of the trust between patient and doctor would be the results of patient involvement in hand hygiene (Sutton, Brewster and Tarrant, 2019). A response from one HCP shows how patient involvement in hand hygiene is perceived in relation to the patient-HCP relationship.

> "I personally see my professional relationship with the patient as that there are two sides to it. So, if a patient asked me if I'd washed my hands, if they asked me if I know what I'm doing, if they asked me any question, obviously, they're asking because they want to know. And I think being open and honest helps build that relationship, that

> professional relationship between myself and the patient" (Davis *et al.*, 2016, p. 265).

To conclude, results from these two subthemes [confrontation/embarrassment, and a potential threat to the patient-provider relationship] show that patient involvement in hand hygiene is complex. HCPs view potential patient involvement in hand hygiene as a confrontational and embarrassing incident which could cause tension and build mistrust between HCPs and patients. However, not all groups of HCPs reacted in the same way to patient involvement in hand hygiene, as most of the studies included in this review reported major differences between nurses' and doctors' views and perceptions. Interestingly, nurses were more in favour of patient involvement in hand hygiene compared with doctors. The next section provides a summary of the main findings of this integrative literature review.

2.8. Summary of the main findings

Taken together, the results of this integrative literature review present evidence from 23 empirical studies on patients' and HCPs' opinions of patient involvement in hand hygiene. They show that HCPs and patients have mixed views when patients remind HPCs to wash their hands. HCPs' mixed views of patient involvement in hand hygiene hinge mainly on their willingness to understand the patients' viewpoint and their attitudes towards being asked. Patients' possible involvement in hand hygiene incorporates mixed views, with wide-ranging reasons for reluctance, their intention when they ask and their willingness to remind HCPs to wash their hands.

There is evidence that the seemingly simple request to ask patients to prompt HCPs to wash their hands is, in reality, far from simple. Some patients and staff are willing to be involved in the promotion of hand-hygiene compliance, but this area is complex

and warrants further study. Although patient involvement in their safety is a promising strategy to enhance hand-hygiene compliance among HCPs, successful implementation requires a deeper understanding of complex factors such as the therapeutic patient-provider relationship, patients' level of understanding and knowledge of their role in any involvement, and HCPs' acceptance of patient involvement. Therefore, to ensure high-quality and sustainable outcomes of any involvement, further collaborative work should be undertaken with patients and HCPs to facilitate the role of patients in prompting HCPs to wash their hands.

In summary, the results of this review provide important insights into the way in which patients ask about hand hygiene, and how HCPs respond to the question. However, patients' and HCPs' mixed views were derived from self-reported surveys, with less attention paid to the actual *experience.* Hence, the actual experiences of patients and HPCs with regard to patients prompting handwashing were not studied. This means that the way in which HCPs and patients experienced patient involvement in hand hygiene is not clear yet from the literature review. There is a lack of understanding of how patients asked and how HCPs responded regarding hand hygiene. For instance, how patients felt about asking nurses to wash their hands, and how nurses responded to the hand hygiene reminder, were two facets that were considered. These insights were the main drive to conduct this PhD study, which aims to understand the *experience* of both patients and HCPs of patient involvement in hand hygiene.

The results of this integrative literature review acknowledge the need for further research on patient involvement in hand hygiene. Several gaps in research were identified. These need to be filled to understand fully the role of patient involvement

in the promotion of hand-hygiene compliance among HCPs in the hospital setting, and are highlighted below.

2.9. Gaps in the literature

The results of this integrative literature review suggest that more work is required in a number of areas. Firstly, patients and HCPs' *experiences* with patient involvement in hand hygiene have yet to be explored fully. Current studies focus on what patients and staff "say they would do"' rather than what happens in practice when patients remind staff, and HCPs receive the reminder. There is a need for further qualitative and observational studies to capture the realities that surround the issue of patients reminding HCPs to wash their hands in the hospital environment. Further research is needed to comprehend the practical understanding of what constitutes patient involvement in hand hygiene. The studies included in this integrative review have provided scenarios and answers to closed-ended questions regarding patients' and HCPs' opinions of patient involvement in hand hygiene. However, more work is required to understand patients' and HCPs' experiences regarding the issue. Additionally, knowledge is needed regarding the experiences of patients who asked or felt they wanted to ask HCPs to wash their hands, but they did not ask.

Secondly, studies included in this integrative literature review examined different aspects of patient involvement in their safety that included hand-hygiene compliance. However, these studies adopted a wide range of outcome measures, which produces difficulties in making comparisons between study findings. The challenge of reliance on quantifiable data provided through self-reported questionnaires and cross-sectional surveys has been outlined previously. There remains a need for

qualitative study of patient involvement in hand hygiene through in-depth discussions and interviews is needed to understand the subject fully.

In summary, conspicuous gaps have been discovered as a result of this integrative literature review in relation to patient involvement in hand hygiene. This PhD study seeks to address these gaps.

2.10. Chapter summary

This chapter presents the review of the literature on the perceptions of patients and HCPs towards patient involvement in the promotion of hand-hygiene compliance in the hospital setting. The chapter has explored patient involvement in hand hygiene from the perspectives of patients and HCPs. The result of this review shows that the seemingly simple request to ask patients to prompt HCPs to wash their hands is, in reality, complicated. Some patients and staff are willing to be involved in the promotion of hand-hygiene compliance, but this area is complex and warrants further study.

It is clear from the studies included in this review as a whole indicate that patients and HCPs have mixed views of involvement, and therefore their roles in patient involvement in hand hygiene are unclear. However, on account of the methodological approaches discussed above, there is a need for contextually specific, qualitative research to understand the experiences of HCPs and patients in reminding HCPs to wash their hands.

In the next chapter, Chapter Three, the methodological approach will be outlined, along with the rationale for the methodological decisions that have been made. The

next chapter identifies and justifies the research methods, including data collection and analytical procedures.

CHAPTER 3: METHODOLOGY AND METHODS

Abstract

This chapter outlines the methodological approach, rationale and philosophical stance, before describing the study methods. This chapter aims to set the scene for the PhD study, which comprises two qualitative studies designed to address the single aim: *To understand the role of patient involvement in the promotion of hand hygiene compliance among nurses in the hospital setting*. In the first study, seven focus group discussions were conducted with 36 nurses to explore their experiences and perceptions when asked by patients to wash their hands. In the second study, telephone interviews were completed with 21 participants who had been patients, to collect critical incidents/happenings which illustrate their experiences of asking nurses to wash their hands. Ethical considerations, including those of institutional ethics approval, informed consent and participant anonymity, are discussed. Finally, to achieve rigour in qualitative research, issues of confirmability, credibility, dependability, transferability and reflexivity are addressed.

3.0 Introduction

This chapter is divided into two main sections: research methodology [Section One], and methods [Section Two]. Section one [3.1] outlines the fundamental perspectives on philosophical underpinnings, provides a rationale for the chosen research methodology, and discusses different research paradigms. This section describes the qualitative research approach and its suitability for this PhD study. Finally, the congruence between qualitative research and interpretivist paradigms are also explained to justify and aid the researcher's decision in determining which approach best suits the research questions or phenomenon which has been identified for exploration.

Section Two [3.2] provides information on the study design, including sampling, setting and recruitment. Furthermore, it provides a detailed account of the data collection and analysis methods for this qualitative study. In the first study, focus group discussions were completed and data analysed using thematic analysis (Braun and Clarke, 2006). In the second study, critical incidents/happenings were collected through telephone interviews and data analysed using the critical incident analysis (Schluter, Seaton and Chaboyer, 2008). This section discusses the decisions made on transcription and translation of data gathered from a country where English is not the first language. Fundamental research issues are addressed, including ethical considerations such as informed consent and institutional ethics approval.

3.1 Section One: Methodology

A research methodology is shaped by a set of philosophical assumptions, which in turn guide the research design process (Hesse-Biber and Leavy, 2011). The following sections discuss philosophical assumptions [3.1.1], different research paradigms [3.1.2], overview of qualitative research [3.1.3], and consider the research methodology used in this qualitative study [3.1.4].

3.1.1 Philosophical underpinnings

Fundamentally, the human ambitions to understand phenomena and make sense of the world, are key factors that lead to establishing different forms of research and inquiry (McEvoy and Richards, 2006). Hence, asking questions about a phenomenon is the means by which researchers come to know, recognise, and understand it (Knapik, 2006). Similarly, Kessler (2013) found that philosophy of mind is needed to understand a phenomenon, as humans start by "wondering and being curious about a 'big' or fundamental human question" (p. 1). For instance, questions about "what is real?" (ontology) and "what is knowable?" (epistemology) are examples of these fundamental human questions (Bruce, Rietze and Lim, 2014, p. 67). Several researchers argue that without explicit formulation and understanding of a research's philosophical underpinnings, there will be a lack of deeper understanding and meaning of what constitutes knowledge, how phenomena should be studied, how research is conducted, and what are the research findings (Weaver and Olson, 2006; Bradshaw, Atkinson and Doody, 2017). Therefore, an explicit and transparent

philosophy that underpins the researcher's methodological choices is recommended (Bradshaw, Atkinson and Doody, 2017). Finally, research's philosophical underpinnings enable and direct researchers to utilise a diversity of approaches to answer the intended research questions. Doyle, Brady and Byrne (2009) suggest that researchers are advised to locate their research in a 'paradigm'.

Positionality "*reflects the position that the researcher has chosen to adopt within a given research study*" (Savin-Baden and Major, 2013 p.71). For this study, the researcher's positionality influences both how the study is conducted and how results are communicated. According to Grix (2019), positionality is identified by locating the researcher in three main areas: (1) the subject under investigation; (2) the research participants, and (3) the study's context or setting. For this study, the researcher provided detailed description and justification of decision made in relation to the chosen topic, the participants [information rich] and the context where experiences happened. For instance, the current study aims to understand experiences from nurses and patients when patients asked nurses to wash their hands within the hospital settings.

Ontologically, the researcher adopted both an insider perspective [emic account] or outsider perspective [etic account] to understand experiences from nurses and patients. Holmes (2020) argue that a researcher "*may inhabit multiple positions while moving back and forth along several axes in relation to the study topic, participants and context*" (p.6). For instance, the insider position in this study facilitated (1) easier access to the experiences being studied; (2) ability to ask meaningful or insightful questions; (3) honest answers from participants who trusted the researcher and provided truthful, authentic or 'thick' description, and (4) better understand the

language, including colloquial language, and non-verbal cues. However, it could be argued that adopting a single position is not desirable. The nurse researcher could be viewed as insider for nurses from Jordan and the UK, insider for nurses from Jordan and outsider for nurses from the UK, outsider for patients and insider for hospitalised staff, and so on. Therefore, it is desirable for the researcher to simultaneously residing in several positions to know and develop a deeper understanding of the participants and phenomenon under study (Holmes, 2020).

It is important to understand what a paradigm is and how researchers can locate themselves within a certain paradigm. Hence, the next section defines the term paradigm, provides a further description of the various research paradigms, and addresses the correlation between philosophical [ontology and epistemology], theoretical [methodology], and design [methods] levels.

3.1.2 Research paradigms

Guba (1990) describes a paradigm or worldview as a "basic set of beliefs that guide action" (p. 17). A research paradigm consists of the ontology, epistemology, axiology, methodology, and method (Scotland, 2012). *Ontology* refers to the nature of existence or of being (Crotty, 1998) and the nature of realities (Creswell, 2013). *Epistemology* is related to the nature, forms, and theories of knowledge (Foster, 1997), and is concerned with "how knowledge is known" (Creswell, 2013, p.20). *Axiology* refers to the ethics and value of what individuals believe is true (Patton, 2015), and where authors position themselves in a study (Creswell, 2013). *Methodology* is concerned with the research approach, and includes decisions about why, what, from where, when, and how to collect and analyse data (Denzin and Lincoln, 2018). *Method* is not only a procedure or a tool to collect and analyse data,

but also a deeper understanding of strategic choices regarding which procedure/technique and sources are appropriate to answer the research question (Mason, 2018). Hence, the choice of a suitable research paradigm depends upon the wide-ranging philosophical assumptions a researcher holds about what is reality; what is the nature of reality; what is the value and the ability to believe in reality; how reality is constructed, and how or by which means to know the reality.

As previously discussed, it is vital for all researchers to understand the paradigm they are using, including the ontological, epistemological and methodological assumptions that underpin their research. This is important to understand "how we know what we know" (Crotty, 1998, p. 10), and to question and apply assumptions in research (Creswell and Poth, 2018). For instance, a researcher's fundamental thoughts about nature [ontology] and knowledge [epistemology], and the connection between them is determined by the selection of a suitable paradigm (Denzin and Lincoln, 2011).

In this study, the ontological stance is the answer to the question "what is the nature of reality?". The researcher believes that the truth is not 'out there' as reality is different from one person to another. Thus, every perspective of reality has a peculiar truth in relation to the following reality and its interpretations. This study strives for in-depth understanding of human phenomena through analysis and interpretation of meaning participants ascribe to events. The ontological position of this study is informed by the views that "no one reality exists but many realities exist" as individuals ascribe their own interpretation and meaning to the phenomenon (Bradshaw, Atkinson and Doody, 2017, p. 2). In this study, the researcher is interested in how patients prompting of handwashing is perceived by both nurses

and patients. It is acknowledged that there will not be one reality in common to all participants, but each will have their own perception, which will contribute to a deeper understanding of the phenomena.

Epistemologically, the answer to the questions "how we know the nature of knowledge? what constitutes knowledge, or where knowledge comes from?". The researcher considers that knowledge is interpreted, and it can be generated through shared language and dialogue with the research participants. For instance, it was anticipated that shared experiences from nurses and patients through individual and group interviews along with the researcher interpretation, could help in providing a better understanding of the study phenomenon through the first-hand experience from participants.

It is challenging for novice researchers, including MSc and PhD students, to justify their research's philosophical underpinnings by stating the differences and similarities between paradigms. A high level of certainty and confidence are required to report and defend the philosophical foundation of any research (Corry *et al*., 2019); the process of reading and understanding how different researchers have articulated their choices of certain research philosophical underpinnings, epistemology, ontology, methodology, and methods can create confusion, because different terminologies are used interchangeably (Decuir-Gunby and Schutz, 2017; Punch, 2016; Bradshaw, Atkinson and Doody, 2017). Pinxten (2015) argues that "the literature on worldviews leaves one with a feeling of uneasiness" (p. 753). Therefore, for this study it was decided to describe and justify the ratification of using *interpretivism* as a worldview, and this paradigm informs this qualitative study. The following section outlines "why" and "how" the interpretivist paradigm was adopted to

meet this PhD study's aim and objectives, and therefore how the choice of this paradigm shaped the data collection and the analysis and the interpretation of the findings.

Interpretivism

Interpretivism is the main research paradigm that underpins this qualitative PhD study, which aims *to understand the role of patient involvement in the promotion of hand hygiene compliance among nurses in the hospital setting*. An interpretive tradition aims to 'make sense of the world' and human behaviour or experiences (Gerrish and Lathlean, 2015). Gerrish and Lathlean (2015) argue that there is no single interpretation, truth or meaning; hence, interpretation of qualitative research seeks to emphasise that human beings are different, according to the societies and cultures in which they live (Gerrish and Lathlean, 2015).

The interpretive approach aims to understand something in its natural context (Holloway and Wheeler, 2010). Thanh and Thanh (2015) state that the interpretivist paradigm often adopts qualitative methods when researchers aim to seek the experiences, understandings, and perceptions of participants. Therefore, the interpretivist paradigm is used to gather 'in-depth' information and 'insights' from the study population and to uncover the participants' perceptions of reality (Thanh and Thanh, 2015). Hence, the researcher gains access to the participants' experiences by asking questions and exploring answers (Smith and Firth, 2011). This is important in qualitative studies, which emphasises the participants' perspective and can be contrasted with quantitative research, which does not take into consideration the participants' perspectives within the context of their lives (Holloway and Wheeler, 2010).

The epistemological stance within the interpretivist paradigm reflects the subjectivity of the researcher (Guba, 1990; Weaver and Olson, 2006), while the relativist ontology reflects lived experience, cultural influence, and meaning while acknowledging the potential for multiple realities (Welford, Murphy and Casey, 2011). The interpretative paradigm reflects *subjective* understanding and the need to interpret it (Thanh and Thanh, 2015). Accordingly, "explanation and understanding" reflect the "researcher's understanding of the subjects own understanding of his or her experience" (Hovorka and Lee, 2010, p. 3). Importantly, inherent within the researcher's understanding is the recognition by the researcher of their own experiences that potentially shape their interpretations (Crotty, 1998; Guba, 1990). Studies within the interpretivist paradigm generally use a qualitative methodology. Qualitative researchers begin their studies with assumptions, interpretive frameworks or a certain worldview that guide their inquiries: "*Like the loom on which fabric is woven, general assumptions and interpretive frameworks hold qualitative research together.*" (Creswell and Poth, p. 79). Unlike in quantitative research, which is focused around the *deductive* testing of a hypothesis [positivism], qualitative studies, such as this PhD study, are *exploratory* and *inductive* in nature.

For this study, a qualitative inductive approach emphasising the existence of multiple truths or multiple realities was adopted. For instance, persons understand reality in different ways that reflect individual perspectives. Hence, qualitative researchers seek to achieve maximum variation when selecting research participants and generating data. Participants are often purposely sought who, have experience of the phenomenon under investigation, and can answer the research question. The reported findings rely on in-depth descriptions that help to explain the topic being studied. The researcher provided interpretations of what participants discussed

during the interviews strengthened and supported by reference to verbatim quotations from participants. Therefore, for this study, the researcher travelled inductively [bottom-up or data to theory] from a world full of experiences and views to explore and interpret the participants' descriptions of experiences, thereby reaching a deeper understanding of the phenomenon under study.

Interpretivism is the central paradigm adopted for this study, which seeks to understand the *experiences* of patients and nurses concerning the involvement of patients in the promotion of hand hygiene. Following the nature of the interpretive paradigm, the researcher adopted two qualitative methods [focus group discussion and interviews] to understand experiences from both patients and nurses. These experiences are *interpreted* through the meaning generated during individual and focus-group interviews. In particular, the emphasis is on how patients experienced asking nurses to wash their hands and how nurses experienced being asked by patients about hand hygiene.

The next section [3.1.3] provides an overview of qualitative research before this discussion moves to a reflection on methodology in this study [3.1.4].

3.1.3 Qualitative research

"Qualitative research is concerned with the *understanding of experiences* and behaviour, and the meanings and interpretations that people attach to these" (Holloway, 2008, p. 3). Qualitative research enables the researcher to explore the breadth and depth of the topic or phenomenon under investigation according to the needs of the study (Holloway, 2008). To achieve breadth, researchers should facilitate the maximum freedom for their participants to express the range, scope, and boundaries of the experience under investigation (Todres and Galvin, 2005),

while depth might be achieved with further exploration of the participants' lived experience (Holloway, 2008). It has been argued that breadth and depth in qualitative research are not correlated with the number of participants or the sample size, but about the focus of the study or the issue under investigation (Davidson *et al.*, 2019). Therefore, depth in qualitative research refers to "the density of contextual information" (Davidson *et al.*, 2019, p. 21).

Qualitative approaches allow researchers to gain insight from the perspective of participants and explore these insiders' views (Holloway and Wheeler, 2010). Qualitative researchers rely on textual (qualitative) data rather than numerical (quantitative) data, and at the analysis stage, making sense of that data is achieved using a textual form rather than figures to understand the meaning of human action (Schwandt, 2001). Thus, qualitative research permits multiple ways to explore the depth, richness, and complexity inherent in phenomena (Borbasi, Jackson and East, 2019). Additionally, qualitative data is characterised as rich and in-depth information obtained when researchers focus their attention to understand the depth of a specific phenomenon/experience (Thomas and Magilvy, 2011). Therefore, in line with the current study's aim and objectives, qualitative research is the most suitable design to help the researcher to understand the experiences and perceptions of participants concerning patient involvement in hand hygiene.

3.1.4 Methodology in this study

The term methodology has come to be used to refer to "the general logic and theoretical perspective" of a research study (Bogdan and Biklen, 2007, p. 35). Methodology refers to "broad inquiry purposes and questions, logic, quality standards that guide the researcher's 'gaze'" (Johnson, J. Onwuegbuzie and A

Turner, 2007, p. 128). Qualitative research concerns with making sense or interpreting phenomena in relation to the meanings that are communicated between the researcher and the research participants (Holloway, 2008; Denzin and Lincoln, 2011). In this thesis, a qualitative methodology was adhered to and the definition of qualitative research by Denzin and Lincoln (2011) is followed:

> "*Qualitative research consists of a set of interpretive, material practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings, and memos to the self. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them.*" (p. 3)

This study is aligned with the general qualitative research. The current study is concerned with understanding what happens when patients prompt nurses to wash their hands. These 'experiences' of nurses' handwashing are an account of what happens in practice. Therefore, this study aims to thoroughly understand these experiences and interactions that happen between nurses and patients. Therefore, the aim of the current study is to provide a rigorous understanding of experiences when patients prompt nurses to wash their hands.

As discussed in the previous section, *experiences* of patients and nurses concerning patient involvement in hand hygiene have not been fully explored. Therefore, the researcher adopted general qualitative approach to understand experiences from nurses and patients concerning patient involvement in hand hygiene. Methodologically, the researcher aimed to carefully and thoroughly capture and describe how participants experience the phenomenon under study—how they perceive it, feel about it, describe it and talk about it with others.

Methodological conclusions

The first section [3.1] has set out the philosophical underpinnings for this qualitative study. Further detail on interpretivist paradigm was provided. The qualitative approach to research was described, with justification of its suitability for this PhD study as a qualitative research provides a robust understanding and in-depth view of participants' experience. For the purpose of this study, the phenomenon under investigation directed the choice of method used for data collection which in turn reflects the interpretivist paradigm upon whose philosophy the project is based.

The following section [3.2] details the chosen methods and their application during concurrent data generation and analysis. The methods chosen for data generation were focus-group discussions and interviews. The next section of this chapter will further explicate these two qualitative data-collection methods, the rationale for their use and their application to this study. Details of the participants, the setting and the application of ethical principles will be provided.

3.2 Section Two: Methods

This study was completed in two countries with different linguistics; Jordan and the UK. The researcher's bilingualism and dual residency helped in developing the study with an international focus. Moreover, one of the expected outcomes of this study was to gain a better understanding of a possible hand hygiene promotion strategy as part of national and international efforts to enhance hand hygiene compliance among healthcare professionals via patient involvement.

This section will introduce the methods used to collect data.

- The first study included seven focus group discussions with nurses from two countries (Jordan and the UK) in which participants (nurses) discussed their experiences with and perceptions about patient involvement in hand hygiene.
- The second study included 21 patients from Jordan who participated in semi-structured telephone interviews that aimed to understand their experiences of patient involvement in hand hygiene through the collection of critical incidents/happenings. The second part of the study was conducted in Jordan, and not in the UK, as the timescale of the project did not allow for the necessary permissions for the researcher to recruit patients in a UK hospital. This is acknowledged as a limitation however service user input in the UK was obtained in order to facilitate understanding of the interviews that were undertaken in Jordan and thereby to gain the perspective of 'patients' in the UK.

3.2.1 Focus group discussions with nurses

Seven focus-group discussions with nurses (n=36) were undertaken with nurses in Jordan and the UK. The aim of this stage was to explore nurses' experiences and views of situations in which patients had asked nurses to wash their hands.

Rationale for focus groups

Williamson and Whittaker (2014) define a focus group as "a group of individuals selected to provide their opinion on a pre-identified subject, facilitated by an individual (*moderator*) who aims to form an open and friendly atmosphere for discussion and promote interactions between participants" (p. 67). Patton *et al.* (2017) describe the focus group as a guided discussion between individuals in a small group, where data is collected by the researcher from an emic perspective

[insider point of view]. The opinion of Patton *et al.* (2017) is that adopting an emic approach enables researchers to gain insight into participants' personal experiences. Similarly, Torrance (2000) reports that an emic approach provides a better understanding of participants, permitting the researcher to *interpret* experiences from the researcher's own perspective. Focus groups allow researchers to observe similarities and differences in the participants' opinions and experiences (Morgan, 1997).

Focus group discussions offered nurses the space to share, describe, and discuss their experiences and perceptions, thereby uncovering convergent and divergent views on patient involvement in hand hygiene. In comparison with interviews and observations, focus-group discussions helped the researcher to *understand* the experiences and perceptions of a group of nurses. This is because focus group discussions were useful to observe discussions between nurses and gain their *aggregated* views as well as how they influence each other in clinical practice. Individual interviews were not suitable for this study, as the research is not only aiming to understand *individual* experiences from nurses. Focus group discussions were helpful in this study because discussions might generate new insight between the participants which they might not have previously considered. Similarly, observations were not useful to understand nurses' experiences and perceptions when patients ask them to wash their hands. This is because direct observation of nurse-patient interaction on a daily basis may rarely include patients asking nurses to wash their hands. Furthermore, the presence of a third party could cause additional stress to patients and staff. Salmon (2015) states that it is challenging during direct observation to avoid the observer effect (Hawthorne effect) – the participants' behaviour may change if they know they are being observed. Therefore,

focus group discussion was perceived as a suitable method to generate and record discussions between nurses on their experiences and perceptions when patients reminded them to wash their hands.

Ethics approvals

The first phase of the study [focus group discussion with nurses] received ethical approval from Oxford Brookes University Research Ethics Committee (UREC) on 29th November 2016 [reference number 161050] (Appendix 3.1). In Jordan, ethical approval was obtained from the Jordanian Ministry of Health on 5th January 2017 [reference number 12748] (Appendix 3.2). In the UK, management approval was issued on 27th April 2017 by the National Health Services, Oxford University Hospitals [reference number 12765] (Appendix 3.3).

Steps followed in completing focus group discussions

To successfully complete focus group discussions, the researcher followed a practical guide developed by Stewart and Shamdasani (2014) (Figure 3.1). Stewart and Shamdasani (2014) guide lists nine steps to complete focus-group discussion. The first seven steps are discussed within this chapter, while the last two steps (writing the report and decision-making and action) will be covered in the following findings in chapter four and the conclusion and recommendations in chapter seven respectively.

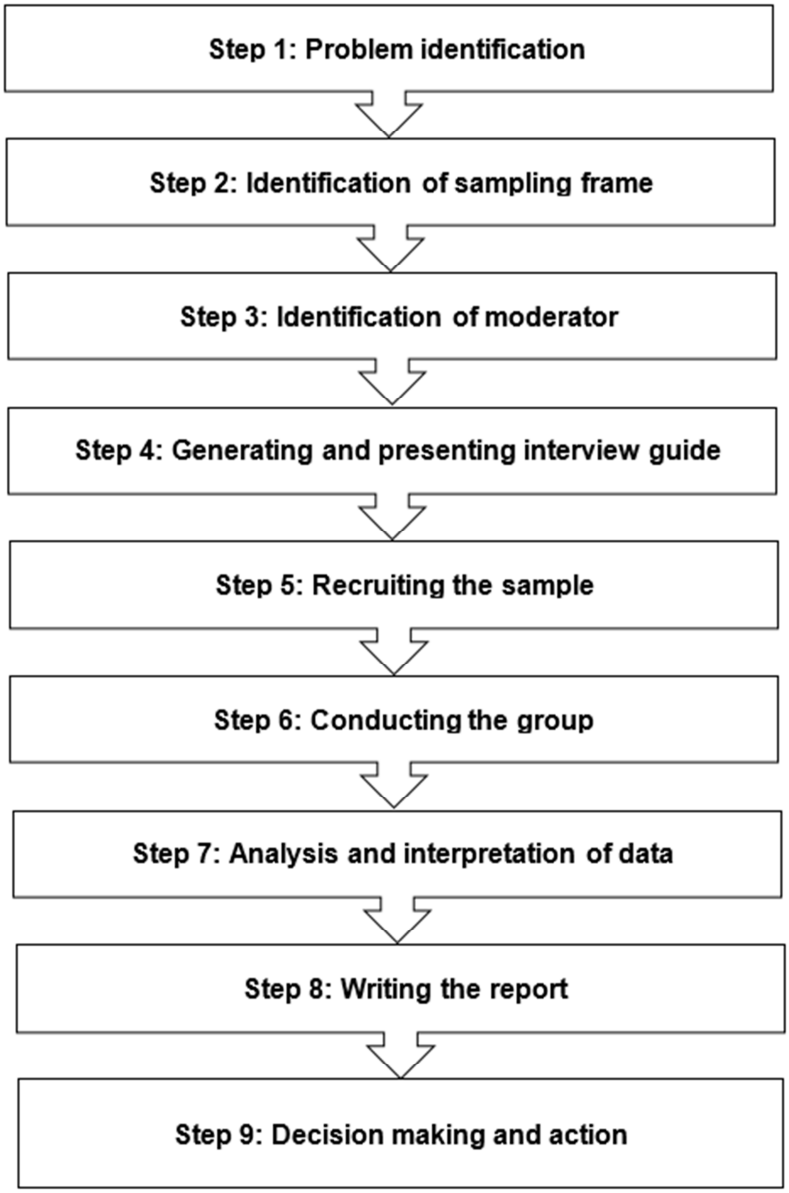


Figure 3.1: The design and use of focus groups by Stewart and Shamdasani (2014).

Step 1: Problem identification

This step has been addressed in the first two chapters of this thesis. The first chapter [Introduction] explained the general focus of this study, while the second chapter [Literature Review] provided an in-depth description of what is known about the topic and what further information is needed to understand patient involvement in hand hygiene.

Step 2: Identification of sampling frame

Purposive sampling was used to include nurses in both countries who were willing to discuss their experiences with patient involvement in the promotion of hand-hygiene compliance. Borbasi, Jackson and East (2019) suggest that researchers tend to search for people who are 'information-rich' – people who have experiences of the issue under investigation and are willing to articulate these experiences. Hence, for the purpose of this study, the sample was identified because nurses were considered as sources of information concerning patient involvement in hand hygiene.

In line with the research aim and objectives, nurses formed the target group from which the researcher aimed to understand the group members' experiences with patient involvement in hand hygiene. The researcher ensured that the nurses' focus groups were heterogeneous. Thus, the recruited participant were nurses who represented male and female genders and were qualified nurses from different hospital departments such as intensive/critical care units, dialysis, medical/surgical wards, maternity and paediatric areas.

The optimum number of focus group participants is often debated, Krueger and Casey (2014) argue that there is no ideal number of participants to include in focus groups, regardless of the area being researched; however, they suggest that a number of participants between four and 12 is suitable for inclusion in a focus group discussion (Krueger and Casey, 2014). Hence, for this study, it was decided that each of the focus groups would include a minimum of four and a maximum of 12 nurses. Further details about the number of participants in each group that took part in the focus-group discussions are provided in Table 3.1.

Table 3.1: Breakdown of the focus group sample.

FG #	Code	Country	# of nurses per group
1	FG1	JO	6
2	FG2	JO	6
3	FG3	JO	6
4	FG4	UK	4
5	FG5	UK	6
6	FG6	UK	4
7	FG7	UK	4
TOTALS	7 focus groups		36 nurses

FG: focus group**; #:** number**; JO:** Jordan**; UK:** United Kingdom

Focus group discussions comprised a total of 36 nurses from two countries, Jordan and the UK. In Jordan, three focus-group discussions were completed with 18 nurses, and these were followed by four group discussions with 18 nurses in the UK.

The inclusion criteria for participation were being a registered nurse, ability to speak, read and understand English [for nurses from the UK] and Arabic [for nurses from Jordan]. Therefore, only registered nurses who worked in hospital settings and in contact with patients were included. There were no explicit exclusion criteria. Any nurse who met the inclusion criteria, and was willing to share his or her experiences and perceptions in an open discussion was included in this study. There were no restrictions on nurses' gender, age, years of experience, or any other demographic characteristics. Hence, participants' demographics are not presented or discussed in this thesis.

Step 3: Identification of moderator

The identification of a moderator is a key factor towards achieving valid and rich insights from focus-group discussions (Stewart and Shamdasani, 2014). According to Holloway (2008), in health research, the researcher may be the facilitator or the moderator of the focus-group discussion. For this study, taking into consideration the researcher's background in nursing and infection control and bilingual ability, the researcher moderated the focus-group discussions in both Jordan and the UK. The aim of the focus groups was that nurses could discuss their views and experiences in a friendly atmosphere without feeling that they are monitored, recorded or supervised by someone in the room. Therefore, a decision was made not to include any external assistance but only the researcher who acted as the facilitator/moderator for the study.

Step 4: Generation and presentation of interview guide

The main aim of the focus-group guide is to direct the discussion (Stewart and Shamdasani, 2014); it aims to set the agenda for the progression of discussion and should emerge from the research aim and question (Stewart and Shamdasani, 2014). Therefore, a focus-group guide was developed by the researcher with the help of the expert research team (the supervisory team). A sample of the discussion guide can be found in Table 3.2.

Table 3.2: Focus-group discussion guide

Initial questions:
Each focus-group discussion started with the opening request: "Can you describe an experience when a patient reminded you to wash your hands?" and "How did you manage the situation?"
Follow-up questions:

“Can you describe the events that preceded patients asking you to wash your hands?” “Can you tell me what your actions were in the event?”

Probing questions (if required):

“What happened next?”

“What did you do next?”

“What were you thinking?”

“What do you mean?”

“How did it affect you?”

“How did it make you feel?”

Step 5: Recruiting the sample

Nurses were invited to participate in this study after receiving an invitation letter (Appendix 3.4) followed by a participant information sheet (Appendix 3.5). These two documents included information that explained the research background, the aim of the study, and why nurses were invited to participate in this study. In Jordan, designated nurses delivered letters to invite staff nurses who met the inclusion criteria and were working clinically at a major government hospital in the country. Invitation letters were delivered to a wide range of hospital units by a third person (anonymously), not the researcher or the nurses’ line managers. These units were intensive/critical care units, medical and surgical wards, maternity and paediatric and renal dialysis unit. After receiving the initial information about the study, the researcher received phone calls and mobile text messages from nurses who were interested in attending the group discussions. Subsequently, a copy of the participants’ information sheet was delivered in a sealed envelope to the interested nurses to their place of work. Other potential participants preferred to receive the

participant information sheet to their emails. The participant information sheet was translated into Arabic and combined with the English version to make sure the Arabic-speaking participants fully understood their rights and the study conditions. The researcher arranged the group discussion with nurses who first made contact and agreed to participate in the study. Therefore, nurses were informed over the phone, via text messages and emails with the interview date, time and venue.

In the UK, increasing research participation is a key agenda within the NHS, but the optimal methods of improving recruitment to clinical research remain elusive (Newington and Metcalfe, 2014). In this study, recruiting nurses from hospitals in England to participate in focus group discussions was more challenging compared to recruitment in Jordan. In the UK nurses worked 12 hour shift patterns, and therefore it was not possible to complete focus groups before or after clinical shifts. Recruitment therefore focussed on nurses who were undertaking post-registration courses at a local university. Recruitment was undertaken in the following ways: First, *flyers on notice boards* as invitation posters were placed on boards located at the Faculty of Health and Life Sciences, as a strategic location for registered nurses who attend their postgraduate courses there (Appendix 3.7). Second, *recruitment via Twitter* - a tweet asking nurses to participate in the study if they were willing to share their experiences and perceptions with patient involvement in hand hygiene (Figure 3.2). Therefore, participants were contacted via direct messages on Twitter to confirm their interest in participating in the focus group discussions.

Figure 3.2: Study recruitment tweet.

Third, UK nurses were recruited via a direct introduction through postgraduate module leaders and postgraduate seminar leaders. Course leaders introduced a group of postgraduate nursing students who were working clinically and undertaking their postgraduate study and critical care courses at the university where the PhD student was registered. Copies of the invitation letter and the participant information sheet were left in the lecture room where nurses would attend their lecture or seminar. Finally, some participants were recruited through other participants - *students or staff contacts and word of mouth*. For instance, some nurses who participated in the study talked to other nursing colleagues at work or university. If potential participants were interested in getting involved, a participant information sheet was sent to them by mail or email so that they could consider their decision and join the study by replying to the email or returning a reply slip.

Step 6: Conducting the group

In Jordan, focus group discussions were conducted where the recruitment and initial contact were made at one of the busiest government hospitals in the country with a 500-bed capacity, in a city that has more than 1,200,000 inhabitants (Qudiesat *et al.*, 2009). The focus group discussions took place in a seminar room that was designed for staff meetings. The room had a round table with comfortable seating, ventilation,

and refreshments. Nurses were invited to sit in a semi-circle arrangement to facilitate discussion flow among participants (Holloway, 2008).

In the UK, registered nurses who were working clinically and also studying part-time, were invited to participate. Some nurses (n = 4) agreed to attend group discussions held in seminar and teaching rooms belonging to the university where the study was completed. Other nurses (n = 14) attended 2 group discussions which were convened at the end of their lectures. A similar atmosphere as for the Jordanian nurses was created. The rooms were large enough to accommodate participants, with a sufficient number of comfortable chairs that were placed in a semi-circle. The focus group discussions in both countries were conducted in a seminar room which was designed for the purpose of staff meetings with a rounded table suitable for group discussions - to facilitate discussion flow (Holloway, 2008). At the back of the room, refreshments were made available for participants before, during, and after the focus group discussion. Each focus-group session lasted for approximately 60 minutes. Before the focus group started, the moderator [the researcher] reminded participants that there were no right, or wrong answers and that any information was welcome, including opposed opinions. Participants from the two countries were asked two main questions at the beginning of the discussion to direct the focus group discussions: *Can you describe an experience when a patient reminded you to wash your hands? And How did you manage the situation?*

The use of open-ended questions allowed and encouraged participants to address and express their perceptions in their own words (Patton *et al.*, 2017). Open-ended questions allowed participants to refer to virtually any aspect of the general stimulus identified in the question (e.g., How do you feel about it) (Stewart and Shamdasani,

2014). Therefore, the researcher gained a detailed, in-depth understanding of nurse's experiences and perceptions of instances where the patient became involved in the promotion of hand-hygiene compliance.

After the completion of the focus groups in Jordan, participants were invited to attend a festive dinner at one of the local restaurants in Amman (the state of Jordan); this is customary in Jordan as a way of thanking people for participation in a research project, and this was regarded as a reward for their time. In the UK, a voucher of £10 was granted to participants who attend the focus group discussion as reward for their time.

Step 7: Analysis and interpretation of data

Transcribing and translating data from different countries:

In Jordan, focus group discussions were completed and moderated by the researcher. This was considered appropriate as the researcher has experience of working with nurses and patients in a governmental hospital in Jordan. Focus group discussions were completed in Arabic and then transcribed by the researcher into written Arabic, which enabled the researcher to remain close to the data as possible. Arabic transcripts were translated into English by a professional translator who has experience in working with patients and healthcare professionals in Jordan. A random selection of three pages from each of the three group discussions was back-translated into written Arabic by a professional bilingual translator. The researcher's involvement in data verification through reading, re-reading, and comparing the meaning with the original audio recordings helped the researcher to achieve a better understanding of nurses' experiences and perceptions. Therefore, the researcher's

involvement at different stages while completing focus group discussions helped to ensure that meaning was not lost during the translation and back-translation.

In the UK, the focus group discussions were completed in English. The focus group discussions were moderated by the researcher, who is fluent in English and has worked with patients and nurses in England. Focus group discussions were audio-recorded and transcribed verbatim.

One of the challenges of this PhD was managing the data from two different countries and this was an area explored in-depth in paper subsequently published in a peer-reviewed journal (Alzyood *et al.*, 2020) and an oral conference presentation (Alzyood *et al.,* 2019). In order to explore this in-depth, a discussion session was held at the Royal College of Nursing research conference in September 2019, at which the collection, transcription and analysis of data from different countries were debated (Alzyood *et al.*, 2019). Those in attendance expressed agreement with the approach undertaken in this research. The published paper discussed the complex issues surrounding the use of focus group data from countries with linguistic differences including translation, analysis and presentation (See appendix 3.17). The researcher's experience reaffirms the desirability of having a bilingual lead researcher. As a research team, it was felt that having a bilingual researcher enabled the study achieved maximum consistency in the facilitation of the focus groups, while the potential for misinterpreting the focus group data was minimal. The use of illustrations (Figures 3.4) helped the researcher in reporting an open, transparent processes of transcription, translation and the back-translation of data which may have ensured that the meaning of the participants' discussions was not lost in transcription or translation. Similarly, drawing a map of steps followed by the

researcher helped in providing detailed information on translation which may have enhanced the credibility and auditability of research findings. An illustration of the process of data transcription, translation, and the role [level of involvement] of the researcher can be found in Figure 3.3.

After completing the process of transcription, translation, back-translation, and verification, the data from both countries were combined and treated as one data set. The reasons for this are three-fold: 1) the strong similarity between the codes and themes shared between nurses from Jordan and the UK when asked the same questions during the group discussions; 2) there was no intention to compare data sets; 3) the absence of argument in the literature to suggest that the data from different countries should be presented separately (Alzyood *et al*., 2020).

Data were uploaded into NVivo11© software to facilitate data management and the coding process for later analyses. Not only computerised-□ assisted data management but also manual data handling was useful as it helped the researcher to remain close to the data while focusing on the research aim. It has also been argued that using NVivo11© software could help to improve the accuracy of qualitative studies (Jackson and Bazeley, 2019). In line with the data management and analysis, the researcher used NVivo11© as a tool to organise data and create themes (nodes). The creation of codes, themes, and sub-themes was possible using thematic analysis (Braun and Clarke, 2006). Further details about thematic data analysis are discussed in the subsection below.

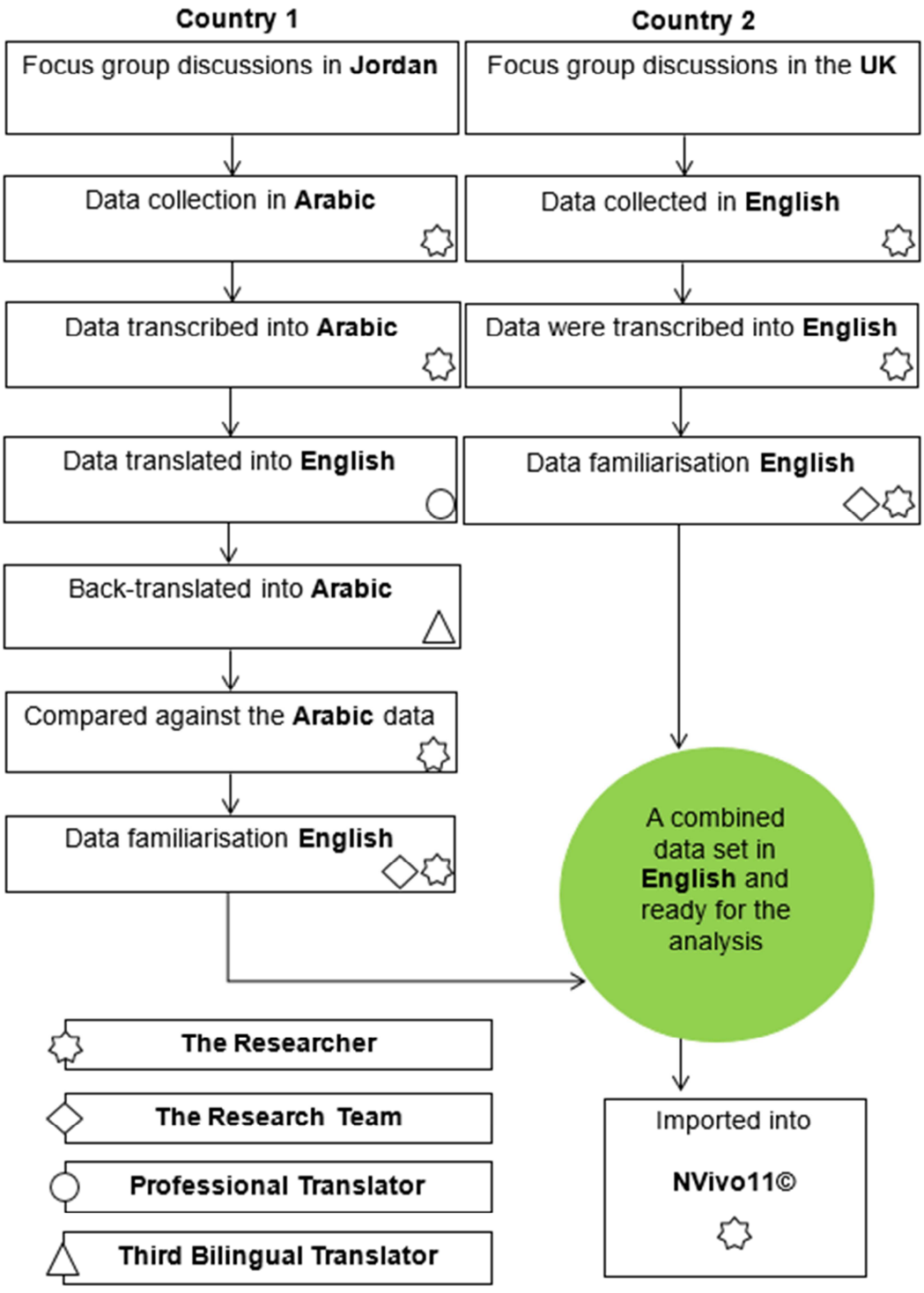


Figure 3.3: Transcribing and translating data from two countries

Coffey and Atkinson (1996) refer to qualitative data analysis as processes of “coding, indexing, sorting, retrieving, or otherwise manipulating data” as well as the “imaginative work of interpretation” (p. 6). Therefore, qualitative data analysis of the focus group data following the six steps of thematic analysis – developed by Braun and Clarke (2006) – was used for the study and will be discussed below. Thematic analysis has been used in the analysis of other focus group data (Nakopoulou, Papaharitou and Hatzichristou, 2009; Taneichi and Rokkaku, 2020; Tsang *et al.*, 2019). Figure 3.4 illustrates the steps followed to analyse data from focus group discussions with the nurses.

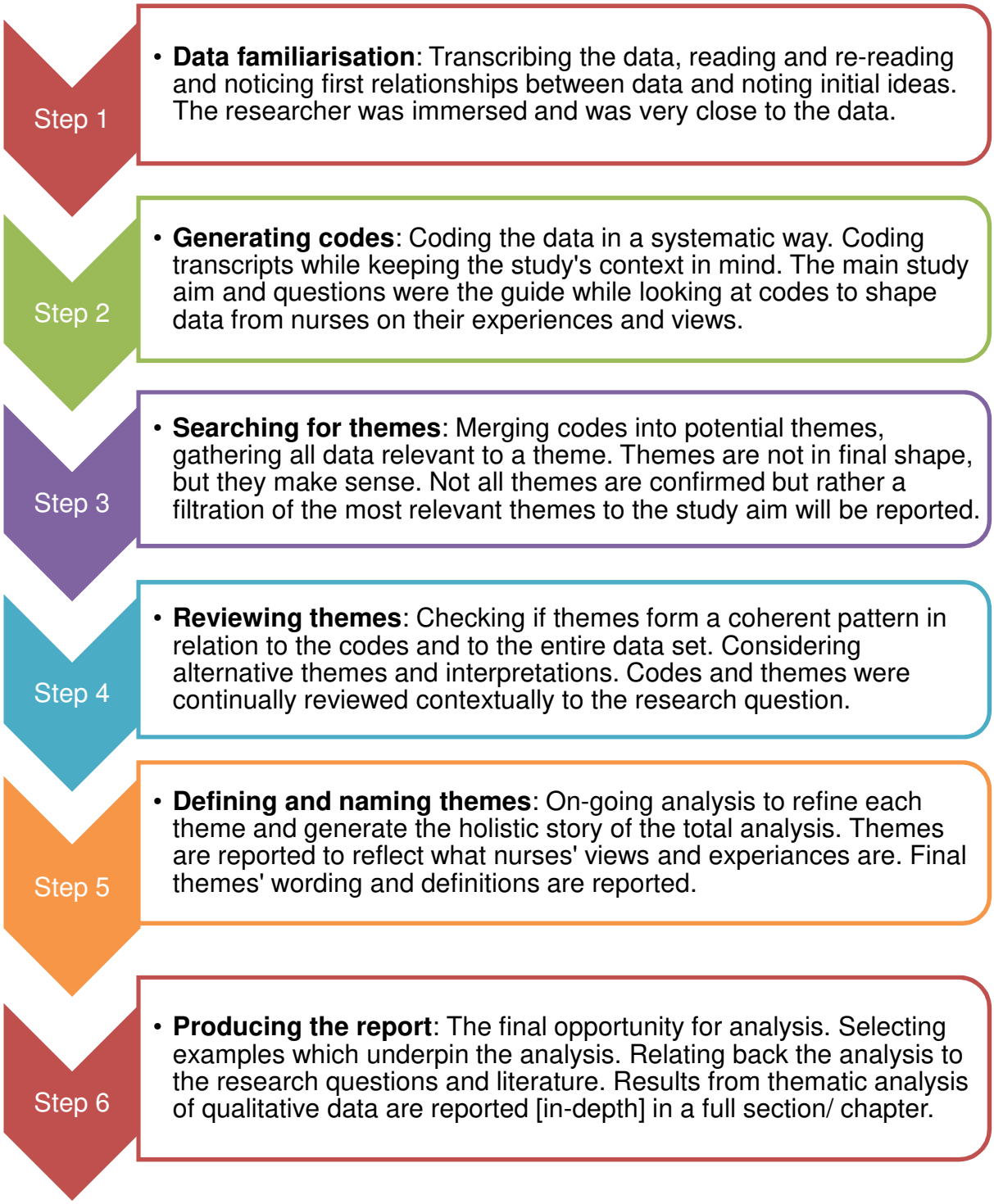


Figure 3.4: Six steps of thematic analysis, developed from Braun and Clarke (2006).

For step one [*data familiarisation*], the researcher transcribed verbatim each group discussion, which enabled familiarisation with the data. Notes of interesting points were created after a repeated process of reading and re-reading the data from nurses in the two countries. The researcher was immersed in the data after completing each focus-group transcription as noted in his personal reflective diary. Similar experiences were reported from other nurse researchers who used reflective diaries to facilitate data familiarisation and their understanding therefore analysis of qualitative data (Houghton *et al.*, 2013; Glaze, 2002; Thorne, 2000). Consequently, the researcher noticed relationships between data and noted initial ideas to enable the next level of analysis.

In the second step [*generating codes*], the researcher coded the full transcripts by identifying as many themes/patterns as possible while keeping the study's context and prime aim in mind. There were two main coding strategies: manual coding (pen and paper) and computer-assessed coding (NVivo11© computer software).

In step three [*searching for themes*], identification of codes across transcripts from both countries helped the researcher to group similar codes together, which provided a draft of possible themes [shared patterns]. In step four [*reviewing themes*], the researcher first reviewed all themes against the data underneath each theme to ensure that the theme reflected the nature of the data to which it belonged. Another level of reviewing themes was completed with the supervision team to ensure that themes truly reflected what nurses from both countries reported. In step five [*defining and naming themes*], the researcher defined, named, and confirmed the final shape of themes and their relevant data. Each theme was defined to reflect the meaning(s) included in this theme in line with the study aim.

The final step [*producing the report*], reflects the outcomes or output of the data analysis phase and presents the findings of thematic analysis.

Interpretation of data:

In line with the study aim to understand nurses' experiences and perceptions with patient involvement in hand hygiene, this PhD study consolidates data from two countries into one account of nurses' experiences and perceptions. As described in the previous section, data from nurses in both countries were amalgamated as one dataset. Furthermore, and in line with thematic analysis that was used concurrently to fully understand the phenomena of interest, themes were synthesised to support the findings and the researcher interpretations (Sandelowski and Barroso, 2002). Finally, connections between the identified abstracted themes were made and are presented in the findings chapter [Chapter Four].

Ethics considerations

This section discusses the four fundamental principles of ethics in health research and practice including autonomy, non-maleficence, beneficence and justice (Page, 2012). Autonomy has been defined as "*the capacity to think, decide, and act on the basis of a freely made decision*" (Gillon, 1985, p.1806). In the context of research, informed consent is a form of participant's autonomy that embraces "*an explicit agreement by participants to take part in the research after receiving and comprehending information concerning the nature of the research*" (Hewitt, 2007, p.1152). The principles of beneficence and nonmaleficence involve an obligation to provide benefits for participants and to balance such benefits against risks (Beauchamp and Childress, 2013). The principles of beneficence and nonmaleficence require the researcher not to cause any harm and remove existing

or possible sources of harm to participants (Morton and Fontaine, 2018). Finally, justice refers to the equitable distribution of social benefits (Beauchamp and Childress, 2013). In the context of research, justice means offering research participants a fair and equitable distribution of burdens and benefits (Townsend, Cox and Li, 2010). In this study, justice was ensured as all nurses were able to voluntarily and confidentially participate. For instance, nurses who participated in this study described their participation as *beneficial* as it has helped them to acquiescently communicate with patients concerning prompting handwashing. Further details on the application of the four fundamental principles of ethics in this study are discussed below.

Informed consent:

In the UK, nurses who were working clinically and studying a postgraduate course were informed that participation in this study was confidential and completely voluntary and participation or withdrawal from the study would not influence their work. Nurses who were studying their masters and Adult Intensive Care Practice courses at Oxford Brookes University were informed that participation or withdrawal from the study would not influence their academic progress. Participants from both countries were informed that interviews were to be audio-recorded using an MP3 device, and consent was gained to do this as indicated on the consent form (Appendix 3.6).

Anonymity and confidentiality:

Participants were informed that their anonymity and confidentiality were maintained as described during the process of obtaining consent. The nurses who participated were informed that their anonymity would be protected, and all information would

remain confidential. Transcripts of interviews were numbered and anonymised to protect individual identities. Similarly, to protect confidentiality, written information about participants and interview transcripts were stored in a locked cupboard. Furthermore, confidentiality of data, including that confidentiality of information provided by participants during the focus group discussions was subject to legal limitations as confidentiality of any information provided can only be protected within the limitations of the law. Nurses were informed of their right to withdraw at any time of the study, and that only unprocessed data (their voice memo from the records) would be withdrawn from the study. Finally, to protect nurses' identity, a combination of letters and number were used to refer to the source of information [direct quotation]. For instance, to prevent individual identification, FG1-P5 refers to nurse number five from the first focus group. Again, in line with the study aim, and to present data from nurses in one place, no codes were used referring to the country's name.

Data protection:

Data from nurses were stored on password-protected computer belonging to the university where the study was completed. A copy of anonymised data was stored to the University Google Drive account, which was protected by a username and password.

Reporting malpractice and minimising the risk of harm:

As discussed in the ethics application that was completed before this study started, a set of processes were established to report and feedback on interactions between patients and nurses when patients observed non-compliance with optimal hand hygiene practices among nurses. As a nurse researcher, I considered raising

concerns or reporting malpractice to the responsible staff member, including the head nurse and the infection prevention and control agent. I discussed these issues with the head of the continuing education department at the hospital where the interviews were completed in Jordan. During the discussion, this person acknowledged that more work was needed to enhance the monitoring of hand hygiene compliance and minimise the risk of harm to patients in hospitals in Jordan. The discussion included other aspects of nursing and infection control on the nurses' hand hygiene behaviours, nursing understaffing and limited resources. Therefore, I ensured that none of the nurses I interviewed was individually addressed or traced back by not mentioning any names or information that could result in the identification of any nurse who participated in the group discussions. The aim of the discussion with the head of the continuing education and other infection control agents was to stress how important is the continuous education and raising awareness on hand hygiene practices for patient safety. Finally, I agreed to share the study findings after the completion of this PhD study in a form of journal publication.

To conclude, this subsection provides details of the method used to collect data from nurses, focus-group discussions, and steps that were followed to complete focus-group discussions in two different countries, including data collection, management and analysis. The following subsection [3.2.2] presents the data-collection method [interviews] used to collect data from patients, to collect critical incidents/happenings data.

3.2.2 Interviews with patients

In this second study, semi-structured telephone interviews were completed with 21 patients who had a recent hospital admission in Jordan. The aim of this stage was to understand patients' experiences, by collecting incidents using Flanagan' critical incident technique (1954) to collect data, when asking nurses to wash their hands. This section includes several subsections that present ethical considerations including relevant issues of ethical conduct and consent; the steps followed in completing the critical incident technique (Flanagan, 1954): the steps followed in the design of this study, including sampling and inclusion criteria; telephone interviews as a method of data collection; the setting and participants recruitment; the process of data transcription and translation; and data analysis by critical incident analysis.

Rationale for critical-incident technique

The critical-incident technique has been described by Sharoff (2008) as a "practical and efficient methodology that encourages participants to tell their story; with *happenings* that are memorable events in the participants' lives" (p. 304). Norman *et al*. (1992) argues that "critical incidents need not always be demarcated scenes with a clear beginning and end, but may arise from respondents summarising their overall experience within their description of one incident" (p. 950). Participants are asked to provide descriptions of situations, either positive or negative, that they perceive as significant to the aim of the study (Flanagan, 1954). According to the critical incident technique research tradition, participants share their experiences in a story-telling form to the researcher (Sharoff, 2008).

The critical-incident technique guided the process of data collection during the semi-structured telephone interviews to collect data from patients on their experiences

when they asked, or they felt they wanted to ask but they did not ask nurses to wash their hands. Flanagan (1954) states that critical-incident technique is a procedure for gathering information concerning individuals' behaviour in a defined situation. For instance, critical incident technique was used in nursing research to understand experiences or perceptions of aspects of best and worst practice to understand dimensions of interactions between patients and nurses in clinical settings (Byrne, 2001). More recently, Butler (2018) studied nurses' experiences of managing patient deterioration following a post-operation education programme.

Considering the previous discussion and for the aim of this study, the critical incident technique was appropriate as it enables the researcher to obtain descriptions of patients' individual experiences of a certain incident/happening [asked or intended to ask nurses to wash their hands]. Hence, critical incidents/happenings were defined as any self-reported patient activity that was obtained from the participant who, during a hospital stay, had requested or intended to request nurses to wash their hands.

Ethics approvals

Ethical approval was obtained from the university where the PhD study was completed. The second study [interviews with patients] received ethical approval from the Research Ethics Committee at the Faculty of Health and Life Sciences - Oxford Brookes University on 2nd November 2017 [reference number FREC 2017/11] (Appendix 3.8). In Jordan, ethical approval was obtained from the Scientific Research Ethics Committee at the Jordanian Ministry of Health on 1st July 2018 [reference number MoH REC 180085] (Appendix 3.9).

Steps followed to complete critical incident technique

To complete critical-incident technique, Flanagan (1954) proposes that five main stages are followed.

Stage one: formulation of the general aim of the activity

Performance of the work described in the previous two introductory chapters (Introduction and Literature Review) helped the researcher to gain better understanding of the research problem and to decide why there was a need to understand patients' experiences in asking nurses to wash their hands.

Stage two: setting plans and specifications

The second stage in the critical-incident technique procedure involves "deciding who should be the respondents, which situations should be studied, and which activities should be noted" (Norman *et al.* 1992, p. 592). In line with the critical incident approach, identifying suitable participants for the study required patients with experience of either asking or explicitly not asking nurses to wash their hands when in fact they wanted to. To determine the types of incidents or happenings to be collected, the researcher aimed to ascertain specific and accurate patients' accounts of behaviour related to asking or the intention to asking nurses to perform hand hygiene.

For the purpose of this study, the terminology "critical happenings" suggested by Norman *et al*. (1992) was defined as self-reported patient activity and obtained from any patient who, during a hospital stay, had requested or intended to request nurses to wash their hands. Normal *et al*. (1992) suggest that critical happenings terminology is adopted when "respondents appear to recount what actually happened as they saw it, and what they said was clearly important to them" (p. 590).

The researcher indicated similar conclusion and suggested that patients' description of one incident/happening is amalgam of incidents/happenings of similar type rather than a recalled single event. Normal *et al*. (1992) argue that "it is reasonable to accept that the critical happenings identified by patients are 'valid' by virtue of the fact that they are clearly important to them" (p. 596). For instance, when patients described their experiences of asking nurses to wash their hands, they discussed several valid points to them, including why they asked, what prompted them to ask, how they asked, and how the nurse responded to the handwashing reminder. This description identified by the researcher as several "critical happenings" that may be related to a single critical incident. This kind of incident incorporates typical happenings that are derived from an incident (Normal *et al*., 1992). Norman *et al.* (1992) reported that the most meaningful data would be collected when participants were allowed to recount the activities surrounding the event. For instance, what was happening before, during, and after asking nurses to wash their hands, rather than through clearly demarcated incidents with a beginning and end. The researcher adopted the term "critical happenings" from Norman *et al.* (1992) to reflect on the events surrounding patients asking nurses to wash their hands. Therefore, it was decided that more appropriate units are the "critical happenings" revealed by the incident. Hence, the researcher decided to call incidents collected from patients concerning asking nurses to wash their hands as critical happenings (Normal *et al*., 1992) but not critical incidents (Flanagan, 1954).

Participant recruitment:

Designated nurses from both hospitals delivered the study packs to all patients on discharge. A designated clinic administrator delivered the information pack to

potential participants when they checked-in to the clinic. If any patient was interested, they were invited to call the researcher directly using the contact details on the participant information sheet (Appendix 3.11). Patients were given enough time [24 to 72 h] to read the study information and ask questions if they had any.

Stage three: collecting the information

For the purpose of this study, the semi-structured telephone interview method was adopted by the researcher to collect data from patients. Interview is one of the most frequently used method to collect qualitative data (Burnard, 1994) and was regarded as the most effective approach to collect data using the critical incidents technique (Butterfield *et al*., 2005). There were several reasons why the researcher adopted interviews as a qualitative data collection method and why nurse researchers chose this method to collect data from patients concerning their experiences. For instance, participants provide spontaneous, rich, specific, and relevant descriptions of their experiences (Austin and Sutton, 2014). The researcher was able to follow up and thereby encouraged patients to clarify the meanings of their descriptions when necessary. The use of interviews helped the researcher to collect detailed first-hand account of experiences from patients concerning prompting nurses to wash their hands.

There were several reasons why telephone interviews were adopted, including (a) the high reachability [larger geographical access] (Vogl, 2013); (b) allowing respondents to feel relaxed and able to disclose information on a sensitive subject without embarrassment (Chapple, 1999); and (c) increased response rates (Chapple, 1999). Finally, there is a lack of evidence to suggest that telephone interviews produce lower quality data compared to face-to-face or individual

interviews (Novick, 2008; Smith, 2005). Hence, telephone interviews were adopted by the researcher to collect data from patients on their experiences concerning asking nurses to wash their hands.

There are other reasons why, for this study, semi-structured telephone interviews were appropriate to collect data. One reason was the fact patient involvement in hand hygiene is viewed as a challenge to authority and it was anticipated that asking nurses to wash their hands was a relatively uncommon practice. Therefore, patients might not feel comfortable discussing or sharing their experiences in individual (face-to-face) interviews or in group discussions. Similarly, since patient involvement in hand hygiene was likely to be a rare occurrence, observation was unsuited to collecting data from patients during their course of treatment in a hospital setting. In comparison with individual interviews and observations, semi-structured telephone interviews helped the researcher to collect detailed descriptions of patients' experiences.

Sampling and inclusion criteria:

The sample size of a critical incident study should be based on the number of critical incidents rather than the number of participants (Flanagan, 1954). The unit of analysis in critical-incident technique is the number of incidents/happenings rather than how many participants were recruited (Schluter, Seaton and Chaboyer, 2008). The number of incidents/happenings is determined by the complexity of the research question, and the quality of the data is ascertained (Schluter, Seaton and Chaboyer, 2008). Andersson and Nilsson (1964) claim that collection of data regarding more than 100 incidents is recommended to achieve adequate analysis. Schluter, Seaton and Chaboyer (2008) recommend that data for no fewer than 50 incidents should be

collected. Similarly, Butterfield *et al.* (2005) report that there is no set rule regarding how many participants or incidents are sufficient. In line with qualitative research, the sample size in critical incident technique does not reflect the volume of data generated (Bradbury-Jones and Tranter, 2008). Hence, the researcher was more concerned with the number of incidents/happenings recalled by patients in each incident they prompted nurses to wash their hands.

For the purpose of this study, 21 semi-structured telephone interviews were completed. A total number of 116 happenings were reported from 21 patients. A purposive sampling technique was used to ensure that participants were relevant to the study's aim and research question (Bryman, 2016). The purposive sampling technique does not require underlying theories or a set number of participants, as the researchers decide what needs to be known and start recruiting individuals who are willing to provide information by virtue of knowledge or experience (Bernard, 2011). Purposive sampling is often used in qualitative research to identify and select the information-rich participants (Patton, 2015). Creswell and Plano Clark (2017) argue that purposive sampling involves identification and selection of individuals or groups who are proficient and well-informed with a phenomenon under study. Therefore, it was made clear that only patients who had experience asking or they felt they wanted to ask but they did not ask nurses to wash their hands were included in the interviews.

The invitation was open to all those who had hospital experience asking or intended to ask nurses to perform hand hygiene (Appendix 3.10). The incident could have happened at any hospital setting and happened during care [while receiving hospital care] in the last 5 years. All participants were patients over the age of 18 years old

and were willing to share and articulate their experiences on patient involvement in hand hygiene. Patients were included if they are willing to commit to a 30 to 60 min telephone interview. Further details on the setting and how participants were recruited are discussed in the following section.

The setting:

Patients who agreed to participate had experiences of asking or wanted to ask nurses to wash their hands in one of the largest government hospital under the umbrella of the Ministry of Health in Jordan, where they had received care. Interviews were completed over the telephone when patients were at home and were scheduled at a time of the participant's choice. Therefore, none of the telephone calls occurred in a hospital setting.

Interview processes:

The guide to semi-structured interviews developed by (Whiting, 2008) was adopted by the researcher to prepare and complete the telephone interviews with patients. The guide includes seven steps which are illustrated in Figure 3.5 below. Further details regarding these steps and how they were implemented to complete interviews with patients are discussed next.

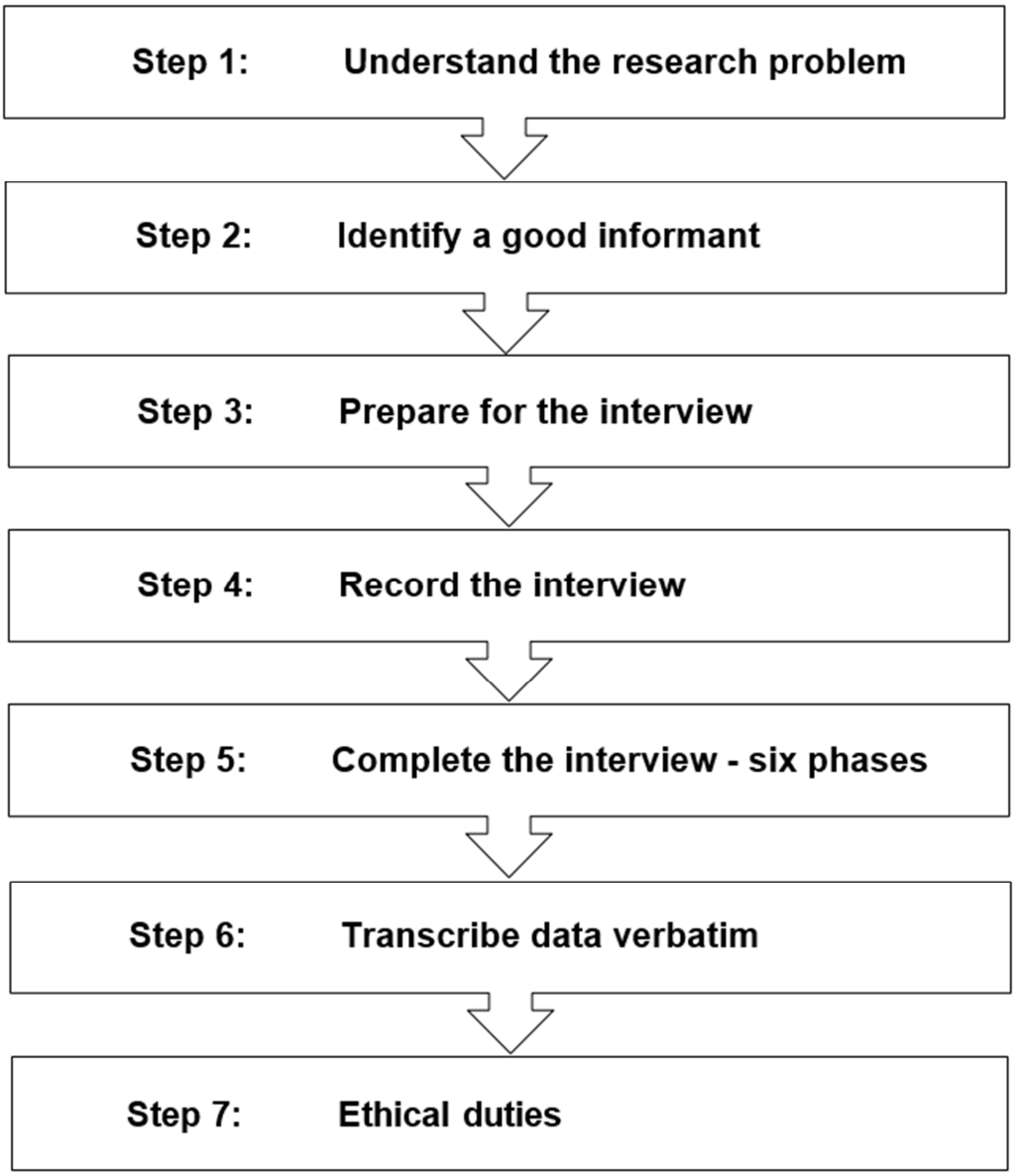


Figure 3.5: Steps to complete semi-structured interviews, Whiting (2008).

The first [*understand the research problem*] and the second [*identify a "good informant"*] steps were discussed previously in the first two stages of the critical incident technique. For the third step [*prepare for the interview*], the researcher adopted a checklist from Rose (1994), which identified practical preparations and areas to be clarified in semi-structured interviews. These were:

(a) the purpose of the interview;
(b) clarification of the topic under study;

(c) the interview's format;
(d) the estimated length of the interview;
(e) assurance of confidentiality;
(f) permission to audio record;
(g) assure participants that they could ask for clarifications of questions;
(h) assure participants that they could decline to answer a question, and
(i) assure participants they had time to ask questions or seek clarifications.

For step four [*record the interview*], all interviews were audio-recorded using MP3 technology. The recordings lasted between 30 and 60 minutes. Notes were also taken by the researcher while conducting the telephone interviews. This step was ensured using a reflective diary which helped the researcher to develop the necessary interview skills and maintain effective communication skills by noting areas for further improvement in each interview.

As part of step four, the researcher developed a set of open-ended questions followed by a group of sub-questions or prompts (Creswell and Creswell, 2018). Semi-structured interviews were performed based on an interview guide (Table 3.3). The questions were constructed by the research team [MA, JB, HA], all of whom have considerable research and clinical experience working with patients and nurses, HA & DJ and JB have had experience in the use and implementation of the critical incident technique.

Table 3.3: Semi-structured interview guide

Initial Questions: Each interview started with the opening request: "Can you describe a situation where you asked a nurse to wash hands, or an experience when you wanted to ask a nurse to wash hands, but did not?"

Follow-up questions:

“Can you describe the events that preceded you asking (or not asking) the nurse?”

“Can you tell me what your actions were in the event?”

“Did you draw upon any previous knowledge asking nurses to wash their hands?”

“What might support you asking nurses to wash their hands in the future?”

Probing Questions (if required):

What happened next?

What did you do next?

What were you thinking?

What do you mean?

How did it affect you?

How did it make you feel?

Step five [*complete the interview*] included six phases: *building rapport; apprehension phase; exploration phase; co-operative phase; participation phase* and *concluding the interview* (Whiting, 2008). Detailed description of how these phases were carried out is provided in Appendix 3.13.

The guide to semi-structured telephone interviews developed from Whiting (2008) included two final steps: step six [*transcribe data verbatim*] and step seven [*ethical duties*]. For step six [*transcribing and translating data*], the researcher completed the semi-structured telephone interviews in Arabic as all participants were native speakers of Arabic. Jordan is Arabic majority speaking country; therefore, Arabic would be the most suitable language for patients to articulate their experiences with asking nurses to wash their hands. The choice of Arabic language also helped the researcher with data familiarisation. Interviews were transcribed verbatim into written Arabic and then translated into English by a professional bilingual translator. A

random selection of three pages was back-translated into Arabic by a third bilingual translator. The researcher verified the back-translation with the original data in Arabic. A different translator from the one that completed translation of data from nurses [3.2.1] was recruited to avoid introducing any bias into the transcription and back-translation processes. Figure 3.6 illustrates the process of data transcription and translation of data from Jordan.

The figure below illustrates how the researcher played a major role and maintained a high level of involvement with the data during the process of data transcription and translation. Hence, the researcher's involvement was vital to achieving an enhanced understanding of data and to ensure that meanings were not lost in translation and back translation. Finally, to ensure maximum level of collaboration across the research team, English data were read and discussed in multiple meetings before, during, and after completing the data analysis. Further details about the process of data analysis and interpretation of the findings are discussed next [steps four and five of critical incident technique].

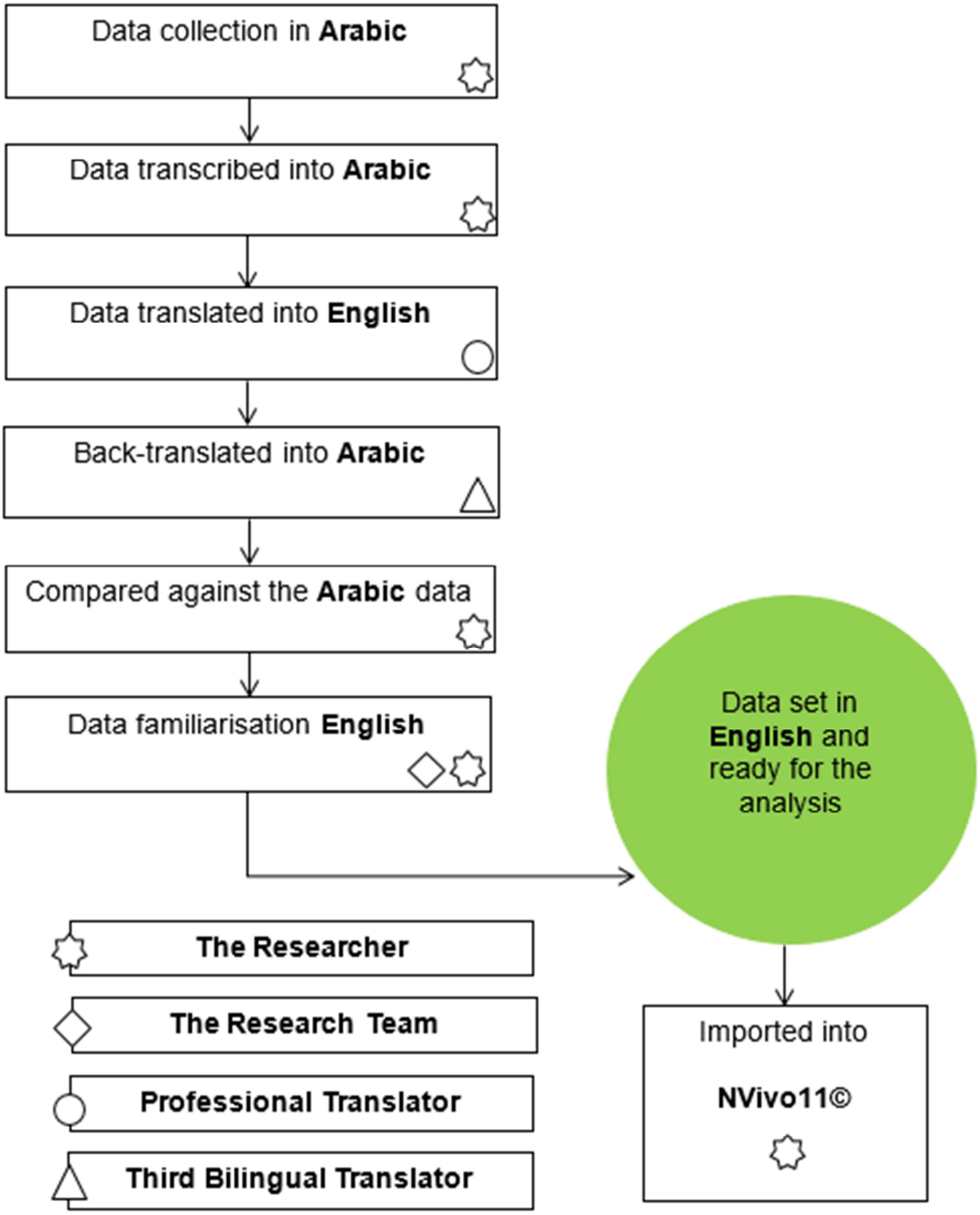


Figure 3.6: Transcribing and translating data gathered from Jordan.

Stage four: analysis of the data

In critical-incident technique studies, "analysis usually takes the form of inductive classification of the information and the construction of a hierarchy of categories, which enables the information to be described at increasing levels of specificity" (Norman *et al*., 1992, p. 594). Therefore, inductive analysis, as in other qualitative studies, is the approach followed to analyse data of a critical incident technique study. Norman *et al*. (1992) argue that formulation of categories is completed by sorting the incidents/happenings into clusters that seem to group or fit together. This view was confirmed later by Bradbury-Jones, Sambrook and Irvine (2007), who stated that inductive classification required the construction of a hierarchy of categories by sorting incidents into clusters that seemed to 'fit' together. It was also argued that the development of categories and sub-categories was an iterative process that included work on the categorisation system until the researcher achieved an intuitive sense of 'rightness' (Woolsey, 1986; Norman *et al*., 1992).

For the purpose of this study, the researcher adopted a similar approach to complete the critical-incident analysis for the patient interviews. First, the analysis process started at an early stage while data collection was in process. Thus, a *contact summary sheet* was completed immediately after each interview to assist in beginning the analysis. This sheet summarised salient points noted during the telephone interviews, including any patients' feelings which could help in the analysis. These contact summary sheets helped in planning for the next interview and facilitated reorientation when returning to transcripts at the analysis stage (Miles *et al*., 1994). The contact summary sheet included some private information about

patients, including their names and telephone numbers, which were kept confidential and stapled along with their transcripts (Appendix 3.14).

The guide to complete critical incident technique analysis includes a process of inductive analysis using *two levels of interpretation* (Schluter, Seaton and Chaboyer, 2008). The first level included reading and re-reading transcripts individually to identify codes or shared patterns. The process of iterative reading (Polit and Beck, 2004) enabled the researcher to discover consistencies and inconsistencies in the data and emerging themes to develop. Furthermore, repeated reading of the transcripts ensured that the researcher remained close to the text (Schluter, Seaton and Chaboyer, 2008). The second level of interpretation included a comparison of individual texts between transcripts to develop themes (Polit and Beck, 2004). Categories were continuously reinterpreted in light of information that emerged as further transcripts were added (Schluter, Seaton and Chaboyer, 2008). Hence, development of coding categories and subcategories (Flanagan, 1954) allowed the researcher to organise the data to help in further analysis.

Schluter, Seaton and Chaboyer (2008) argued that *reporting the context* of incidents was a vital step to complete the analysis of data in critical-incident technique. Thus, during the interview phase, notes were made concerning the context that surrounded the events in critical incidents. The context influenced the incident, as it provided clues regarding why patients made their decisions [asking or not asking nurses to wash their hands]. For instance, “patients who wanted to ask nurses to wash their hands while receiving care at the emergency department as nurses were busy dealing with a major traffic accident that had just arrived”. The contexts that

surrounded the events are described in detail in the findings chapter [Chapter Five: Results from patients' interviews].

Service user involvement in the data analysis

The researcher invited members of a patient and public involvement (PPI) group in Oxford UK to assist in the process of analysis of qualitative critical incident data. This enhanced the researcher's understanding of the data/incidents. A group of service users from the UK volunteered to discuss the data from patients in Jordan. The PPI group (n = 4) were invited (Appendix 3.15) voluntarily to read a random sample of transcripts of patients' narratives on their experiences of asking or not asking nurses to wash their hands. The discussion lasted for an hour under the supervision of a senior member of the research team with the help of a PhD colleague to make notes. Service users were invited to read transcripts (n = 10) which were distributed one week before the meeting date. The PPI group gave their views of the data gathered from patients in Jordan. A PPI group was previously used by Jennings *et al.* (2018) to involve PPI co-researchers in collaborative analysis of qualitative data. Brett *et al.* (2012) has also argued that a PPI group can help to inform researchers regarding the best way to develop "user‐friendly information" and a "consumer‐focused interpretation of data", which could enhance implementation and dissemination of study results (p. 8). Hence, for the purpose of this PhD, the views of service users from the UK helped the researcher to understand better the experiences of patients from Jordan as they provided insightful views about asking nurses to wash their hands.

Stage five: interpreting and reporting the findings

This study shares detailed accounts of patients' experiences when they asked, or they wanted to ask nurses to wash their hands. Additionally, the analysis has explored the context [surrounding events] in which patients asked nurses to wash their hands and what happened before, during, and after asking. Consequently, and in line with critical-incident technique, findings are presented in a form of categories and sub-categories concerning patient involvement in the promotion of hand-hygiene compliance among nurses. Finally, categorisation of data is presented in Chapter Five [findings from patients' interviews].

Reporting and presenting the findings were informed by the study aim to provide thorough understanding of the experiences of nurses and patients when patients prompt hygiene in the hospital setting. Hence, collated discussion of views and experiences from the perspective of both nurses and patients in one chapter was advisable to provide a holistic understanding of the phenomena under study. Therefore, after the completion of data analysis from the first study [focus group discussions with nurses] and the second study [interviews with patients], a decision was made to collate and discuss the findings from nurses and patients in one chapter [See Discussion Chapter 6].

Ethical considerations

The guide to semi-structured telephone interviews developed from Whiting (2008) included final step: step seven [*ethical duties*]. For step seven, the four fundamental principles of ethics in health research and practice including autonomy, non-maleficence, beneficence and justice were considered (Page, 2012). Further details on the application of the four fundamental principles of ethics in this study are discussed below.

Informed consent:

Informed and voluntary consent was obtained from all patients who agreed to participate in telephone interviews. Consent forms included information to confirm patients' willingness and acknowledgement to audio record interviews. Patients were informed that they had the right to withdraw at any time of the study, and that only unprocessed data (their voice memo from the records) would be withdrawn from the study. Informed consent forms contained a written checklist for participants to confirm that they had been fully informed and a space for their signature at the bottom (Appendix 3.12). Informed consent was obtained by providing patients with a verbal explanation and a written information sheet to take away. To ensure a better understanding of the invitation to participate, a copy of the participants' information sheet for Jordanian patients was translated into the national language (Arabic). Consequently, consent occurred at the time of interview, once participants had considered the participant information sheet and opt-out. Therefore, verbal consents were obtained from participants, as the researcher signed the participant information sheet on the participant's behalf.

Anonymity and confidentiality:

Patients were informed that their anonymity and confidentiality would be maintained as described during the process of obtaining consent. Patients were informed that their anonymity would be protected, and all information would remain confidential. Transcripts of interviews were numbered and anonymised to protect individual identities. Additionally, patients were informed that participation in this study is confidential and completely voluntary. Finally, to protect the patients' identity, a combination of letters and number were used to identify the source of information

[direct quotation]. For instance, to prevent individual identification, ‘P5’ refers to participant number five.

Data protection:

Data from patients were stored on a password-protected computer belonging to the university where the study was completed. Similarly, to protect confidentiality, written information about participants and interview transcripts were stored in a locked cupboard. A copy of the anonymised data was stored on the University Google Drive account, which was protected by a username and password.

Reporting malpractice and minimising the risk of harm:

As part of the ethical approval processes for this study, a set of processes to report and feedback on interactions between patients and nurses when patients asked nurses to wash their hands were established. The majority of incidents/happenings when patients asked nurses to wash their hands happened in the past 5 years. Therefore, none of the participants was interviewed while receiving in-patient care at the hospital. However, the researcher was eager to ensure no harm to participants. For instance, there was the possibility that the research could reveal poor clinical practice. In dealing with poor clinical practice related to non-compliance with hand hygiene, the researcher provided feedback to the clinical management environment so that they were able to address any significant issues or staff training might be needed. Participants were encouraged to contact the Patient Advice and Liaison Service (PALS) at the Jordanian Ministry of Health and contact information were included with the participant information sheets. Finally, the researcher is eager to ensure that findings from this study would inform nursing practice in Jordan. Hence, the published findings of this study will be shared and discussed with chief nurses

and infection prevention and control managers at the hospital where the study was completed.

3.2.3 Rigour in qualitative research

Austin and Sutton (2014) state that "when undertaken in a rigorous manner, qualitative research provides unique opportunities for expanding our understanding of the social and clinical world that we inhabit" (p. 439). However, there is a need to defuse the myths that qualitative research is easy to complete, subjective, unscientific and, therefore, unreliable. To maintain rigour, the quality of qualitative research cannot be judged comparatively with quantitative research [validity and reliability] (Houghton *et al.*, 2013). It has been argued that the issue of rigour in qualitative research needs to match the philosophical underpinnings, methodology and methods of the study (Silverman, 2017). For the purpose of this PhD study, the researcher ensured that the research process was transparent, including reporting the aim, methods and decisions that were taken while undertaking this study.

Rigour is defined as "criteria for the trustworthiness of data collection, analysis, and interpretation" (Prion and Adamson, 2014, p. 107). Rigour in qualitative research is concerned with trustworthiness, authenticity, transferability, and validity (Holloway and Wheeler, 2010). Therefore, terms such as trustworthiness and authenticity are used as a replacement for the positivist views of internal and external validity in quantitative research (Denzin and Lincoln, 2011). Guba and Lincoln (1982) proposed that "internal validity should be replaced by that of **credibility**; external validity by **transferability**; reliability by **dependability**; and objectivity by **confirmability**" (p. 3-4). There are different measures used to assess the rigour of qualitative research, but those named by Guba and Lincoln are the most commonly employed. These

stringent criterion are described later by Forero *et al.* (2018) as “the four-dimensions criteria” to determine rigour in qualitative research. Additionally, Jootun, McGhee and Marland (2009) argues that the concept of **reflexivity** has matured in conjunction with developments in qualitative research to increase the rigour of the research process. Therefore, the application and demonstration of the processes of rigour of the current study, comprising confirmability, credibility, dependability, transferability and reflexivity, are addressed below.

Rigour in qualitative research is established through the study’s **confirmability** – or auditability (Lincoln and Guba, 1985; Sandelowski, 1986; Speziale, Streubert and Carpenter, 2011). Simply put, confirmability is the neutrality, accuracy, and presentation of the data (Lincoln and Guba, 1985); further, Borbasi, Jackson, and East (2019) support the view that auditability is concerned with making sufficient information available about the research to enable another researcher to repeat the study. Confirmability or auditability requires the absence of researcher bias and assumption or a clear delineation of the researcher’s perspective (Prion and Adamson, 2014) through reflexivity. Lincoln and Guba (1985) correctly argue that findings are auditable when another researcher can follow the steps used by the investigator in the study: auditability is achievable when the researcher leaves a clear trail of the decisions taken in the study from the beginning to the end (Sandelowski, 1993).

In line with this, the researcher ensured confirmability by providing enough details in the study to enable methods and findings to be confirmed or corroborated. To maintain confirmability, several processes were put in place to minimise the researcher’s bias, including a complete set of notes on decisions made during the

research process through regular supervision meetings, reflective thoughts, and adoption of research materials.

The researcher produced a research diary that documented challenges and issues, which helped to maintain cohesion between the study's aim, design and methods. This has also helped in demonstrating a clarity in terms of thought processes during data management, analysis and interpretations of the findings. The researcher reported the research process and findings in an open approach where assumptions and thoughts could be challenged. Consequently, emerging themes were discussed with members of the supervision team who had expertise in qualitative research and wide-ranging practical nursing experience. Finally, the researcher established an audit trail, as described later in the section on *dependability.*

Credibility is defined as the truthfulness and subsequent interpretation of the data (Prion and Adamson, 2014, p. 107). Lincoln and Guba (1985) define credibility as the value and believability of the research findings. Agar (1986) suggested that to fit the qualitative view, terms such as credibility, the accuracy of representation, and authority of the writer could replace the reliability and validity. Polkinghorne (2005) concludes that qualitative research is credible or valid when the meanings of the study findings as reported by participants and the meanings interpreted by the researcher are as adjacent as possible.

In this study, credibility was ensured to evaluate the truth value - the confidence that could be placed in the research findings. The researcher built and maintained rapport with research participants before and during interviews, and developed a trusting relationship with peers and research participants by showing a willingness to cooperate and exchange information. The researcher shared participants' responses

with supervisory team to comment on whether the final themes and concepts that had been created adequately reflected the phenomena being investigated. To ensure credibility, the researcher was debriefed by supervisory team at different stages of the research process, from early stages of the study design to the interpretation of the findings. The debriefing included feedback from postgraduate tutors at Oxford Brookes University during the annual progress monitoring interviews. Postgraduate tutors were not members of the supervision team or directly involved in the research project, which has helped the researcher to improve the quality of the inquiry findings. Postgraduate tutors acted as a "critical friend" (Giancola, 2020) who provided an extra set of eyes and a fresh perspective to comment on the study design, data analysis and interpretation of the findings. Debriefing also included a discussion of the research process and findings with doctoral students who were undertaking other qualitative studies by interviewing nurses and patients. The previously discussed measures to ensure credibility also helped to ensure dependability, as explained below.

Dependability is often likened to the concept of reliability in quantitative research and refers to how stable the data is (Tobin and Begley, 2004; Lincoln and Guba, 1985). Borbasi, Jackson and East (2019). Borbasi *et al*. (2019) argue that, when the data recorded matches what occurred, it can be considered as dependable. In the same vein, Forero *et al.* (2018) state that dependability is ratified by the consistency or reliability of qualitative research. However, Prion and Adamson (2014) claim that dependability refers to auditability and describes the ease with which other researchers can follow the original researcher's decision-making process during the study and reach similar conclusions. 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) use the term *auditable* to describe how other researchers might follow the decision trail used by the investigator in the study. Consequently, a clear audit trail could enhance both the dependability and confirmability of the project (Lincoln and Guba, 1985).

To maintain dependability in this study, the researcher provided a thorough description of the research methodology and methods. For instance, the researcher implemented an audit trail, which involved an examination of the inquiry process [data collection] and product [findings] to validate the data. Audit trails of decisions included detailed accounts of changes that occurred within the study and how stable the data were. Furthermore, the researcher included detailed accounts of any changes to the data over time and any alterations made in his own decisions during the analysis process to avoid any risk of inconsistency. For instance, to maintain consistency and therefore, dependability, the researcher asked the same questions of all the participants. An example of reporting a decision was described previously concerning data transcription and translation of data from two countries.

Transferability occurs when the findings of the study fit with the context outside the study situation (Borbasi, Jackson and East, 2019). Lincoln and Guba (1985) refer to this concept as part of external validity, and as an aspect of applicability. Polit (1999) defines transferability as “the extent to which the findings can be transferred to other settings or groups” (p. 717). To facilitate transferability, researchers are required to submit a clear and distinct description of culture and context, selection and characteristics of participants, data collection, and process of analysis (Graneheim and Lundman, 2004). However, it has been argued that a rich and vigorous

presentation of the findings, with appropriate quotations, could enhance transferability (Graneheim and Lundman, 2004). Bradshaw, Atkinson and Doody (2017) reported four means of supporting transferability in the qualitative description approach in health care research: purposeful sampling; maintaining a reflexive journal; providing sufficient study details so repetition or replication could occur; and rich description.

To ensure transferability in this study, the researcher compiled a thorough description of the research methodology and methods so that repetition or replication could occur. The researcher provided detailed descriptions of sample characteristics, the setting, the inclusion/exclusion criteria, and data collection and analysis methods, which could enable readers to assess whether the findings were transferable to other settings or contexts or not. For instance, a theoretical approach of purposeful sampling was followed, that is, a detailed description of the enquiry was drawn up and participants were selected purposively. The researcher also described the context in which the incidents/happenings took place so that behaviour and experiences would be meaningful to the reader. Finally, this thesis included a statement to make clear whether the research findings could be transferred to other settings, situations or populations.

In addition to the four criteria of transferability, confirmability, dependability and dependability, the concept of reflexivity is also important. **Reflexivity** is a continuous self-critique, and self-appraisal aims to explain how the researcher's experience influenced different stages of the research process (Koch and Harrington, 1998). In line with interpretivism, qualitative research can be highly interpretive, which puts nurse researchers at higher risk of cognitive bias "apophenia" (Buetow, 2019).

Therefore, reflexivity helps qualitative researchers to "position themselves in qualitative research" (Creswell, 2013, p. 47) and reflect on their consciousness of biases, values, and experiences (Creswell, 2013).

It has been argued that reflexivity was previously employed to separate the research process from the researcher, but has evolved as a process to reflect on the researcher's influence on the research process (Jootun, McGhee and Marland, 2009). Similarly, other researchers view reflexivity as a continual internal dialogue and critical self-evaluation of the researcher's positionality in relation to the research process, analytic stance, and outcome (Bradbury-Jones, 2007; Berger, 2015). Finlay (2002) argues that reflexivity in qualitative research improves transparency in the researcher's subjective role during the process of data collection and analysis. However, Darawsheh and Stanley (2014) argue that reflexivity is a "contested and underused term" (p. 567), and that there is a lack of consensus concerning its meaning and application to the maintenance of rigour in qualitative research studies. Moreover, Dowling (2006) argues that the term reflexivity in nursing research is "poorly described and elusive" (p. 7).

Reflexivity in this study was applied by recording detailed accounts of ongoing processes, thoughts, hunches, emergent ideas and questions for follow-up conversations with the supervision team. For instance, the researcher reflected on different stages in completing this research in two countries with different linguistics. The researcher's involvement in the processes of data collection, management, transcription, translation, analysis and interpretation were explicitly reported. The researcher shows awareness of the mutual influence of researcher and participants on the research process and outcomes is integral part of ensuring rigour in qualitative research. Similar experiences of reporting reflexivity were described by

other nurse researchers who argue that reflexivity is characterised by an ongoing analysis of researcher's involvement which may help to make the research process open and transparent (Jootun, McGhee and Marland, 2009).

Dowling (2006) urges that nurse researchers must differentiate between personal and epistemological reflexivity (two principle types of reflexivity evident in published literature). Personal reflexivity concerns 'self-awareness' and 'self-inspection' or 'self-reflection' (Carolan, 2003; Colbourne and Sque, 2004; Dowling, 2006). The identification and reporting of conscious self-awareness enhance rigour and facilitate openness in qualitative research (Schluter, Seaton and Chaboyer, 2008). However, epistemological reflexivity can be achieved when the researcher asks questions such as "How have the research questions defined what can be found? And how could the research question been investigated differently?" (Dowling, 2006, p. 11). Therefore, epistemological reflexivity encourages the researcher to ask questions about the world and the knowledge that is created during the research (Dowling, 2006). Reflexivity in this study was applied in two different levels are personal and epistemological reflexivity.

The researcher was explicit about personal bias in the current study. For instance, personal and professional motivations have been described in the first chapter of this thesis. Therefore, from an early stage, the researcher attempted to be transparent in Chapter One and explained his professional background and interest in nursing research and patient safety. The researcher is aware that total detachment of self from participants' data is unrealistic aspiration that can hinder and limit the qualitative process in his qualitative study. Hence, the researcher acknowledges incorporating own interpretations will enable engagement with participants and enrich the quality of the research.

Epistemological reflexivity was achieved in this study at multiple stages. For instance, a reflective diary was the principal tool used to record any progression or decision undertaken and any learning identified. Reflexivity in the current study was applied by reflecting on the researcher's own experiences, views, beliefs and attitudes of the area of interest. The use of a reflexive journal also aided reflection on all events that happened while undertaking this study, including deciding the study's aim and objectives, data collection and analysis. The researcher perceived the importance of reflexivity while uncovering the meaningful participants' worlds and understand their experiences from the perspective of the participants. Therefore, the researcher was mindful to ensure their own views did not influence interpretations of the data through engaging in discussion with the supervision team through all stages and processes. The reflexive approach used in this study allowed the researcher to develop an interactive relationship with research participants to obtain first-hand experiences providing valuable and meaningful data.

3.3 Chapter Summary

Qualitative research methodology guides the generation and interpretation of data to shed the light on the experiences of nurses and patients of patient involvement in hand hygiene. Qualitative methods [focus groups and interviews] were appropriate for the researcher to understand the experiences and views of both nurses and patients concerning patient involvement in hand hygiene. The methods followed to complete the two main studies [focus groups with nurses and interviews with patients] have been explicated. The processes used for concurrent data generation and analysis have been summarised. Issues of confirmability, credibility, dependability, transferability and reflexivity have been addressed. Finally, the

application of ethical principles to the current study has been explained. The following chapter introduces the findings of the first study [focus-group discussions among nurses] and provides details of the thematic findings.

CHAPTER 4: RESEARCH FINDINGS - NURSES' EXPERIENCES AND PERCEPTIONS OF THE ROLE OF PATIENT PROMPTING ABOUT HAND WASHING

Abstract

The overall aim of this PhD study was to understand the role of patient involvement in the promotion of hand hygiene among nurses in the hospital setting. This chapter presents the results of focus-group discussions with nurses who were asked to discuss their experiences and perceptions of patient involvement in the promotion of hand-hygiene compliance. The following objective: *To explore the experiences and perceptions of nurses regarding patients asking or reminding them to wash their hands*, was addressed and explored in depth. Seven focus-group discussions were completed with 36 nurses from two countries: 18 participants in Jordan and 18 in the UK. Nurses participating in the study were requested to recall their experiences of patients asking them to wash their hands and to describe how they responded to the requests. Data from the focus group discussions was transcribed verbatim and analysed by a coding process to identify relevant themes. This chapter presents the findings of four overarching themes and eight related subthemes. Overall, nurses acknowledged both the right of patients to ask and their reasons for asking. However, nurses reported that patient asking is challenging in practice. Nurses stated that patient asking has a negative impact on the nurse-patient relationship. Finally, there was an overall agreement among nurses that hospitals should promote a culture that supports patient involvement in hand hygiene.

4.0 Introduction

This chapter details the themes (n = 4) and subthemes (n = 8) which were identified through data analysis of textual data from the seven focus-group discussions in the two countries, Jordan and the UK. Table 4.1 provides definitions of the themes and subthemes.

4.1 Introduction to the themes

The four themes discussed in this chapter explore how nurses perceived, experienced and reacted to patient involvement in hand hygiene. The themes are shown in Table 4.1 and include: *Nurses acknowledged both the right of patient to ask and their reasons for asking; Acknowledgement that patient asking is challenging in practice but the manner of asking is important; The effects of patient asking on the nurse-patient relationship,* and *Promoting a culture that supports patient involvement*.

The first theme, *Nurses acknowledged both the right of patients to ask and their reasons for asking,* this theme explores the attitudes which were revealed through nurses' practice and how they perceived the right of patients to ask about hand hygiene. These attitudes were informed by the experiences and perceptions of nurses when asked to wash their hands. This theme includes two subthemes. The first subtheme, *Precaution not provocation,* includes nurses' discussions of why patients asked them to wash their hands, such as to prevent infection, and that this was not challenging their professionalism. In the second subtheme, *Forgetfulness,* nurses reported that patients should be involved in the promotion of hand-hygiene compliance as nurses admitted that they might have forgotten or failed to wash their hands.

The second theme, *The patient asking is challenging in practice but the manner of asking is important,* presents nurses' experiences and perceptions regarding how patient involvement in hand hygiene is challenging in practice. This theme incorporates two subthemes. In the first subtheme, *The way of asking*, nurses discussed their opinions and experiences of how patients asked. The second subtheme, *The way of asking is facilitated by good nurse-patient communication,* includes nurses' responses when patients asked them to wash their hands and nurses' communications with patients concerning hand-hygiene compliance.

The third theme, *The effects of patient asking on the nurse-patient relationship,* describes the impact of patient involvement in the promotion of hand-hygiene compliance on the nurse-patient therapeutic relationship, and includes two subthemes. In the first subtheme, *Concern that patient prompting might affect trust in the nurse-patient relationship,* nurses discussed how patient involvement in hand hygiene might adversely impact the nurse-patient trust relationship. In the second subtheme, *Concern that nurses will not accept hand hygiene prompting from patients,* nurses discussed the possible adverse impact of patient involvement in hand hygiene on their work-pressure which may result in not accepting the reminder due to the increased workload and work-related stress.

The final theme, *Promoting a culture that supports patient involvement,* presents the opinions of nurses on the role of patient involvement as a "new culture" in the promotion of hand-hygiene compliance. This theme encompasses two subthemes, firstly *New culture,* in which nurses stressed the importance of endorsing a new culture of patient involvement in the promotion of hand-hygiene compliance. In the second subtheme, *Lack of awareness,* nurses discussed the need to increase

patients' awareness of their potential involvement in hand hygiene and how this could empower patients to ask nurses to wash their hands.

These themes and subthemes provide insight into the experiences and perceptions of nurses concerning patient involvement in the promotion of hand-hygiene compliance in the hospital setting. The themes and subthemes are discussed in this chapter, and are illustrated with excerpts of verbatim text from the nurses' narratives. The contribution of the dataset to the development of the themes is presented in Table 4.2 below, which shows the identification of the themes across all the focus groups.

Table 4.1: Focus groups: main themes and sub-themes

Theme	Sub-theme	Definition
Nurses acknowledged both the right of patients to ask and their reasons for asking	*Asking should be regarded as a precaution not a provocation*	Patients reminded nurses to wash their hands to ensure their own safety, not to challenge nurses or question their ability to do their jobs correctly.
	Forgetting and the need for reminding	Patients reminded nurses to wash their hands as nurses may forget to perform hand hygiene.
Acknowledgement that patient asking is challenging in practice but the manner of asking is important	*The way of asking may affect the nurses' response*	How patients asked nurses to wash their hands. How nurses reacted to patients asking.
	The way of asking is facilitated by good nurse-patient communication	How the reminder was communicated between nurses and patients. How effective and healthy communication could help to facilitate patients' requests.

The effects of patient asking on the nurse-patient relationship	*Concern that patient prompting might affect trust in nurse-patient relationship*	Patient involvement in hand hygiene may result in loss of trust between nurses and patients.
	Concern that nurses will not accept hand hygiene prompting from patients	Patient involvement in hand hygiene could place pressure on the nurses and increase their work-related stress and anxiety levels.
Promoting a culture that supports patient involvement	*New culture of patient involvement in which patient prompting is acceptable*	Patient involvement in hand hygiene is not common and is referred to as a new culture in the hospital setting.
	Raising patients' awareness of the importance of hand hygiene and involvement	Patient involvement in hand hygiene starts with raising patients' awareness of the importance of hand hygiene and their role in the promotion of hand-hygiene compliance.

Table 4.2: The identification of the themes and subthemes from the focus-group discussions

Theme *Subtheme*	Focus Group Code	FG-1 JO	FG-2 JO	FG-3 JO	FG-4 UK	FG-5 UK	FG-6 UK	FG-7 UK
Nurses acknowledged both the right of the patient to ask and their reasons for asking								
Asking should be regarded as a precaution not a provocation		✓	✓	✓	✓	✓		
Forgetting and the need for reminding		✓	✓	✓	✓	✓	✓	✓
Acknowledgement that a patient asking is challenging in practice but the manner of asking is important								
The way of asking may affect the nurses' response		✓	✓			✓	✓	✓
The way of asking is facilitated by good nurse-patient communication		✓	✓	✓	✓	✓	✓	✓
The effects of patient asking on the nurse-patient relationship								
Concern that patient prompting might affect trust in the nurse-patient relationship		✓	✓		✓	✓	✓	✓
Concern that nurses will not accept hand hygiene prompting from patients		✓	✓	✓		✓	✓	
Promoting a culture that supports patient involvement								
New culture of patient involvement in which patient prompting is acceptable		✓	✓	✓	✓	✓		
Raising patients' awareness of the importance of hand hygiene and involvement		✓	✓	✓	✓	✓	✓	✓

FG: Focus Group; **JO:** Jordan; **UK:** United Kingdom

The following section (4.2) presents the thematic findings from the focus-group discussions with nurses in response to two open-ended questions: "*Can you describe an experience when a patient reminded you to wash your hands?"* and *"How did you manage the situation?"* [other prompt questions were discussed in the methods chapter].

4.2 Identification of themes

The main aim of data analysis is to "tell a story from the data" (Hardy and Bryman, 2004, p. 1). The six steps of thematic analysis described by Braun and Clarke (2006) were applied to the data, as detailed in Chapter Three. Following the completion of the coding process, four themes and eight subthemes were identified.

This section discusses the four themes and eight subthemes. Each subtheme is illustrated with quotes taken from participants in the focus groups and numbered according to the focus group (FG) and participant (P).

4.2.1 Nurses acknowledged both the right of patients to ask and their reasons for asking

The first theme discussed in this chapter is the acknowledged and perceived *right of patients to ask* nurses to wash their hands. Nurses from all focus groups acknowledged that patients had the right to ensure their own safety and therefore ask nurses to wash their hands. Nurses acknowledged patients were concerned about their personal safety and did not aim to provoke nurses or criticise their professionalism. In line with the patients' right to ask, nurses admitted that they might have occasionally forgotten to wash their hands; therefore, there was a need for

patients to remind them. The subthemes are patients' requests were *precautionary*, not *provoking*, and that patient reminders are needed as nurses may *forget* to wash their hands.

Asking should be regarded as a precaution not a provocation

There was overall agreement across the seven focus groups that, as patients had the right to remind nurses to wash their hands, nurses should not take the reminder as an offence. Nurses participating in the focus groups agreed that patients had the right to receive safe care (from nurses with clean hands).

A participant who discussed their experience of being asked by a patient to perform hand hygiene agreed with the patients' right to remind nurses to wash their hands . The participant added:

> *"I didn't take it as an offence. Patients are entitled to do that [ask about hand hygiene] before I perform a procedure or attend to them in any way, as they are concerned about any type of cross-contamination or infection"* ***[FG5-P3]***

A participant from another focus group reported patient involvement in hand hygiene was not "criticising" nurses, but rather it was their right to help to enhance nurses' hand-hygiene compliance. Hence, the right of patients to ask could improve nurses' hand-hygiene compliance rates and therefore reduce the risk associated with hospital-acquired infections. For instance, one participant said:

> *"I think encouraging patients to have an opinion and overall ensuring that hand hygiene is carried out by staff is a good idea. I think that as nurses we need to receive that better, and feel that is not to criticise us. That's actually them [patients] trying to help us with hand hygiene to reduce the risk of infection and cross-contamination" [****FG1-P6****]*

Participants discussed how their hands could serve as reservoirs for infectious pathogens transferred from surfaces they had touched. A participant explained how unclean hands were a cause of infection and that nurses' hand-hygiene compliance was often suboptimal, according to this participant's own observation:

> *"Maybe I might harm a patient. When I go down the stairs I will touch the rails as I leave the place –"[**P3**].*
> *"You transmit the infection."[**P4**].*
> *"Of course it is about hospital-acquired infection."[**P5**].*
> *"If we need to go back to the cause of this infection, it is us who are not doing hand-washing."[**P3**].*
> *"Yeah, this is why they have the right to ask"[**P4**]. [**FG2**]*

Similarly, another participant from her observation found nurses' hand hygiene was not as good as it should be and believed patient involvement in the promotion of hand hygiene unquestionably became their right:

> *"So, if it is not happening [patient involvement in hand hygiene] then we need to find a way to make sure it happens. If that one person said to me 'just want to say, I haven't seen you washing your hands, would you mind?' This would prevent the wound infection, or prevent something happening to them, I think this is absolutely valid, it's their right and we have to do something about hand hygiene which we are not doing right" [**FG5-P4**]*

Similarly, participants also discussed the right of patients to ask them to wash their hands and that this was emphasised as additionally important if the patients had previously experienced infection or were receiving chemotherapy, so had weakened immune systems. Participants indicated that patients with infection or low immunity could feel more encouraged or empowered about their right to ask nurses to wash their hands since they would be more protective of themselves concerning safe care. Participants discussed how patients who were immune-compromised or who had

past experience of being harmed with HCAIs are more encouraged to ask nurses to wash their hands:

> *"I would understand why patients ask, especially if they had a past experience of infection. I mean it's fair for them to ask." [**P1**]*
> *"In my case, when I asked myself why would patients ask, I thought they maybe had an experience with infection."[**P3**].*
> *"Yeah, that patient had an infection and she was so obsessed about hand hygiene."[**P3**].*
> *"Yeah, and I think this is more often with low immune system, chemotherapy patients or oncology patients - more frequent as they are more anxious about hand hygiene and want to feel safe, I mean it is their right to ask" [**P4**] [**FG6**].*

One participant also stated it should be accepted that patients have the right to ask and their question is not meant to be accusing:

> *"I think it is about bringing in a way that people would understand that the patients have the right to ask, and it is not an accusation, it [the patient's request] is just a question" [**FG4-P4**]*

Within this subtheme, most participants in the focus groups considered patient involvement as a patient's right. From the nurses' perspective, patients were concerned about acquiring infection as a result of nurses' non-compliance with hand hygiene. Amid all these opinions, the majority of participants acknowledged patients had the right to ask nurses to wash their hands.

Forgetting and the need for reminding

Nurses discussed their experiences and perceptions with patient involvement in hand hygiene concerning the right of patients to remind nurses to wash their hands on occasions when nurses forgot to wash their hands which they attributed to excessive workload and busyness.

The most compelling insight offered by nurses for this subtheme was nurses might forget to wash their hands due to their excessive workload. Equally, nurses' forgetting to wash their hands due to excessive workload was a recurring subtheme, with the ward nurses explaining this was a frequent result of being overwhelmed with several tasks to complete in a short period of time.

There was a shared sense among participants that busy nurses might forget to wash their hands, which opened further discussion on the right of patients to ask. The participants seemed to be prepared to sacrifice this aspect of safety on the altar of timesaving because of busyness:

> *"Anyone would forget" [**FG1-P1**]*
>
> *"That's how I look at it because if I am very busy and forget sometimes, I would really appreciate that somebody would remind me that I haven't washed my hands" [**FG4-P1**]*
>
> *"Come on, 'glorified be he who never oversees nor forgets'. It might happen and we forget."[**P4**].*
> *"Yes, we are humans and not impeccable." [**P5**].*
> *"Yes, it [forgetting to wash hands] happens a lot" [**P4**] [**FG3**]*
>
> *"That's the thing; patients [need] to be open about it [hand hygiene] as we may all forget" [**FG5-P5**]*
>
> *"Sometimes we forget. I am responsible for 15 patients [in a ward] and short on time. I forget to visit the sink to wash hands; most of the time we use alcohol hand-rub instead of washing our hands as we do not have time, or we forget" [**FG1-P5**]*

A participant also highlighted nurses might have forgotten to wash their hands which again gave patients the right to remind them:

> *"It's the patient's right that I deal with him/her with clean hands; it's my right that if I forget to wash my hands then she will remind me from transmitting infection" [**FG3-P1**]*

One participant reported a reminder from patients could act as an "alert" when nurses forgot to wash their hands. In line with patient safety, the participant viewed safety for self and others as a priority that could be achieved by performing hand hygiene as a result of a patient reminder:

> *"This will act as a memo for nurses to wash their hands. For example, a patient would say 'I know, and I see you busy all day, could you wash your hands; maybe you forget.' I see it [patient involvement in hand hygiene] as a nice idea, it reminds me more to be alert and careful. This is indeed a patient safety issue but also our [nurses'] safety" [**FG3-P3**]*

One participant suggested nurses might be more prepared to receive a hand-hygiene reminder from patients if they thought patients were about to ask them to wash their hands at any minute:

> *"I meant if I keep this question in mind, I might always do hand hygiene because I know that anytime, patients will remind me to wash my hands. It [patient involvement in hand hygiene] will act as a memo in my mind: 'keep it in mind, do not forget'" [**FG3-P3**]*

A discussion between participants revealed hand-hygiene reminders from patients would put nurses under pressure and keep them aware they should not forget to wash their hands. One participant added when patients reminded nurses to wash their hands, that meant that patients were observing nurses' hand-hygiene practices. Hence, nurses would remain alert and reminded to wash their hands all the time:

> *"I knew someone was going to ask me. If I have not washed my hands, I am aware of that as a mistake. If a patient is telling me to wash my hands, it is better so I can fix it at the same time. I think I*

*am, like, under more pressure because you are under supervised practice."[**P2**].*
*"Yeah."[**P3**].*
*"Yeah."[**P1**] [**FG5**]*

A participant in another focus group commented nurses should acknowledge and appreciate hand-hygiene reminders from patients. The analysis of results incorporates all those who contributed to a discussion point in a focus group but on this occasion, the researcher is representing just one voice as it summarises the overall debate. The participant added nurses should thank patients for the reminder, as nurses may have forgotten to wash their hands. The participant acknowledged that not all nurses did the right thing concerning handwashing:

> *"I don't mind at all, I think it is quite good as it [patient involvement in hand hygiene] means that sometimes you forget if you're busy, and if somebody reminds you, you should appreciate it and say 'thank you very much for reminding me' and say 'I will wash my hands'. So, personally, I would not mind being asked, I would appreciate it, rather than getting upset or anything like that" [**FG4-P1**]*

> *"If I was in the shoes of the patient I would ask nurses to wash their hands, just because I am a nurse and I know that some nurses, they don't do it like they should" [**FG6-P1**]*

In summary, this theme (*Nurses acknowledged both the right of patients to ask and their reasons for asking*) was identified through the discussions between participants on patients' rights to ask nurses to wash their hands. Additionally, the first subtheme *(Asking should be regarded as a precaution not a provocation)*, identified nurses believed they should perceive patient involvement in hand hygiene from a patient safety perspective, as patients were being *precautionary*. The second subtheme *(Forgetting and the need for reminding),* discussed the right of patients to receive safe care, by reminding nurses to wash their hands as *nurses may forget*. Finally,

participants gave an implicit acknowledgement hand hygiene is not always optimal and agreed that patients have a right to ask, but also mentioned that this is not an easy thing to do. This is explored in the next section.

4.2.2 Acknowledgement that it is challenging in practice but the manner of asking is important

In this theme, there was a sense that (regardless of the theme above) patients who asked about handwashing were transgressing the unwritten rules of being a patient. There was a sense that patients were behaving against the culturally accepted norms of being passive and grateful when they prompted nurses' handwashing.

Participants from all focus groups acknowledged the manner of patients' requests are important in how nurses perceive and experience the hand hygiene reminder, therefore a good communication between patients and nurses would facilitate patient promoting hand hygiene. The subthemes are *The way of asking may affect the nurses' response*, and *The way of asking will be facilitated with good nurse-patient communication*.

Despite widespread acknowledgement patients have the right to ask, participants described how this could be challenging and awkward in practice. One participant stated:

> *"I will be mortified if patients asked me to wash my hands" [**FG7-P3**]*

One participant reported nurses would react differently depending on the situation. The participant explained she would find it challenging and would feel offended and embarrassed if asked by a patient to perform hand hygiene:

> *"I think it depends on the person actually, as I would feel offended. I would be embarrassed. Maybe some nurses would say 'oh sorry I will go and wash them now, so you can see', so yeah, I think it depends on the nurse as well" [**FG6-P1**]*

Another participant agreed, saying some nurses might accept the reminder while others might take it as an offence:

> *"Nurses might accept it and say 'okay, I will wash my hands every time I go in or out of the patient's room'. Other nurses were saying 'oh I won't do that because it is like insulting me' and others were in the same line embarrassed" [**FG6-P3**]*

One participant reported nurses should already be washing their hands, and she would take the reminder as an "offence". It is therefore not clear why the nurse perceived the reminder as offensive when it is well-established that nurses should wash their hands; if they do not, the reminder would be a challenge to their bad practice:

> *"If you're concerned about doing it [hand hygiene] and you know that you should be doing it all the time, it [patient involvement] can be offensive for someone who has not done it" **[FG7-P2**]*

As in the previous quote, some discussions between the participants concentrated on whether handwashing was completed at the time when a patient asked them to do it. Participants reported different views depending on whether their hands were clean or not when patients asked, and how nurses perceived the reminder.

A participant experienced a patient reminder even though she had washed her hands. The participant described this experience as a "punch" and "offensive":

> *"In my experience, I was a bit offended by the question. If a patient would ask me to do it, I would feel like a punch. Because I do it*

*[hand hygiene] all the time and you [patients] don't have to remind me" [**FG6-P1**]*

Although nurses could find patient requests challenging, they acknowledged the situation might also be challenging for patients. Another participant added nurses' behaviour in front of patients might hinder patient involvement in hand hygiene:

*"'The nurse may seem unapproachable', I wonder if the way that we behave in front of patients - if someone ever says anything about hand washing or any aspect of their care" [**P4**] [**FG7**]*

Participants discussed their opinions of what factors might prevent patients from asking nurses to wash their hands. Participants reported that asking nurses to wash their hands might not be feasible for patients for several reasons. These included shyness, embarrassment or fear. One participant suggested patients might feel shy and might apologise for mentioning hand washing, as nurses knew how to do their jobs:

*"Patients are seeing us not washing hands but they feel shy to ask. They might say 'I know you are doing a great job and it's well done, but I have noticed you did not wash your hands and I felt shy to remind you.' I am talking about the patient here, as they might see this and feel shy to ask as they might say 'it's your job and you know how to do it'." [**P5**]*
*"They might even be afraid to tell." [**P4**]*
*"Yes, they're either shy, afraid, embarrassed or having other considerations for not asking" [**P5**] [**FG3**]*

Regarding their actual experiences and reactions towards hand-hygiene reminders, one participant described his experience as "awkward" as it had occurred with the patient's family members and visitors present in the patient's room. On this occasion, the participant said the surrounding environment in which the patient had asked about hand hygiene was vital in determining his reaction:

> *"But please don't forget about the room you are in! There were other patients, family, visitors, so many people. I think the way of asking was important here, that was awkward" [**FG2-P1**]*

The way of asking may affect the nurses' response

This is the first subtheme to be discussed within the theme *Acknowledgement that it is challenging in practice but the manner of asking is important*. This subtheme includes discussion between nurses on how patients asked nurses to wash their hands and how nurses reacted to patients asking.

Further to the discussion about how nurses might be offended when a patient might ask them to wash their hands, participants from all focus groups deliberated on how *the way of asking* was likely to affect the nurses' responses to the hand-hygiene reminder. Some participants perceived that, despite acknowledging the right to ask and the rationale for this, nurses might still react negatively to being asked, suggesting that the way of asking might influence the reaction of the nurse.

Some participants therefore suggested their agreement with the right of patients to ask them to wash their hands was in some way conditional on *the way or the manner in which the patients asked*. The manner in which patients asked nurses to wash their hands was a feature of most focus-group discussions:

> *"I think it's the patient's right to ask but it depends on the way or the manner that patients use to remind the nurse. There might be patients who are offensive with their reminder, and there are people who might be obsessed with hand hygiene, they don't like anyone to touch them without washing their hands and in front of them" [**FG1-P1**]*

There was an essence that the participant was almost blaming the patient for asking about hand hygiene. Across all focus groups, it became apparent participants described a conditional agreement to accept hand-hygiene reminders from patients based on the *way of asking.* Some participants described this as the "delivery" of the reminder or the question that patients employed, while others provided some possible examples of ways of asking that patients could use which would elicit the required response from nurses.

Other participants discussed how the manner of speaking or the *way* in which the reminder was delivered could determine nurses' reactions concerning patient involvement in the promotion of hand-hygiene compliance:

> *"I think I will take it, but that would be dependent on the way they ask." [**P2**]*
> *" - the delivery." [**P3**]*
> *"I think it's also how the patient asks, if a patient asks you 'Oh you forgot my medication, it was half an hour ago' and we were actually happy 'Thank you for reminding me, I don't want to make mistakes' and if the patient comes in a nice way asking you 'Oh sorry you did not wash your hands', it is not a judgement, it is more like a reminder." [**P6**]*
> *"Yeah, yeah. It is about the way they ask and when they ask" [**P5**] [**FG5**]*

Similarly, a discussion between two participants indicated the way in which patients asked was key to determining the way in which nurses reacted to the hand-hygiene reminder. Findings from this group discussion showed there was perhaps an unfair expectation on patients concerning the "way of asking". When patients asked in a "nice or right way", then it was highly likely that nurses would react in the same way:

> *"We asked them here, and then. They have to ask in a right way when I [as a nurse] speak to them [patients] in a nice way."[**P3**]*
> *"- they [patients] will respond with the right way." [**P5**]*

*"Sure – I could cross halfway with the patient, at least there is a gate for discussion with her so I can enter and talk" [**P3**] [**FG1**]*

Participant P3 here refers to meeting the patient halfway to discuss hand hygiene compliance, in contrast to earlier comments in which it was the patients' right to ask nurses about hand hygiene.

Some participants reported the way of asking would determine their reaction to the reminder. One participant thought she could complete hand hygiene several times if the way of asking was acceptable and "friendly". Discussion between participants in one group showed that regardless of the overall agreement on the importance of handwashing, nurses were more concerned with how patients communicated the hand-hygiene reminder than the importance of handwashing to patient safety. It was expected that all nurses show optimal hand- hygiene compliance without making judgements about the patient and the patient's motives to ask or their way of asking. It is not clear from the group discussions how patients who may be sick, anxious and scared are meant to know what counts as a "nice" or "friendly" way of prompting handwashing:

*"It is the manner that patients use to ask." [**P4**]*
*"A patient might ask in a sarcastic way –"[**P6**]*
*" –yes, sarcastic way –" [**P4**]*
*"– 'Did you wash your hands, you, I am talking to you!'" [laughs] [**P3**]*
*"It would really make you feel small, but it is different from 'if you please, did you wash your hands?'" [**P6**]*
*"There is a way or manner." [**P3**]*
*"A nice way, right, I would accept it if asked in a friendly way, I would wash my hands 10 times." [**P6**] [**FG2**]*

A participant believed most nurses in the discussion were in agreement with patient involvement in hand hygiene. However, the participant explained nurses had the right to be asked in a "nice way" and nurses' reactions were based on whether

patients asked genuinely because they were concerned to ensure safety, or whether (although these were rare cases) they asked in order to humiliate or embarrass the nurse. The participant compared patients' rights to receive safe care by prompting handwashing with the right of nurses to receive kind reminders from patients. This participant said patients had different "attitudes" in asking, which determined nurses' reactions to the reminder:

> *"We are with acceptance – but when I tell the patient 'it is your right to ask me about hand hygiene', it is good as well to make sure they ask in a nice way. Patients have the right to ask me to wash my hands, and I have the same right to be asked in a nice way. When I see a tough patient... Really, there are patients – sorry, I respect all people - but some of them, they don't have [a nice] attitude in asking. Whatever you're doing for them and acting well to them, but no, their attitude is [silence]" [**FG1-P5**]*

The way in which the patient asked the nurse to wash their hands was clearly considered important by the nurses who participated in the focus groups. Participants strongly suggested that in their perception the "nice or right" way would shape how nurses would respond to the hand hygiene reminders from patients.

4.2.2.2. The way of asking is facilitated by good nurse-patient communication

The way in which the patient asked the nurse to wash his or her hands was considered important and participants further suggested the interaction between nurses and patients could affect nurses' responses and attitudes towards patient involvement in the promotion of hand-hygiene compliance.

Some participants felt that if there was a good rapport between the patient and nurse this would facilitate asking. Participants shared similar views that good nurse-patient

communication was vital in order to involve patients in the promotion of hand-hygiene compliance. A participant added communication was a two-way process that should aim to maintain “rapport” and reach a “mutual understanding”. However, it was not clear from the discussion what the participant meant by mutual understanding when patients were at risk and their safety was compromised by nurses’ non-compliance with handwashing requirements:

> *“For communication, I need to have a rapport between me and the patient so that we would have a mutual understanding” [**FG2-P6**]*

Similarly, another participant stated “rapport” between nurses and patients was needed and added patient involvement in hand hygiene was “part of the patient’s care plan”:

> *“I need to have a rapport between me and the patient so that we would have interactive communication to provide a care plan. Now, part of the patient care plan is patient involvement” [**FG2-P3**]*

Communication was discussed; one participant highlighted effective communication between patients and nurses played a vital role in how nurses understood patient involvement in hand hygiene. This participant perceived patients prompting hand hygiene as protecting both patients and nurses from the spread of infection:

> *“Nothing is wrong with patients speaking up because I want to protect myself and patients. It is a nice approach but depends on the communication manner between us” [**FG1-P1**]*

Similarly, a participant said:

> *“We want you [the patient] to feel very comfortable, relaxed, and open about it [patient involvement in hand hygiene]. It means they [patients] would not mind asking us to wash hands; they would feel more comfortable to ask about anything” [**FG4-P1**]*

Participant P1 in FG4 also reported patient involvement in the promotion of hand hygiene had to start with open, honest, and clear communication between nurses and patients. Similarly, another participant in the same group indicated there was a need to empower patients to speak up about their concerns and to discuss nurses' hand-hygiene compliance:

> *"I think we need to really work on getting the patient at the point where they feel comfortable to speak, not about only hand hygiene, but hand hygiene would be a good start" [**FG4-P4**]*

However, a discussion between participants indicated nurses with effective communication skills could help, regardless of how poorly the reminder had been communicated. Part of the discussion included:

> *"I can change everything, even in a situation when the patient asks in a provocative way, I can still change it [the tension caused by patients asking in a provocative way]. I can, but you [nurses] just need to have excellent communication skills" [**P6**]*
> *"Like what was said at the beginning." [**P3**]*
> *"That is 100% true" [**P4**]: [**FG2**]*

Similarly, within this subtheme, a participant stated patients should feel empowered to ask nurses to wash their hands, without experiencing the sense they had done something wrong. The participant added that improved communication would empower patients and make them feel confident to direct hand-hygiene reminders to nurses:

> *"I was about to say that it's really important to make nurses understand that a patient shouldn't feel they've done something wrong when they ask about hand hygiene. I think being open to talking about these matters would help. You can get people to talk openly about what they want or what they need, and they should be happy to say something to nurses. Saying, 'I didn't see you washing your hands, do you mind washing your hands?'" [**FG4-P4**]*

Moreover, a participant indicated there was a need to increase the confidence of patients to ask nurses about hand hygiene. Good communication was closely associated with patients' empowerment to speak up about "sensitive issues" such as nurses' hand-hygiene compliance:

> *"We need to work on the way/manner of the question itself, it is a sensitive issue, that's why we need to promote patients' confidence to ask" [**FG3-P3**]*

A number of participants reported a possible scenario in response to patients asking nurses to wash their hands. The scenario included the need for nurses to maintain effective communication with patients and thank them for challenging their adherence to hand hygiene practices:

> *"I think at the end I would thank them, and say 'Well done for challenging me'." [**P2**]*
> *"Yeah, very good." [**P4**]*
> *"I like that." [**P3**]*
> *"Yeah, because this might break the ice, as it could create a bit of tempting, I wanna actually acknowledge it and thank them for challenging." [**P2**]*
> *"I think it is a good idea. I think like actually you kind of just touched us as a group of how that information could be put across to patients, so again it's not going away - challenging hand hygiene - actually, we should be, like, more than positive about it, let's work together for hand hygiene." [**P3**]*
> *"Yeah" [**P4**]: [**FG7**]*

Participants discussed the belief they should determine the way in which they responded to patients when receiving a hand-hygiene reminder. Again, participants suggested they should not feel offended by the reminder, instead they should thank the patient. One participant said nurses should reassure patients of their hand-hygiene status - whether they had washed their hands or were about to do so:

> *"I think if the patients have said that [asked nurses to wash their hands], we're all saying and thinking if we would be offended. It is like us viewing it negatively." [**P4**]*
> *"Yeah." [**P2**]*
> *"Maybe that's our way of how we perceive their feedback on how we've been asked to wash hands. Then we need to change the way we accept it. Instead of being negative about it, saying that I might be offended about it, you could say 'Yes I have done this' or 'I will do this' or 'Actually no, not yet, I am gonna do that now'." [**P4**] [**FG7**]*

In summary, focus-group participants agreed patient involvement in the promotion of hand hygiene was challenging in practice. There was a general agreement among participants the *way of asking* was a key determinant of how nurses appraised patient involvement in the promotion of hand hygiene. The two subthemes, *The way of asking may affect the nurses' response* and *The way of asking is facilitated by good nurse-patient communication barriers,* provided further details of ways in which communication between nurses and patients determined nurses' reactions, and therefore responses towards patient involvement in the promotion of hand-hygiene compliance.

Participants were able to describe clearly some key factors that facilitated or constrained the role of patients in the promotion of hand-hygiene compliance. Finally, participants reported overall agreement that effective communication and positive nurses' responses towards patient involvement in hand hygiene could reflect on the nurse-patient relationship. Further details concerning the nurse-patient relationship are discussed within the following theme.

4.2.3 The effects of patient asking on the nurse-patient relationship

This theme presents nurses' thoughts on the impact of patient involvement in hand hygiene on the nurse-patient relationship, and conversely the impact of that

relationship on patient involvement. Furthermore, participants discussed the impact of the nurse-patient trust relationship on how nurses perceived patient involvement in hand hygiene. The sub-themes are *Concern that patient prompting might affect trust in the nurse-patient relationship* and *Concern that patient prompting might increase nurses' work-based stress*.

Concern that patient prompting might affect trust in the nurse-patient relationship

Participants discussed the possible negative impact of patients requesting nurses wash their hands on the trust between nurses and patients. There was a sense of agreement among participants that patient involvement in hand hygiene might not receive a positive or friendly reception from nurses. Hence, patient involvement in hand hygiene could adversely affect mutual trust relationships between patients and nurses.

For instance, a participant stated:

> *"The patient will be less trusting. They will say 'You forgot to do the most important single step in receiving treatment', which is to wash hands" [**FG3-P5**]*

Similarly, two participants discussed whether mistrust between patients and nurses could be a consequence of patient involvement in hand hygiene. For instance, one participant argued if the nurse acknowledged failure to perform hand hygiene, patients might not trust nurses in other procedures such as the administration of medicines. Therefore, the same participant added she may feel forced to lie about hand hygiene compliance to maintain the trust of patients.

> *"If the patient is conscious of this [lack of hand washing] and asks me to wash hands, and I really forgot about it, I will do it in front of him/her. Then when I come later to give medication they might ask me 'Is this is the right medication or the right dose?'. It happened to me." [**P6**]*
> *"They will apply this mistrust on all my actions or procedure we do, the first thing they will say is 'Are you sure it is the right medication or what you doing is right?'" [**P4**]*
> *"Let's be honest here, if the patient asks me to wash hands, I would say 'Yes I did'. You know, rather than saying 'No I didn't'. Patients may lose trust in nurses and with other procedures like giving medication" [**P6**]: [**FG1**]*

One participant reported patient involvement in hand hygiene could lead to nurse-patient mistrust when nurses admitted their failure to complete hand hygiene:

> *"The negative side of this is when the staff really did not perform hand hygiene! This is a problem, as the patient would say 'I remind you to wash your hands, otherwise you will deal with me with dirty hands'. They will have doubt in you and gain mistrust!" [**FG3-P5**]*

Another participant added:

> *"The patient's question will reflect the carelessness of the nurse if their hands are not washed" [**FG3-P6**]*

Participants feared patient involvement in hand hygiene would have a negative impact on the patient-nurse trust relationship. For instance, two participants discussed whether the suggestion to patients they could play a part in improving hand hygiene might result in them losing trust in nurses. One participant mentioned involving patients in the promotion of hand hygiene compliance may not be received well by patients, which could result in mistrust in other nurse roles. Again, one participant mentioned patients might question the nurses about the medicines:

> *"It [patient invovement in hand hygiene] will arrive in the wrong way. It will be like because I reminded you about hand hygiene, now you do it." [**P2**]*
> *"They might ask me next time when giving medication, 'are you sure this is my medicine?' This has happened to me before" [**P6**]: [**FG5**]*

Participants reported an overall agreement that patient involvement in hand hygiene would result in mistrust between nurses and patients concerning nursing procedures. For instance, one participant added patients should feel self-motivated to ask nurses to wash their hands without endorsement from nurses to gain the patient trust. However, this participant confirmed that patients needed to trust nurses and patient involvement in hand hygiene could result in a loss of trust:

> *"This will lead to mistrust between patient and staff. The patient would expect you to give him/her everything they need, you have care plans, and studied this. But when you involve them in hand hygiene, I think this is a critical approach. If you asked patients to be involved then this will lead to mistrust. It should be an initiative from the patients themselves, not the staff. This is my view. Patients need our trust. But when you involve them in hand hygiene then what about trusting the staff in other procedures?" [**FG2-P1**]*

One participant stated some patients did not discuss hand hygiene with them, but with visitors or other patients in the room, which, from the nurse's perspective, indicated a lack of trust:

> *"Patients do not talk with us about hand hygiene, maybe tell the patient next to them or with visitors – 'See that nurse did not wash their hands', but they will not say it to us. It is a matter of mistrust here. They don't come to tell us or even the in-charge person. They might tell each other but not us. You might hear them later talking about the previous shifts. They deliver the information to you in an indirect way, but we hear the discussion between patients. We hear it from other patients" [**FG1-P3**]*

The same participant added:

> *"I cannot remember in the last 15 years that someone asked me to wash my hands. The problem is not if I am doing the hand hygiene or not. The community is not directive or supportive, they don't talk about it. They might tell each other but not us." [**FG1-P3**]*

However, another participant gave a different view. The participant explained building trust between patients and nurses would help to make patients feel more comfortable and therefore more able to ask nurses to wash their hands:

> *"I think it is quite important to build trust and a relationship with the patient as well, because if you tell the patient or relatives what actually you're doing and why you're doing it, they would have trust in you and they will actually feel more comfortable about it [patient involvement in hand hygiene]." [**FG4-P1**]*

A participant shared a similar view that patient involvement in hand hygiene was part of a "partnership" between nurses and patients:

> *"I think it is definitely a step more towards partnership working in a way from that sort of paternalistic approach" [**FG5-P6**]*

One participant reported it was the nurses' responsibility to gain the trust of patients. The participant added it was the responsibility of nurses to explain their daily schedules to patients, which could help patients to gain trust and feel more comfortable:

> *"I think it is quite important to build trust and relationship with the patient as well, because if you tell the patient about hand hygiene - I am talking now from my personal experience as a nurse in cancer care - if you tell the patient or relatives what actually you're doing, and why you're doing it, they would have trust in you and they will actually feel much more comfortable" [**FG4-P2**]*

Another participant reported a similar view that nurses should establish trust with their patients. Therefore, it was the responsibility of nurses to position patients at the "centre of safe care" referring to hand-hygiene compliance:

> *"I think we implement trust in the patient! I think it is really really important to allow the patient to be right at the centre of things, say that 'We are all here to keep you safe'" [**FG4-P3**]*

Participants discussed their uncertainty about patients' willingness to be involved in the promotion of hand-hygiene compliance. One participant said patients should feel "comfortable" and that nurses should cooperate with patients to build a trusting relationship:

> *"I think the first thing that would come up is, patients do feel, I am not sure if patients would feel happy about it [patient involvement in hand hygiene]. We need to make sure that patients are very happy to do that." [**P3**]*
> *"Yeah, feel comfortable" [**P1**]*
> *"I think it's like what you said" [**P3**]*
> *"To put the patient at ease and make sure we have that trusting relationship with patients and they are comfortable" [**P1**]: [**FG4**]*

When considering the nurse-patient relationship, some participants reported patient involvement in the promotion of hand-hygiene compliance might possibly affect trust in the nurse-patient relationship. There was an overall agreement across all focus group discussions that patient involvement in hand hygiene may not be well received by patients. Patients trust nurses and participants felt requesting patients to remind nurses to wash their hands might lead to patients not trusting nurses with procedures other than that or handwashing, such as the administration of medicines.

Concern that nurses will not accept hand hygiene prompting from patients

Participants across all focus groups discussed the impact of patient involvement in hand hygiene on the nurse-patient relationship in the light of the high workload and levels of stress among nurses. Some participants described stress and overload of work as barriers to easy nurse-patient communication, therefore nurses might not readily accept hand hygiene reminders from patients.

Participants discussed the '*stressful'* nature of nursing due to the '*excessive workload'* on nurses. Importantly, participants reported clear understanding of the importance of hand hygiene compliance and their willingness to comply with hand hygiene behaviours regardless whether they were busy or not. However, there was a single barrier in one subtheme, *concern that patient prompting might increase nurses' work-based stress.*

One participant explained how patient involvement in hand hygiene would cause additional stress and loss of confidence for nurses:

> *"You have to take into account that you're busy, you're stressed, and then you get asked by patients to wash your hands, then you ask yourself what I've done wrong!" [**FG5-P3**]*

Participants discussed the requirements for them to perform multiple tasks, and suggested patient involvement in hand hygiene would be unlikely to happen because nurses were already too busy; they had other tasks to perform and were committed to ensuring that all tasks were accomplished. One participant reported patients observed nurses and they understood how busy nurses were; therefore, patient involvement in hand hygiene was difficult to integrate:

> *"The nature of our job, particularly in the ward - you're so rushed to do things in a short period of time. Patients already see us as*

*unapproachable. In my experience patients always say to me 'Oh, I did not wanna bother you, because you look so busy'" [**P4**]*
*"You look busy" [**P3**]*
*"Yeah" [**P4**]*
*"'You've got too many other things to do', and it could be as simple as they wanted something to drink. Or actually, use the toilet. Or bring them back to bed. So if patients wanted to help with hand hygiene or in fact wanted to say to me that I need or have I washed my hands, I think our behaviours and actions would stop them from doing that" [**P2**] [**FG6**]*

Another participant added:

*"If it's happening every single time" [**P4**]*
*"As I already said, it is already stressful for our own job. If we are being questioned by patients to wash our hands, then this will add more stress to me" [**P2**]: [**FG6-P4**]*

A participant from another focus group reported a similar view:

*"Imagine the stress, it would be too much. As you need to do other things, and they are asking 'did you wash your hands' or 'please wash your hands now', I think this will be too much" [**FG7-P2**]*

When participants were asked as a follow-up question why patient involvement in hand hygiene might be hard to accept and could be a source of stress for them, their discussion included comments that some nurses would find it hard to accept patient involvement in hand hygiene, especially if they had many years of experience in nursing. A discussion between participants showed patient involvement in hand hygiene could be seen as questioning a nurse's competence:

*"Nurses would say 'For goodness sake, I have 10 years' experience and you're asking me to wash my hands'" [**P3**]*
*"Yeah, or 'I know what I am doing'" [**P1**]: [**FG4**]*

A participant described her “upsetting” experience of receiving multiple hand-hygiene reminders from several patients in a short time, and how this made her perceive such patient involvement as irritating and stressful:

> *“If I have six patients and all of them asking me to wash my hands, every time that I would go there, I will go completely mad. If it’s occasionally, once every month [group laughing] it is all right. But if every time, I go there, and a patient asks me to wash my hands, I will be furious, that will upset my mood a lot” [**FG6-P4**]*

The same participant stated patient involvement in hand hygiene would add more *stress* to the nurse, especially if the reminder was frequent. She reported she would be offended if patients frequently asked about hand-hygiene compliance, and that she will not accept patient prompting:

> *“If it’s just once they are asking me to wash my hands I will accept it well, but I will ask them if they have any other concerns. If it’s happening every single time, like [nurse P2] already said, it is already stressful in our own job. If we are being questioned by patients to wash hands, then this will add more stress to me. Imagine the stress, that would be too much, as you need to do other things, and they are asking ‘Did you wash your hands?’ or ‘Please wash your hands now’. I think this will be too much, if it’s one occasion it is fine, I would accept it well, but if it is repeatedly then no I will feel offended. Because it is like what [nurse P1] said, it is part of our training, part of our job, we all have it [hand hygiene] in mind, maybe not all nurses do it, but we all have it in mind to wash our hands” [**FG6** [**P4**]:]*

A participant from the same focus group also stated patient involvement in hand hygiene would offend her and add more stress to her working environment (a ward):

> *“I would be quite offended if the patient asks me to wash my hands, and this would add stress even you already have stress on the ward. Yeah, I would be offended and this would make me a lot more stressed about my job” [**FG6-P2**]*

One view of this topic was summed up by a participant based on her experience in the Intensive Care Unit (ICU); she felt hand-hygiene reminders were not needed and it was not the responsibility of patients to remind nurses to wash their hands:

> *"Honestly! Like what the other sisters said, we have [a high] workload sometimes in the ICU. I don't think I need a reminder from patients as they should not and are not responsible for that. I sometimes work with one, two, three patients at the ICU. I can manage it. I have time to finish with one patient, wash my hands and go to the next one. I do not have any problem with hand hygiene. I really don't need a reminder from patients" [**FG1-P6**]*

However, other participants disagreed. One focus group reported that as nurses were the healthcare professionals most often in contact with patients, it was their responsibility to encourage patients to ask and they should accept patients' promoting hygiene:

> *"Not only nurses but all healthcare professionals. Because nurses spend more time with patients. You know, when they first come to us, we see them, we say hello to them. Then yes, they're seen by the doctors, but we [nurses] spend more time with them" [overall agreement from group members] [**FG4-P4**]*

Equally, another discussion between participants concluded that it was the responsibility of nurses to involve patients in the promotion of hand-hygiene compliance. Therefore, patients have the right and responsibility to question if someone is potentially harming them. One participant from this group believed patient involvement in hand hygiene was not taking the responsibility away from nurses:

> *"Everyone's' health is their responsibility." [**P6**]*
> *"My thought is they are coming to the hospital to be looked after by professional people." [**P5**]*

> *"We just want your help to remind us to wash our hands; this is not taking the responsibility from nurses at all. But it is involving them [patients] in that sort of relationship to make this the safest environment for you" [**P1**] [**FG5**]*

In summary, participants from different focus groups reported patient involvement in hand hygiene was challenging due to two main factors which were discussed in two subthemes: *Concern that patient prompting might affect trust in the nurse-patient relationship,* and *Concern that patients will not accept hand hygiene prompting from patients*. These two subthemes were discussed within the theme, *The effects of patient asking on the nurse-patient relationship*. The majority of participants reported patient involvement in hand hygiene had a negative impact on the nurse-patient trust relationship. Participants across different focus groups reported patients interrupting to ask about hand hygiene was a source of stress for nurses, and therefore an unnecessary intervention. However, some participants supported patient involvement in hand hygiene and considered such involvement as a partnership with patients to enhance hand-hygiene compliance among nurses.

In conclusion, participants held mixed views and had different experiences with patient involvement in the promotion of hand-hygiene compliance. Finally, participants believed that the culture of patient involvement in hand hygiene was a shared responsibility, not only between nurses and patients but amongst all healthcare professionals. Further details about the culture of patient involvement are discussed in the following theme.

4.2.4 Promoting a culture that supports patient involvement

Participants from different focus groups stressed the importance of creating a *culture* inside the hospital setting to empower patients to speak up about hand hygiene.

Some participants described patient involvement in hand hygiene as a “new culture”. Other participants reported the majority of patients were not aware of a culture of patient involvement in hand hygiene. Participants stated patients were not aware of what hand hygiene entailed (the procedure), when hand hygiene was needed (the moment), and whether or not they should ask nurses to wash their hands (the involvement). Overall, findings discussed within this theme indicated the need to promote a hospital culture which fully involves patients in the promotion of hand-hygiene compliance. The sub-themes, therefore, are *New culture of patient involvement in which patient prompting is acceptable* and *Raising patients' awareness of the importance of hand hygiene and involvement*.

New culture of patient involvement in which patient prompting is acceptable

There was a sense of agreement among participants that further work was needed to promote the *new culture* of patient involvement in hand hygiene. Only a small minority of participants reported an experience when patients had asked them to wash their hands. It can therefore be argued a culture of patient involvement in hand hygiene has not been embedded in the hospital procedures at the time of this study.

One participant believed neither nurses nor patients had a culture of patient involvement in the promotion of hand-hygiene compliance; it was not something they were used to:

> *“We do not have the culture of patients asking about hand hygiene. In my opinion, the culture of hand hygiene is nil. Even patients asking about hand hygiene, no, it is not activated at all, never. This is something new to our culture as nurses and patients” [**FG2-P1**]*

Similarly, a participant believed patient involvement in hand hygiene was a “new culture” and “not the acceptable norm”:

> *"It is not a culturally accepted norm. So you perhaps are a bit more used to saying 'No don't do that' or 'I have seen, don't do it that way'. I think unfortunately that is a universal culture. It is a cultural thing" [**FG5-P3**]*

Additionally, two participants discussed the importance of *creating a culture* inside the hospital setting to empower patients to speak up about hand hygiene:

> *"The key thing actually is, we are going back to that culture thing, to put patients at ease. It is your care and you should ask healthcare professionals to wash their hands, and if you see anything wrong you should talk about it. The reminder is part of that but talking to them when they come to the hospital, that is the culture of the ward." [**P1**]*
> *"Telling them that 'your safety is very important to us'" [**P3**] [**FG4**]*

The two participants discussed the view nurses were responsible for the promotion of the culture of patient involvement in hand hygiene. Promotion of such a culture meant "putting patients at ease", empowering patients and helping them to "feel comfortable" when asking nurses to wash their hands:

> *"It has to come from us [nurses]. It is a culture we developed so you [patients] would feel comfortable about it [asking about hand hygiene]." [**P1**]*
> *"I think it's like what you said, to put the patient at ease and making sure we have that relationship with patients and they are comfortable to ask and talk about it [hand hygiene]" [**P3**]: [**FG4**]*

Three participants in this focus group reported promotion of a culture of patient involvement in hand hygiene should ensure patients did not feel guilty when they asked nurses to wash their hands. Participants discussed the view that the creation of such a culture involved making both patients and nurses feel comfortable about hand-hygiene reminders:

> *"I was about to say that is really important to make nurses understand that patients should not feel they've done something wrong when they ask about hand hygiene." [**P4**]*
> *"Yes, absolutely." [**P1**]*
> *"Like saying politely 'I have washed my hands and I am really happy to wash them again.'" [**P3**]*
> *"All these things will come back to changing the culture and make sure it is acceptable" [**P1**]: [**FG4**]*

Similarly, a participant who believed nurses should help to promote the *culture* of patient involvement in hand hygiene, suggested more work was needed to encourage nurses to take an active role and facilitate the role of patients in prompting handwashing:

> *"I think it's about the culture as well, it not about it could be applicable or not, it is actually about is it okay to be reminded to wash your hands or not. It is about changing the mentality of some of the nurses, there is nothing bad about it, we need to change the culture of the nursing [staff] to accept it" [**FG4-P1**]:]*

For some participants, developing a new culture involved reassuring patients by washing their hands in the sink inside the patient's room, so patients could see hand hygiene was completed and there was no need for a reminder. Other participants also discussed their decision to perform hand hygiene within patients' view if needed:

> *"I need to make sure I do it in front of the patient and reassure them." [**P1**]*
> *"I am happy to do that again if needed, in front of them, to show them that I had." [**P6**]*
> *"I have also said 'I am happy to do it again so you can see me if you like'" [**P5**]: [**FG5**]*

Similarly, one participant said:

*"Maybe we can do hand hygiene in front of the patient; then this would solve the issue and [there would be] no need to ask" [**FG3-P3**]*

Participants reported patients may ask nurses to wash their hands again to feel safe and this could be avoided by adopting a culture of always handwashing in front of the patient. Participants reported different views:

*"Some patients will challenge the nurse to perform hand hygiene in front of their eyes, to feel safe, this is how they [patients] take things" [**FG1-P1**]*

*"Predominantly, because patients need to see me washing my hands. So hopefully it is evident that I am physically doing it, so they can see it or otherwise patients would challenge us to do it again" [**FG5-P3**]*

Participants offered several other opinions on ways to promote the culture of patient involvement in the promotion of hand hygiene. For instance, one participant suggested patient involvement in hand hygiene should become a "hospital policy" or a "new normal". Furthermore, posters could help patients and nurses to become more aware of this new culture:

*"It is important to build this culture inside the hospital. When we do a poster to make the hospital policy clear to patients that they have the right to complain and make suggestions - now we need to add words to patients to let them know it is a must you check that the care provider did wash their hands before providing service" [**FG2-P3**]*

Another participant proposed a way to introduce patients and nurses to the culture of patient involvement in hand hygiene, to help patients to feel comfortable to ask about hand hygiene, patients should be introduced to their role in the promotion of hand-hygiene compliance at the point of admission. Hence, patients and nurses would

become more familiar with the culture of patient involvement in hand hygiene in the near future. For example, in P1's words:

> *"What we really need to do is to make patients feel comfortable asking about it, that is the key thing! Every single patient, yes, and also, but I think if you make it like a culture, let's say for example if you make it as part of the admission that whenever the patient comes to the hospital we will tell them, then it will become a culture in a few years' time. That is the key thing" [**FG4-P1**]*

The same participant suggested patient involvement in hand hygiene should become a national policy introduced from senior levels to empower patients to ask nurses about hand hygiene. The participant added the *culture* of patient involvement in hand hygiene should be introduced to the public and integrated into nursing training:

> *"It [the culture of patient involvement in hand hygiene] has to be done on all levels, as we said, make it part of the admissions, and it has to come from the Department of Health to say 'it is okay to ask', on the news and everywhere, part of the nursing training" [**FG4-P1**]*

A participant discussed a way in which patients should be involved in the promotion of hand-hygiene compliance, with a slogan such as "give us a hand" to encourage patients to help as partners in their care:

> *"What I think needs really to happen is that to tell patients 'You are a partner in your care, we would appreciate the help'. I think it is about how we address it with the patients. We would say 'Give us a hand', 'If you've seen that we haven't washed our hands, please give us a hand and remind us, we're busy people' … 'Give us a hand'. It is helpful and to make sure that everybody is going to be prepared to accept that" [**FG5-P6**]*

Participants felt the culture of patient involvement in hand hygiene could become "accepted or standardised practice" over time. One participant said all nurses would

remain vigilant about washing their hands if they expected that patients might ask about their hand hygiene:

> *"In the longer term, isn't that going to make sure you do that [wash your hands] before you go to that patient? Or in front of them?" [**P6**]*
> *"Then it [patient asking about nurses' hand hygiene] will be customary." [**P2**]*
> *"Yeah, like accepted or standardised practice." [**P3**] [**FG5**]*

Some participants felt patients had a vital role to play in promoting a culture of patient involvement in hand hygiene. Participants argued the promotion of such a culture needed to begin with raising patients' and nurses' awareness of hand hygiene and the role patients could play in the promotion of hand-hygiene compliance. Further details regarding the lack of patient awareness in the promotion of hand-hygiene compliance are discussed in the following subtheme.

Raising patients' awareness of the importance of hand hygiene and involvement

Participants in different focus groups had similar views that patients needed to be more aware of both the importance of hand hygiene and the role they could play in hand hygiene promotion. Patient awareness of the importance of hand hygiene could facilitate efforts to spread a culture of patient involvement and increase patients' active involvement in the promotion of hand-hygiene compliance. There was overall agreement in most focus groups that patients as well as nurses lacked awareness of a culture of patient involvement in hand hygiene:

> *"We need to raise patients' awareness of hand hygiene" [**FG3-P1**]*

> *"I don't think that most patients know enough about hand hygiene" [**FG4-P4**]*

One participant believed patients with high levels of awareness about the importance of hand hygiene were more motivated to ask nurses to wash their hands. Similarly, patients with insufficient knowledge about hand hygiene were less encouraged to be involved in the promotion of hand-hygiene compliance:

> *"I just feel like patients don't have the knowledge, the only patients I see questioning anything healthcare professionals do are patients who have some basic knowledge of healthcare, but I don't think that most patients, they know enough about hand hygiene" [**FG4-P3**]*

One participant also suggested patients' level of awareness concerning the importance of hand hygiene was vital in deciding their intention to speak up about nurses' hand-hygiene practices. This opinion was confirmed by another participant:

> *"I don't genuinely know if, actually, patients are aware of it [hand hygiene] as much as the majority of us are aware of it. If they are not aware of it or bothered about it." [**P3**]*
> *"Yeah, I totally agree with you." [**P2**] [**FG7**]*

Participants suggested nurses would agree to the role of patient involvement in the promotion of hand-hygiene compliance if patients were sufficiently aware of hand hygiene practices and how they should ask:

> *"I agree with the patient asking, but agreement only comes with health education for patients on how to ask about hand hygiene – how come I will ask patients to remind me to wash my hands without telling them what the hand washing is or how to ask?" [**P2**]*
> *"I would wash my hands ten times if the patient is aware and educated" [**P6**] [**FG1**]*

Participants in one group all agreed enhancement of patients' awareness of hand hygiene could result in stronger involvement from patients in the promotion of hand hygiene, which would be shown by patients having greater intentions to challenge nurses to wash their hands:

> *"Definitely, if you raise patients' awareness then they are going to challenge it [hand hygiene], while if they don't understand the importance of it, they [patients] might say 'We've never been asked about this in hospitals', and you're not going actually to have the drive to challenge it." [**P3**] [**FG7**]*

The discussion continued:

> *"I think generally from my experience patients are not aware of it [hand hygiene] enough and it's important to have that role [patient involvement] done. So, I think some more patient education is needed and would help" [**P4**]*
> *"And some encouragement as well, that it's okay to say something if they needed" [**P4**] [**FG7**]*

However, a participant argued patients' levels of awareness should not be the deciding factor; it was their right to ask about hand hygiene. The participant believed being "inclusive" of patients with different health literacy levels was important to ensure that all patients asked nurses to wash their hands:

> *"This depends on the level of knowledge that the patient has. We have a patient who comes to the hospital with a different level of education. Some patients who have no literacy, will not know what is going on. We have to include here the ethics of nursing. Hand washing is part of the treatment and patients should ask about it. Me and you know that very well, but patients don't" [**FG2-P3**]*

A discussion ensued between participants regarding who should be responsible for enhancing patients' awareness of hand hygiene to facilitate their role in the promotion of hand-hygiene compliance. One participant believed all healthcare professionals held a shared responsibility to raise patients' awareness about the importance of hand hygiene:

> *"To raise patients' awareness about the right hand-hygiene technique, and the responsibility of healthcare workers who deal*

*with patients; is to make it clear that patients' right is staff's hand hygiene, so patients would ask about it [hand hygiene]" [**FG1-P2**]*

A participant agreed:

*"People who are in need of health care, need the right education and awareness from a designated staff member inside the hospital, to tell them that it is their right to ask about hand hygiene, this way, we can increase hand-hygiene compliance rates" [**FG2-P3**]*

Additionally, a participant suggested posters could be helpful to raise patients' awareness and encourage them to ask nurses to wash their hands:

*"How about having a poster about patient involvement, it is like every single border [entrance to a section] should have that handout or poster to say 'It is okay to ask the healthcare professional to wash their hands'?" [**FG4-P1**]*

Interestingly, one participant held the opinion patients were not sufficiently aware of the hand-hygiene steps or technique to become involved in the promotion of hand hygiene. The participant discussed patients' lack of awareness of the right moments and techniques of hand hygiene, which could limit their involvement in the promotion of hand-hygiene compliance:

*"It's like you're talking about a solid concept, not the whole process! The normal hand washing, I think as I have seen in the picture, finger by finger and so on… The patients do not know this process! If you said yes, I washed or not, it is not clear to the patient what the hand hygiene is." [**FG2-P1**]*

The quote above represent another statement from a participant in focus groups who mentioned similar scenarios, giving various examples of how patients' awareness could facilitate their role in the promotion of hand-hygiene compliance.

In summary, participants reported patient involvement in hand hygiene was challenging due to two main factors: (a) the need to promote a culture of patient involvement in the promotion of hand hygiene in which patient prompting is acceptable and (b) the need to raise patients' awareness of the importance of hand hygiene and their lack of involvement which could limit their role in the promotion of hand-hygiene compliance in the hospital setting.

4.3 Summary

This chapter has presented the four themes and eight subthemes revealed from seven focus group discussions that were completed with registered nurses in two countries, Jordan and the UK. These findings provide insight into how nurses describe their experiences and perceptions of patient involvement in the promotion of hand-hygiene compliance among nurses in the hospital setting. The commonly shared themes from focus-group discussions reveal nurses acknowledged patients asked to wash their hands as a *precaution,* not a *provocation*. Nurses also referred to patient involvement in hand hygiene as a useful tool to encourage them to remain vigilant, as they might *forget* to wash their hands.

However, regardless of their overall agreement with patient involvement in hand hygiene, nurses reported patients prompting hand hygiene was challenging in practice. Nurses discussed *how patients ask* was important and the techniques they used for interacting with patients might shape their *reactions* to the hand-hygiene reminder. Nevertheless, nurses reported patient involvement in hand hygiene could have an adverse impact on the *nurse-patient relationship*. Nurses believed patient involvement in hand hygiene might have a negative impact on the nurse-patient *trust* relationship, as nurses might not accept hand hygiene prompting from patients.

Finally, to ensure effective patient involvement in hand hygiene, nurses believed that endorsement of a *new culture* of patient involvement and enhancement of *patients' awareness* could facilitate the role of patients in the promotion of hand hygiene compliance and therefore their willingness to ask nurses to wash their hands.

CHAPTER 5: RESEARCH FINDINGS – PATIENTS' EXPERIENCES OF PROMPTING NURSES ABOUT HAND WASHING

Abstract

The aim of the work described for this PhD study was to understand the role of patient involvement in the promotion of hand hygiene among nurses in the hospital setting. This chapter presents the results of telephone interviews with patients, who were asked to discuss their experiences of involvement in the promotion of hand-hygiene compliance. The following objective was addressed and explored in greater depth through this stage: *to gain insight into patients' experiences regarding their involvement in asking nurses to perform hand hygiene, through the use of critical incidents.* Semi-structured telephone interviews were completed with 21 patients in Jordan. Interview participants were requested to recall their experiences (critical incidents or happenings) when they had asked or had chosen not to ask nurses to wash their hands, and to describe what had prompted

them to, or hindered them from, requesting hand washing. Interviews were completed in Arabic, recorded and transcribed verbatim, and then translated into English, and critical incident analysis was completed. Categories and subcategories were derived from the data. This chapter presents the findings of two categories and seven subcategories.

5.1 Introduction

This chapter details the categories (n = 2) and subcategories (n = 7) into which the data have been grouped following data analysis of the textual data from the transcripts of telephone interviews with patients in Jordan. In line with critical-incident analysis (Flanagan, 1954), the categories and subcategories have been derived by the grouping of similar incidents/happenings.

The number of happenings (n = 116) in each category and subcategory is presented in Table 5.2, together with the code allocated to each interview. The table represents the identification of the categories and subcategories across all of the interviews with respect to the entire data set including interview's code [participant number P1-P21], number of happenings per category/ subcategory and the total number of happenings reported in the study. This section of the study focussed on the analysis of critical incidents/happenings. However, discussion of the happenings triggered additional discussion which has also been analysed in this section.

Two categories and seven related subcategories were developed. The first category comprises those incidents during which patients asked nurses to wash their hands, it includes three subcategories in which patients discuss their experiences of asking nurses to wash their hands and what prompted them to ask. The second category comprises incidents/happenings during which patients wanted to ask nurses to wash their hands but felt unable to ask. It comprises four subcategories, which cover the factors that hindered patients from requesting that nurses perform hand-washing. Table 5.1 below defines these categories and subcategories.

Table 5.1: Categories, subcategories and definitions into which data collected during telephone interviews were grouped

Category	Subcategory	Definition of the Category
Patients asked nurses to wash their hands	• *Patients asked because they felt they had the right to prompt nurses to perform hand hygiene in order to ensure that they received safe care* • *Patients asked when nurses were not wearing gloves and before the nurses touched them* • *Patients asked when they observed an imminent risk of exposure to blood or body fluids*	This category includes data on patients' experiences when they *asked* nurses to wash their hands. This category includes data on what *prompted* patients to ask nurses to wash their hands. In the interviews, patients discussed their right to prompt nurses to perform hand hygiene, and said that the reminder was necessary when: *(a) Patients noticed that nurses were not wearing gloves;* *(b) Nurses touched other patients in the room without washing their hands; and* *(c) Patients noticed specks of visible dirt or blood on nurses' uniforms or in a surrounding patient area.*

Patients wanted to ask nurses to wash their hands but they were unable to ask	• *Patients felt it was not their responsibility to prompt hand washing* • *Patients did not ask because they feared it might harm the nurse-patient relationship* • *Patients did not ask because they felt it was offensive and upsetting to nurses* • *Patients were embarrassed or shy to ask nurses to perform hand hygiene*	This category includes data on patients' experiences when they *did not ask* nurses to wash their hands. This category includes data on patients' experiences when patients wanted to ask nurses to wash their hands, *but felt they could not.* This category includes data on factors that *hindered* patients from asking nurses to wash their hands. These factors are separated into subcategories.

5.2 Introduction to the categories and subcategories

As illustrated in Table 5.2, a total number of 116 critical happenings reported following the critical incident analysis. Incidents ranged between 1 and 8 happenings per participant. All the categories and subcategories provide insight into the experiences of patients concerning their involvement in the promotion of hand-hygiene compliance in the hospital setting. Although the researcher collected data regarding critical incident/happenings and provided a detailed explanation of these happenings, findings from patients presented in this chapter include comments on patients' experiences when asked or felt they wanted to ask nurses to wash their hands. Therefore, the categories and subcategories are discussed in this chapter and are illustrated with excerpts of verbatim text from patients' narratives, as provided during the telephone interviews.

Table 5.2: Number of critical happenings reported for each category and subcategory

Category / *Subcategory*			
Patients asked nurses to wash their hands	**Interview code**	**Number of happenings per interview participant**	**Total number of happenings per subcategory**
Patients asked because they felt they had the right to prompt nurses to perform hand hygiene in order to ensure that they received safe care	P3 P10	5 4	**9**
Patients asked when nurses were not wearing gloves and before the nurses touched them	P5 P7 P11 P19 P21	6 6 2 5 6	**25**
Patients asked when they observed an imminent risk of exposure to blood or body fluids	P6 P11 P12	8 7 3	**18**
Patients wanted to ask nurses to wash their hands but they were unable to ask			

Patients felt it was not their responsibility to prompt hand washing	P1 P13 P15 P16 P17 P20	3 4 7 2 3 5	**24**
Patients did not ask because they feared it might have a negative impact on the nurse-patient relationship	P17 P16 P19	6 2 1	**9**
Patients did not ask because they felt it was offensive and upsetting to nurses	P1 P2 P13 P14 P15 P16	1 3 5 3 3 6	**21**
Patients were embarrassed or shy to ask nurses to perform hand hygiene	P1 P15 P18	2 5 3	**10**
TOTAL NUMBER OF HAPPENINGS			**116**

5.3 Emergence of categories and subcategories

The critical-incident technique (Flanagan, 1954) guided the process of data collection during the semi-structured telephone interviews. As discussed in Chapter Three: Methodologies and Methods, the researcher followed a systematic and inductive approach that involved the collection of a description of events or behaviours in a defined situation. Hence, critical incidents/happenings were defined as any patient incident or happening that was self-reported by the participant who, during a hospital stay, had requested or not requested nurses to wash their hands. The participants were prompted during the interviews to recollect specific incidents and how the nurses had reacted to those situations. Pre-set questions sought details regarding the critical incidents, the interview guide (Appendix 3.16) included an opening, open-ended question and several other questions that invited participants to recollect their experiences during the time of their hospitalisation when they had prompted nurses to wash their hands. The discussion of critical incident/happenings triggered discussion of the participants thoughts and feelings about the incident.

5.4 Overview of the interview findings

The researcher explored in detail all aspects related to what these incidents might have involved or how they were experienced from the participants' perspectives. Patients reported both positive and negative experiences during their hospitalisation that had encouraged them to ask or had discouraged them from asking nurses to wash their hands. The positive experiences included nurses demonstrating positive attitudes towards the patients, in the form of: effective communication and shared understanding; an atmosphere that enabled patients to discuss any worries or fears related to their safety; enough opportunity to talk; and confidence and trust in the

nurses to provide compassionate care. Participants also reported other positive incidents where there was a ‘no-blame’ culture in which patients felt empowered to report incidents (prompting hand washing) and recognised the importance of reporting them to ensure their safety.

However, negative experiences were more common. In several situations, participants said as patients they had felt the need to ask nurses to wash their hands, but they either did not ask or wanted to ask but felt they could not. For instance, patients experienced staffing pressures (nurses were busy) which, from a patient perspective, resulted in compromised patient safety. Other negative patient experiences included embarrassment or shyness that prevented them from speaking out; fear of creating a negative impact on the nurse-patient relationship; and their sense that prompting handwashing would offend and upset nurses.

The following sections present the critical-incident findings from the analysis of telephone interviews with patients in response to the open-ended question: *“Can you describe a situation that you experienced in which you asked a nurse to wash their hands, or an experience when you wanted to ask a nurse to wash his or her hands, but did not?”* The sections discuss the two main categories and seven subcategories. Each subcategory is illustrated with quotes from participants in the interviews and numbered according to the participant number (such as P1, P2, P3). Each quote is followed by disclosure of the setting in which incident/happening (prompting handwashing) happened (the type of ward). To enhance understanding for Arabic-speaking readers, when participants used some Arabic idioms, the original wording is provided along with the translation into English.

5.5 Incidents when patients asked nurses to wash their hands

This category consists of three subcategories that describe the experiences of patients when they *asked* nurses to wash their hands. Patients' experiences were related to how they felt before, during and after their prompting of nurses to wash their hands. Their experiences were shaped by their belief they had the right to receive safe care within a hospital, and this included their right to ask nurses to wash their hands. Participants stressed that hospitals should be safe places, not places in which patients were at a higher risk of infection than in their own homes or anywhere outside the hospital environment.

This category includes patient descriptions of *what triggered their request* to the nurses to wash their hands. Participants provided several examples based on their observations and understanding of nursing practice, including their belief that patients had the right to receive safe care from clean hands; their observation that nurses were not wearing gloves while providing care; and their perception of their risk of exposure to blood or body fluids. All these experiences are discussed in the following subcategories.

5.5.1 Incidents when patients felt they had the right to prompt nurses to perform hand hygiene in order to receive safe care

Two participants (***P3*** and ***P10***) discussed their strong belief in their right to prompt nurses to perform hand hygiene. The first participant stated:

> *"I think it is absolutely the patient's right to ask about hand hygiene...I think patients should be aware it is their right to ask nurses to wash their hands; it is very important to understand it is their right to ask"* ***[P3,*** *postnatal patient****]***

The participant stated people in her country lacked trust in the provision of safe healthcare and did not consider hospitals to be safe places. The participant linked a safe hospital environment with hand-hygiene compliance, therefore, she decided that she had the right to remind nurses to wash their hands:

> *"We have to tell patients that hospitals are safe places where you receive treatment as they [patients] are losing trust in hospitals, and hand hygiene is one point. I should be aware that it is my right to ask nurses about hand hygiene"* ***[P3]***

The same participant described her experience of prompting hand washing and the nurse's response. She emphasised her rationale behind her reminder to the nurse to perform hand hygiene was to ensure her safety, and not to criticise the nurse personally:

> *"She [the nurse] said: 'You know what, I did wash my hands and I know what I'm doing, it is my job.' I said: 'I swear I asked to make sure your hands are clean, not to criticise you personally'…Patients have to tell nurses if they argue after patients ask, that the asking is to protect themselves [patients] from getting a deadly infection and this is not criticising nurses or teaching them how to do their job"* ***[P3]***

The interview participant described her way of asking as "kind" and she reported being "shocked" by the nurse's response. The participant argued nurses should be grateful for hand-hygiene reminders and should not hold any grudge towards patients who mention it. However, the participant stated patients should not ask in what she described as a "rough manner":

> *"I was smiling when I asked, but her [the nurse's] reaction shocked me, honestly. She was angry and upset about it and started to make some noise with the instruments; maybe she was mad at me…Maybe some rough manners from patients when asking, like 'do not touch me', 'do not get close to me', or 'wash your hands then touch me', or 'do your job', would make nurses react harshly or*

> *worsen the situation…I think some gentle gratitude between the patient and the nurse would enable patients to ask without being afraid of the nurse's reaction"* ***[P3]***

Similarly, the participant stated patients had the right to ensure their safety through prompting, not only nurses, but all healthcare professionals to perform hand hygiene. The participant stressed the belief patients were "experts" in the healthcare environment and therefore, they should prompt nurses to wash their hands. Similarly, to the previous participant, this participant claimed that patients should not feel guilty when prompting nurses to wash their hands:

> *"I think we have to make things more apparent here. Patients have the right to ask about anything concerning their health and safety. Doctors and nurses should not give patients the feeling that they are doing something wrong if they ask. They [patients] have the full right to ask. We all know that 'the patient is the doctor of himself' [□ □□□□□□□□□□ □□□□□□□□□□ □□□□ □"][****P10,*** *female surgical ward****]***

The participant described her experience as "awkward" when she prompted hand washing. She expected that healthcare professionals would regularly wash their hands, and she understood they were aware of the way they should do their jobs. Therefore, the participant stated it was "hard" for her to ask the nurse to perform hand hygiene:

> *"I asked the nurse to wash her hands. It was awkward I can tell you; when [speaking to] a member of medical staff who knows all about healthcare and how things should be, sometimes it is hard to talk about it [hand washing]"* ***[P10]***

The nurse "was not happy" to be asked, and had complained to the nurse in charge. The participant reported some concerns that the nurse had considered the hand-hygiene reminder as a personal criticism. The participant stated that the nurse

perceived the hand hygiene reminder as “teasing” from the patient, therefore the nurse reacted on that basis and complained to the nurse in charge:

> *“I asked the nurse to wash her hands, but she wasn’t happy about it. She turned her face away and said ‘okay, will do that’. The only thing I remember is that she did hand hygiene in front of me, and that was the only thing I cared about at that time…I also remember that she [the nurse] went to talk to the nurse in charge complaining that I had asked because I was a dentist and was trying to tease her. Honestly, this was not my intention at all…You know what, I think that nurse took my question personally”* ***[P10]***

Overall, patients reported experiences when prompted handwashing as they had the *right* to receive safe care therefore ask nurses to wash their hands. The experiences from patients showed that they were often *confronted* and *shocked* by the nurses behaviours when asked them to wash their hands. However, patients stated they felt that they had the right to ask not only nurses but all HCPs to wash their hands without any sense of *guilt* or they have done *something wrong*.

5.5.2 Incidents when patients asked nurses to wash their hands when the nurses were not wearing gloves as they prepared to touch the patients

Five participants [***P5***, ***P7***, ***P11***, ***P19*** and ***P21***] reported that they had asked nurses to wash their hands because the nurses were not wearing gloves and were about to come into contact with them. All five participants stated the same reason.

The first participant reported he had asked the nurse to perform hand hygiene when the nurse intended to take a blood sample without wearing gloves:

> *"The nurse entered the room and wanted to take a blood sample without wearing gloves...I did ask him [the nurse] directly: 'could you please wash your hands?'" **[P5,** emergency department**]***

The participant described his feelings as he asked and after he had asked the nurse to perform hand hygiene, particularly in light of the nurse's response:

> *"The experience was not pleasant as I felt terrible after telling the nurse to wash his hands; especially when the nurse approached me [again], smiled and said: 'Now I washed my hands, are you happy?'…I felt like he [the nurse] wasn't happy about what I did, so I just felt bad about everything" **[P5]***

The participant stated he felt stressed and felt a need to apologise to the nurse, but he did not do so after one of his family members told him that he had made the right decision to ask:

> *"I wanted to apologise later, but my sister stopped me and said: 'It's fine, the nurse is not upset, don't worry about it, you did the right thing'" **[P5]***

The participant stated there had been no further interaction between himself and the nurse, other than the taking of the blood sample, but he had sensed the nurse's expression indicated the reminder was not appreciated:

> *"The nurse's smile was like I did something wrong; I know how different [from a genuine smile] that smile was. I think that smile was more like to make me feel bad because I had asked him to wash his hands" **[P5]***

Another participant had asked a nurse to wash his hands after she had observed him working without wearing gloves. The participant had been worried the nurse was preparing to administer intravenous medication without gloves:

> *"I noticed that the nurse was working with no gloves and mixing medication or something next to my bed. I asked him at that time: 'Is*

> *this for me?' He said: 'Yes'…I was worried about how careless that nurse was. He tried to insert a needle in my hand, 'to give me some fluids' [he said]"* ***[P7,*** *dialysis unit****]***

In response to questions from the researcher (how did you ask the nurse to wash his hands?; how did the nurse respond to the reminder?), the participant described the incident further:

> *"I asked directly, like 'sorry, did you wash your hands?'…The nurse responded: 'Please don't worry, I've just put alcohol on my hands, my hands are clean'"* ***[P7]***

The participant sensed from the nurse's body language the nurse was not happy about receiving a reminder to wash his hands. There was no further verbal interaction between the nurse and the patient after the hand-hygiene reminder. The participant stated she had asked the nurse to wash his hands as she knew there was a high risk of acquiring infections in hospital:

> *"The nurse was not happy about it. He did not say anything, but I could see this in his face, he was not comfortable after I asked…I did not want to be mean, but I just asked because I know how bad it is if you get a serious germ from inside hospitals"* ***[P7]***

The participant further stated she had been reassured regarding her safety by the nurse's statement he had applied an alcohol-based sanitiser, but she feared the nurse may have been offended by the hand-hygiene reminder:

> *"I just reminded the nurse, and then we did not talk about the situation again. I appreciated that he did wash his hands, even though I did not see him washing them; the nurse said he did with alcohol, so I trust that…The nurse was not happy about it [the query regarding his hand washing]. I felt like I had offended him or something"* ***[P7]***

Another participant had asked a nurse to wash her hands after observing the nurse working without gloves. The participant had been concerned about her safety as she had *thrombocytopenia*. She described what happened:

> *"I said: 'Could you please wash your hands?'. The nurse was not happy, as I saw in his face. He said: 'I already washed my hands, Madam.' I smiled and said 'thank you'. I was really concerned about my safety at this stage as the nurse did not even use gloves to take blood samples, knowing that I have a problem with platelets, and he already knew that"* ***[P11,*** *emergency department****]***

Another participant described a more positive interaction when she had asked a nurse to wash her hands before performance of a physiotherapy session. The participant reported there was a positive, shared understanding with the nurse when she prompted the nurse to wash her hands. The nurse had acknowledged the lack of hand-hygiene compliance and had been willing to wash her hands:

> *"The nurse wanted to touch me without putting her gloves on, as she said 'it's better and more effective without gloves to massage your foot'. Even so, I asked her: 'Would you please wash your hands?'. The nurse smiled and said: 'Of course I will do that.'"* ***[P19,*** *surgical ward****]***

The participant stated her manner of asking had been reflected in the way in which the nurse had responded to the hand-hygiene reminder:

> *"I asked, and in a very gentle way. That is how it should be anyway. You cannot ask someone to do something for you in a bad or rude way; that is like you do not trust them. To ask someone, especially when it comes to healthcare personnel, you must be very kind and make a polite request for whatever you need from them. I am sure they would appreciate that you asked politely and then they will do whatever you asked them to do for you"* ***[P19]***

The participant explained why she thought her kind way of asking had resulted in a kind response from the nurse:

> *"I think it is about being kind and positive. This enhances our relationship with the medical staff. We are not here [at the hospital] to search for their mistakes. I think looking for their errors and criticising them would broaden the gap between us, and create an unhealthy environment for all of us"* ***[P19]***

Another participant reported asking a nurse to wash his hands after observing the nurse returning from outside the hospital building and coming to make contact with the participant's father without wearing gloves. The participant stated:

> *"A nurse entered the room to take a blood sample. I noticed the nurse was not wearing gloves and he started to check for a place to take the blood. I said to the nurse: 'Please wash your hands as I saw you outside smoking and I did not see you washing your hands'"* ***[P21,*** *acute admissions unit****]***

The participant considered the hand-hygiene reminder had been necessary as the nurse was not wearing gloves:

> *"Some nurses are already wearing gloves and do not need a reminder, but in my case, clearly, the reminder was necessary. I encourage everyone in hospitals to ask about hand hygiene or [medical staff] not wearing gloves if they see that their loved ones are at risk"* ***[P21]***

The participant reported how the nurse had reacted to her hand-hygiene reminder. The participant regarded asking the nurse to wash his hands as "awkward*",* but she stressed asking the nurse to wash his hands had been to ensure patient safety even if the reminder was upsetting for the nurse:

> *"I asked the nurse to wash his hands, and he was shocked. I remember, he was not happy about my question, especially when I said: 'I saw you smoking outside, but not washing your hands.' I think this was awkward, but you know, I don't mind upsetting anyone if health is at risk. There is no courtesy [necessary] here"* ***[P21]***

The participant reported her father, who was the patient and a medical doctor, had also asked the same nurse to wash his hands. The participant said the nurse had reacted differently to the request from someone with a medical background and therefore some standing in the hospital:

> *"I asked the nurse to wash his hands; he was not that happy about it. However, when my dad spoke to him and said 'I am a doctor, and we both know how important hand hygiene is', the nurse's reaction was different. He smiled and went to wash his hands. I think this was because my dad is a doctor, and you know the 'authority' could have helped the situation. Maybe because my dad knows everything about not washing hands, and how awful this could be, the nurse responded and washed his hands"* ***[P21]***

5.5.3. Incidents when patients asked nurses to perform hand hygiene when they observed an imminent risk to themselves from exposure to blood or body fluids

The experiences of three participants [***P6***, ***P11***, and ***P12***] fell into this subcategory. All the experiences that have been classified into this subcategory happened in emergency departments, where the patients asked nurses to wash their hands after they had noticed red spots, which they understood to be blood, or yellow spots, which they took to be bodily fluids, on the nurses' lab coats.

A participant had asked one nurse to wash her hands when the patient noticed visible blood spots on the nurse's lab coat before the nurse started checking the patient's vital signs (blood pressure and temperature). The participant acknowledged she was aware of the 'busy time' at the emergency department as other nurses were busy treating admissions due to a traffic accident. The participant stated nurses were busy 'saving lives', but she had to ask the nurse to wash her hands:

> *"The nurse said she was here 'to check my blood pressure and temperature' and to talk to me about what had happened. Her white coat had some blood spots. I was not sure if these were new or old spots, but I saw the blood…I asked her: 'Are you sure your hands are clean? As I heard there is an accident outside.' I was worried about the view I saw of the white coat with blood spots, and I didn't see if her hands had blood on them or not"* ***[P6,*** *emergency department****]***

The participant described the nurse's response as "not pleasant". The nurse "yelled" at the patient after receiving the hand-hygiene reminder. The participant stated:

> *"Because I saw the blood, I asked her nicely: 'Are you sure your hands are clean? As I heard there is an accident outside.' That's what I said…She [the nurse] replied: 'Can't you see the ER is really busy as we are dealing with a traffic accident and lots of people here are in pain?'…The nurse's response was not pleasant, to be honest. She yelled at me and said: 'Can't you see us busy with one million cases outside!' Well, I didn't say 'stop caring for others'"* ***[P6]***

The participant stated the nurse had continued to speak angrily to her. She said the nurse had argued the hospital was clean enough, and had even told the patient to leave the hospital or receive care from a different nurse:

> *"The nurse was really upset about it [the patient's request that she ensure that her hands were clean] and told me how busy she was, plus she asked me to leave the hospital if it wasn't clean…She said: 'You know how busy these hospitals are, if you think you are not safe you can leave, or find another nurse to take care of you'"* ***[P6]***

The participant said she had felt "shocked" and "speechless" after she heard the nurse's response to the hand-hygiene reminder. However, the participant stated she had been glad when the nurse decided to wash her hands:

> *"I was really shocked and speechless at that time. I didn't add anything; I just relaxed in my bed and let her do whatever she wanted.…It was clear that the nurse was mad at me because I asked [about the cleanliness of her hands]. She [the nurse] went to*

wash her hands but didn't change her uniform…I didn't say anything, but the nurse washed her hands and I felt a bit calmer and happy that, at least, she did wash her hands…I didn't talk to her again but I could tell that she was not happy that I had asked her to wash her hands" ***[P6]***

Another participant reported a similar reason had led to her asking a nurse to perform hand hygiene. The participant said her first reason for asking was "to feel safe". The second reason was her observation of some "dark yellow spots" on the nurse's lab coat, which the participant had considered to be a "body fluid" from another patient, and therefore, she had felt that the reminder was necessary:

"I asked the nurse just to make sure I was safe, but honestly I didn't see anything that would encourage me to ask…I first saw the lab coat, but I didn't see any dirt on his [the nurse's] hands; if it had been visible blood then it would have been easy to see, but there was no blood on his hands or lab coat, [instead] it was like little dark yellow spots all over the lab coat, the chest area, probably vomit or something from another patient" ***[P11,*** *emergency department****]***

The participant explained how the nurse had responded to the hand-hygiene reminder. The participant stated the nurse "was not happy":

"The nurse was not happy; it was clear on his face. He just said: 'I already washed my hands.' I did smile and said 'thank you'. Anyway, I was really concerned about my safety at this stage…The nurse was not that happy with the reminder, I think because I looked at [the yellow spots on] his lab coat first and then asked. Maybe he felt that 'because of the dirt on my lab coat, she is asking about my hand hygiene'…He did not say that literally, but we both noticed this" ***[P11]***

The participant described how she had perceived the nurse's response:

"The nurse's response didn't include any kind words. If it had, then that would keep patients psychologically happy. It will be hard for patients to be part of the care plan and talk to nurses while receiving

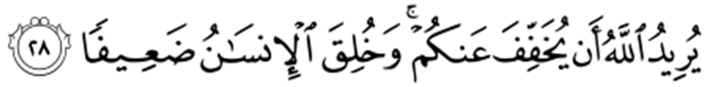
care without empathy. We have to be honest with ourselves and respect each other as human beings" ***[P11]***

The participant added the "nurse's attitude" towards a patient who had requested hand washing had not been appropriate:

"I think some nurses should change the way they speak to patients. The nurse I dealt with may be perfect in patient care or doing procedures. I am not talking here about his skills. All that I am talking about is the nurse's attitude, which was not nice" ***[P11]***

The participant elaborated on her feelings towards the nurse's response, on her feelings of weakness during her hospitalisation and at different stages including before, during and after the hand-washing incident, and on how nurses needed to support patients with "mercy and sympathy":

"They [nurses] can direct the conversation and make you happy or sad within seconds. You know, I needed support while I was hospitalised; I had never seen myself as weak as this before. The Quran says: 'Allah wishes to lighten for you, and humans are created weak'" [Sura 4: An-Nisa]



"I believe all humans are naturally weak in some situations, like when they are patients in hospitals. They are even weaker and need support, mercy and sympathy" ***[P11]***

Another participant stated she had asked a nurse to wash her hands after she had seen the nurse cough and use her hands to cover her mouth. The participant stated:

"She [the nurse] coughed and used both hands to cover her mouth. After that, she approached me and asked me to relax my hand for her to check the blood pressure. I said: 'Sorry, could you please wash your hands?' The nurse was surprised, she opened her eyes

and mouth, and said: 'I am really sorry, I totally forgot.' Actually, she was kind to me" ***[P12,*** *emergency department****]***

The participant discussed self-protection as her main motivation for the request that the nurse wash her hands. The participant reported the nurse had responded pleasantly as she acknowledged her non-compliance with the hand-hygiene procedure and rectified the omission by performing hand hygiene:

> *"I just felt I had to protect myself and ask that nurse, maybe her hands were full of germs…I told her 'wash your hands please', and she responded according to my question, but that was it. We did not talk about this afterwards…She was honest with me and admitted that she forgot to wash her hands, and went to wash them. That is everything for me, when you know your mistake and correct it at the same time - within seconds - that means you are a smart person. I like people who are really smart and can respond quickly"* ***[P12]***

In this category, the participants seemed frequently to get a negative response to their requests, which was unpleasant and stressful for them as patients. On the occasions when the nurse's response was pleasant it was usually because the participant had been careful to ask in a particularly pleasant and polite way.

5.6 Incidents when patients wanted to ask nurses to wash their hands but they were unable to ask

This category comprises four subcategories which describe patients' experiences when they *wanted to remind* nurses to wash their hands, but they felt they *could not*. The majority of participants *did not ask* nurses to wash their hands or perform any form of hand hygiene. Most of the participants gave different reasons to explain why they had not asked nurses to wash their hands. First, as patients they felt that they

were not responsible for reminding nurses to wash their hands. Second, they felt that asking nurses to wash their hands might harm their relationships with the nurses. Third, they felt nurses might be offended or upset if they were asked to wash their hands. Finally, participants said they felt embarrassed to ask nurses to wash their hands as they could be seen to be directly confronting and challenging nurses. All these experiences are discussed in the following four sections, which consider each of the four subcategories.

5.6.1 Incidents when patients felt it was not their responsibility to prompt hand washing

In this subcategory, six participants [***P1***, ***P13***, ***P15***, ***P16***, ***P17***, and ***P20***] reported their experiences when they felt it was not a patient's responsibility to remind nurses to wash their hands. Participants described their feelings about this matter, their experiences and how they felt in their individual situations. Their descriptions are detailed in the following paragraphs.

One participant reported asking nurses to wash their hands was not a patient's responsibility because patients expected all healthcare professionals, including nurses, to clean their hands before touching patients. Therefore, a reminder regarding hand hygiene was not a patient's duty:

> *"As a nurse is educated, I automatically supposed that he [the nurse] washed his hands. This is what makes me hesitate to ask, as he knows his job better than me"* ***[P1,*** *emergency department****]***

The same participant suggested patients would wonder "why they would have to ask or why any patient had asked nurses to wash their hands". The participant said the nurse would argue with patients when they receive hand hygiene prompts just after

completing handwashing. The participant concluded that prompting nurses to wash their hands was not a patient concern:

> *"Even if I asked, the nurse might tell me that he has washed his hands already. I cannot do anything then. It's like, why would I ask in the first place?…They [nurses] would react to the reminder in a defensive way. The nurse might already have done that [hand washing] and would say: "I already washed my hands, and I know how to do my job.…The nurse's reaction would be defensive; I am sure about this. Then we [patients] cannot do anything about it. So it's not my concern"* ***[P1]***

Another participant reported similar views prompting nurses to wash their hands was not needed. The participant said that as a patient she had wanted to ask the nurse to wash her hands, but then she had decided not to ask. The participant justified her decision with an explanation of a discussion with other patients in the same room, which was a surgical ward. The participant reported fellow patients had felt an appreciation of nursing care and the level of care that the nurses had provided for them, and therefore, the participant felt the hand-hygiene reminder was not necessary:

> *"I wanted to ask her [the nurse to wash her hands], but we had an argument with other mothers in the room about this [prompting hand washing], and therefore I couldn't ask. Nothing stopped me, but I decided not to ask…I did not talk to the nurse but I talked to other mothers in the room with me. We had noticed that the nurses were really helpful and doing a great job [over] days and nights to help us, so there was no need to ask them about this"* ***[P13,*** *female surgical ward****]***

The participant stressed her confidence nurses and other healthcare professionals knew their responsibilities, and therefore, there was no need to intervene in their job to ask them to wash their hands. The participant also suggested it was not ideal for patients to interfere in nurses' duties, as they might receive unpleasant feedback:

> *"Personally, I don't think I would be able to say a word to nurses or doctors. I am confident that they [nurses and doctors] know better than me. They are masters at their job. I am a good cook and I won't accept anyone telling me what to do in the kitchen, let's put it like that. We say: 'Whoever interferes in someone else's affairs will be told something unpleasant'"* ***[P13]***

Another participant expressed the view that, since nurses were supposed to clean their hands before touching patients, therefore, she was not responsible for prompting the nurse to hand wash:

> *"I did not actually ask. I suppose that doctors and nurses already clean their hands and care about sterility, right?…But why would a patient have to ask? Why is it not a nurse's job or part of what they do?"* ***[P15,*** *emergency department****]***

However, this participant said she had been concerned about her safety, and therefore she had intended to ask the nurse to wash her hands; but she had not translated that intention into action as she felt it was not her responsibility to remind the nurse to wash her hands. Interestingly, the participant discussed the possibility she might have asked the nurse to wash her hands if she knew the nurse would "accept" her hand-hygiene reminder:

> *"I wanted to ask, but I didn't. At the same time, I was concerned about my health, and didn't want to get sick because someone touched me without cleaning their hands…I think something is missing in the middle. Patients cannot ask nurses about hand washing if the nurse won't accept this or is not happy to be asked. I think we [patients and nurses] need to sit together and talk honestly about things [prompting hand washing]"* ***[P15]***

The participant reported further details of her experience of feeling unable to remind the nurse to wash her hands. The participant stated prompting nurses to wash their hands was "hard" and patients were not empowered enough to direct questions to

nurses or other healthcare professionals in the hospital setting. The participant described healthcare professionals as “experts in their field” and patients as service users without the power to ask nurses to wash their hands:

> *“What I am trying to say is how hard it might be inside hospitals to talk or give your opinion [as a patient]. We [patients] know that medical staff will act as experts in the field, and we have nothing to say. It’s like when you go to fix your car, and start telling the engineer ‘do this and do that’ [participant laughs]”* ***[P15]***

The same participant highlighted further details concerning how she felt about being unable to prompt the nurse to wash her hands. The participant stated patients did not have the “power or responsibility for anything” including the power to ask nurses to wash their hands. The participant referred to the disparity in the quality of care received in private versus public hospitals in Jordan where she received care. She considered promotion of hand washing would be an ideal initiative that could happen only in “five-star hospitals”:

> *“I told myself to remain silent and be quiet, let them [nurses] finish their job. Don’t act like you are with a hairdresser in a salon, and want to tell her what to do or how you want things to be done. I think hospitals are different. It isn’t easy for patients to act like they have power or are responsible for anything. Maybe this is an ideal [patients having such power to ask nurses to wash their hands], and happens only in movies or at five-star hospitals, where patients act like spoiled kids and nurses are like mum and older sisters, taking care of them”* ***[P15]***

Another participant discussed his experience during hospitalisation in the renal dialysis unit. The participant stated it would be “hard” to include patients in any system to remind nurses to wash their hands. The participant explained in his opinion nurses and other healthcare professionals had learnt how to provide safe care, and therefore patients should not have a role in the promotion of handwashing:

> *"It is really hard to tell them [nurses]; I think it is better to let everyone do their job, let everyone practise things as they learnt them. Doctors and nurses have spent years studying medical things and I want to act smart and give instructions? I don't think this is a good idea"* ***[P16,*** *renal dialysis unit****]***

Similarly, another participant reported nurses and other healthcare professionals were prepared to wash their hands, and therefore, there was no need for patients to remind them:

> *"I don't think there is a need, in general, to ask doctors and nurses to wash their hands. I think they know better than us what they have to do and asking them is not what we [patients] are supposed to do. Also, doctors and nurses are very clean from what we see every day"* ***[P17,*** *emergency department****]***

This participant stressed patients were not responsible for prompting hand hygiene among nurses, and stated patients were in hospital to receive care rather than to monitor hand-hygiene compliance:

> *"We [the nurse and the patient] did not talk about hand hygiene. Because I see there is no need to ask any of the medical staff to wash their hands or have a shower. It's not our [patients] responsibility. Also, I think patients have lots of stuff going on in their minds while in the hospital. They [patients] don't have time to monitor this and see that. I think they are there to receive care, feel better and then go home"* ***[P17]***

Another participant reported similar views, that patients were hospitalised to receive care from healthcare professionals, including nurses, and therefore, the patient was not responsible for reminders to nurses to wash their hands. The participant considered nurses were aware of the importance of hand hygiene and the consequences if they did not perform hand washing. Therefore, patients were not supposed to remind nurses to wash their hands. The participant stated:

> *"I think nurses know that if they don't clean their hands, they will get sick. It's them who are supposed to know the importance of hand hygiene, not the patient. So I don't think the reminder is needed from my side"* ***[P20,*** *female medical ward****]***

The next participant said she had been admitted to hospital to receive care and relief for her pain, not to monitor hand-hygiene compliance among nurses. The participant stated patients were not machines and nurses should find an alternative approach to remind them to wash their hands, that did not include patient involvement. The participant implied that patients should not act as alarm or electronic reminder "buzzer sound" to remind nurses to wash their hands:

> *"My feeling is telling me not to ask [nurses to wash their hands] as this is not what I am at the hospital for. I am here [in hospital] to feel better, get the pain out of my way and live a better life, not to monitor how people work. I am not a machine. Maybe they [nurses] can find some people to help them or a machine to send a buzz to tell them 'you forgot', but we [patients] ask? I don't think this is possible"* ***[P20]***

This participant stressed her view that it was important to ensure that patients were not responsible for the nurses' hand hygiene. The participant stated she had entered hospital because she experienced severe pain and was not feeling well enough to discuss hand-hygiene compliance with nurses. She expressed her opinion that it was up to the nurses to wash their hands without patient involvement:

> *"Nurses can be asked by someone else, not patients. We have to keep everyone doing their job, and the patient's job is not to remind nurses to wash their hands. You know that I have been through a tough time, and had severe pain killing me from inside, and was not in the mood to talk to anyone, even asking nurses about their hands. If they did it [hand washing] then good, if not then it was not my business"* ***[P20]***

5.6.2 Incidents when patients did not ask nurses to wash their hands to avoid harming the nurse-patient trust relationship

Three participants [***P17, P16,*** and ***P19***] did not ask nurses to wash their hands as they thought that the prompting of handwashing could result in tension between nurses and patients. They considered this tension could harm the nurse-patient trust relationship.

One participant described her experience when she considered that she could not ask a nurse to wash his or her hands. The participant stated mutual trust was necessary between patients and nurses, and the participant felt asking the nurse to wash his or her hands could result in a negative impact on the trust relationship with the nurse. The participant described the potential involvement of patients in the promotion of hand washing as placing them in the "front line", which could "make trouble" between patients and nurses:

> *"I think we [patients and nurses] need to be friends and trust each other. When you first asked me, I said: 'Why are you, as a nurse, talking to me about asking your colleagues to wash their hands?' I think if you or anyone has trust in nurses or what they do, then there is no need to ask them about hand hygiene. We need to have a good relationship with each other based on trust. I think this will build a strong future in hospitals. Then we can nicely talk to each other without us [patients] having to put ourselves on the front line, defending our safety and making trouble with nurses and doctors"* ***[P17,*** *emergency department****]***

These participants considered asking nurses to wash their hands was a betrayal of the nurse-patient trust relationship. The participant stated:

> *"I think patients need to act in a way that they [patients] trust nurses and doctors and trust what they [nurses and doctors] do. Asking them to wash their hands could threaten this lovely relationship. This could even worsen the way in which nurses and doctors treat patients. They will consider us as unwelcome in the hospital and could fight us back"* ***[P17]***

The participant considered that the patients should not interfere in nursing job by prompting nurses to wash their hands. This is because patients had responsibility to gain the nurses' trust. Handwashing requests would indicate that trust was not total:

> *"I think all nurses should be given our [patients'] trust and we should let them do their job. If we cannot trust them in handwashing, how come we give them the right to treat us when we or our beloved ones are really sick?"* ***[P17]***

Another participant reported similar feelings that prompting nurses to wash their hands could result in a loss of any established and flourishing relationship. Therefore, the participant had decided not to ask the nurse to wash his hands:

> *"Asking is awkward or could lead to loss of your friendship, [and] because of that it is not a good idea. I really care about my healthy relationship with others, and anything that would break this relationship I will not do"* ***[P16,*** *renal dialysis unit****]***

Similarly, another participant stated the nurse-patient trust relationship was vital for both patients and nurses and patients should not search for errors made by nurses, such as non-compliance with hand hygiene rules.

Participants considered nurses might gain a sense of patients being "happy to catch them" if they commented that a nurse had not complied with hand-hygiene practice, and nurses should not be placed in this position. Consequently, the promotion of hand washing might drive a wedge between patients and nurses, which could create an "unhealthy environment" in the hospital:

> *"I think it is about being kind, and always being positive, to enhance our relationship with the medical staff, and not to search for their errors that would generate a gap between them and us, and create an unhealthy environment for all of us"* ***[P19,*** *female surgical ward****]***

5.6.3 Incidents when patients did not ask nurses to wash their hands in case it was offensive and upsetting to nurses

Six participants [***P1***, ***P2***, ***P13***, ***P14, P15*** and ***P16***] did not ask nurses to wash their hands because they feared that prompting nurses to handwash would offend and upset the nurses.

One participant considered nurses would perceive any such request as confrontational and upsetting behaviour:

> *"They would be angry and upset about it [prompting hand washing], as if I was confrontational by asking. They wouldn't be happy about me asking"* ***[P1,*** *emergency department****]***

Another participant reported she perceived hospitals as safe places to receive care, with optimal hand hygiene, and she feared reminding nurses to wash their hands was offensive and would upset the nurse:

> *"I know the nurse personally; I did not want to offend her. It would be a very uncomfortable feeling if you go to the hospital to receive safe care and feel that you [the patient] are in danger. We [patients] don't want to upset nurses or any other healthcare professionals. We expect them to provide us with safe treatment and do their job with good hand hygiene"* ***[P2,*** *female medical ward****]***

Similarly, another participant had not asked a nurse to wash her hands, although she had discussed it with other patients who shared the same room. The participant stated all the patients agreed that the nurses were performing "helpful" and "great" work, and therefore, there was no need to upset them with a hand-hygiene reminder:

> *"I did not talk to the nurse, but I talked to other mothers in the room. We noticed that nurses were really helpful and doing great jobs over days and nights to help us to get better. Therefore, there was no*

need to ask them [nurses] about this because we would upset them" ***[P13,*** *female surgical ward****]***

The participant reported several reasons why she believed prompting handwashing would be offensive and upsetting to nurses. The participant stated patients were not supposed to prompt nurses to wash their hands, but only to receive care. For instance, the patient considered herself a "guest" in hospital therefore she was not supposed to ask the nurse "the host" to wash her hands. The participant provided an example of the way in which nurses might perceive a hand-hygiene reminder from patients:

> *"I think it [requesting that the nurses wash their hands] is not what we are supposed to do. We are here to receive care and feel better, not to make demands or requests. We would be like we say here [in Jordan], 'a guest with a sword in his hand': □ □□□□ □□ □□□ □□□□ □□□□□ □ □□□□ □You cannot be a guest at someone else's house and put conditions on your stay or ask for things that are not your right to ask about"* ***[P13]***

Another participant offered a different perception of the offensive nature of a request to nurses to perform hand hygiene. The participant described how offensive and upsetting it could be to remind nurses to wash their hands, similar to receiving a hand hygiene reminder from a "stranger" or someone with "power" like when a mother request her children to wash their hands after school:

> *"Think about it, even when my mum used to tell us, after school, as soon as we arrived home, to wash our hands, we were not happy about it; it [being required to wash our hands] was like an offence or a punishment. Sometimes you do not accept it [a hand-hygiene reminder] from your mum, so how come you would accept it from a stranger, let's be honest"* ***[P15]***

One participant described the making of a request to nurses to wash their hands as an act that was “not easy” to perform. The participant believed such a request would be “a stab in the nurse’s back”. The participant considered reminding nurses to wash their hands as offending or betraying the nurse. The participant thought that nurses might change their behaviour towards patients after they had received any prompt to perform handwashing:

> *“This [prompting hand washing] is not easy. I do not mean we [patients and nurses] will fight, but if I asked that nurse - it would be like a stab in her back. The nurse would look at me differently after that, or they [nurses] might even say ‘we are not in a toilet here’. This did not happen for real, but I think it would if I asked”* ***[P14,*** *emergency department****]***

One participant wanted to remind the nurse to wash his hands, but felt “bad” that he was not able to do so as they had known each other a long time. The participant was a patient at the renal dialysis unit and had established a long, therapeutic relationship with the nurse. He felt that the nurse would be upset if he asked the nurse to wash his hands and therefore, the request was impossible:

> *“I felt so bad but couldn’t say a single word, as I did not want to upset my friend, the nurse. We have known each other for a long time, and even our families know each other…We are friends, so I did not want to upset him, I just pretended that and all was fine, I was smiling. I wanted badly to tell him, ‘please wash your hands’, but I did not want to upset him”* ***[P16,*** *renal dialysis unit****]***

The participant added that he considered requests regarding hand hygiene to be different from other reminders that could be offered in hospital. For instance, reminding the nurse to give him medication or to help him to drink water was a straightforward request, whereas reminding the nurse to wash his hands brought into

question the personal hygiene of the nurse. Therefore he considered reminding the nurse to wash his hands was not possible:

> *"If he [the nurse] forgot my medication or to bring me water, I would remind him to bring it, as he is human and may forget, but the problem with the hand hygiene is that it reflects on personal hygiene. When you tell anyone to wash their hands, most likely they will take it as an offence…I was not sure if I asked him to wash his hands, whether this would upset him. I had a feeling that asking was not a good idea"* ***[P16]***

5.6.4 Incidents when patients were embarrassed or shy to ask nurses to perform hand hygiene

Three participants [***P1***, ***P15***, and ***P18***] did not ask nurses to wash their hands during their hospital stays as they felt either embarrassed or shy regarding the request.

One participant considered that in general, patients would be embarrassed to ask nurses to wash their hands, because nurses understood how to do their jobs and, therefore, patients were not able to advise nurses:

> *"We would feel shy or embarrassed; [and] the nurse would not accept the question. They would tell me: 'You don't know our job better than us.' They would not accept [the request] as they would take it that I was teaching them to do their job"* ***[P1,*** *emergency department****]***

Another participant stated she had felt shy to ask the nurse to wash her hands. The participant discussed the ways in which nurses might perceive such a reminder and why patients could not prompt nurses to wash their hands:

> *"I did not talk to the nurse as I felt shy, to be honest. I think she [the nurse] would take it as 'you are a dirty nurse'. It's hard for us [patients] to talk about these things [hand hygiene]. I am sure the medical staff or anyone in the street would not appreciate it or be*

happy if you asked them to wash their hands" ***[P15,*** *emergency department****]***

The participant described herself as a "shy person" and stated she had not asked the nurse to wash her hands as nurses might perceive such a reminder in a "wrong way". However, the participant stated healthy communication and friendly body language between nurses and patients could facilitate the role of patients in prompting nurses to wash their hands:

> *"I did not ask because I am sure it would have been understood in a wrong way, like 'you are a dirty, careless person, go and wash your hands'. Nurses' state of mind [mood] or communication, of course, affects us. If you [the nurse] smiled, I would feel encouraged to remind you to wash your hands or wear gloves, but if you were a tough person, I would not even ask you for a glass of water. This is how things work for me as a shy person. Maybe I am a complicated person, but this is me, sorry"* ***[P15]***

Another participant stated she had felt obliged to pretend that nothing untoward had happened, regardless of her observation the nurse had failed to perform hand hygiene. The participant justified her behaviour as avoiding "embarrassment and humiliation" which could have resulted if she had prompted the nurse to wash her hands.

Of note here was the participant's opinion there was a disparity between holding a theoretical discussion with nurses regarding handwashing behaviours and the involvement of patients in hand hygiene, and actually requesting in practice a nurse perform hand hygiene while the patient received care in the hospital:

> *"I just pretended like nothing happened to avoid being embarrassed or humiliated by asking. You know it is different while I am talking to you now, and when I am receiving care from their [nurses'] hands. The situation is different, and even my feeling is different between now and when I was lying down in my bed…Saying it here in the*

interview is far from the actual experience when you are in the bed receiving care. I think this is one of the things that we describe as "easier said than done" **[P18,** *emergency department***]**

5.7 Summary

This chapter has presented the two categories and seven subcategories into which the data were grouped during analysis of the data collected from telephone interviews that were completed with 21 patients in Jordan. These findings provide insight into the ways in which patients describe their experiences of involvement in the promotion of hand-hygiene compliance among nurses in the hospital setting.

The next chapter discusses the findings that have been presented in Chapters Four and Five. Chapter Six discusses the experiences and perceptions of nurses and patients regarding the role of patients in the promotion of hand-hygiene compliance among nurses in the hospital setting.

CHAPTER 6: DISCUSSION

Abstract

In this chapter, the findings presented in Chapters 4 and 5 are discussed with reference to the scholarly work that was reviewed in the literature review (Chapter 2), and the existing wider literature on patient involvement in the promotion of hand-hygiene compliance among nurses in the hospital setting. The contribution and relevance of the findings to the prompting of hand washing are presented. This chapter includes a summary of the key findings and interpretations through the highlighting of correlations, patterns and relationships among the data. Finally, this chapter contextualises the findings of this study within the previous research and theory while explaining both expected and unexpected results and evaluating their significance.

Overall findings from the current study show that patient prompting hand hygiene is consistent with current discourse within the nursing profession to ensure patients are receiving a safe care and at all times. Both nurses and patients acknowledge that patients have a right but not a responsibility to prompt handwashing. Both nurses and patients acknowledge that it is difficult for patients to raise concerns about hand hygiene. Yet patients should be able to voice concerns without engendering confrontation; patients should be empowered and encouraged to speak up and voice their concerns regarding nurses' hand hygiene practices, and ensure cultural

readiness of patients [patients prompting handwashing to become a hospital culture or new normal].

6.0 Introduction

Despite the increasing frequency of discussions regarding the role of patients in the management of their own safety, little attention has been given to the role of patients in prompting HCPs to wash their hands as a patient safety measure (Alzyood *et al.*, 2018), although some hospitals encourage patients to prompt HCPs' handwashing. The involvement of patients in wider safety measures and the perceptions of quality and safety have been given recent attention but are under-researched (Furniss *et al.*, 2016). An integrative literature review, which was undertaken as part of the current study, identified the need for further research to understand in-depth the role of patient involvement in the promotion of hand-hygiene compliance among HCPs, especially nurses, in the hospital setting (Alzyood *et al.*, 2018). The literature review (Alzyood *et al.*, 2018) identified a lack of research on the actual experiences of HCPs and patients concerning patient involvement in hand hygiene. The results of this literature review instead focus on the views of patients and staff on patient involvement and present evidence from 23 empirical studies indicate that both HCPs and patients have mixed views concerning patient involvement in hand hygiene. These mixed views hinge mainly on staff willingness to understand the patients' viewpoint but acknowledging conflicting attitudes towards being asked with wide-ranging reasons for reluctance, their intention when they ask and patients willingness to remind HCPs to wash their hands.

The current study focusses on providing an understanding of the experiences and reflections of nurses and patients when patients prompted nurses to wash their hands. Both patients and nurses embrace an overall agreement that patients have the right to ask nurses to wash their hands. However, the experiences of nurses and incidents from patients based on experiences from clinical settings show that patient prompting of handwashing is very sensitive and triggers confrontation and other stressful encounters in hospital settings. Both nurses and patients report prompting handwashing has a negative impact on the nurse-patient trust relationship. Overall, nurses report a need to promote a culture in the hospital settings where patients would feel encouraged and empowered to speak up and ask nurses to wash their hands.

This chapter incorporates six findings/ discussion points are patient prompting hand hygiene is consistent with current discourse about patient involvement in safety within the nursing profession [6.1]; patients have a right to ask but not a responsibility to prompt handwashing [6.2]; patients and nurses acknowledge that it is difficult for patients to raise concerns about hand hygiene and this often results in confrontation [6.3]; patients should be heard without engendering confrontation [6.4]; patients should be empowered and encouraged to speak up and voice their concerns regarding nurses' hand hygiene practices [6.5], and ensure cultural readiness of patients and nurses and hospitals to facilitate the role of patient involvement in hand hygiene [6.6].

6.1 Patient prompting hand hygiene is consistent with current discourse about patient involvement in safety within the nursing profession

The data in this thesis, from both patients and nurses in two different countries, is remarkably consistent on how nurses and patients reacted to patient involvement in hand hygiene to ensure safe care is provided at all times. There is a consensus between both nurses and patients that the patient has a right to ask the nurse if their hands are clean and prompt nurses to perform hand hygiene. This is also consistent with current policy and discourse within the profession regarding patient involvement in safety issues. Safe patient care is regarded as a basic human right requires patients be informed, involved and treated as partners in their own care (WHO, 2020). Most of the attention and the experiences of healthcare systems are focused on patient safety in high-income countries (Wilson *et al.,* 2012; WHO, 2020). Several studies identified a lack of patient safety initiatives in some parts of the world [low- and middle-income countries] (Wilson *et al.*, 2012; Aveling *et al.*, 2015; Johnston *et al.*, 2019). However, there are increased efforts to address patient safety issues in low- and middle-income countries (WHO, 2020).

For example, there are no national research studies describing the level of hospital safety culture in Jordan (Saleh, Darawad and Al-Hussami, 2015). There is a lack of patient safety culture as perceived by Jordanian nurses (n = 242) especially in staffing and non punitive response to errors (Saleh, Darawad and Al-Hussami, 2015). The non punitive responses were identified as "*the blame culture*" of safety by focusing on individuals rather than systems in addressing errors (Saleh, Darawad and Al-Hussami, 2015). Jordanian nurses acknowledged effective communication and continuous learning and improvement are important factors in enhancing patient safety culture within the hospital settings. Overall, there is a need for further research

in both high- and low-income countries focused on essential contributions to patient safety like patients, families, HCPs, policy-makers and planning committees (WHO, 2020). Therefore, it is important to ensure patients are closely involved in all aspects of safe care to help patients in protecting themselves from harm.

The UK's Nursing and Midwifery Council (NMC, 2020) state that the nurse has a duty to promote patient safety. The Royal College of Nursing (RCN, 2020) report that patient safety is an essential part of nursing care that includes preventing avoidable errors and patient harm. The UK's NMC (2020) urged nurses to prioritise the safety of their patients, actively listen to their concerns, recognise their needs and demonstrate readiness to deliver a quality nursing care. A patient's concern might be related to appropriate, enhanced or optimal handwashing behaviours. By logical extension, the patient has a right to comment on or question aspects of care that might compromise patient safety. Nurses have a duty to listen when a patient notice and flags up an issue related to safety. It seems reasonable and necessary for patients to defend their safety by promoting handwashing when observing a non-compliance to hand hygiene behaviours among nurses. For instance, the NMC codes 19.3 and 19.4 explains that nurses have the duty to reduce risks, promote safe care and recommended safe practice which may include promoting patient involvement in hand hygiene.

> *"Be aware of, and reduce as far as possible, any potential for harm associated with your practice. keep to and promote recommended practice in relation to controlling and preventing infection; The Code, 19.3" ... "Take all reasonable personal precautions necessary to avoid any potential health risks to colleagues, people receiving care and the public; The Code, 19.4."* (NMC, 2020)

If promoting patient safety is the nurse duty, then it can be argued that patients can contribute to this and ask if hand washing has been done prior to the delivery of

care. The role of the patient in promoting safety is about increasing their sense of feeling and being safe, as Woodward (2017) explains:

> *"Feeling safe is one of the most important needs for our patients. Feeling safe and being safe. The act of keeping patients safe is about being constantly vigilant; noticing what happens every moment of every day, noticing when it goes right, noticing when it could go wrong and noticing when it does go wrong."* (p. 1) …
> "*Despite all the hard or technical barriers we can put in place, we are human and we are frequently reminded of our human fallibility when we make mistakes or errors, slips or lapses."* (p. 2)

Therefore patient prompting hand hygiene is reflected in the trend towards partnership between nurses and patients in providing and receiving safe care. Indeed, the UK's NMC (2020) emphasises the partnership between the nurse and patient: which arguably indirectly/implicitly encourages patient prompting of hand hygiene. According to the NMC (2020), "*All nurses must work in partnership with service users, carers, groups, communities and organisations. They must manage risk and promote health and wellbeing while aiming to empower choices that promote self-care and safety*".

Thus working in partnership implies that concerns about hand hygiene can and should be raised by the patient. Indeed Geeson (2010) argues that infection control is 'everyone's responsibility. The Code of Practice by The Health and Social Care Act (2008) stresses the importance of shared infection control responsibility between all *staff* working directly or indirectly with patient care within the Trust:

> *"The organisation is moving forward in establishing a culture that reflects ownership and emphasises that infection prevention and control is everyone's responsibility."* (Geeson, 2010, p. 12)

Indeed, patients have the right to ask nurses to wash their hands, and that right should be perceived by nurses as a precaution, not a provocation, it is part of a

partnership between nurses and patients in the promotion of a safe care. Nurses could identify that patient involvement in hand hygiene was not intended as a criticism but rather a patient's right to enhance hand-hygiene compliance among nurses. These results are in agreement with those obtained by Gould *et al.* (2018), in which nurses agreed that hand hygiene was the most important precaution to prevent infection. Hence, the right of patients to ask could improve nurses' hand-hygiene compliance rates and therefore reduce the risk associated with HCAIs (Gould *et al.*, 2018).

In summary, there is a strong rationale for encouraging patient prompting of hand hygiene, given the current emphasis on patient involvement in safety and partnership with those who look after them. In view of this, the suggestion that hospitals might encourage patient prompting, such as 'it's OK to ask' is understandable. Given the priority on patient safety, and the partnership between patients and staff to achieve this, patient prompting of hand hygiene seems a logical way to proceed. However, as data for this study has shown, this seemingly simple activity is complex in the hospital settings and has unintended consequences which need addressing before it can be advocated as an activity to enhance nurses' compliance with hand hygiene.

6.2. Patients have a right to ask but not a responsibility to do so

The results of this study indicate that both nurses and patients agree patients have a right to prompt handwashing therefore enhance their own safety. Interestingly, both nurses and patients agree patients are not responsible for promoting handwashing among nurses. In this study, nurses and patients reported that hand-hygiene practices are fundamental to patient care, and it is the responsibility of nurses to clean their hands at all times. Both nurses and patients reported that this is a

professional and moral obligation some even wondered why patients should even consider asking about this most basic of requirements.

These results are in line with those of previous studies which questioned whether patients have a role in prompting hand hygiene- as HCPs were responsible for cleaning their hands without a reminder from patients (Longtin *et al.*, 2009; Michaelsen *et al.*, 2013; Kim *et al.*, 2015). Patients considered that infection prevention through handwashing was a responsibility of HCPs, and they thought they should not be responsible for reducing their own risks to acquire infection or monitoring staff hand-hygiene compliance (Sutton, Brewster and Tarrant, 2019). For instance, in a 2015 study, the majority of patients reported that "*it is not the patient's responsibility to remind HCPs to wash their hands*" (72%) (Kim *et al.*, 2015). In a survey by Julian *et al.* (2008), HCPs (n = 272) (173 physicians and 99 nurses) were invited to measure their attitudes toward receiving hand-hygiene reminders from patients. The study surveyed the HCPs following a campaign to encourage patients to ask HCPs "*have you washed your hands*". The findings showed that HCPs (18 physicians and 3 nurses) did not support patient involvement in hand hygiene as they felt it was not the patients' responsibility to provide feedback on HCPs' hand-hygiene compliance (Julian *et al.*, 2008).

Nearly a decade later, Sutton, Brewster and Tarrant (2019) reported that HCPs considered themselves to be responsible for protecting patients from the risk of infection and this was a priority over "*the prerogatives to involve patients and relatives in the co-production of infection control"* (p. 6). Nurses, in particular, express the view that patients should ask nurses about hand hygiene and other infection control procedures without placing obligations on patients as it is the nursing professional responsibility to keep patient safe (Sutton, Brewster and

Tarrant, 2019). Other studies argue that patient involvement in hand hygiene is "*shifting the responsibility*" for infection control from HCPs to patients (Ottum *et al.*, 2013; Seale *et al.*, 2015a). However, involving patients in infection prevention does not necessarily mean shifting the responsibility from HCPs to patients, but rather adopting a shared goal as a first step towards patients and HCPs working together in the co-production of patient safety initiatives (Prince, 2014; Sutton, Brewster and Tarrant, 2019). It has been argued that sharing responsibility equitably between patients and HCPs in all situations is "*neither possible nor desirable*"; therefore, the burden of responsibility for patient safety must fall disproportionately on HCPs (Batalden *et al.*, 2016, p. 514). In addition, it is vital that HCPs do not abandon patients who do not have the expertise or resources to partner effectively in the co-production of improved health outcomes for themselves (Batalden *et al.*, 2016).

In conclusion, it is well-established that nurses and other HCPs are responsible for the safety of patients inside the hospital setting. However, the question remains unanswered whether patients can contribute to enhancing their own safety. Both patients and nurses in this study did not consider that the patient had a duty in safety. It could be that the concept that patients have a right but not a duty to prompt hand hygiene creates a slight muddying of the waters for HCPs. Hence adds to the complexity of the data collected for this thesis.

6.3 Patients and nurses acknowledge that it is difficult for patients to raise concerns about hand hygiene and this often results in confrontation

Despite acknowledging the patients' right (though not a duty) to prompt hand hygiene, the results of this study indicate that both nurses and patients have concerns that patient involvement in hand hygiene is challenging and confrontational

in practice. Nurses and patients in both countries [Jordan and the UK] agreed that despite the previously approved “right to ask”, patient involvement in hand hygiene was challenging and often perceived to be confrontational.

Experiences from nurses and patients when patients promoted nurses to wash their hands showed that prompting handwashing was an upsetting behaviour for nurses, and not a simple or an easy act for patients. Some nurses considered receiving a hand hygiene reminder from patients as a “stab in the nurse’s back”, and were ‘horrified’. Not surprisingly, many patients had specific examples of how prompting hand hygiene led to an unpleasant confrontation with nurses. For instance, change in the nurse behaviour after receiving the hand hygiene reminder from patients, denying the hand hygiene or stating that handwashing was completed while patients observation showed it was not, complaining to staff and head nurses about patients who seemed to ask many questions including promoting handwashing. Surprisingly, these encounters were not hidden but they took place directly at the bedside of the patient who raised the concern. These encounters and experiences of tension between nurses and patients were not confined by nurses to backstage ‘letting off steam’. It might be expected that nurses would accept the hand hygiene reminder from patients and reassure them about their safe care [on-stage] and then show different behaviours to their colleagues at the nursing counters [off-stage]. In this study, the confrontational encounter happened ‘onstage’.

Goffman’s book ‘*The Presentation of Self in Everyday Life’* provides explanation for on-stage and off-stage. Goffman discusses three distinct areas in which different individuals play different roles and have different information about a situation (Goffman, 1990). These stages are the front (on-stage), back-stage and outside (off-stage). The back-stage or off-stage are spaces that belong to nurses; “*behind the*

scenes or staff-only spaces" such as nurses' stations, counters or meeting rooms. On-stage areas are the spaces that are primarily for patients or their family members – the space in which bedside nursing care is provided. In line with Goffman's stages, it would be expected that nurses would respond to hand-hygiene reminders professionally when "on-stage", aiming to reassure patients that hand hygiene has been completed or will be completed. Therefore, patients would be put at ease. If nurses were not happy with the reminder, it might be surprising that they do not keep a public face and complain or discuss this with their colleagues or head nurse when they were "back-stage" or "off-stage". Of course nurses are expected to maintain a professional image onstage, as Hrisos and Thomson (2013) discuss:

"Healthcare providers were expected to always remain 'professional' in their dealings with patients and their families, regardless of the situation, and there appeared to be a general consensus amongst both patients and healthcare professionals that most would. However, there was a common belief that some care providers might not respond favourably to being asked a seemingly challenging or critical question." (Hrisos and Thomson, 2013, p. 6).

However, findings from the current study show that patient prompting hand hygiene led to negative reactions 'onstage'; patients experienced confrontation from nurses "on-stage". This was an unexpected finding and is an indication of how challenging patient prompting of hand hygiene is, a finding strongly identified in the data for this study. Overall, all patients who asked nurses to wash their hands reported that they experienced unpleasant and confrontational reactions from nurses. The rest of the patients who participated in the current study felt unable to ask nurses to wash their hands, possibly because they anticipated this reaction. In the current study, many participants expressed how they had wanted to ask but did not. Patients' reluctance

to speak up is well documented. In accordance with the present results, previous studies have demonstrated that patients are not willing to ask nurses and other HCPs to wash their hands as they fear upsetting, offending or annoying the staff member (Davis *et al.*, 2007; Davis, Sevdalis and Vincent, 2011; Seale *et al.*, 2015b).

In summary, patients experienced confrontation when asking nurses to wash their hands. This finding was unexpected and suggests that 'direct confrontation 'onstage' is unusual, possibly indicating how challenging prompting hand washing can be. Many patients seem to anticipate this and therefore did not raise concerns. Both patients and nurses reported several barriers or negative outcomes to patient involvement in hand hygiene, as discussed in the following three sub-sections [6.3.1], [6.3.2] and [6.3.3].

6.3.1 Patient prompting is challenging due to nurses being already overworked

Patients and nurses report that being overworked in a busy hospital environment was one factor of why they think patient prompting handwashing is challenging. Both nurses and patients acknowledge that nurses are already facing an excessive workload and patient prompting handwashing is simply adds further pressure and demand on nurses. These results are in agreement with a report by Leape and Berwick (2000) which stated that safe health care could not be expected from HCPs who were sleep-deprived, worked long hours (double or triple shifts), or whose jobs involved several competing urgent priorities to be completed concurrently. In a more recent study, increased workload was also named as a reason why HCPs would not support patient involvement in hand hygiene and considered it unnecessary (Sande-Meijide *et al.*, 2019). In another study, both registered nurses and nurse assistants

who acknowledged the importance of patient safety and open discussion with their patients about errors also said that such discussion was difficult in practice because of business and feelings of being burdened (Danielsson *et al.*, 2014). The lack of time and staff prioritisation of other work activities were the two barriers against patient involvement in asking questions and sharing information in surgical care (Andersson *et al.*, 2020). However, the connection between work demands and therefore lack of time for nurses with patient involvement in hand hygiene is not clear. Ball *et al.* (2013) reported that nurses lack time to complete care and that most care is left undone due to low staffing levels in a study competed with registered nurses working in English NHS hospitals (n = 2917). A strong correlation was reported between staffing levels of nurses and the prevalence of care left undone, and calls for further research to study the link between these alarming figures and patient outcomes (Ball *et al.*, 2013). A possible explanation for these results may be the lack of adequate time nurses spent listening to their patients therefore nurses may find it difficult or react badly to patient prompts when they are burdened. Van Bogaert *et al.* (2016) also identified lack of time and work demands as reasons why nurses would not be receptive to prompting from patients. In accordance with findings of the current study, experiences from patients and nurses reported that low staffing levels and exessive workload have a negative impact on nurses' acceptance of patient involvement in hand hygiene. Nurses have little time to perform important tasks that are vital for patients' outcomes; therefore, nurses are left with less time to talk to their patients and empower the patients to prompt hand washing. Therefore, patient prompting nurses to wash their hands is an additional challenge and may explain their negative reaction.

6.3.2 Patient prompting hand washing is challenging because patient is acting out of role and hence is perceived as inappropriately challenging

A further explanation is that patient prompting handwashing is challenging to nurses as it requires the patient to act out of role and adopt a role that is not currently expected or even accepted. Sociologist Ervin Goffman has presented the idea that in society, a person is like an actor on a stage, and each person has a *status* to represent (Goffman, 1978). For instance, a daughter, an elderly person, an employee and a patient represent certain roles in life, and their status describes the responsibilities that the person may take on according to their role in society (Goffman, 1959). According to Biddle (1979), Role Theory represents "*social exchange between two or more people demonstrates patterns which are determined by the role expectation and actual roles which everyone adopts*" (Broderick, 1999, p.119). However, a person may experience a role conflict or ambiguity when one or more roles contradict each other (Tunc and Kutanis, 2009; Dasgupta, 2012). In health care, there are specific roles and there is an expectation that all will play out their part. If the patient is expected to play a passive role, this might prohibit patient involvement. When someone ignores the role expectations this may result in confusion, embarrassment, and controversy (Goffman, 1959).

The results of this study show that most patients did not ask nurses to wash their hands during their hospital stays as they felt either embarrassed or shy regarding the request. These results corroborate the findings of the previous work reported asking nurses and other HCPs to wash their hands was often viewed with embarrassment or awkwardness (Longtin *et al.*, 2009; Pittet *et al.*, 2011); patients reported being shy, feeling intimidated (Seale et al., 2015b); patients experienced discomfort (Ottum *et al.*, 2012; Lastinger *et al.*, 2017; Oliveira and Pinto, 2018); or they felt awkward or

disrespectful (Michaelsen *et al*., 2013). It can therefore be assumed that patients did not feel prompting handwashing is their role.

It is well documented that patients often take a passive role in health care and this includes involvement in their safety. For instance, Seale *et al*. (2015b) found patients are often treated as a passive party in the prevention of infection, though little research has focused on the patients' perspectives. Patients included in other studies did not feel able to communicate their worries regarding hand-hygiene compliance to HCPs as they *"felt uncomfortable"* asking and *"did not dare"* to pursue the matter with the nurse (Watt *et al*., 2009), indicating that taking an active role in their care was not encouraged. Watt *et al*. (2009) also found that *"some patients are not complainers by nature; and they tended not to speak up about things because they would be embarrassed about making a fuss"* (Watt *et al.,* 2009, p. 198).

Other studies have found that it is not easy for patients to take an active role in their care therefore prompt nurses to wash their hands. For example, in a study by Wright *et al.* (2016), patients experience concerns about questioning or challenging the professionalism of staff, which they fear may result in repercussions as a consequence of upsetting staff. Patients have reported other negative attitudes in the context of identifying safety concerns; for example, HCPs may "*treat the patient differently as result of them being upset*" (Wright *et al*., 2016, p.132), which may alter the balance of rapport between them (Severinsson and Holm, 2015). Other negative reactions are *"fear of being rebuffed or chastised"* and "*fear that care may be compromised"* (Hrisos and Thomson, 2013). Support for patient involvement in hand hygiene is reduced among patients who fear that such involvement may seem to HCPs to be *"rude or offensive"* (Hrisos and Thomson, 2013, p. 5). The fear of consequences or compromised care and the desire not to antagonise or upset HCPs

were reported during the *Cleanyourhands* campaign, which was introduced to HCPs in all acute National Health Service (NHS) hospital trusts in England and Wales (National Patient Safety Agency, 2014). Further example of patients' unwillingness to challenge care is found in the report of the Stafford enquiry; an independent inquiry into the poor care provided by a UK NHS hospital trust, which stated that service users were reluctant to raise concerns, even in the face of serious failings, for fear of *"upsetting staff"* (The Mid Staffordshire NHS Foundation Trust Inquiry, 2010, p.15). Consistent with the literature, the current study found that patients perceived their involvement in hand hygiene as *"offensive and upsetting"* to nurses.

There is some evidence that patient involvement in other areas of care might be less contentious than prompting hand hygiene. For instance, patients adopt an active role in ensuring their own safety through confirming the right medication and identifying the operation or surgical site prior to receiving care. Therefore, patients are *"less embarrassed"* to be involved in the prevention of medication errors compared with involvement to prevent errors in hand hygiene practices (Schwappach, Frank and Davis, 2013). However, the Schwappach, Frank and Davis (2013) report did not discuss the reason behind this difference in attitudes. In the current study, patients were concerned that asking nurses to wash their hands was *challenging* to HCPs and that such challenges might have an adverse impact on the quality of care they received. Mohsin-Shaikh, Garfield and Franklin (2014) stated that patients might feel less willing to engage with safety initiatives that involved challenge, such as asking HCPs to wash their hands, compared with their willingness to report medication safety-related behaviours (Davis, Sevdalis and Vincent, 2011). In a qualitative study by Schwappach and Gehring (2014), oncology nurses accepted patient involvement

in safety initiatives (voicing medication safety) while discussing other safety concerns (reminding staff to wash their hands) were more difficult and challenging to voice.

Hence, to avoid embarrassment, and to avoid acting out of role, many patients felt that prompting hand washing should not be regarded as a patient's duty. Similarly, nurses were concerned that patient involvement in hand hygiene is not a role of patients but rather a professional duty for all HCPs as nurses do not expect patients to prompt handwashing. Other studies reported that physicians did not support patient involvement as they felt patients are not responsible for reminding physicians to perform hand hygiene (Pittet *et al.*, 2011). Among the factors that hinder patient involvement is the lack of acceptance of the possible role of patients in ensuring their own safety (Longtin *et al.*, 2010a).

In relation to Goffman's explanation, findings from the current study show that when patients prompt hand hygiene, they are acting 'out of role' and this triggers a confrontational situation. For instance, patients are expected not to act out of role when prompting nurses to wash their hands. However, though many patients in this study did not feel comfortable to ask about handwashing, there are no defined or written roles and responsibilities they should follow during their hospitalisation period. For example, The North Bristol NHS Trust (2020) reported on their website that patients' responsibilities include treating NHS staff with respect and give positive or negative feedback about their experiences and the treatment and care received. However, it is not clear whether these "negative feedbacks" may include patients prompting nurses to wash their hands or complaining about suboptimal hand hygiene practices among nurses.

As discussed in the previous section [6.2], patients do not have a responsibility to remind nurses to wash their hands (Batalden *et al*., 2016). However, data from nurses indicate the importance that nurses should be treated with respect [receive a nice reminder] when patients remind nurses to perform hand hygiene. Findings from the current study concerning patient involvement in hand hygiene do not offer explanations on how both patients and nurses recognise their rules and act within their roles or boundaries (if they exist). However, findings from the current study indicate that currently, patients are acting out of role when they prompt hand hygiene, even in a 'polite way'.

A possible explanation for this is discussed in Goffman's theory of *face work* (Goffman, 1955), which is consistent with the symbolic interactionist thought that individuals *interpret* and *act* to maintain the face of self and other (Shattell, 2004). Goffman (1955) defines the term *face work* as interaction ritual in human-to-human encounter, which includes "positive social value a person effectively claims for himself by the line others assume he has taken during a particular contact" (Goffman, 1967, p. 5). The previous discussion offers a possible explanation of why nurses confront and negatively react or interact to hand hygiene reminders from patients assuming that patients are acting out of role and handwashing is a nurse rule, duty and responsibility.

Interaction rules are embedded within everyday nurse-patient interactions, and these rules are *invented* by its user [both nurses and patients] to explain or understand phenomena in everyday dealings (Jacobsen, 2010, p. 133). Interactions between patients and nurses include scenarios where patients avoid or delay communication because they are "not willing to complain" (McDonald *et al*., 2000) because of interaction rules. While patient active involvement in care is encouraged (Thomas

and Pollio, 2002), Lenzen *et al.* (2018) argue that patients' contribution to the interaction is limited when they are positioned as passive agents (not capable of actively engaging) rather than active agents (capable of actively engaging).

The previous discussion offers a possible explanation of why patients will likely avoid asking about hand hygiene as they may predict a negative reaction based on the interactions that are implicit within society. Findings from the current study show that interactions between nurses and patients concerning prompting handwashing are often perceived as inappropriately challenging. The violation of rules on interactions may lead people [nurses and patients] to feel that they have been mistreated (Jacobsen, 2010, p. 104). A possible explanation that nurses could misinterpret patient prompting handwashing as 'abuse' or 'inappropriate'. Ervin Goffman states that people are burdened by behaviours they cannot disclose as they fear embarrassment and being ashamed, or when they are worried about how other people may react to their behaviours (Shulman, 2017). For instance, patients might feel burdened when observing failure in nurses' hand hygiene practices as they fear disclosing hand hygiene reminder when patients are worried how nurses might react to the hand hygiene prompts. Hence, patients' experiences on asking nurses to wash their hands show the layers of complexities in interactions between nurses and patients concerning prompting handwashing.

Another element addressed within Goffman's theory of everyday life interactions is when patients attempt to avoid situations that threaten their own "projected self" (Jacobsen and Kristiansen, 2015, p. 80). Projected self means how individuals are viewed by the other in an interactional context (Ryan, Plant and Kuczkowski, 1991). For instance, patients are more likely to avoid asking nurses to wash their hands to avoid challenging confrontation interactions with nurses. In relation to Goffman's

explanation, findings from the current study show that most patients could not ask nurses to wash their hands to avoid situations that threaten their projected self.

From the discussion above, it can be concluded that patient prompting hand washing is far from simple. Some nurses perceived prompting handwashing as role conflict and that patients are acting out of role resulting in inappropriately challenging and confrontational situations. Further research could help in understanding whether patients and nurses recognise any roles concerning prompting handwashing and if patient acting out of role [asking nurses to wash their hands] may result in repercussions as a consequence of upsetting staff.

6.3.3 Patient prompting hand washing has a negative impact on the nurse-patient trust relationship

Patients interviewed for this research value the relationship with nurses and described their relationships as "*flourishing*", "*good*", "*trusty*" and "*therapeutic*". The results of this study indicate that both nurses and patients are concerned that patient involvement in hand hygiene may result in a negative impact on the nurse-patient trust relationship. Hence, they were concerned asking nurses to wash their hands might harm this virtuous relationship.

The underlying principles of the therapeutic relationship between nurses and patients are: respect, genuineness, empathy, active listening, trust, and confidentiality (Sheldon, Foust and Sheldon, 2014). For nurses, the aim of the therapeutic relationship is to support patients while demonstrating unconditional positive regard without any negative judgments (Sheldon, Foust and Sheldon, 2014). One of the earliest nursing theorists, Hildegard Peplau, developed the theory of interpersonal relations (Peplau, 1997), which highlighted the reciprocity in the interpersonal

relationship between the nurse and the patient. Peplau (1997) confirms "*there is nothing routine about the nurse-patient relationship*" (p. 167) and that the worth of the nurse-patient relationship and nursing communication is in building a positive atmosphere in which nurses work in collaboration with the patient to develop the goals of care (Sheldon, Foust and Sheldon, 2014). Peplau (1997)'s theory "*moved thinking about nursing from what nurses do to patients to thinking about what nurses do with patients, thereby envisioning nursing as an interactive and collaborative process between the nurse and the patient*" (Sheldon, Foust and Sheldon, 2014, p. 59).

In the current study, nurses exhibited some positive perceptions and experiences concerning patient involvement in hand hygiene but emphasised the perceived risk to the nurse-patient relationship. Nurses stressed how important it was for them to maintain healthy therapeutic nurse-patient relationships. However, the experiences of patients were surprisingly different; most patients felt they wanted or needed to ask nurses to wash their hands, but they could not as they feared that asking might result in a negative impact on their relationships with the nurses.

Results from the current study on *experiences* from nurses and patients of patient involvement in hand hygiene corroborate the findings of previous work on the *expected views* and *perceptions* of nurses and patients concerning patients prompting handwashing. Hence, nurses disagreed with the promotion of patient involvement in hand hygiene due to their concern that this intervention might have negative effects on their relationships with patients. Patient involvement in hand hygiene is potentially disruptive to the staff–patient relationship because it reveals imperceptible risks of infection to patients who may be unconscious of those risks or

not cognisant to deal with them, and this revelation is perceived as having the potential to undermine trust and threaten relationships between staff and patients (Sutton, Brewster and Tarrant, 2019). Another factor that has a negative impact on the staff-patient relationship is any negative reaction by HCPs to the patient reminder (irrespective of whether an error has occurred) (Davis *et al.*, 2014b). These results provide further support for the hypothesis that patient involvement in hand hygiene poses a threat to the staff-patient relationship, because, it seems this relationship requires patient to adopt a passive role.

Comparison of the findings with those of other studies from when patients raise concerns about safety confirms that these nurse and patient concerns are warranted (Pittet *et al.*, 2011; Schwappach, Frank and Davis, 2013; Davis *et al.*, 2014b; Kim *et al.*, 2015; Seale *et al.*, 2016; Lastinger *et al.*, 2017; Sande-Meijide *et al.*, 2019; Sutton, Brewster and Tarrant, 2019). Indeed, there is strong evidence from the above mentioned literature that patient involvement in hand hygiene is harmful to the patient-provider relationship. However, most of these studies lack in-depth understanding of *how* patients and nurses *experienced* the patients asking HCPs to wash their hands as a threat to the nurse-patient relationship (Alzyood *et al.*, 2018). Although patient involvement in their safety might appear be a possible strategy for enhancing hand-hygiene compliance among HCPs, successful implementation requires a deeper understanding of different complex factors such as the therapeutic patient-provider relationship (Alzyood *et al.*, 2018). The current study found that most patients did not ask nurses to wash their hands to avoid harming the nurse-patient trust and therapeutic relationship.

Evidence from other studies shows that patients fear a loss of trust and a change in the nurse's behaviour towards them after they have given the reminder. Patients also fear that asking might be perceived as showing a lack of respect for staff, shame and even reprisal (Longtin *et al.*, 2009; Garcia-Williams *et al.*, 2010; Michaelsen *et al.*, 2013; Seale *et al.*, 2015a; Sande-Meijide *et al.*, 2019). Other studies confirm that nurses spend more face-to-face time caring for patients than do other HCPs (Seale *et al.*, 2016; Butler *et al.*, 2018); therefore, the therapeutic nurse-patient relationship is crucial to enable the patient to feel safe and to place their trust in health care (Pullen and Mathias, 2010; Conroy *et al.*, 2017) and therefore to improve patient outcomes (Kelley *et al.*, 2014; Kornhaber *et al.*, 2016). There is strong evidence that nurses favour patient involvement in hand hygiene more than other HCPs do (Garcia-Williams *et al.*, 2010; Davis *et al.*, 2014b; Kim *et al.*, 2015; Lastinger *et al.*, 2017). However, findings from the previously mentioned studies (Garcia-Williams *et al.*, 2010; Davis *et al.*, 2014b; Kim *et al.*, 2015; Lastinger *et al.*, 2017) as well as findings from the current study did not offer a clear explanation of why nurses hold a positive attitude toward patient involvement in hand hygiene compared to other HCPs. A possible explanation might be historically nurses have strong therapeutic relationship with patients as they have the most frequent patient care interactions compared to physicians and other HCPs. Yet, as we have seen, both nurses and patients acknowledge that patient prompting hand hygiene is a threat to this relationship.

A possible explanation for the defensive and confrontational behaviours could be that nurses react with defensiveness because they are taking patients requests personally (Schuster, 2010). For example, if a patient says that *"a member of staff stole my purse"* and a nurse responds, *"I highly doubt that any of the hospital staff*

would steal your purse", the nurse displays defensiveness and confrontation (Schuster, 2010, p. 54). Further research should be undertaken to investigate the reasons why nurses react in defensive and confrontational manners to the patient prompts.

Consistent with the literature, the current study found that patient involvement in hand hygiene was a possible threat to the nurse-patient trust relationship. Patient involvement in hand hygiene is challenging to the nurse-patient relationship, and hence patients are unlikely to ask nurses to wash their hands.

6.4 Patients should be heard without engendering confrontation

There are indications in the current study that communication is important. Both nurses and patients state that the reminder to trigger handwashing would be more palatable if done under certain circumstances or in a certain way. The results of this study are similar to the work of (Lent *et al.*, 2009; Wu *et al.*, 2013; Lastinger *et al.*, 2017). For instance, prompting might be easier to do when patients feel that the HCPs would appreciate the reminder (Wu *et al.*, 2013) or know the name of the HCP (Lent *et al.*, 2009; Lastinger *et al.*, 2017). Other studies have reported that the way in which the patient communicates the reminder determines the HCP's intention to accept reminders from patients (Garcia-Williams *et al.*, 2010; Pan *et al.*, 2013b). Schwappach, Frank and Davis (2013) found that HCPs supported patient involvement in hand hygiene if asked in an appropriate way that caused no offence to the HCPs.

Findings from the current study show that nurses would only accept the hand-hygiene reminder from patients if the reminder is communicated in an appropriate manner; as one nurse said, "*asking in a nice way*". Nurses requested that patients

should ask in a certain or appropriate manner without a clear explanation of how should patients who are poorly could be expected to ask in a “nice way”. It is therefore unreasonable to suggest that patients should prompt handwashing in a “*right manner*” when they are sick, especially when both patients and nurses are not sure what the “nice way” sounds like. There is a lack of evidence why nurses might find a particular “*way of asking*” as pleasing or acceptable considering the fact that patients are allowed to raise concerns [communicate their worries] about anything related to their care. There is a need for patients to feel welcome when asking nurses to wash their hands without assuming prompting handwashing may engender negative outcomes. Currently it is not possible to conclude that patients’ voices are heard without engendering anger or tension when patients ask nurses to wash their hands. In order to avoid confrontation and to maintain the nurse patient relationship, the patient often remains silent.

The majority of nurses from the current study report that the “*way of asking”* or the “*delivery*” of the reminder would determine their reaction to hand-hygiene prompts from patients. Nurses provide possible examples of ideal ways of asking that would elicit the desired response from nurses. For instance, “*If you please, wash your hands*” and “*please wash your hands*”. Nurses denote these examples as “*right manner*” which would help them to accept the patient prompts. Garcia-Williams *et al*. (2010) explain how a nurse “turned red in the face” after being asked by a patient in the “wrong way” to perform hand hygiene. Schwappach *et al*. (2013) found that HCPs supported patient involvement in hand hygiene if asked in an appropriate way that caused no offence to the HCPs. The experiences of nurses and incidents from patients based on experiences from clinical settings show that patient prompting of handwashing is very sensitive issue. The study of how language used when

discussing sensitive issues is a relatively new area of research but a study in general practice Albury *et al.* (2018) has identified that certain phrases are more acceptable to patients than others. It is therefore likely that certain ways of patient prompting hand hygiene are more acceptable to nurses than others. Hence, it is important that we take the suggestion by both nurses and patients about the 'way of asking' seriously. This study identifies that the approach taken by the patient in prompting hand hygiene is important and this is an area that warrants further study so that we can equip patients with ways of approaching nurses about involvement in their safety. However, this seems to be an unreasonable obstacle given that patients should feel welcome to ask nurses and other HCPs about anything related to their safe care -including prompting hand hygiene - without experiencing negative outcomes if the request was not made in the most appropriate way.

6.5 Patients should be empowered and encouraged to speak up and voice their concerns regarding nurses' hand hygiene practices

The findings from this study show that it is difficult for the patient voice to be heard concerning prompting hand hygiene among nurses. Experiences related by patients for this study show that most patients felt they wanted to ask nurses to wash their hands, but they could not. A possible explanation for this might be that patients lack empowerment and encouragement from nurses to enable patients from prompting handwashing.

The current study identifies that patients lack empowerment to speak up when they observe a safety concern related to nurses' failure to wash their hands. Findings from both nurses and patients show that most patients are not emancipated to speak up about an observed nurses' non-compliance to hand hygiene practices. The lack

of patient empowerment is evident as most patients included in this study were not able to ask nurses to wash their hands regardless their willingness to prompt handwashing. A possible explanation could be that patients do not have the courage or felt it is not possible to question or confront nurses with hand hygiene prompts.

Results from the current study are in line with those of previous studies, which report not all patients felt able to speak up due to the lack of empowerment (Davis *et al.*, 2012; Zhang *et al.*, 2012; von Lengerke, Kröning and Lange, 2017). Seale *et al.* (2015a) argue that patients will continue to be unwilling or unable to engage with HCPs or adopt behaviours to promote infection control (such as asking nurses to wash their hands) unless they are empowered and encouraged by their HCPs. Furthermore, patient empowerment is not encouraged even though patient empowerment could enhance patients' participation in preventing the risk of HCAIs (Seale *et al.*, 2015b). Other studies report that patients should be empowered to work in collaboration with HCPs to guarantee the rights of both patients and HCPs in safe care (Entwistle, Mello and Brennan, 2005; Watson, 2016; Paradiso and Sweeney, 2019). Recently, Park, Pardosi and Seale (2020) argue that not only patients but also their family members should be empowered and involved in infection prevention and control efforts. The UK's patient empowerment programme "*Partners in Your Care"* includes education brochure was delineated to patients with information on the importance of handwashing, and to ask nurses "*Did you wash your hands?*" (McGuckin *et al.*, 2001). The "*Partners in Your Care"* programme empowers patients to take responsibility for their own safety and ask HCPs to wash their hands (McGuckin *et al.*, 1999; McGuckin *et al.*, 2001). A study by Cheng *et al.* (2017) reports patients willingness to remind HCPs to wash their hands increased from 52.6% to 64.8% after receiving encouragement from infection control nurses.

Patients are more willing to ask nurses and other HCPs to wash their hands when they receive encouragement or invitation from nurses or doctors to ask (Davis, Sevdalis and Vincent, 2011; Cheng *et al.*, 2017). Recently, Grota, Eng and Jenkins (2020) report a 66% increase in patient participation in asking HCPs to wash their hands after implementing a patient motivational dialogue as a patient empowerment strategy. The patient motivational dialogue includes scripted intervention (Appendix 6.1) aims to instruct patients that staff hand hygiene is vital for their care and to "giving the patient permission to ask HCPs to clean their hands" (Grota, Eng and Jenkins, 2020, p.573).

There is evidence from the literature that encouraging and empowering patients from nurses may enhance patient participation in strategies to facilitate their safety such as prompting nurses to wash their hands (McGuckin *et al.*, 2011; Pittet *et al.*, 2011; Seale *et al.*, 2016; Campbell *et al.*, 2020). Nurses can play a leading role in encouraging patients' involvement. Patients are more willing to prompt hand hygiene when they receive encouragement from HCPs through institutional prompts, such as staff wearing a badge that reads "It is OK to ask" (Pittet *et al.*, 2011, p. 301) or the presence of posters (Seale *et al.*, 2016). Other encouragement messages include visual prompts like posters, information packets and educational videos helped patients to speak up and ask HPCs to wash their hands (McGuckin *et al.*, 1999; McGuckin *et al.*, 2001; Lent *et al.*, 2009; McGuckin *et al.*, 2011; Campbell *et al.*, 2020; Gesser-Edelsburg *et al.*, 2020). It is possible that when patients receive encouragement from staff or institution, they become aware of the importance of hand-hygiene compliance to the assurance of their safety; therefore, more empowered to prompt nurses to wash their hands. However, further research is

required to conclude which approach (or combination of approaches) may work most effectively to empower patients and enhance their role in prompting hand hygiene.

Both nurses and patients report that patients need the support of nurses to act in partnership. Findings from the current study and the wider literature review reported increased patients' intention in asking nurses to wash their hands when patients received encouragement and support from nurses. It is possible therefore to conclude that patients need encouragement and be empowered to speak up and raise concerns about their safety, including asking nurses to wash their hands.

6.6 Ensure cultural readiness of patients and nurses and hospitals to facilitate the role of patient involvement in hand hygiene

Findings from the current study show that patients do not perceive a culture in which they can ask about hand hygiene. For instance, *"it was awkward"*, *"the nurse was not happy"*, *"the reminder was taken as personal criticism"*, *"in the nurse's body language, he was not happy*, and *"patients should not feel guilty when asking".* These findings broadly support the findings from other studies that patients are reluctant to ask HCPs about hand hygiene and patients do not feel it is possible to do so; they feel disrespectful, awkward or ashamed (Longtin *et al.*, 2009; Oliveira and Pinto, 2018; Sande-Meijide *et al.*, 2019; Sutton, Brewster and Tarrant, 2019). Patients also fear annoying HCPs (Seale *et al.*, 2015b; Sande-Meijide *et al.*, 2019), creating conflicts with HCPs (Kim *et al.*, 2015; Cheng *et al.*, 2017), and that HCPs will assume that they are questioning the HCPs' professional ability (Pittet *et al.*, 2011). A possible explanation for patients relectant to ask nurses to wash their hands is the lack of cultural readiness of patients and nurses and hospitals to facilitate the role of patient involvement in hand hygiene.

The findings from the current study report a need to promote a culture of readiness between patients, nurses and hospitals to facilitate the patient prompts. The majority of nurses report that promoting a culture of safe care inside the hospital setting can alleviate the challenge, mitigate the patient prompts and fully involve patients to speak up about hand hygiene. Lastinger *et al.* (2017) argue for patient involvement in hand hygiene to be successful, it is imperative for HCPs to accept the culture of patient prompts and they do not take hand hygiene reminders as challenging behaviour. These findings are similar to those of other studies, which reported that both patients and HCPs should jointly advocate the culture of patient involvement in hand hygiene (Alzyood *et al.*, 2018).

In the current study, most nurses reported a lack of culture readiness in the hospital settings concerning patient involvement in the promotion of hand hygiene compliance. In 2004, the UK NHS introduced the *Cleanyourhands* campaign as national initiative in England and Wales primarily aim to promote hand-hygiene compliance. The campaign included patient asking HCPs to wash their hands via a message "*It's OK to ask*" (Stone *et al.*, 2012). However, the campaign did not discuss any findings related to experiences from HCPs and patients on patient involvement in hand hygiene. The campaign, like other hand hygiene campaigns, focused mainly on the rates of hand-hygiene compliance, without discussing how HCPs and patients experienced the patient prompts. Asking patients to prompt hand washing without management of the culture and expectations of staff is likely to promote uncomfortable encounters and create needless stress for patients. It is, therefore, possible to hypothesise that hospitals should not invite patients to prompt hand washing until this concept is culturally accepted by both patients and nurses.

Findings from the current study show that hospital environments do not support the role of patients in the promotion of hand-hygiene compliance. For instance, nurses from both countries [Jordan and the UK] manifest similar views that hospitals are not introducing a culture of patient involvement in hand hygiene. Hence, patients do not experience a culture in which they feel able to ask nurses to wash their hands. Patients report that prompting handwashing is not perceived as a norm or an acceptable culture.

Kilpatrick *et al.* (2019) argue that change in the institutional safety climate/culture should start with a focus on the involvement of senior managers, champions or role models. Kim *et al.* (2015) argue HCPs may be unfamiliar and challenged when asked by patients to wash hands which make it hard for them to accept the prompts. Similarly, Linam *et al.* (2017) report that asking nurses to wash their hands is not a norm or an acceptable culture as patients are not used to confronting nurses and ask them to wash their hands. Linam *et al.* (2017) introduce a *Speaking Up for Safety Programme* that includes a culture change and an increase in HCPs' willingness to speak up about hand-hygiene compliance as an expected social norm. Woodward (2017) argues that patients should be introduced to a culture of safety so "*they can speak up and share information openly and freely about their concerns and are treated fairly when something goes wrong*." (p. 48).

In the current study, nurses stress the importance of introducing a culture of patient involvement by familiarising patient with the importance of hand hygiene - the need to ask nurses to wash their hands. There is also a need to inform nurses to expect patients to ask them about handwashing. Woodward (2017) argues a safety of culture represents a set of actions and beliefs aim to promote a mindset patient safety. Woodward (2017) states "*a safety culture does not get built by a set of*

superficial policies, goals, mission statements, job descriptions, issuing a safety strategy document, placing safety notices on the walls or sending out alerts. A safety culture is a way of being." (p. 46).

Promotion of an institutional culture of safety climate is associated with several positive outcomes on patients and HCPs, such as fewer occurrence of errors, incidents and adverse events (Luiz *et al.*, 2015), and enhanced perceptions among frontline staff of patient safety climate (Rosen *et al.*, 2010). Sande-Meijide *et al.* (2019) report a need for a culture change to create a facilitating environment between HCPs and patients to promote patient involvement in hand hygiene. Seale *et al.* (2016) argue that the nurses' role is vital to introduce this new culture as they spend more face-to-face time with the patient. Similarly, Bishop and Macdonald (2017) argue that both nurses and patients should promote a successful culture of patient involvement in safe care.

Findings from the current study show that nurses are not ready yet to adopt a hospital culture that includes receiving hand hygiene reminders from patients. Hence, any such instituional reminders encouraging patients to prompt are premature and risk confrontation. Promoting a culture of patient involvement in hand hygiene may help both patients and nurses to adopt a facilitated perspective towards the patient prompts, so both nurses and patients are not conjecturing or confronted when patients ask nurses to wash their hands. Therefore, there is a need to ensure the cultural readiness of patients and nurses and hospitals to facilitate the role of patient involvement in the promotion of hand-hygiene compliance - a culture of zero harm to patients.

6.7 Chapter summary

This chapter discussed the study findings in relation to the contemporary literature on patient involvement in the promotion of hand-hygiene compliance among nurses in hospital settings. There is evidence that the seemingly simple request to ask patients to prompt HCPs to wash their hands is, in reality, far from simple. The majority of themes discussed by nurses and patients regarding patient involvement in hand hygiene shared similarities with existing work on the nursing role in ensuring patient safety in the hospital settings. Overall, both nurses and patients confirmed the patients' right but not a responsibility to ask nurses to wash their hands.

However, findings from the current study report that both nurses and patients acknowledged it is difficult for patients to raise concerns about hand hygiene. The experiences from both nurses and patients show patient prompting is challenging as nurses being already overworked; patients are acting out of role when prompting handwashing, and patient prompting hand washing may result in a negative impact on the nurse-patient trust relationship.

Experiences from both nurses and patients report that patients should be heard without engendering anger or other stressful encounters. Patients should be empowered and encouraged to speak up and voice their concerns regarding nurses' hand hygiene practices. There is a need to ensure a culture readiness to facilitate the role of patient involvement in hand hygiene.

The *experiences* from both patients and nurses shed light on how nurses and patients have reacted to situations in which patients asked nurses to wash their hands. Previous studies have focussed on the views and perceptions of nurses rather than the actual experiences of nurses and patients. Hence, in exploring the

actual experiences of nurses and patients, this PhD study confirms the speculation of previous studies that patient prompting would not be welcomed by nurses. What was not anticipated was the magnitude of the impact of patient prompting, articulated by both nurses and patients.

CHAPTER 7: 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 patient involvement in the promotion of hand-hygiene compliance among nurses in hospital settings.

7.0 Conclusions from the research

In Chapter 1, the link between hand-hygiene practices and patient safety was established. Hand hygiene remains the most simple and effective measure to prevent HCAIs. Hand hygiene compliance rates are alarming and at levels below those expected. The multimodal hand-hygiene interventions are vital to increase hand-hygiene compliance rates among HCPs. Patients' views are discussed with

regard to ensuring their own safety in hospital. However, patient involvement in the promotion of hand hygiene was not introduced as a method to enhance hand-hygiene compliance. The question considered was whether or not patients had a role in the promotion of hand-hygiene compliance in hospital settings.

Chapter 2 provided an integrative review of the patient's role in the promotion of hand-hygiene compliance among HCPs in hospital settings. Evidence was collected from 24 studies of patient involvement in hand hygiene performed in different countries and hospital settings. Studies from different methodological stances (mainly quantitative) reported that both patients and nurses had mixed views concerning patient involvement in hand hygiene. Other findings from the literature have reported that patients and HCPs found that patient involvement in hand hygiene caused confrontation and embarrassment and created a potential threat to patient-provider relationships. However, the experiences of patients and nurses were not fully discussed.

Chapter 3 presented the methods and methodology that were followed to address the research aim: to understand the role of patient involvement in the promotion of hand-hygiene compliance among nurses in the hospital setting. A qualitative study based on interviews with nurses and patients was adopted to understand how nurses and patients experienced patient involvement in hand hygiene. Focus-group discussions with nurses and telephone interviews with patients were completed in two countries (Jordan and the UK) with different linguistics. Data were audio-recorded, transcribed verbatim, translated into English and analysed thematically. Findings were presented in two separate chapters: findings from nurses were discussed in Chapter 4 and findings from patients were discussed in Chapter 5.

Chapter 4 presented the findings of focus-group discussions with nurses from the two countries. Nurses met to discuss their experiences and perceptions of patient involvement in hand hygiene. Seven focus-group discussions were completed with 36 nurses (18 participants in Jordan and 18 in the UK). Overall, nurses acknowledged both the right of patients to ask nurses to wash their hands and the patients' reasons for asking. Nurses acknowledged that patient asking was challenging in practice, and explained that the manner of asking was important. Nurses also reported that patient involvement in hand hygiene might have an adverse effect on the nurse-patient relationship, and they highlighted the need to promote a culture that supported patient involvement.

Chapter 5 presented the findings of patient interviews from Jordan as they communicated their experiences of patient involvement in hand hygiene. Semi-structured telephone interviews were completed with 21 patients who had been hospitalised in one of the largest government hospitals in the country. Patients reported their experiences when they had asked or had chosen not to ask nurses to wash their hands and to describe what had prompted them to, or hindered them from, requesting hand washing. Overall, patients felt that they had the right to ask nurses to wash their hands, especially when they observed nurses providing care without gloves or when patients perceived an imminent risk of infection. However, the majority of patients did not ask nurses to wash their hands as they felt that patient involvement in hand hygiene was not their responsibility. Other findings from patients reported that patients did not ask nurses to wash their hands as they feared that asking might harm the nurse-patient relationship. Finally, patients felt that asking nurses to wash their hands was offensive and upsetting to nurses, and most patients were either embarrassed or shy to speak up.

It can, therefore, be concluded that patient involvement in hand hygiene is a promising strategy to promote hand-hygiene compliance in hospital settings. However, the findings of this study in relation to the literature show that when patients ask nurses and other HCPs to wash their hands, they often face negative responses. Patient involvement in hand hygiene can result in needless negative encounters between staff and patients which results in an adverse impact on the provider-patient relationship. Both nurses and patients have experienced embarrassment and shyness, and patients believe that asking nurses to wash their hands is offensive and upsetting to nurses. Hence, more work is required to discover how this intervention may work in different hospital settings and how patients with different underlying conditions may be involved in the promotion of hand-hygiene compliance and their own safety in the hospital settings.

7.1 Strengths and limitations of the study

The design of this qualitative study has many new and novel features. The current study applied different qualitative methods to understand nurses' and patients' experiences of patient involvement in hand hygiene. The deliberate search to understand phenomena of interest has not been reported in the literature, which is mainly influenced by self-reported questionnaires and surveys that ask what patients and nurses would do rather than how they have experienced patient involvement in hand hygiene. The qualitative study design robustly answered the research question and aim and revealed more about the phenomena of interest than could be discovered using a quantitative research design. There are other strengths of this study, and therefore of the findings. The study shed light on and revealed the complex nature of patient involvement in hand hygiene based on experiences of both

patients and nurses. The findings add to the knowledge regarding patient involvement in hand hygiene because of the depth and complexity of the subsequent understanding uncovered by the findings. This differs from previous research into patient involvement in hand hygiene, which has predominantly used quantitative retrospective questionnaires. The research design enabled the nurse researcher to compare what nurses said about their experiences of patient involvement in hand hygiene with the experiences of patients, and this is a well-recognised strength of fieldwork.

Whilst the research framework and chosen methods clearly added strength to the findings, there were also limitations to the design and, therefore, the findings. There is an obvious contradiction concerning the contextualised role of patients in the promotion of hand-hygiene compliance among nurses in hospital settings revealed by nurses from two countries and patients from one country, and there is an issue of transferability. Whilst it was the aim of the study to interview patients from the Jordan using purposive sampling, it could be argued that this would have limited the transferability of the findings to other countries. Despite this acknowledged limitation, there is nevertheless sufficient evidence that supports the transferability of the findings to similar regional governmental hospitals in Jordan. The transferability of these findings is enhanced by the processes of rigour applied in the study as previously discussed in Chapter 3.

7.2 Recommendations for further nursing research

While this thesis provides some useful and relevant insights, other, new questions remain.

1) Further research with more focus on observational studies of patient involvement in hand hygiene as a safety-related behaviour in different medical encounters is needed to gain further understanding of how patients' intentions may predict their participation in the promotion of hand-hygiene compliance in hospitals.
2) Further research could observe more encounters between patients and nurses on prompting handwashing and see which encounters do not lead to confrontation and what we can learn from these patient experiences in prompting nurses to wash their hands.
3) Further research is needed to observe the manner or the way in which patients ask nurses to wash their hands and how nurses respond to the reminder. This is imperative as nurses suggested in their discussions for this study that patients should ask in a nice or acceptable way, but what constitutes the "right way" or "how to ask" is unclear to both patients and nurses.
4) Further research is needed to test the language that might be acceptable to nurses and patients concerning promoting handwashing. A possible future study could include providing nurses with sentences to rate and comment on whether these phrases can facilitate the role of patient involvement in hand hygiene from the perspective of nurses. Then the same sentence can be given to patients to test their opinions. Finally, a conclusion can be drawn from both groups on the most suitable or right ways that could facilitate the role of patients in raising concerns and discussing sensitive issues with nurses and other HCPs like prompting handwashing.

5) Future studies may also investigate any current incidents that have happened inside hospital settings when a patient has raised a concern that a nurse has not washed his or her hands, and to understand how nurses have handled patients raising concerns on hand-hygiene compliance.
6) From a methodological perspective, further research is recommended to discover the causal or correlation relationship between nurses' or patients' demographics, including gender, age, education level, health status (for patients) or years of clinical experience (for nurses), in relation to their acceptance of and participation in initiatives regarding patient involvement in hand hygiene.
7) Further research may measure how patients' socio-demographic characteristics, including physical, social, psychological and environmental factors, affect patients' intention to participate and ask not only nurses but all HCPs to wash their hands.

7.3 Recommendations for nursing practice

To ensure that patient involvement in hand hygiene is reflected in patient safety and health-related outcomes, further recommendations for nursing practice are needed.

1) It is recommended that healthcare organisations represented by policymakers and management should engage in efforts to enhance a better understanding of patient involvement in all safety initiatives, including in hand hygiene.
2) It is imperative that hospitals should not invite patients to prompt hand washing until the concept of patient involvement in hand hygiene is culturally and socially accepted. Asking patients to prompt hand washing without management of the culture and expectations of staff is likely to promote

uncomfortable encounters and create additional stress for patients and staff. It is therefore important that managers need to become aware of the consequences of the promotion of patient prompting handwashing with careful consideration that their seemingly simple campaign might result in negative encounters.

3) There is a need for the introduction of formal reporting guidelines regarding hospital incidents so that both patients and nurses can feel protected from the risk of infection when patients observe failure in hand washing, and when nurses acknowledge that they forget to wash their hands. Hence, it is vital to consider a no-blame culture inside hospital settings to ensure optimal hand-hygiene compliance regardless of whether an error has occurred or not. Reporting of incidents that concern non-compliance with hand-hygiene behaviours would involve both further research and changes to some aspects of the existing reporting structure to remove the sense of guilt, blame or retribution that may result when patients report a nurse due to non-compliance with hand-hygiene practices.
4) Finally, there is a need to continue efforts that aim to circulate a culture of patient safety based on the fact that “patient safety is everyone’s responsibility”; therefore, more attention should be devoted to teaching professionals, particularly nurses, in the growing science of patient involvement in their safety.

7.4 Recommendations for nursing education

1) It is recommended that the role of patient involvement in hand hygiene should be raised in the classrooms to help nurses become more comfortable with patients raising concerns and speaking up.

7.5 Concluding statement

In this study, the aim was to provide a thorough understanding of the *experiences* of nurses and patients when patients prompt hygiene in the hospital setting. The deliberate use of qualitative research design and the two qualitative data collection methods [individual and focus group interviews] enabled the researcher to understand and shed light on subtle aspects of the phenomena based on actual experiences of nurses and patients of patient promoting nurses to wash their hands.

This study has identified a wealth of evidence [from the literature review] available on views, attitudes and perceptions of what both nurses and patients say they would do rather than what they actually do or experience. Therefore, it was concluded that experiences of what happened when patients prompt nurses to wash their hands is under-researched and unevaluated. Findings from this study showed both nurses and patients confirmed that patients have a right but not responsibility to ask nurses to wash their hands. Patients reported it was challenging and difficult to prompt nurses to wash their hands. Surprisingly, nurses were confronted and defensive after receiving a hand hygiene prompts from patients. Overall, patients and nurses acknowledged it was difficult for patients to raise concerns on hand hygiene therefore most patients decided not to ask nurses to wash their hands. Hence, the

seemingly simple request resulted in unexpected confrontation and stressful encounters between patients and nurses.

One of the more significant findings to emerge from this study is that both nurses and patients agreed that patients should be heard without engendering confrontation. Patients should be empowered and encouraged to speak up and voice their concerns regarding nurses' hand hygiene practices. Both nurses and patients believed there is a need to promote a hospital culture where patients would have a role in promoting hand-hygiene compliance among nurses in the hospital settings.

The findings of this PhD study are drawn from two countries with different linguistics, healthcare systems and culture, yet the findings are remarkably similar showing that patient involvement in hand hygiene is an issue of concern for patients and nurses that transcends borders. Therefore, collaborative work and developing a shared language for patients and HCPs to address the role of patients in the promotion of hand-hygiene compliance among nurses are needed, so that true change is achieved.

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APPENDICES

Appendix 1.1: Four approaches to monitor hand hygiene compliance

The approach	Description
Direct observation	Advantages: • If provided by trained personnel, direct observation is considered a gold standard to measure hand-hygiene activities. • It captures whether hand hygiene was performed at the right time (WHO, 2009) and can assess hand-hygiene technique or moment (Guanche Garcell *et al.*, 2017). • It measures compliance rate and conditions according to healthcare-worker type (such as physicians or nurses) (Alshammari *et al.*, 2018).

Disadvantages:

- This methodology may not be appropriate due to high set-up costs. Also cannot be used in some situations, such as when access to patients' rooms is limited to maintain privacy (Srigley *et al.*, 2014; Tejada and Bearman, 2015).
- The Hawthorne effect – which refers to the tendency for –hand-hygiene compliance to surge temporarily when the observer is present – has been reported during direct observation of hand-hygiene behaviours (Cheng *et al.*, 2011).

Self-reporting: individual self-assessment

Advantages:

- High self-reporting compliance rates may reflect a higher level of awareness among HCPs (WHO, 2009).

Disadvantages:

- Risk of reporting bias has been observed when HCPs have reported better practice than their actual practice (Hagel *et al.*, 2015; Cruz and Bashtawi, 2016).
- Nursing staff who participated in self-reporting of compliance reported 90% compliance rates, yet a compliance rate of 33.4% was reported by direct observation of the same sample and setting (Al-Wazzan *et al.*, 2011).

- Self-reported hand-hygiene compliance rates are over-reported, overestimated and inflated compared with true compliance rates (Contzen, De Pasquale and Mosler, 2015).

Indirect measurement: consumption of hygiene products

Advantages:

- Hand-hygiene compliance rates can be measured easily by recording the amount of alcohol-based hand-rub products, hand-wash agents, or paper towels consumed (Mu *et al.*, 2016).
- This is an ideal method to measure compliance rates, without a threat to patient privacy due to the need for observers to enter patients' rooms or approach the patients' bedside areas.

Disadvantages:

- It may not provide accurate data regarding performance of hand hygiene at the correct time (five moments) or through the correct technique (Masroor *et al.*, 2017).
- Hand-hygiene compliance rates can be inflated due to the consumption of products by non-healthcare workers such as family members and visitors (WHO, 2009).

Video monitoring and electronic surveillance

Advantages:

- This could mitigate observer bias and reduce the Hawthorne effect (Wu *et al.*, 2017; McCalla *et al.*, 2017).
- It allows 24-hour hand-hygiene monitoring, which would be

arduous using the direct observation method (Marra *et al.*, 2014).

Disadvantages:

- There is a high cost of installation, lack of acceptance by HCPs, limited records of different moments of hand hygiene (five moments), and it is subject to privacy concerns (Gould *et al.*, 2017).
- There are challenges related to organisation culture, physical infrastructure needs, and budget (Conway, 2016).

Appendix 2.1: The full-text of the published integrative literature review

This article has been removed from the online version of the thesis due to copyright restrictions. See pg. 12 for the full citation

Appendix 3.1: University Research Ethics Committee (UREC) – Ref: 161050

OXFORD BROOKES UNIVERSITY

Dr Helen Aveyard
Director of Studies
Department of Nursing
Faculty of Health and Life Sciences
Oxford Brookes University
Marston Road Site

29 November 2016

Dear Dr Aveyard

UREC Registration No: 161050
Patient involvement in promoting hand hygiene among nurses in the hospital setting

Thank you for the email of 28 November 2016 outlining the response to the points raised in my previous letter about the PhD study of your research student Mamdooh Alzyood and attaching the revised documents. I am pleased to inform you that, on this basis, I have given Chair's Approval for the study to begin.

The UREC approval period for this study is two years from the date of this letter, so 29 November 2018. If you need the approval to be extended please do contact me nearer the time of expiry.

Should the recruitment, methodology or data storage change from your original plans, or should any study participants experience adverse physical, psychological, social, legal or economic effects from the research, please inform me with full details as soon as possible.

Yours sincerely

Dr Sarah Quinton
Chair of the University Research Ethics Committee

cc Debra Jackson and Obrey Alexis, Supervisory Team
Mamdooh Alzyood, Research Student
Hazel Abbott, Research Ethics Officer
Jill Organ, Research Degrees Team
Louise Wood, UREC Administrator

Appendix 3.2: Jordanian Ministry of Health – Ref: 12748

مكتب سكينة للترجمة المعتمدة
SUKAINA AUTHORIZED TRANSLATION OFFICE

(TRANSLATION FROM ARABIC)
IN THE NAME OF ALLAH MOST GRACIOUS MOST MERCIFUL

THE HASHEMITE KINGDOM OF JORDAN
MINISTRY OF HEALTH

The Hashemite Kingdom of Jordan, Tel. +962-6-5200230, Fax +962-6-5688373,
P.O.Box 86, Amman 11118 – Jordan, Website: www.moh.gov.jo

No. : Development/Plans/253
Date : 05.01.2017 G.
Corr. to : ..... H.

Director of ..... Hospital

Dear Sirs,

Pursuant to my letter No.: (Development/Plans/8757), dated: 25.09.2016;

Attached herewith please find a copy of the letter of Al-Bashir Hospital/ Head of Scientific Research Ethics Committee No.: (M.B.A./Ethics-Committee/12748) dated: 19.09.2016, related to permitting the Doctorate Candidate in Nursing at Oxford Brookes University/ UK: ***Mr. Mamdooh Ahmed Salem Alzyood*** to conduct a research entitled:

"The Role of Patients' Involvement in Promoting Hand Hygiene among Nurses in the Hospital Setting"

through performing interviews with nursing staff at the government hospitals of the Ministry of Health.

With kind regards.

For/ Director of
Human Resources Development Directorate
Dr. Fadwa Al-Shawabkeh

(Stamp of Zarqa Government Hospital)

Certified Translation
14 MAR 2017
Signature

SATO Tel.: 5690077 SUKAINA AUTHORIZED TRANSLATION OFFICE

Oxford Brookes University
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November 22, 2016

Dear Minister of Health of Jordan,

PhD research project: **Patients' involvement in promoting hand hygiene among nurses in the hospital setting**

The Faculty of Health and Life Sciences at Oxford Brookes University offers research programmes for MPhil and PhD and a range of Masters Programmes for nurses and midwives. These postgraduate research programmes aim to prepare students to be knowledgeable and competent researchers so that they may contribute to the development and improvement of health services both nationally and internationally.

I am writing to you to seek your support and assistance for one of our postgraduate students from Jordan, Mamdooh Alzyood. Mr Alzyood's doctoral research is exploring the role of involving patients/service users in their safety by promoting nurses to wash their hands. It is hoped that the findings from the study will help inform the development of services and nursing roles relating to involving patients in their safety and possibly minimise the risk of healthcare associated infections.

As part of the study, Mamdooh Alzyood would like to undertake interviews with a group of registered nurses working in hospitals in Jordan. We hope that it will be possible to undertake the interviews with the nurses soon because Mr Alzyood's has limited funding to complete the data collection.

All participating organisations will be given a summary of the findings.

Thank you for considering this request. We look forward to hearing from you.

Yours faithfully

Dr Helen Aveyard
Oxford Institute of Nursing, Midwifery and Allied Health Research
Faculty of Health and Life Sciences
Oxford Brookes University, UK

Appendix 3.3: National Health Services, Oxford University Hospitals – Ref: 12765

Oxford University Hospitals NHS
NHS Foundation Trust

From the Head of Research Governance
OUH Research & Development
Joint Research Office
Block 60, Churchill Hospital
Old Road, Headington
Oxford OX3 7LE

Tel: (01865) 572971
Fax: (01865) 572242
Mark.crossley2@ouh.nhs.uk

HH/MC/PID:12765

Mr Mamdooh Alzyood
Doctoral Researcher
Oxford Brookes University
The Colonnade 2.13
Headington Campus
Oxford
OX3 0BP

27 April 2017

Dear Mr Alzyood,

Re: Patient involvement in promoting hand hygiene among nurses in the hospital setting
Research and Development Reference: 12765

Confirmation of Trust Management Approval
On behalf of the Oxford University Hospitals NHS Foundation Trust, I am pleased to confirm Trust Management Approval and Indemnity for the above research on the basis described in the application, protocol and other supporting documents.

Conditions of Approval
Your attention is drawn to the attached conditions of approval. Breach of these conditions may result in Trust Management Approval being revoked.

Recruitment

The agreed total recruitment target for your study at the OUH site is 10 participants by 31 December as specified in the Protocol.

Your first participant recruitment target date is 27 May 2017.

To support OUH Trust and national recruitment targets, R&D will monitor and publish recruitment for your study: 1. Performance against the 70 calendar day period benchmark from the time of receipt of a valid research application in R&D to the date of recruitment of first participant to your study; and for interventional trials; 2. Recruiting planned participants to time and target. The R&D office will contact you to request recruitment progress against both targets. If you recruit your first participant into the study then please send the date to researchrecruitment@ouh.nhs.uk. If you miss this target you will be required to give reasons that can be reported to the DOH/NIHR.

In order to facilitate good communications and avoid unnecessary delays please copy all correspondence with the Research Ethics Committee (REC) to R&D, providing copies of all relevant documents.

Research Sponsorship

It is noted that Oxford Brookes University has agreed to Sponsor this trial.

Capacity and Capability Assessment

This Trust Management Approval letter also incorporates capacity and capability assessment for the Oxford University Hospitals NHS Foundation Trust site.

Approved Documents

The documents approved for use at this trust are as listed in the:

CUREC Approval Letter dated: 29 November 2016

Study Staff

The CVs and GCP certificates of staff have been reviewed.

I wish you every success with the study.

Yours sincerely,

J Franklin

pp Heather House
Head of Research Governance

Standard Conditions of Approval by Oxford University Hospitals NHS Foundation Trust for Research studies other than Clinical Trials of Investigational Medicinal Products or Medical Device Trials

Issued to Chief Investigators and Principal Investigators

1) Commencement of the Study

Before the study commences the Chief Investigator/Principal Investigator is responsible for the following:

a) Ensuring that all members of the research team are appropriately qualified to undertake their role(s) through education, training and experience

b) Establishing a Study Master File/Site File, which should be maintained throughout the study and be readily available to the study team.

c) Ensuring that all members of the research team who have access to patients, their organs, tissues, data or access to NHS staff, information and facilities have OUH substantive/honorary contracts or appropriate research passports/honorary research contracts/letters of access in place prior to their involvement in the study.

d) Ensuring that all appropriate approvals are in place and remain so for the duration of the study

e) Ensuring that all investigators in the study are aware of and comply with the Regulatory Framework surrounding research practice, which includes but is not limited to:

- The Department of Health Research Governance Framework for Health and Social Care 2005
- Mental Capacity Act 2005
- The Human Tissue Act 2004
- The Declaration of Helsinki 2000
- The Human Rights Act 1998
- The Data Protection Act 1998
- ICH Good Clinical Practice 1996

2) Conduct of the Study

a) The study will be conducted according to the all applicable regulations, principles of Good Clinical Practice and applicable OUH Foundation Trust policies.

b) The study will be conducted in accordance with the approved protocol.

c) Essential documents will be made available for audit and inspection purposes where required.

d) The Trust must be made aware of any Intellectual Property that arises from the research study.

3) **Protocol Amendments**

a) Where the OUH (NHS) Foundation Trust has taken on the role of Sponsor, investigators must submit protocol amendments to R&D Department **prior** to submission the Health Research Authority or Research Ethics Committee and MHRA, to assess any implications for the Sponsor.

b) All **substantial** amendments must be submitted to the appropriate Health Research Authority or Research Ethics Committee for approval. Documents should also be forwarded to the R&D Department for assessment as to whether the amendment affects Trust Management Approval.

c) In order for the Trust to meet its responsibilities under the Research Governance Framework **all amendments, including non-substantial amendments** must be submitted to R&D department. You should include all supporting documents.

d) Submission of substantial amendments will be acknowledged by a letter confirming on-going Trust Management Approval, non-substantial amendments will be acknowledged by email.

e) **NO** substantial amendment, except those that relate to an urgent safety measures, should be implemented until all appropriate approvals have been obtained.

4) **Change of key Site Personnel - Chief investigator/Principal Investigator**

a) Any change of nominated Chief investigator/Principal Investigator (e.g. due to relocation, maternity leave, retirement etc.) at the OUH (NHS) Foundation Trust should be notified to the R&D Department **immediately**; the host organisation needs to ensure any on-going studies have been reviewed and appropriate oversight is in place; or where needed studies have been terminated within the required timeframes.

b) All other changes in study staff should be maintained via a study delegation log.

5) **Safety reporting**

a) Appropriate safety reporting procedures will be agreed according to the perceived risks to study participants and/or the Trust. Any safety reporting requirements will be communicated in writing by the R&D Lead to the Chief/Principal Investigator.

6) **REC Annual Progress Reports and Monitoring of the Study**

a) The Chief Investigator should ensure that the REC Annual Progress Reports are completed and submitted in a timely manner on each anniversary of the REC Approval, and copied to R&D.

b) The need for on-site monitoring of the study will be assessed according to risk to study participants and/or the Trust. Any special requirements will be communicated to the Chief Investigator/Principal Investigator in writing.

c) The Trust may audit a number of hosted CTIMPs and interventional studies.

7) **NIHR and NHS Quality Accounts**

a) The Trust is obliged to submit data to the Department of Health annually. The Chief Investigator/Principal Investigator must provide to R&D department in a timely manner, such information about the study as to enable to Trust to meet its obligations.

b) In particular the Chief Investigator/Principal Investigator will forward the first participant recruited date to R&D department by emailing the information to the email address provided in the NHS permission letter.

c) In addition the Chief Investigator/Principal Investigator will update the R&D department periodically throughout the life time of the trial on trial progress including on-going recruitment data and changes in the status of the trial.

8) **Conclusion of the Trial**

a) The Trust R&D Department should be informed within 60 days of the close of the study and a final report provided.

b) If the study is stopped early, the Trust R&D Department should be informed within 30 days outlining the reasons.

9) **Termination of Trust Management Approval**

a) The Trust reserves the right to revoke Trust Management Approval or Sponsorship for any project that is not conducted according to Trust policy or the applicable regulatory or legal framework. However, any such action will not be taken without prior discussion with the R&D Lead and/or the Medical Director together with the Chief or Principal Investigator. Furthermore, all researchers undertaking research at the Trust are subject to the Misconduct and Fraud Policy.

All Trust policies for the conduct of research within the organisation can be found at http://orh.oxnet.nhs.uk/Pages/WelcometothePoliciesPages.aspx

Appendix 3.4: Nurses' invitation letter to participate in FGDs

Research Participants Needed!

Patient involvement in promoting hand hygiene among nurses in the hospital setting

Are you:

- A postgraduate nursing student?
- Willing to participate in a focus group for an hour?
- Interested in the role of the patient/service users in hand hygiene practice?

- If you would like to find out more about this study, please contact me on via:
  E-mail: mamdooh.alzyood-2015@brookes.ac.uk
  Mobile: 07765688088

- Those who take part will receive a £10 Amazon voucher on completion of the study.

- Light refreshments will be provided on the day ☺

UREC version: 161050
Date: November, 2016

Appendix 3.5: Participant information sheet – Nurses

Patient involvement in promoting hand hygiene among nurses in the hospital setting

You are being invited to take part in a research study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

The purpose of the study:

Globally, 1 in 25 hospitalised patients acquire at least one healthcare-associated infection on a daily basis and the risk to acquire healthcare-associated infection remains very real danger around the globe.

Improving hand hygiene compliance among healthcare workers is recognised as one of the most effective ways to reduce the risk of healthcare-associated infections. However, in most healthcare institutions, it is estimated that only 40% of health care workers adhere to recommended hand hygiene guidelines.

Clinical nurses (registered nurses, licensed practical nurses, and certified nursing assistants) are the most frequent healthcare personnel who are in contact with patients and their surrounds in the hospital care environment. Therefore, the role played by nurses is pivotal in minimising the risk of transmitting microorganisms, not only from patient to patient but also between healthcare workers.

The aim of this study is to understand patient involvement in promoting hand hygiene among nurses in the hospital setting.

Why have I been invited to participate?

You will have seen our advertisements inviting postgraduate nursing students to have a group discussion on patient involvement in prompting hand hygiene among nurses in hospital settings.

Data protection and withdrawal

- Confidentiality of any information provided can only be protected within the limitations of the law
- 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, and to withdraw any unprocessed data previously supplied.

What will happen to me if I take part?

If you would like to take part in this research study you can do so by contacting the researcher at the address, phone number or email address given below. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a consent form.

Participation is completely voluntary. If you decide to take part, you are still free to withdraw at any time and without giving a reason. If you are a postgraduate nursing student, by choosing to either take part or not take part in the study or to withdraw at any time will have no impact on your marks, assessments or future studies.

After you decide to take part in the study, you will be contacted via e-mail by the researcher to confirm the focus group date, time, and venue.

What are the possible benefits of taking part?

There is no direct benefit to participants but we hope that the study will help to provide a better understanding of the patient/service users' involvement in promoting hand hygiene compliance among nurses.

- Sharing experiences by improving the quality of research.
- Helping to make sure that research can be understood.
- You will be voluntary invited for dinner after completing the focus group interviews.
- Refreshments will be provided at all studies' venues

Will information collected in the course of this study be kept confidential?

All information collected about you will be kept strictly confidential. Your personal data will be in a locked drawer at Oxford Brookes University, and if saved on a computer, will be securely encrypted with a password. 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 personal data. Interviews will be audio recorded. The data will be analysed in the UK under the supervision of Dr Helen Aveyard, Dr Obrey Alexis, and Professor Debra Jackson at Oxford Brookes University.

What will happen to the results of the research study?

The results will be presented as a part of a PhD dissertation and data published will be anonymised. In addition, the results will be published in peer-reviewed journals and presented at meeting 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 and Allied Health Research (www.OxINAHR.com).

Who is organising and funding the research?

This research is being conducted under the supervision of Dr Helen Aveyard, Dr Obrey Alexis, and Professor Debra Jackson at the Faculty of Health and Life Sciences at Oxford Brookes University. The project is self-funded by the researcher (Mamdooh Alzyood).

Who has reviewed the study?

The research has been approved by the University 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 university research ethics committee on ethics@brookes.ac.uk

Contact for further Information

You can contact the researchers at any time if you have any questions or concerns

TITLE AND NAME	POST	EMAIL	PHONE
Mr Mamdooh Alzyood	PhD student, Oxford Brookes University	Mamdooh.alzyood-2015@brookes.ac.uk	0044 (0) 1865 484750 Mobile-JORDAN: 00962 (0) 795074104 Mobile-UK: 0044 (0) 7765688088
Dr Helen Aveyard	Director of studies	Haveyard@brookes.ac.uk	0044 (0) 1865 482695
Dr Obrey Alexis	Second supervisor	Oalexis@brookes.ac.uk	0044 (0) 1865 485204
Professor Debra Jackson	Second supervisor	Djackson@brookes.ac.uk	0044 (0) 1865 482736

Thank you for your time to read the information sheet.

November, 2016

Participants Information Sheet : UK

Patient involvement in promoting hand hygiene among nurses in the hospital setting

You are being invited to take part in a research study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

The purpose of the study:

Globally, 1 in 25 hospitalised patients acquire at least one healthcare-associated infection on a daily basis and the risk to acquire healthcare-associated infection remains very real danger around the globe.

Improving hand hygiene compliance among healthcare workers is recognised as one of the most effective ways to reduce the risk of healthcare-associated infections. However, in most healthcare institutions, it is estimated that only 40% of health care workers adhere to recommended hand hygiene guidelines.

Clinical nurses (registered nurses, licensed practical nurses, and certified nursing assistants) are the most frequent healthcare personnel who are in contact with patients and their surrounds in the hospital care environment. Therefore, the role played by nurses is pivotal in minimising the risk of transmitting microorganisms, not only from patient to patient but also between healthcare workers.

The aim of this study is to understand patient involvement in promoting hand hygiene among nurses in the hospital setting.

Why have I been invited to participate?

You will have seen our advertisements inviting postgraduate nursing students to have a group discussion on patient involvement in prompting hand hygiene among nurses in hospital settings.

Data protection and withdrawal

- Confidentiality of any information provided can only be protected within the limitations of the law
- 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 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, and to withdraw any unprocessed data previously supplied.

What will happen to me if I take part?

If you would like to take part in this research study you can do so by contacting the researcher at the address, phone number or email address given below. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a consent form.

Participation is completely voluntary. If you decide to take part, you are still free to withdraw at any time and without giving a reason. If you are a postgraduate nursing student, by choosing to either take part or not take part in the study or to withdraw at any time will have no impact on your marks, assessments or future studies.

After you decide to take part in the study, you will be contacted via e-mail by the researcher to confirm the focus group date, time, and venue.

What are the possible benefits of taking part?

There is no direct benefit to participants but we hope that the study will help to provide a better understanding of the patient/service users' involvement in promoting hand hygiene compliance among nurses.

- Sharing experiences by improving the quality of research.
- Helping to make sure that research can be understood.
- At the end of the study you will receive £10 Amazon voucher.

Will information collected in the course of this study be kept confidential?

All information collected about you will be kept strictly confidential. Your personal data will be in a locked drawer at Oxford Brookes University, and if saved on a computer, will be securely encrypted with a password. 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 personal data. Interviews will be audio recorded. The data will be analysed in the UK under the supervision of Dr Helen Aveyard, Dr Obrey Alexis, and Professor Debra Jackson at Oxford Brookes University.

What will happen to the results of the research study?

The results will be presented as a part of a PhD dissertation and data published will be anonymised. In addition, the results will be published in peer-reviewed journals and presented at meeting 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 and Allied Health Research (www.OxINAHR.com).

Who is organising and funding the research?

This research is being conducted under the supervision of Dr Helen Aveyard, Dr Obrey Alexis, and Professor Debra Jackson at the Faculty of Health and Life Sciences at Oxford Brookes University. The project is self-funded by the researcher (Mamdooh Alzyood).

Who has reviewed the study?

The research has been approved by the University 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 university research ethics committee on ethics@brookes.ac.uk

Contact for further Information

You can contact the researchers at any time if you have any questions or concerns

TITLE AND NAME	POST	EMAIL	PHONE
Mr Mamdooh Alzyood	PhD student, Oxford Brookes University	Mamdooh.alzyood-2015@brookes.ac.uk	0044 (0) 1865 484750 Mobile: 0044 (0) 7765688088
Dr Helen Aveyard	Director of studies	Haveyard@brookes.ac.uk	0044 (0) 1865 482695
Dr Obrey Alexis	Second supervisor	Oalexis@brookes.ac.uk	0044 (0) 1865 485204
Professor Debra Jackson	Second supervisor	Djackson@brookes.ac.uk	0044 (0) 1865 482736

Thank you for your time to read the information sheet.

UREC version: 161050

Appendix 3.6: Consent form – Nurses

OXFORD BROOKES UNIVERSITY

Patient involvement in promoting hand hygiene among nurses in the hospital setting

Mamdooh Alzyood
Doctoral Researcher
Oxford Brookes University
The Colonnade
Headington Campus
Oxford
United Kingdom
OX3 0BP
T: 01865484750 EXTN: 8215

	Please initial box
1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.	☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and only unprocessed data may be withdrawn from the study.	☐
3. I agree to take part in the above study.	☐
4. I understand that the focus group consultation will be audio recorded	☐

	Please initial box *Yes*	*No*
5. I agree to the use of anonymised quotes in publications	☐	☐
6. I agree that my data gathered in this study may be stored (after it has been anonymised) in a specialist data centre and may be used for future research.	☐	☐

Name of Participant	Date	Signature
Name of Researcher	Date	Signature

Appendix 3.7: Flyers on notice boards – Nurses

OXFORD BROOKES UNIVERSITY

Research Participants Needed!

Patient involvement in promoting hand hygiene among nurses in the hospital setting

Are you:

- A postgraduate nursing student?
- Willing to participate in a focus group for an hour?
- Interested in the role of the patient/service users in hand hygiene practice?

- If you would like to find out more about this study, please contact me on via:
  E-mail: mamdooh.alzyood-2015@brookes.ac.uk
  Mobile: 07765688088

- Those who take part will receive a £10 Amazon voucher on completion of the study.

- Light refreshments will be provided on the day ☺

UREC version: 161050
Date: November, 2016

Appendix 3.8: Faculty Research Ethics Committee – Ref: 2017/11

Mamdooh Alzyood

The Colonnade

Faculty of Health & Life Sciences

Oxford Brookes University

Gipsy Lane

Headington

OX3 0BP

2 November 2017

Dear Mamdooh

Re. The role of patient involvement in promoting hand hygiene among nurses in the hospital setting.

Thank you for submitting your amendments. I can confirm that you have comprehensively addressed to all points of clarification and amendment. I am therefore pleased to approve the research by Chair's Action, on behalf of the Faculty Research Ethics Committee.

Good luck with the data collection.

Yours sincerely

Kellie Tune

Chair, Faculty of Health and Life Sciences Research Ethics Committee

Appendix 3.9: Jordanian Ministry of Health – Ref: 180085

SATO

مكتب سكينة للترجمة المعتمدة

SUKAINA AUTHORIZED TRANSLATION OFFICE

(TRANSLATION FROM ARABIC)
IN THE NAME OF ALLAH MOST GRACIOUS MOST MERCIFUL

THE HASHEMITE KINGDOM OF JORDAN
MINISTRY OF HEALTH

The Hashemite Kingdom of Jordan, Tel. +962-6-5200230, Fax +962-6-5688373,
P.O.Box 86, Amman 11118 – Jordan, Website: www.moh.gov.jo

No. : MBA/EthicsCommittee/9684
Date : 01.07.2018 G.

Director of Human Resources Development/ in Charge

Dear Sirs,

With reference to your letter No.: Development/Plans/4136 dated 20.06.2018, related to the research submitted by the Doctorate Candidate: ***Mamdooh Ahmed Salem Alzyood***;

I hereby enclose the Decision of the Scientific Research Ethics Committee, which concludes approval on conducting the above-mentioned person research.

For your kind review and actions, please.

With best regards,

Managing Director of Al-Basheer Hospitals
Dr. Ammar Naim Al-Shurafa
(Signed)

SATO Tel.: 5699077 SUKAINA AUTHORIZED TRANSLATION OFFICE

Certified Translation
09 JUL 2018
Signature

SATO
مكتب سكينة للترجمة المعتمدة
SUKAINA AUTHORIZED TRANSLATION OFFICE

(TRANSLATION FROM ARABIC)
IN THE NAME OF ALLAH MOST GRACIOUS MOST MERCIFUL

THE HASHEMITE KINGDOM OF JORDAN
MINISTRY OF HEALTH
The Hashemite Kingdom of Jordan, Tel. +962-6-5200230, Fax +962-6-5688373,
P.O.Box 86, Amman 11118 – Jordan, Website: www.moh.gov.jo

CODE: MOH REC 180085

Decision of the Scientific Research Ethics Committee

Scientific Research Ethics Committee has held its meeting on 28.06.2018 to discuss and study the scientific research submitted by Doctorate Candidate: ***Mamdooh Ahmed Salem Alzyood*** entitled:

("The Role of Patients Involvement in Promoting Hand Hygiene among Nurses in the Hospital Setting")

Therefore, the following committee members have duly signed this decision.

Committee Member *Assistant Nursing Affairs* *Dr. Hani Al-Qudah* *(Signed)*	*Committee Member* *Head of General Surgery Dept.* *Dr. Fayez Al-Hmoud* *(Signed)*	*Committee Member* *Head of Radiotherapy Dept.* *Dr. Rasmi Al-Mubaideen* *(signed)*
Committee Member *Head of Pediatrics Dept.* *Dr. Basema Murrar* *(Signed)*	*Committee Member* *Head of Internal Medicine Dept.* *Dr. Abbas Mansour* *(Signed)*	*Committee Member* *Head of Obs. & Gyn. Dept.* *Dr. Abdelmane' Al-Sleimat* *(Signed)*

Head of Committee
Managing Director of Al-Basheer Hospitals
Dr. Ammar Naim Al-Shurafa
(Signed)

مكتب سكينة للترجمة المعتمدة
SATO
Tel.: 5699077
SUKAINA AUTHORIZED TRANSLATION OFFICE

SATO
مكتب سكينة للترجمة المعتمدة
SUKAINA AUTHORIZED TRANSLATION OFFICE

(TRANSLATION FROM ARABIC)
IN THE NAME OF ALLAH MOST GRACIOUS MOST MERCIFUL

THE HASHEMITE KINGDOM OF JORDAN
MINISTRY OF HEALTH

The Hashemite Kingdom of Jordan, Tel. +962-6-5200230, Fax +962-6-5688373,
P.O.Box 86, Amman 11118 – Jordan, Website: www.moh.gov.jo

No. : Development/Plans/4136
Date : 20.06.2018 G.
Corr. To : ..... H.

DIRECTOR OF AL-BASHEER HOSPITALS/ IN CHARGE
HEAD OF SCIENTIFIC RESEARCH ETHICS COMMITTEE

Dear Sirs,

I hereby attach a copy of Oxford Brookes University, related to a request to allow the Doctorate Candidate: ***Mamdooh Ahmed Salem Alzyood*** to conclude a research entitled:

("The Role of Patients Involvement in Promoting Hand Hygiene among Nurses in the Hospital Setting")

Throughout meeting patients of governmental hospitals of the Ministry of Health, and take their opinions about promoting hand hygiene among nurses working in the hospitals of the Ministry of Health.

Kindly review and inform your opinion about the possibility to approve conducting the above mentioned research.

With best regards,

Director of Human Resources Development
Dr. Sawsan Jaba'tah
(Signed)

مكتب سكينة للترجمة المعتمدة
SATO
Tel.: 5699077
SUKAINA AUTHORIZED TRANSLATION OFFICE

المملكة الأردنية الهاشمية

وزارة الصحة

الرقم .....

التاريخ ..... م ب ا / لجنة اخلاقيات / ٩٦٨٤

الموافق ٢٠١٨/٧/٢

مديرتطوير الموارد البشرية/المكلف

تحيه طيبه وبعد ،،،

اشاره لكتابكم رقم تطوير /خطط /4136تاريخ2018/6/20 بخصوص البحث المقدم من قبل طالب الدكتوراة/ممدوح أحمد سالم الزيود

ارفق بطيه قرار لجنة اخلاقيات البحث العلمي والمتضمن الموافقة على إجراء البحث العائد للمذكور أعلاه .

للتكرم بالاطلاع واجراءاتكم لطفا .

واقبلوا الاحترام

مدير إدارة مستشفيات البشير

الدكتورعمار نعيم الشرفا

ص ب

المملكة الأردنية الهاشمية

وزارة الصحة

الرقم .....

التاريخ .....

الموافق .....

CODE : MOH REC 180085

قرار لجنة اخلاقيات البحث العلمي

إجتمعت لجنة اخلاقيات البحث العلمي بتاريخ28/ 6 / 2018 لمناقشة و دراسة البحث العلمي المقدم من طالب الدكتوراة/ممدوح أحمد سالم الزيود بعنوان :

" دور مشاركة المرضى في تعزيز نظافة اليدين بين الممرضين في مستشفيات وزارة الصحة"
The Role of Patients Involvement in Promoting Hand Hygiene among Nurses in the hospital Setting

وعليه تم التوقيع من قبل اعضاء اللجنه حسب الاصول .

عضو اللجنه المساعد لشؤون التمريض الدكتور/ هاني القضاه	عضو اللجنه رئيس قسم الجراحة العامة الدكتور/ فايز الحمود	عضو اللجنه رئيس قسم الاشعة العلاجية الدكتور / رسمي مبيضين
عضو اللجنه رئيس قسم الاطفال الدكتوره/باسمه مرار	عضو اللجنه رئيس قسم الباطني الدكتور /عباس منصور	عضو اللجنه رئيس قسم النسائية والتوليد الدكتور /عبد المانع السليمات

رئيس اللجنه
مدير إدارة مستشفيات البشير

الدكتورعمار نعيم الشرفا

بسم الله الرحمن الرحيم

وزارة الصحة

الرقم بمدير خطط/ ١٣٦٠

التاريخ

الموافق ٢٠١٦/٩/٢٠

مدير ادارة مستشفيات البشير/ المكلف
رئيس لجنة اخلاقيات البحث العلمي

تحية طيبة وبعد ،،،

ارفق طيا صورة عن كتاب جامعة Oxford Brookes University بخصوص طلب السماح لطالب الدكتوراة ممدوح احمد سالم الزيود اجراء بحث بعنوان :

"دور مشاركة المرضى في تعزيز نظافة اليدين بين الممرضين في مستشفيات وزارة الصحة".

"The Role of Patients' Involvement in Promoting Hand Hygiene among Nurses in the Hospital Setting"

وذلك من خلال مقابلة المرضى المراجعين للمستشفيات الحكومية التابعة لوزارة الصحة وأخذ أرائهم حول تعزيز مفهوم نظافة اليدين لدى الممرضين العاملين في مستشفيات وزارة الصحة.

ارجو التكرم بالاطلاع واعلامي رأيكم حول امكانية الموافقة على اجراء البحث اعلاه .

وتفضلوا بقبول فائق الاحترام ،،،

مدير تطوير الموارد البشرية المكلف

الدكتورة سوسن جباعته

المملكة الأردنية الهاشمية
هاتف: ٥٢٠٠٢٣٠ ٦ ٩٦٢+ فاكس: ٥٦٨٨٣٧٣ ٦ ٩٦٢+ ص.ب: ٨٦ عمان ١١١١٨ الأردن. الموقع الإلكتروني: www.moh.gov.jo

Appendix 3.10: Patients' invitation letter to participate in telephone interviews

Oxford Institute of Nursing, Midwifery & Allied Health Research

research • patient care • education

OXFORD BROOKES UNIVERSITY

To be translated into Arabic.

Would you be able to help us with research exploring the experience of service users in asking nurses to perform hand hygiene?

If you:

- Are over the age of 18.
- Had a hospital stay in the last 5 years and are not currently receiving care related to this episode of treatment.
- Can identify an incident where you asked, or did not ask, nurses to wash their hands.
- Can commit to a 30-60 minute telephone interview.

Mamdooh Alzyood

MSc, BSc, RN
Oxford School of Nursing & Midwifery (OxINMAHR)
Faculty of Health and Life Sciences
Oxford Brookes University

If you would like to find out more about this study, please contact me on:

E-mail: mamdooh.alzyood-2015@brookes.ac.uk
Mobile: 00962(0)795074104

UREC version: 2017/11
Date: May, 2018

Appendix 3.11: Participant information sheet – Patients

Participants' Information Sheet- JORDAN

OXFORD BROOKES UNIVERSITY

To be translated into Arabic.

Patient involvement in promoting hand hygiene among nurses in the hospital setting

You are being invited to take part in the above research study. This study will form part of the requirements of a doctoral degree (PhD) in Health Care Studies. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

The purpose of the study:

Globally, 1 in 25 hospitalised patients get at least one hospital-acquired infection on a daily basis, and the risk of picking up infection remains a very real danger around the world.

Improving hand hygiene compliance among healthcare workers especially nurses is recognised as one of the most effective ways to reduce the risk of these hospital-acquired infections. However, in most healthcare institutions, it is estimated that only 40% of health care workers adhere to recommended hand hygiene guidelines.

Nurses are the most frequent healthcare personnel who are in contact with patients and the surroundings in the hospital care environment. Therefore, the role played by nurses is pivotal in minimising the risk of transmitting microorganisms, not only from patient to patient but also between healthcare workers.

The aim of this study is to gain insight into the experience of service users in Jordan in asking nurses to perform hand hygiene.

Why have I been invited to participate?

You have been invited to participate because you meet the inclusion criteria: You:

- Are over the age of 18.
- Had a hospital stay in the last 5 years and are not currently receiving care related to this episode of treatment.
- Can identify an incident where you asked, or did not ask, a nurse to wash their hands.
- Can commit to a 30-60 minute telephone interview.

Do I have to take part?

No. It is up to you to decide whether or not to take part. If you do decide to take part, you will be invited to complete a consent form before starting the telephone interview. If you agree to take part, you are free to withdraw from the study at any time before data are processed, and without giving a reason. If you are to be readmitted or revisit the hospital in the future, your decision to take part (or not) will not have any impact on your care or your relationship with hospital staff. Your name will never appear in any published work.

What will happen to me if I take part?

You will be invited for a telephone interview lasting 30-60 minutes with me, the principal investigator, (Mamdooh Alzyood). This will be held at the time you agreed to with me.

During the telephone interview, the focus of the questions will be on your experience of asking a nurse to wash their hands, or an experience when you had wanted to ask a nurse to wash her hands, but did not.

You will first be asked to describe a situation that you experienced in asking a nurse to perform hand hygiene. Finally, the interview will reflect back upon what we have talked about, to see if anything about your experience has been missed or if there are any patterns to your experience. The interview will be audio recorded. Approximately 100 incidents will be collected during this project.

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OXFORD BROOKES UNIVERSITY

What are the possible benefits of taking part?

There is no direct benefit to you, other than the enjoyment of taking part and having the opportunity to reflect upon and share your experiences in asking nurses to wash their hands.

The main benefit is to the researcher to gather material for use in my doctoral dissertation. It is hoped that the project findings will help us to understand better the role that service users would have in promoting hand hygiene in the hospital setting.

What are the possible disadvantages and risks of taking part?

The time commitment involved in taking part in the study will be 30-60 minutes. Whilst we do not anticipate any significant risk to those who take part in these telephone interviews, it is possible that discussing your experiences may make you feel uncomfortable. If this is the case, you are free not to answer any of the questions asked of you, and you retain the right to end the interview and to withdraw from the study.

Mr Alzyood is a registered nurse (adult) and has experience working with patients in Jordan. If you become upset, the interview will be stopped until you ready to continue or abandoned if you don't want to continue.

Will what I say in this study be kept confidential?

All information collected from you as part of this research will be kept strictly confidential and can only be protected within the limitations of the law. If you take part in the study, your data will be assigned a de-identification to ensure your anonymity.

The interviews will be audio recorded and then transcribed; your name will be held separately. Only the lead researcher [Mr Alzyood] will have access to the information collected during this study. A digital voice recorder will be used during the telephone interview. The use of a digital voice recorder is to ensure the correct transcription and analysis of the interview data and your confidentiality will be maintained.

Information obtained prior to and during these interviews (e.g. email correspondence, consent forms, audio recordings) will be kept secure at all times. Following the interview transcription, all audio recordings will be deleted.

What should I do if I want to take part?

If you wish to take part, please email me, the researcher, at 15045110@brookes.ac.uk, and I will then contact you to discuss the project further and to arrange a mutually convenient time and date for an interview. You may also wish to call or text me on +962795074104. If you do not wish to take part, you need to take no further action.

What will happen to the results of the research study?

The results will be presented as a part of a PhD dissertation and the data published will be anonymised. They may also form part of future publications, for example in journal articles and / or academic conference presentations. If you would like to find out the results of this study you may contact the researcher (via email), who will be able to provide a summary of the study's overall findings (via email) upon completion of the dissertation.

Who is organising and funding the research?

I am conducting this study as a PhD research student at Oxford Brookes University. I am based at the Oxford School of Nursing & Midwifery (OxINMAHR), the Faculty of Health and Life Sciences at Oxford Brookes University.

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This research is being conducted under the supervision of Professor Debra Jackson, Dr Joanne Brooke and Dr Helen Aveyard. The project is self-funded by the researcher (Mamdooh Alzyood).

Who has reviewed the study?

The research has been approved by the University 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 University Research Ethics committee on ethics@brookes.ac.uk

What if there is a problem?

If you have a concern about any aspect of this study, you should ask to speak to me or my PhD supervisor (Dr Helen Aveyard) and we will do our best to answer your questions. You can contact me on 0096279 5074104 and Dr Aveyard on 0044(0)1865 484848.

If you have any concerns about how the research is being conducted, you can contact Kellie Tune, Faculty of Health and Life Sciences at Oxford Brookes University on email: frec@brookes.ac.uk or phone: 01865 482639.

Sources of support

If you would like to report any concerns, make suggestions or a complaint about your experience at JMOH's hospitals you can do so confidentially through the Raising Concerns using their online services to report incidents (http://www.moh.gov.jo/). Also you could contact the Patient Advice and Liaison Service (PALS) at the Jordanian Ministry of Health:

Location	AL Hashimi ALshamaly
P.O.Box	86
City	Amman
Postal Code	11118
Telephone	5200230
Fax	5689177
Email	diwan@moh.gov.jo
Website	http://www.moh.gov.jo

Contact for further Information

You can contact the researchers at any time if you have any questions or concerns

TITLE AND NAME	POST	EMAIL	PHONE
Mr Mamdooh Alzyood	PhD student, Oxford Brookes University	Mamdooh.alzyood-2015@brookes.ac.uk	Office: +44 (0) 1865 488215 Mobile-JORDAN: +962 (0) 795074104
Dr Helen Aveyard	Director of studies	Haveyard@brookes.ac.uk	+44 (0) 1865 482695
Dr Joanne Brooke	Second supervisor	jbrooke@brookes.ac.uk	+44 (0) 1865 482736
Professor Debra Jackson	Second supervisor	Djackson@brookes.ac.uk	+44 (0) 1865 482736

Thank you

Many thanks for taking the time to read this information sheet.

May, 2018

UREC version: 2017/11
Date: May, 2018

Appendix 3.12: Consent form – Patients

Patient involvement in promoting hand hygiene among nurses in the hospital setting

Mamdooh Alzyood
PhD student
Oxford Brookes University
The Colonnade
Headington Campus
Oxford
United Kingdom
OX3 0BP
Mobile-JORDAN: +962795074104
Mobile-UK: +0447765688088
Email: 15045110@brookes.ac.uk

	Please initial box
1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.	☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and only unprocessed data may be withdrawn from the study.	☐
3. I understand that the interviews will be audio recorded.	☐
4. I agree to take part in the above study.	☐

	Please initial box *Yes*	*No*
5. I agree to the use of anonymised quotes in publications.	☐	☐
6. I agree that my data gathered in this study may be stored (after it has been anonymised) in a specialist data centre and may be used for future research.	☐	☐

Name of Participant	Date	Signature

Name of Researcher	Date	Signature

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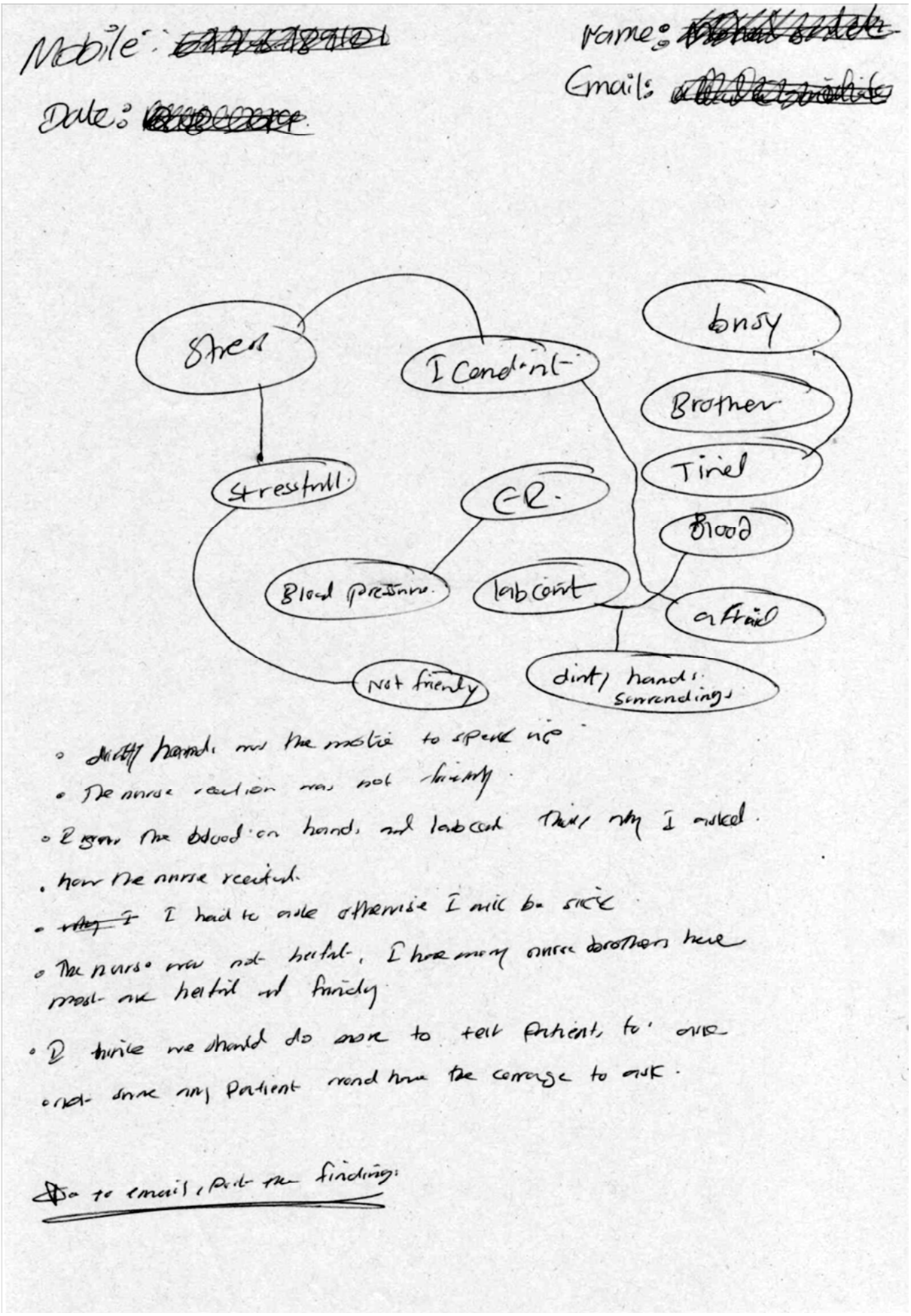
Date: May, 2018

Appendix 3.13: Six steps to complete semi-structured telephone interviews

Building rapport	Being a nurse helped the researcher to building rapport with patients throughout the interviews. Patients felt comfortable while talking over the hone about their experiences with patient involvement in hand hygiene. However, as a key limitation for telephone interviews, it was challenging to establishing rapport with participants during the interviews due to the inability to respond to visual cues.
Apprehension phase *:*	The researcher was engaged in trail phone conversations to practice the interview guide and to make sure this step can induce a more relaxed atmosphere during the actual telephone interviews. The use of open-ended and focused questions on the research topic was useful to allow patients to express their views and experiences.
Exploration phase	The continuous use of open-ended questions and prompts during the interviews helped the researcher to drive patients to provide in-depth descriptions to express their experiences and feelings. Therefore, this was helpful to generate knowledge based on patients' insights and experiences. This phase was achieved in the second half of the interview when interviews passed the first five to ten minutes; participants started to talk freely and provided detailed descriptions of their experiences. Whenever patients wanted to talk with the researcher about his own nursing experience or working/ studying abroad, they were brought back to the interview topic to make sure focus is not lost. At this phase, the researcher focuses more on what happened after patients asked or during asking nurses to wash their hands. This phase was suitable to ask in-depth questions related to the study aim to achieve richness to the data collection.

Co-operative phase	Participants felt more comfortable and engage in free discussion with the interviewer. However, it was ensured by the interviewer that interviews would not lose focus and not degenerate into a chat. In this phase, the interviewer focused more on asking participants to explain more about their experiences in asking or not asking nurses to wash their hands [more sensitive information were revealed]. Hence, in this phase, participants were able to provide more depth and richness to the data collection. At this stage, rapport develops, and both participants and interviewer started to feel the interview as a fulfilling experience.
Participation phase	Included in-depth interviews where the greatest rapport with participants was achieved.
Concluding the interview	Achieved at the end of the telephone conversation. It was evident from the recordings and transcripts that patients enjoyed the experience talking over the phone and felt welcomed and appreciated before, during and after the telephone interviews. The value of the participants and acknowledging their participation in the study was achieved and reimbursed.

Appendix 3.14: Contact summary sheet – Patients



Appendix 3.15: PPI Group Invitation Letter/ Poster

Appendix 3.16: Interview Guide – critical incidents with patients

Patient involvement in promoting hand hygiene among nurses in the hospital setting

Interview Guide

Arrangement of interviews, recruitment, and data collection will be organised by the lead researchers Mamdooh Alzyood [MA]

BEFORE THE START

- MA will test the telephone and the recording equipment is working.

PREPARING TO START THE SESSION

- MA will offer gratitude for participating in this research.
- MA will check that there are no objections to the use of the audio recorder as confirmed in the consent form; then will start the interview.

THE START

INITIAL QUESTIONS:

EACH INTERVIEW WILL START WITH THE OPENING REQUEST:

"CAN YOU DESCRIBE A SITUATION THAT YOU EXPERIENCED WHERE YOU ASKED A NURSE TO WASH HANDS OR AN EXPERIENCE WHEN YOU WANTED TO ASK A NURSE TO WASH HER HANDS, BUT DID NOT?"

FOLLOW-UP QUESTIONS:

"CAN YOU DESCRIBE THE EVENTS THAT PRECEDED YOU ASKING (OR NOT ASKING) THE NURSE?"

"CAN YOU TELL ME WHAT YOUR ACTIONS WERE IN THE EVENT?"

"DID YOU DRAW UPON ANY PREVIOUS KNOWLEDGE ABOUT ASKING NURSES TO WASH THEIR HANDS?"

"CAN YOU THINK OF ANYTHING THAT MIGHT SUPPORT YOU TO ASK A NURSE TO WASH THEIR HANDS IN THE FUTURE?"

PROBING QUESTIONS (IF REQUIRED):

WHAT HAPPENED NEXT?

WHAT DID YOU DO NEXT?

WHAT WERE YOU THINKING?

WHAT DO YOU MEAN?

HOW DID IT AFFECT YOU?

HOW DID IT MAKE YOU FEEL?

THE END

- The participant will be invited to ask any further questions before finishing.
- Thank the participant for taking part in this study.

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Appendix 3.17: Focus group data from countries with linguistic differences (Alzyood et al., 2020)

The use of focus group data from countries with linguistic differences: A discussion of methodological and pragmatic issues

Alzyood[1], M., Aveyard[1], H., Brooke[2], J.M., Jackson[3], D.

[1] **Oxford Brookes University**

[2] **Birmingham City University**

[3] **University Technology of Sydney**

ACCEPTED VERSION

ACCEPTED IN

Nurse Research

15/10/2019

This article has been removed from the online version of the thesis due to copyright restrictions

Appendix 6.1: Patient motivational dialogue scripted intervention

"I as your doctor (health care provider) would like to remind you that our team is committed to your health. One of the ways is cleaning my hands. (Demonstrate use of hand sanitizer.) Hand cleaning is an essential part of your care and keeps you from getting an infection.

All health care providers including doctors and nurses should clean their hands before touching you as a part of your treatment plan. When you do not see them clean their hands, I am asking you to remind them to clean their hands prior to touching you. Do you have any questions? Will you repeat what I just told you?

Just remember all you have to do is raise your hand and say, "Clean hands, please."

(Grota, Eng and Jenkins, 2020)