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ORIGINAL REPORT

Primary Health and Supportive Care Needs of Long-Term Cancer Survivors: A Questionnaire Survey

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ABSTRACT

Purpose

There are 1.2 million long-term cancer survivors in the United Kingdom. Existing research on the health and supportive care needs of these survivors is sparse and inconclusive. This study investigated health status, psychological morbidity, and supportive care needs in long-term cancer survivors in the United Kingdom.

Methods

Five to 16 years after diagnosis, 1,275 eligible survivors of breast, colorectal, and prostate cancers were approached to participate in a questionnaire survey. The questionnaire explored health status (European Quality of Life–5 Dimensions), psychological morbidity (Hospital Anxiety and Depression Scale), and supportive care needs (Cancer Survivors' Unmet Needs Measure). Data were analyzed by type of cancer and time since diagnosis. Logistic regression was used to identify predictors of unmet supportive care needs.

Results

The response rate was 51.7% (659 survivors). Overall health status and levels of psychological morbidity were consistent with population norms. At least one unmet supportive care need was reported by 47.4% of survivors, but overall numbers of unmet needs were low (mean, 2.8; standard deviation, 4.8). The most frequently endorsed unmet need was for help to manage concerns about cancer recurrence. Trait anxiety ($P < .001$), nondischarged status ($P < .01$), dissatisfaction with discharge ($P < .01$), and receipt of hormonal therapy ($P < .01$) were predictive of unmet supportive care needs.

Conclusion

The findings suggest a majority of long-term breast, colorectal, and prostate cancer survivors who have no signs of recurrence report good health and do not have psychological morbidity or large numbers of unmet supportive care needs. A minority of long-term survivors may benefit from ongoing support. The identification and support of those long-term survivors with ongoing needs is a key challenge for health care professionals.

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INTRODUCTION

There are currently 2 million cancer survivors in the United Kingdom. Of these, 1.2 million were diagnosed 5 or more years ago.[1] The number of long-term cancer survivors is likely to continue to grow because of the rising incidence of cancer and improving survival rates.[2] Understanding the health and supportive care needs of this population is therefore becoming increasingly important.

The impact of cancer does not end once treatment and routine hospital follow-up are complete. Long-term cancer survivors (5 or more years postdiagnosis) may continue to live with uncertainty over potential physical[3-7] and mental health problems,[8-10] quality-of-life issues,[11-13] and information and support needs.[14]

Existing research on the psychosocial implications for long-term cancer survivors is sparse and inconclusive.[15] Some studies have found ongoing mental health problems and quality-of-life issues in long-term survivors of different cancers,[8-13,16,17] whereas other studies suggest that mental health and quality of life in this population are not significantly compromised.[18-20] In its recent recommendations, the National Cancer Survivorship Initiative in the United Kingdom prioritizes the need to understand the natural history of survivorship and create risk-stratification tools to determine the appropriate aftercare for cancer survivors.[21] The challenge then is to identify those survivors who do have ongoing health and supportive care needs when they are discharged from routine hospital follow-up so that additional care and support can be provided to those who need it.

In contrast with the United States, most cancer survivors in the United Kingdom are cared for exclusively by primary care physicians (PCPs) by 5 years postdiagnosis. Therefore, the role of primary care is particularly important in the long-term care of cancer survivors in the United Kingdom.[3,22] PCPs are well positioned to identify those survivors requiring additional support and manage the ongoing health and supportive care needs of cancer survivors.[22a,23] Following the US model, the introduction of survivorship care plans (SCPs) in the United Kingdom will help to ensure PCPs are informed of survivors' cancer journeys and define surveillance schedules. However, there is currently no formal cancer-related care or support offered to long-term survivors beyond routine hospital follow-up.

The objectives of this study were to investigate health status, psychological morbidity, and supportive care needs in long-term cancer survivors in the United Kingdom and to identify the factors that predict poor health status, anxiety and depression caseness, and unmet needs in this population.

METHODS

Study Design and Sample

A cross-sectional postal survey was conducted across the populations served by the Northern and Yorkshire Cancer Registry and Information Service and the Oxford Cancer Intelligence Unit in the United Kingdom. Potential participants were identified through these two regional cancer registries, which then distributed the questionnaires to the PCPs who were caring for the identified survivors. The PCPs were asked to forward questionnaires to the selected participants, provided they met the inclusion criteria and if it was deemed appropriate.

A stratified random sample of 2,400 long-term survivors of breast ($n = 800$), colorectal ($n = 800$), and prostate ($n = 800$) cancers diagnosed between January 1, 1993, and December 31, 2003, was selected. Our definition of a long-term survivor was a person who had survived at least 5 years from diagnosis. Survivors were also stratified by sex (colorectal cancer) and years since diagnosis (5 to 7, 9 to 11, or 14 to 16 years). Survivors 5 to 7 years from diagnosis were oversampled (ratio 2:1:1) to minimize the effect of recall bias on questions relating to discharge from follow-up (data not presented). Exclusion criteria were male breast cancer survivors; diagnosis of recurrence, metastatic disease, or second primary cancer; age younger than 30 or older than 100 years at diagnosis; and registration with a different PCP or living outside the recruitment area.

Measures

The questionnaire employed the European Quality of Life–5 Dimensions (EQ-5D),[24] Hospital Anxiety and Depression Scale (HADS),[25] Cancer Survivors' Unmet Needs (CaSUN) Measure,[26] and Trait Scale of the State Trait Anxiety Inventory (STAI).[27]

Each of the five dimensions in the EQ-5D (mobility, self-care, activities, pain/discomfort, anxiety/depression) is scored from 1 (no problem) to 3 (extreme problem), generating a profile (eg, 11232) that can be used to calculate a single index score (range, −0.594 to 1.000).[28] The EQ-5D also generates a self-rating of health-related quality of life scored from 0 to 100 on a visual analog scale (VAS). EQ-5D profile, index, and VAS scores were used in the current study.

The HADS generates separate subscale scores for anxiety and depression. Subscale scores of 8 to 10 indicate possible cases of anxiety or depression, and subscale scores of 11 or higher indicate probable cases of anxiety or depression.

The CaSUN is a measure of cancer-related needs experienced within the preceding month. It includes 35 need items, which respondents are asked to indicate as not applicable, met, or unmet. Unmet needs are rated as weak, moderate, or strong. The need items factorize onto five domains: comprehensive cancer care, existential survivorship, information, quality of life, and relationships. The current study included 28 of the CaSUN items; the excluded items all factorized onto the existential survivorship domain (excluded items listed in Appendix Table A1, online only).

Statistical Analysis

Data analysis was undertaken using SPSS software version 16.0 (SPSS, Chicago, IL). Kolmogorov-Smirnov tests were used to test for normality. We used a complete case analysis strategy; therefore, respondents with missing values on a variable were excluded from analyses of that variable. Respondents with missing values for any question on a standardized measure were excluded from all analyses of that measure. Data were analyzed by type of cancer and years since diagnosis. Percentages and 95% CIs were used to compare the sample with population norms and to compare groups within the sample.

Logistic regression was used to identify factors that predict poor health status, anxiety and depression caseness, and unmet needs. Predictor variables were selected based on existing literature[8,17,29-32] and potential clinical utility of identifying modifiable risk factors. The variables entered into the regression model were geographic region, age, sex, type of cancer, years since diagnosis, trait anxiety score, treatment (surgery, radiotherapy, chemotherapy, hormonal therapy), discharge status (self-reported), and satisfaction with discharge. A significantly lower than expected number of respondents reported comorbidities meeting Charlson index criteria[33,34]; hence, the comorbidities variable was excluded from the regression analysis.

The logistic regression outcomes were: first, score of 1 on all dimensions of the EQ-5D versus score of 2 or higher on at least one dimension of the EQ-5D; second, HADS anxiety score lower than 8 versus HADS anxiety score of 8 or higher; third, HADS depression score lower than 8 versus HADS depression score of 8 or higher; and fourth, no unmet needs versus at least one unmet need on the CaSUN. Because of the large number of variables entered into the regression analyses, only variables contributing to the model at $P < .01$ were accepted as statistically significant; these are discussed in Results.

RESULTS

Recruitment and Sample Characteristics

The recruitment process is shown in Figure 1. The cancer registries supplied basic demographic information for all nonrespondents. T-tests indicated that respondents and nonrespondents did not differ significantly in terms of age, sex, type of cancer, or years since diagnosis (two-tailed $P > .05$). Therefore, on these variables, the sample of respondents was representative of all those survivors identified as eligible by the registries and sent the questionnaire by the PCPs.

The mean age for the sample was 71.6 years (standard deviation, 9.9 years; range, 42 to 92 years), and 45.8% of respondents were male. There were more responses from breast cancer survivors, with comparable numbers from colorectal and prostate cancer survivors. The largest proportion of the respondents was 5 to 7 years from diagnosis, with comparable numbers 9 to 11 years and 14 to 16 years from diagnosis, approximating the distribution of the initial sample identified. The mean trait anxiety score on the STAI for the overall sample was 34.0 (standard deviation, 10.0), which is consistent with population norms.[27] Additional demographic data for the overall sample are listed in Table 1. Data on age, sex, type of cancer, and years since diagnosis were provided by the cancer registries; all other demographic and clinical data were self-reported.

Health Status

The mean EQ-5D index and VAS scores for the overall sample and those for each cancer type and length of time since diagnosis were consistent with or better than population norms (Table 2).[35] Both mean and median scores are reported because of the significantly skewed distribution of the data ($P < .001$).

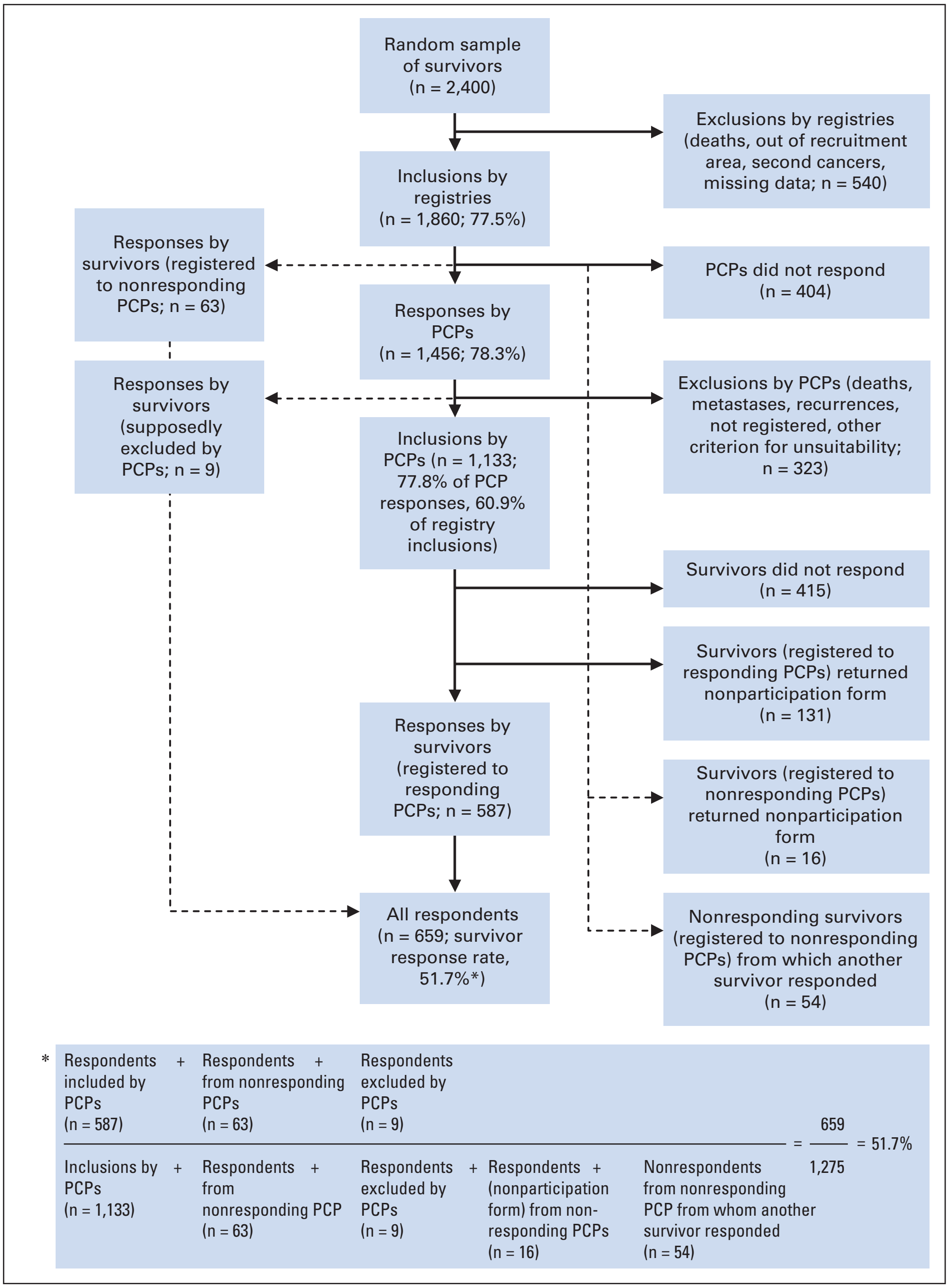

Fig 1. CONSORT diagram. Because of our reliance on primary care physicians (PCPs) to inform us of survivors' inclusion/exclusion in the study, we were unable to obtain a definitive number of survivors to whom the questionnaire was sent. We have presented our response rates conservatively and the recruitment process transparently to highlight the high nonresponse rate at PCP and survivor level in this study.

Psychological Morbidity

The possible (HADS score 8-10) and probable (HADS score ≥ 11) cases of anxiety and depression in the overall sample and in survivors with different types of cancer and with different lengths of time since diagnosis were consistent with or below population norms (Table 3).[25,36]

Unmet Needs

In total, 538 respondents (81.6%) completed the CaSUN. The results showed 47.4% of these respondents reported at least one unmet need (any strength). This percentage decreased to 36.6% when including only respondents who reported at least one moderate or strong unmet need. There were no significant differences between the proportions of respondents reporting at least one unmet need or at least one moderate or strong unmet need across cancer types or time since diagnosis.

The most frequently endorsed unmet needs and the mean ratings (strength) of these needs are listed in Table 4. The existential survivorship need for "help to manage my concerns about the cancer coming back" was the most frequently reported unmet need. After this, the highest frequency and strength of reported unmet needs were related to comprehensive cancer care (eg, "I need to know that all my doctors talk to each other to coordinate my care"). Other needs concerning existential survivorship (eg, "I need help to reduce stress in my life")

Table 1. Patient Demographics and Disease Characteristics for Overall Sample

Characteristic	Patients (N = 659) No.	%
Age, years		
Mean	71.6	
SD	9.9	
Trait anxiety		
Mean	34.0	
SD	10.0	
Region		
NYCRIS population	266	40.4
OCIU population	393	59.6
Sex		
Male	302	45.8
Female	357	54.2
Relationship status		
Single	27	4.2
Married	459	71.1
Widowed	117	18.1
Divorced/separated	43	6.7
Total	646*	
Living status		
Alone	165	25.4
With spouse/partner	458	70.6
With other family	21	3.2
With other people	5	0.8
Total	649*	
Employment status		
Paid work	106	16.5
Unemployed	8	1.2
Retired	492	76.3
Long-term disability/illness	18	2.8
Other	21	3.3
Total	645*	
Ethnicity		
White	631	97.5
Black Caribbean	6	0.9
Black other	2	0.3
Indian	3	0.5
Pakistani	1	0.2
Chinese	1	0.2
Other	3	0.5
Total	647*	
Educational status		
O-level	107	16.6
A-level	60	9.3
Clerical/commercial qualification	89	13.8
College/university degree	152	23.6
None of these	237	36.7
Total	645*	
Type of cancer		
Breast	258	39.2
Colorectal	205	31.1
Prostate	196	29.7
Years since diagnosis		
5-7	388	58.9
9-11	142	21.5
14-16	129	19.6
Treatment†		
Surgery	505	77.0
Radiotherapy	315	48.0
Chemotherapy	137	20.9
Hormonal therapy	230	35.1
Other treatments	22	3.3
Comorbidities		
At least one	87	13.2
None	572	86.8
Discharge status (self-reported)		
Discharged	429	66.2
Not discharged	219	33.8
Total	648*	
Satisfaction with discharge		
Satisfied	365	90.6
Not satisfied	38	9.4
Total	403*	

Abbreviations: NYCRIS, Northern and Yorkshire Cancer Registry Information Services; OCIU, Oxford Cancer Intelligence Unit; SD, standard deviation.

*Total excludes those with missing data.

†Many survivors had received more than one treatment modality.

and information (eg, "I need information provided in a way that I can understand") also ranked among the top 10 unmet needs.

A breakdown of unmet needs by type of cancer and years since diagnosis showed that the following three items were within the top five most frequently endorsed unmet needs for all groups, although the order varied: coordinated health care, health care services available locally, and involvement in the management of their health care. The needs for complaints to be addressed, more accessible hospital parking, and the best medical care also featured frequently in the top five unmet needs. The need for help to manage concerns about recurrence ranked in the top six unmet needs for all groups; it was the most frequently endorsed unmet need for breast cancer survivors (24.5%) and those survivors 5 to 7 years from diagnosis (22.1%). Survivors were asked if they had other needs, but there were no consistent references to additional needs not included in the CaSUN.

Survivors with possible or probable anxiety on the HADS reported significantly higher numbers of unmet needs on the CaSUN (possible: mean, 4.9; 95% CI, 3.41 to 6.39; probable: mean, 6.9; 95% CI, 4.63 to 9.18) compared with survivors with no anxiety (mean, 2.1; 95% CI, 1.73 to 2.47). Survivors with possible depression on the HADS reported significantly higher numbers of unmet needs on the CaSUN (mean, 5.9; 95% CI, 3.27 to 8.53) compared with survivors with no depression (mean, 2.5; 95% CI, 2.11 to 2.89). Survivors with probable depression also reported higher numbers of unmet needs (mean, 6.0; 95% CI, 1.10 to 10.90) compared with survivors with no depression, but the difference did not reach statistical significance, possibly because of the small number of survivors with probable depression.

Predictors of Health Status, Psychological Morbidity, and Unmet Needs

Logistic regression models (Table 5) showed that trait anxiety significantly predicted problems in at least one EQ-5D dimension

Table 2. EQ-5D Health Status: Comparison of Sample With Population Norms

EQ-5D	No.	Median	Mean	95% CI of Mean
Index (age and sex standardized population norm = 0.77)*				
All	636	0.81	0.80	0.78 to 0.81†
Type of cancer				
Breast	250	0.80	0.77	0.74 to 0.80
Colorectal	196	0.85	0.80	0.77 to 0.84
Prostate	190	0.85	0.82	0.79 to 0.85†
Years since diagnosis				
5-7	375	0.81	0.79	0.77 to 0.82
9-11	136	0.80	0.79	0.75 to 0.83
14-16	125	0.85	0.81	0.77 to 0.85
VAS (age and sex standardized population norm = 76.5)*				
All	611	79.0	75.5	74.3 to 76.7
Type of cancer				
Breast	240	79.0	75.6	73.6 to 77.5
Colorectal	186	79.0	75.3	73.1 to 77.5
Prostate	185	79.0	75.5	73.4 to 77.6
Years since diagnosis				
5-7	357	79.0	75.4	73.8 to 77.0
9-11	134	80.0	75.3	72.7 to 77.9
14-16	120	79.0	75.9	73.3 to 78.5

Abbreviations: EQ-5D, European Quality of Life–5 Dimensions; VAS, visual analog scale.
*Age and sex standardized population norms calculated by weighting population norms for different age groups/sexes according to sample distribution.
†Population norm outside 95% CI of sample mean.

of health ($P < .001$), HADS anxiety scores of 8 or higher ($P < .001$), HADS depression scores of 8 or higher ($P < .001$), and at least one unmet need on the CaSUN ($P < .001$). Age significantly predicted problems in at least one dimension of health ($P < .01$), but the relationship between age and health status was unclear. Receipt of hormonal therapy ($P < .01$), nondischarged status ($P < .01$), and dissatisfaction with discharge ($P < .01$) significantly predicted at least one unmet need on the CaSUN. No other variables were predictive of health status, anxiety or depression caseness, or unmet needs at the higher level of statistical significance ($P < .01$).

DISCUSSION

The current study found that a majority of long-term cancer survivors report good health and do not have psychological morbidity or large numbers of unmet supportive care needs. In line with recent international research, health status and overall cases of anxiety and depression were consistent with or better than population norms.[37-39] Hence, long-term breast, colorectal, and prostate cancer survivors who have no signs of recurrence seem to have adjusted well 5 to 16 years after diagnosis.

Fewer than half of the respondents to the CaSUN in the current study reported one or more unmet need; approximately one third reported at least one moderate or strong unmet need. The needs that were reported primarily concerned comprehensive cancer care, such as the need to know that health care is coordinated and available locally and the need for more accessible hospital parking. The focus on these largely practical needs is perhaps surprising in a health economy with universal access. Interestingly, many of the more psychosocial needs (ie, impact of cancer on relationships, body image, quality of life, social life, and so on) were not frequently endorsed by the long-term survivors in this study.

Despite the overall encouraging findings, a minority of long-term survivors in the current study reported poor health status, increased psychological morbidity, and/or moderate or strong unmet supportive care needs. More than one fifth of respondents to the CaSUN indicated the need for help in managing concerns regarding recurrence. Such survivors may benefit from long-term support, and a number of interventions are being developed to specifically address this issue.[40-42]

The National Cancer Survivorship Initiative has recently prioritized the need for research to enhance understanding of survivorship and improve aftercare for cancer survivors in the United Kingdom.[21] This is the first United Kingdom study to report the health and supportive care needs of long-term cancer survivors. Because of the lack of existing literature, the current findings are important in providing insight into this ever-growing population. The overall sample was large and representative of two regions in the United Kingdom. There was representation of three common types of cancer and of survivors at different stages of long-term survivorship.

A limitation of the study was the use of the modified CaSUN. The CaSUN was developed in a different health care setting on survivors 1 to 15 years from diagnosis (mean, 2.3 years), and some of the needs it assesses might be more relevant earlier in the survivor trajectory.[26] Furthermore, the items excluded from the CaSUN in the current study might have been identified as important unmet needs by our sample. Although no respondents made reference to any of the excluded needs when asked to identify other needs, the current findings are perhaps an underestimation of the number of unmet existential survivorship needs experienced by long-term cancer survivors.

Additional limitations are the potential self-selecting and PCP-selecting sample biases. Ethical approval for this study was consequent on the approach to the survivors being made by their PCPs. The PCPs were given explicit exclusion criteria, but despite this, they may have also excluded survivors with comorbidities. This potential bias may have contributed to low levels of comorbidities, low anxiety and depression caseness, and good overall health status in our sample.

Table 3. HADS Anxiety and Depression: Comparison of Sample With Population Norms

HADS	No.	Possible Case		Probable Case	
		%	95% CI	%	95% CI
Anxiety (population norm = 20.6, possible case; 12.6, probable case)					
All	627	13.6	10.9 to 16.3*	9.3	7.0 to 11.6*
Type of cancer					
Breast	248	18.1	13.3 to 23.0	12.9	8.7 to 17.1
Colorectal	190	8.9	4.8 to 13.0*	10.0	5.7 to 14.3
Prostate	189	12.2	7.5 to 16.9*	3.7	1.0 to 6.4*
Years since diagnosis					
5-7	367	13.1	9.6 to 16.6*	8.2	5.4 to 11.0*
9-11	134	15.7	9.5 to 21.9	11.9	6.3 to 17.5
14-16	126	12.7	6.8 to 18.6*	9.5	4.3 to 14.7
Depression (population norm = 7.8, possible case; 3.6, probable case)					
All	633	7.3	5.3 to 9.3	2.1	1.0 to 3.2*
Type of cancer					
Breast	254	6.3	3.3 to 9.3	2.8	0.8 to 4.8
Colorectal	191	6.8	3.2 to 10.4	0.5	0.0 to 1.5*
Prostate	188	9.0	4.9 to 13.1	2.7	0.4 to 5.0
Years since diagnosis					
5-7	372	7.8	5.1 to 10.5	2.4	0.8 to 4.0
9-11	135	5.9	1.9 to 9.9	1.5	0.0 to 3.6
14-16	126	7.1	2.6 to 11.7	1.6	0.0 to 3.8

Abbreviation: HADS, Hospital Anxiety and Depression Scale.
*Population norm outside 95% CI of sample mean.

The existing literature on the psychosocial implications of long-term cancer survivorship is sparse, and there are few studies to compare with this study. The current findings do support a recent systematic review that concluded that most survivors experience few problems 5 or more years after diagnosis, yet a minority consistently describe quality-of-life issues and physical/psychological problems associated with cancer and its treatment.[15] Consistent with our findings, the authors of the CaSUN found that the most frequently endorsed unmet need in samples of breast and gynecologic cancer survivors was for help with concerns about recurrence.[43,44] Other studies have also identified fear of recurrence as the most significant concern for long-term cancer survivors.[8,45,46]

Numerous predictors of poor psychosocial outcomes in long-term cancer survivors have been proposed.[8,17,29-32] One US study found dispositional optimism/pessimism to be the most consistent predictor of cancer worries, anxiety, and depression.[8] This is in line with the finding from the current study that trait anxiety predicts those survivors at risk of poor health status, anxiety and depression, and unmet needs. The finding that dissatisfaction with discharge is predictive of unmet needs is novel and, although based on small numbers, warrants additional research. Other research priorities include prospective studies to risk-stratify patients according to need, investigations of the supportive care needs in other cancer populations, and additional research on intervention studies to better target the needs of long-term cancer survivors.

Table 4. Survivors' Most Frequently Endorsed Unmet Needs

Rank	CaSUN Need	Domain	Percent of Patients (n = 538)	Mean Rating*
1	I need help to manage my concerns about the cancer coming back	Existential survivorship	20.8	2.6
2	I need to know that all my doctors talk to each other to coordinate my care	Comprehensive cancer care	20.6	3.2
3	I need local health care services that are available when I require them	Comprehensive cancer care	18.8	3.3
4	I need more accessible hospital parking	Comprehensive cancer care	18.4	3.4
5	I need to feel like I am managing my health together with the medical team	Comprehensive cancer care	18.0	3.1
6	I need any complaints regarding my care to be properly addressed	Comprehensive cancer care	14.7	3.4
7	I need the very best medical care	Comprehensive cancer care	14.5	3.5
8	I need help to reduce stress in my life	Existential survivorship	13.2	2.3
9	I need information provided in a way that I can understand	Information	12.8	3.0
10	I need an ongoing case manager from whom I can find out about services whenever they are needed	No domain	12.6	2.7

Abbreviation: CaSUN, Cancer Survivors' Unmet Needs.
*Unmet needs rated as weak (2), moderate (3), or strong (4).

Table 5. Logistic Regression Analysis to Identify Variables Associated With Poor Health Status, Anxiety and Depression Caseness, and Unmet Needs

Characteristic	Health Problems on EQ-5D		HADS Anxiety Caseness		HADS Depression Caseness		At Least One Unmet Need on CaSUN	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
No. of survivors included in logistic regression	514		506		509		458	
Region								
OCIU population*								
NYCRIS population	0.85	0.56 to 1.30	0.58	0.31 to 1.11	1.83	0.86 to 3.89	0.79	0.52 to 1.20
Age, years	1.06†	1.03 to 1.08	1.00	0.97 to 1.04	1.06‡	1.01 to 1.11	0.97‡	0.95 to 1.00
Sex								
Female*								
Male	0.90	0.43 to 1.89	0.51	0.14 to 1.83	0.87	0.20 to 3.80	1.60	0.75 to 3.39
Type of cancer								
Colorectal*								
Breast	1.58	0.70 to 3.55	1.99	0.64 to 6.15	0.46	0.11 to 1.93	0.48	0.21 to 1.09
Prostate	0.93	0.45 to 1.92	1.93	0.50 to 7.47	2.91	0.63 to 13.34	0.61	0.29 to 1.29
Years since diagnosis								
5-7*								
9-11	0.97	0.58 to 1.63	2.34‡	1.11 to 4.93	0.41	0.15 to 1.10	1.19	0.72 to 1.98
14-16	0.63	0.37 to 1.09	0.97	0.43 to 2.19	0.75	0.28 to 1.98	0.93	0.53 to 1.60
Trait anxiety	1.11†	1.08 to 1.14	1.27†	1.21 to 1.33	1.20†	1.14 to 1.26	1.06†	1.04 to 1.09
Radiotherapy								
No*								
Yes	0.91	0.56 to 1.47	0.56	0.26 to 1.20	2.90‡	1.06 to 7.94	1.28	0.79 to 2.09
Chemotherapy								
No*								
Yes	0.98	0.57 to 1.68	1.61	0.70 to 3.66	1.04	0.36 to 3.06	0.93	0.54 to 1.59
Surgery								
No*								
Yes	1.12	0.62 to 2.03	0.83	0.33 to 2.09	2.15	0.61 to 7.51	1.22	0.66 to 2.26
Hormonal therapy								
No*								
Yes	1.13	0.67 to 1.91	0.63	0.30 to 1.33	1.37	0.53 to 3.52	2.09†	1.24 to 3.52
Discharge status								
Satisfied*								
Dissatisfied	0.99	0.63 to 1.56	1.05	0.29 to 3.80	1.78	0.43 to 7.38	4.39†	1.79 to 10.74
Not discharged	1.47	0.58 to 3.73	1.90	0.96 to 3.78	0.54	0.23 to 1.27	2.03†	1.28 to 3.21

NOTE. All variables are mutually adjusted.

Abbreviations: CaSUN, Cancer Survivors' Unmet Needs; EQ-5D, European Quality of Life–5 Dimensions; HADS, Hospital Anxiety and Depression Scale; NYCRIS, Northern and Yorkshire Cancer Registry Information Services; OCIU, Oxford Cancer Intelligence Unit; OR, odds ratio.

*Reference category.

†Significant at $P < .01$.

‡Significant at $P < .05$.

The key challenges for health care professionals providing long-term survivorship care are, first, to identify the survivors requiring additional help at the point of discharge or later in survivorship and, second, to establish the most effective interventions for those long-term survivors with ongoing needs. Awareness of the potential risk factors (ie, high trait anxiety, receipt of hormonal therapy, nondischarged status, dissatisfaction with discharge) might help toward identifying those survivors requiring further follow-up, although the lack of consistency in the risk factors identified in the literature highlights the importance of routinely screening all survivors at the point of discharge.[47]

The introduction of SCPs will enable PCPs to provide better care to long-term cancer survivors. SCPs are tailored documents that inform PCPs about survivors' diagnosis, treatment, and ongoing management requirements.[48] SCPs are currently being trialed in the United Kingdom and, if successful, are likely to be implemented.[49] The introduction of postdischarge reviews between PCPs and cancer survivors could also help in the identification of those long-term survivors requiring additional support.

The findings of the current study suggest that a majority of long-term cancer survivors have good health and are not experiencing psychological morbidity or large numbers of unmet supportive care needs. A minority of long-term survivors may benefit from ongoing support, and the current study identified potential predictors of unmet supportive care needs. The identification and support of those long-term cancer survivors with unmet needs is a key challenge for health care professionals caring for this population.

AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

The author(s) indicated no potential conflicts of interest.

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