Final Report

Evaluation of health workforce readiness and confidence in managing the consequences of cancer as a long term condition

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PROJECT SUMMARY

This project was commissioned as part of the National Cancer Survivorship Initiative (NCSI) with support from Macmillan Cancer Support and NHS improvement (add web link). This project was developed to identify the readiness of the UK nursing and allied health professional workforce to manage the increasing and future needs of cancer survivors. This study explored the confidence of healthcare staff to support people experiencing the longer term consequences of cancer and its treatment and contribute to future workforce planning. The Vision document produced in 2010 [1] indicated a need for a paradigm shift within the healthcare system to address long term cancer care. This shift includes follow up systems in secondary and primary care, long term care planning, life style change, health promotion and managing long term and late effects. There are a number of definitions for the term 'cancer survivor' but the one adopted by Macmillan which is used in this project is "someone who is living with or beyond cancer". In our survey we have looked at the perceived skills and confidence of health care practitioners in managing patients 12 months beyond the end of active oncology treatment (chemotherapy, radiotherapy and surgery). Defining cancer as a chronic illness as those patients who are 12 months or beyond cancer treatment.

We carried out a survey using an online questionnaire to establish how long term and late effects of cancer treatment are managed by both primary and secondary care practitioners including acute oncology, haematology, community and allied health professionals. Our aim was to establish the readiness and confidence of healthcare professionals in managing the long term consequences of cancer and its treatment. Furthermore we wanted to examine where there may be gaps in the skill sets of healthcare professionals who are currently managing care and who prepare patients and plan care for cancer surveillance. The data from this study identified that staff felt confident in managing psychosocial care and communicating with patients but found long term medications management, care planning, long term and complex symptom management areas of difficulty. Only 80% of those surveyed saw patients at 12 months post treatment with 32% allied health professionals, 18% community and 29.6% of oncology nurses. Results of this survey will assist future workforce planning and subsequent areas requiring further development of education and training.

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INTRODUCTION

Support after cancer therapy will increasingly become a health care issue as people continue to live with and beyond a cancer diagnosis [2]. Almost two million people in the UK have experienced cancer and have survived; a number which is set to increase by an average of 3% per year [3 4]. Despite new treatment regimes, late effects of cancer therapy are emerging as adjuvant treatment results in complex adverse effects that can occur many months to years later [5-7]. These long term effects can impact on health and perceived needs, with as many as 20% of those surviving cancer experiencing ongoing symptoms from their initial cancer treatment [8]. Most patients therefore have few ongoing symptoms, however a recent multi centre survey suggests that 30% of those at the end of treatment had 5 or more unmet needs and for 60% of these patients this had not been resolved 1 year later [9]. The most frequently cited unmet needs were psychological needs and fear of possible recurrence. Those having received hormone therapy emerged as having significantly higher unmet needs than other cancer populations. This suggests that a proportion of survivors continue to have unmet needs despite support from health care teams.

Whilst knowledge of the late adverse effects of cancer treatment is evolving, it comes mainly from the paediatric setting where there are comprehensive data and clinical guidelines [10]. In contrast there is little guidance in relation to the adult cancer setting impacting on current risk assessment and management of long term late effects [4 8 11]. Despite this there are co-morbidities that occur more frequently for example heart failure, osteoporosis, endocrine and metabolic adverse effects. In this study we have termed long term effects as those continuing from the end of therapy for example fatigue and menopausal symptoms and late effects as any symptom that occurs more than 12 months following the completion of active treatment (chemotherapy, radiotherapy, surgery) [12]. For many patients follow up care and surveillance past this 12 month treatment period will continue in the community as part of primary care or be linked via a shared care model with the cancer centre or unit. New models of surveillance such as telephone follow up and patient directed surveillance have grown partly because of the volume of patients and the need to consider new models of care delivery [13 14]. These new models of surveillance post treatment have led to increased attention on nurse-led or specialist rehabilitation and surveillance models with a focus on co-ordination of care and appropriate supportive care intervention or referral[15 16]. With co morbidities and late effects emerging, as awareness of the consequence of cancer treatment occurs, general practitioners and community nurses will increasingly need to take responsibility for routine assessment, triage and referral[10] Furthermore oncology nurses will need to educate and plan care for patients as they move forward into surveillance and ongoing care. To meet these future needs requires a workforce skilled and competent to assess risk, organise care, and manage patient late effects and to subsequently facilitate access to rehabilitation services. Furthermore we know little of what training is currently provided for those involved in this care and how confident practitioners feel to meet this future challenge. Cancer education and continuing professional development needs to evolve so that staff are prepared to meet the ongoing needs of survivors.

This study sets out to evaluate the readiness and confidence of primary and secondary care practitioners in managing the consequences of cancer as a long term condition. This work aims to inform the National Cancer Survivorship Initiative and assist them in planning future workforce development.

BACKGROUND

As part of the background work for this project a search of the literature was undertaken using; ISI Web of Knowledge, Medline, CINAHL, EMBASE, Science Direct, British Nursing Index and PsycINFO. A combination of key words was used to identify papers relevant to education and training in this area. MeSH terms used were cancer and #care (4,448), #survivorship (112), #follow-up (470), #education (1,827), #late effects (93), #core competencies (7), #training (438) and #oncology education (71). From the papers identified few were research based or explored competencies or skills of nurses working in survivorship practice. This review extrapolates from reports and mainly descriptive studies to identify key themes and questions to address in the survey.

The context of future cancer care will be ambulatory, outpatient, community based and remote this has been clearly articulated in the Vision document [1]. Clearly most of post survivorship care in the future will occur in the non cancer community.

Understanding the pre registration training context is important in exploring confidence for future nurses in managing cancer care in the general setting. The Royal College of Nursing in 2002 reviewed registered nurse training content and identified a number of weaknesses in the cancer care provision in the preparation of nurses for the general setting [17]. In an analysis of pre-registration courses it was found there was no provision for cancer as a chronic disease or survivorship; instead the report identified existing essential skill clusters as cancer health promotion, diagnostics, treatment and palliative care. The World Health Organizations [18] strategy for continuing education for nurses and midwives in cancer care also identified the need for survivorship education. The European oncology Nursing Society (EONS) 2005 curriculum for post basic oncology nurses also identifies cancer survivorship as content but that chronic illness elements are not described. Oncology is not alone in this as a report published by the Institute of Medicine of the National Academies [19] identifies a need to improve competencies generally of health care practitioners in the management of chronic conditions. Within the UK there are no standards for specialist oncology nurse education and certification is diverse with no competency agreement.

In recent years educational research has mainly focused on communication skills training for health care professionals with systematic reviews providing conflicting data as to the impact on patient outcomes [20 21]. Studies have also demonstrated that despite these inconsistencies in efficacy training improves health care professional’s confidence for communication in practice [22-24]. Effective communication skills are seen as essential for all healthcare professionals involved in multi-disciplinary cancer management and as such has become a mandatory requirement within the UK. The ability to use these skills in telephone follow up is not part of the training but contributes to wider skills in managing concerns and distress after cancer treatment.

Beaver *et al.* [25] showed that whilst patients may be satisfied with telephone follow up as a service, their levels of satisfaction were much lower when discussing symptom management, treatment or side effects. Collins *et al.* [26] carried out a structured review of the literature on follow-up services for breast cancer patients that revealed an inconsistency in service provision. Few guidelines currently exist for the management of surveillance with guidance currently available for breast care and little evidence for long term management of other cancers. Greenfield [10] in a study of clinicians views on cancer follow-up found that most clinicians valued clinical contact to detect late effects and recurrence but that there focus was not on supportive care. Specialist nurses were identified as the most important resource to provide quality follow up services. Furthermore, clinicians were concerned that the transfer of surveillance to primary care that this would result in the loss of late effects and treatment outcome data.

The need for primary care staff to be more aware, of cancer late effects and patient needs after treatment, is identified in community based interventions[15 27]. Primary care practitioners need to be able to effectively screen patients for co-morbidities and late-effects of treatment [2 28]. General Practitioners (GP's) can play a vital role in managing the long-term survival issues of cancer patients [29] but there are also disadvantages. As many as 84% of the cancer experts surveyed by Greenfield *et al.* [10] were concerned that important data on the late-effects of treatments may be lost if follow-up was carried out in primary care. More importantly 81% of cancer experts and 75% of GP's surveyed cited their lack of expertise in the field of follow-up as a disadvantage. It is clear from this research that primary care does not currently have the core skills, confidence to provide long term cancer follow up or the knowledge and confidence required to provide an effective service for cancer as a chronic disease [30 31 32]. Wood and Ward [33] carried out interviews and focus groups with non-specialist staff (i.e. no post registration qualifications in oncology). The study selected a convenience sample for interview but included all staff groups who may be, or become involved in cancer care long term. Community staff had noted an increase in the number of patients with cancer, but felt that their lack of knowledge meant they were unable to provide patients with services or information appropriate to their needs. Frew *et al.* [34] in a national survey of 34 cancer networks in England, identified significant differences in the aims of follow-up between service users and primary care practitioners including: early detection of recurrences, medication management and information pertaining to the carers support and improvement in the psychological wellbeing of the patient. In the primary care sector of which there were 940 (883 general practitioners and 57 practice nurses) responders, follow up was viewed by more than 91% of practitioners as an opportunity to manage medications rather than address wider lifestyle advice and physical concerns. Physical aspects of cancer care such as late effects, symptom assessment and care management are poorly represented in studies of primary care follow up.

Skills such as assessment have been explored but primarily in relation to tools. A skill is defined as an ability to perform a given task and a confidence level as the perceived self assurance in applying a learned skill, however the two do not always go together [35] [36] [37] [38].

Gould *et al.* [39] carried out a qualitative, exploratory study on the nature and relevance of continuing professional education (CPE) provision for cancer and palliative care in which she conducted interviews and focus groups with front line staff. The results highlighted a lack of a structured analysis of cancer education requirements. A scoping study to review perceptions of healthcare professionals in a one cancer network showed that CPE in cancer was poor and lacked content appropriate to local service needs and cancer survivorship [40]. Furthermore opportunities to update clinical skills were limited.

Specialist nurses have been identified by the National Cancer Action Team as a key member of the multi disciplinary oncology team in providing proactive case management and reducing risk to patients from long term disease and treatment [41]. Farrell *et al.* [42] in a study of specialist nurses found that most nurses (92.7%) had received specific training for their role but this is not defined. Trevatt and Leary [43] reported results from a census of clinical nurse oncology specialist nurses within England and Wales that identified more breast cancer nurses than for other tumour group but did not look at training. Furthermore there were seventeen different role titles raising issues as to consistency and focus of role and the training required for such differing roles. The lack of a UK advanced and specialist nursing regulatory framework and no standards for competency raises issues as to the consistency of specialist nurse competencies within oncology. A recent web survey of oncology nurses in the USA found that few nurses were working in health care settings that provided patient survivorship programs [44]. At the transition to follow up care the greatest focus of nursing was ongoing disease monitoring whilst the least employment and financial advice. Barriers to implementing more survivorship care were seen as the lack of time and reimbursement funding and a health care professional’s lack of knowledge of survivorship issues. Training in rehabilitation and survivorship management has long been overlooked despite it being identified as significant to supportive care [45]. Rehabilitation programmes including exercise and lifestyle changes within cancer care are deemed an important element of the cancer recovery process, and yet there is little training in managing activity after treatment for this segment of the healthcare population [46 47 48].

According to the UK cancer service guidance 'Improving Supportive and Palliative Care for Adults with Cancer' [49] section ES28: *Some patients are not getting access to rehabilitation services, either because their needs are unrecognised by front-line staff or because of a lack of allied health professionals who are adequately trained in the care of patients with cancer* (page 12). The current competency framework for cancer education through peer review does not include survivorship training or late-effects management as part of mandatory requirements and in future there is a need to look at specific advanced practice and rehabilitation skills necessary in these key areas. Evidence in general suggests that a more structured approach is required in educating health care practitioners about managing cancer as a long term condition. Whilst cancer care is high on the governments' agenda for change, in reality there is very little evidence to suggest that education programmes have moved forward in order to incorporate issues such as rehabilitation and survivorship care. In conclusion the literature highlighted diverse and inconsistent roles plus mandatory education focusing on advanced communications skills with little evidence for broader education relating to the late adverse effects of treatment. This study therefore explores health care professionals' perceptions of their current survivorship skills so that we can understand current ability and prepare a workforce that is both effective and informed for the future.

Table 1: Identification of core competencies in use within specialist cancer education

Author	**Competency**	**Outcome**
Parle 1977 [50]	- Communication	Aim to develop a programme of study in communication skills with cancer patients. Barriers to learning included distancing tactics, angry patients, lack of support, low self-esteem.
Thorne 2008 [51]	- Communication	Qualitative interviews with 69 cancer patients and 13 focus groups. Patient's perceptions of their disease state are influenced by either a negative or a positive communication experience.
Cunningham 2006 [52]	- Communication - Reflective practice - Clinical placement - Theoretical preparation for cancer care	Pre-registration nurses in a London University between 2003 -04 on clinical placement were asked about their perception of their educational/clinical preparation in caring for cancer patients. 134 students completed a self report questionnaire with 21 items using a 5 point Likert scale. 77.6% felt they did not have skills necessary to care for cancer patients and 60% report theory was inadequate. Communicating with patients was cited as a major concern for many of the students.
Schofield 2008 [53]	- Communication	Review of good communication skills in cancer care and ways to improve it. Concludes that there is room for improvement in order to provide the best possible outcome for patients.
Turner 2010 [24]	- Communication	Exploration of the attitudes of staff in South Cumbria to the compulsory communication skills course. Qualitative survey and semi-structured interviews were carried out. Significant differences between nurses and doctors with more negative responses for the course from doctors. Nurses rate their communication skills more highly than doctors. Suggests that this mandatory course may not be appropriate for all service providers of the oncology continuum.
Wood 2000 [33]	- Overview of cancer - Communication - Cancer treatments - Physical & practical issues - Organisation of care - Death and dying	A qualitative study of interviews and focus groups which set out to identify cancer education needs of non-specialist staff in two health authorities in SW London during 1999. Six key areas were identified (listed under competencies) but there is nothing on rehabilitation and survival.

MATERIALS AND METHODS

Training needs are identified through the use of structured training needs analysis [54]. This survey of training needs utilised the 'tailored design method' introduced by Dillman and is based on the theory of social exchange [55]. It assumes that respondents will participate more readily in a study where the questionnaire is constructed to highlight the importance and usefulness of their responses. Furthermore it indicates that completion of the questionnaire will provide solutions to a problem for which participation shows reward. Frew *et al*. [34] have already shown that there is great interest in follow-up care for cancer patients, thus this was encouraging for our survey method.

Data were collected by e-survey using the Survey Monkey web platform and directed at HCPs working with cancer patients more than 12 months following treatment.. The questionnaire was available using an electronic web link between April and May 2011. Web links were disseminated *via* a network of people including lead cancer nurses across the 28 cancer networks, community forums and the Queens Nursing Institute, and to Allied Health Professional leads in rehabilitation services in order to produce a snowballing effect and encourage participation.

This work builds upon earlier research carried out by Greenfield *et al.* with doctors and specialists working with young adults. The initial invitation e-mails included an information letter with a preface that cancer survivors are defined as individuals who have completed treatment and are disease free ≥12 months post treatment (classified as surgery, chemotherapy and radiotherapy) and an inital question that screened those eligible to take part.

The primary focus of the questionnaire was to establish what services were provided by participants and which symptoms patients most often sought help for following their cancer treatment. The secondary aim focused on the skills and confidence of these practitioners in the management of long term and late effects, existing training and future training requirements they felt they required.

Ethics

This study sought to define the services provided and to evaluate the training needs of practitioners working with patients in follow up after cancer treatment. Ethical approval was requested from the NHS committee and the University of Surrey ethics committee for this 'service evaluation' study; both confirmed that ethical approval to approach HCPs was not required.

Sampling

One of the objectives of the survey was to estimate how many practitioners provide ongoing care for cancer survivors after they have completed treatment. Assuming that a proportion of 40% would respond positively to a questionnaire on training needs, we estimated that in order to detect an underlying difference of 0.5 standard deviation between any two cohorts, with size equal to 5% and power equal to 80%, at least 64 subjects were required in each cohort. The questionnaires were separated to take into consideration the individuality of the three cohorts.

RESEARCH QUESTIONS

1. What proportion of nurses and AHPs provide management for long term consequences of cancer and its treatment within primary and secondary health care?
2. What are the perceived skills and training needs of health care practitioners in providing late effects services
3. What are the existing components of continuing professional development?
4. What areas do clinicians feel confident in providing such survivorship services?

Secondary questions asked were:

a) Were the practitioners confidence levels influenced by the services they provided?
b) Were the services provided by practitioners supported by the training they had received?
c) Was the frequency of symptoms that practitioners dealt with linked with the skills they possessed?
d) Did having a post-graduate qualification influence how confident they felt?

Domains

The questionnaire was organised around four domains. These were selected specifically to look at who was providing a late effects service to cancer patients, to highlight the symptoms and concerns of patients who most often sought help, to find out how confident practitioners felt with their current skill level and what additional training may be required by them in the future. We also selected four themes which broadly identify the main areas of survivorship care needs; they were psycho-social, physical, sexual dysfunction and general lifestyle support. We also reviewed the demographics and included the age of the survey population, the number of years in practice, the current work location, their level of training and any survivorship cancer training undertaken within the past 2 years. Furthermore, we wanted to understand what training practitioners felt they needed in order to support survivors in the long term and how they felt any additional training might be best delivered.

Domain One: Current clinical practice such as health services that are provided for patients post cancer treatment in the participant's area of practice. This includes areas of symptom and psychosocial care or specific follow-up, health and wellbeing services.

Domain Two: Skills participants feel they already have in order to manage the long term effects and symptoms presented by patients, as a consequence of cancer treatment. In addition this section seeks to establish how confident they feel they are in caring for individuals following cancer treatment.

Domain Three: Demographic, training information and number of years since qualification.

Domain Four: Areas of training, skills or knowledge participants would like to know more about to aid them in providing follow up care for cancer patients. This includes open text boxes for comments and suggestions.

An expert panel of community practitioners, specialists in oncology and late effects educators reviewed the questionnaires for content and construct validity. A pilot was undertaken to provide feedback on the format and ease of use. Following the feedback from the pilot study the questionnaires were refined. Each of the questionnaires had a mix of uniform questions that were applied to each of the practitioner groups individually, together with questions that were unique and may only be relevant to a specific group.

We used both open and closed questions allowing space for an individual's comments. (See appendix A for questionnaire format). Our target group included:

1) Allied Health practitioners
2) Community practitioners
3) Oncology and Haematology nurses working in cancer centres and units

DATA ANALYSIS

Data from the questionnaires were coded and analysed using a the statistical package SPSS v18 (SPSS Inc, Chicago, IL, USA). Frequencies, means and range were calculated together with rank scores and t-tests where appropriate to look at differences between groups. Non parametric statistics were used across the groups utilising the Spearman's rank test for correlations and cross tabulations utilised the Chi-squared tests. This provided a comparison of the variance which enabled us to compare the training needs between primary and secondary care and professional groups. Open box comments were analysed qualitatively using content analysis. Where data were missing from any particular question, for example, where a practitioner had marked a 'don't know' response to a question, they were treated as if they had not answered the question at all.

RESULTS

A total of 765 practitioners started the online survey whilst only 618 practitioners continued to complete the survey after the eligibility screening question. This question asked the practitioners '*Do you provide nursing and supportive care services or rehabilitation for patients who are in follow-up after cancer treatment?'* Those who answered yes continued to complete the questionnaire (Table 2 provides a breakdown).

Table 2: Representation of the total number of practitioners who accessed the online survey and the total number of practitioners who completed the survey. Totals are given as a percentage of *n=765.*

	AHP's		Comm		Onc/Haem		ALL	
	n	%	n	%	n	%	N	%
Total number of practitioners who accessed and started the survey	324	42.3	180	23.5	261	34.1	765	100
Number of practitioners responding to Q1 that they care for cancer patients 12 months after therapy	250	77.1	141	78.3	227	86.9	618	80.7

Over 80% of respondent cared for patients following cancer treatment although only 78% of community practitioners managed care longer term. General demographics are shown in Table 3 and unless otherwise indicated; results are shown as a percentage of (*n)* of responders answering each question.

Table 3: Practitioner demographics. Values are shown as a percentage % of (*n)* for each practitioner group answering the question.

What age group do you belong to?	AHP's		Comm		Onc/Haem		ALL	
	%	n	%	n	%	n	%	N
20-30	14.6	21	2.6	2	4.0	6	7.8	29
31-40	28.5	41	20.8	16	23.2	35	24.7	92
41-50	37.5	54	45.5	35	44.4	67	41.9	156
51-60	18.1	26	28.6	22	27.2	41	23.9	89
60+	1.4	2	2.6	2	1.3	2	1.6	6
Answered question: *n* =	*n=144*		*n=77*		*n=151*		*N=372*	
In which region do you currently work?								
London	23.6	34	2.6	2	11.3	17	14.2	53
South East	10.4	15	16.9	13	13.9	21	13.2	49
South West	14.6	21	28.6	22	20.5	31	19.9	74
East of England	3.5	5	6.5	5	1.3	2	3.2	12
East Midlands	2.8	4	2.6	2	2.0	3	2.4	9
West Midlands	8.3	12	6.5	5	7.9	12	7.8	29
Wales	0.7	1	3.9	3	0	0	1.1	4
Yorkshire and the Humber	13.9	20	11.7	9	7.3	11	10.8	40
North West	13.2	19	9.1	7	23.8	36	16.7	62
North East	4.9	7	2.6	2	7.3	11	5.4	20
Scotland	4.2	6	9.1	7	4.6	7	5.4	20
Answered question: *n* =	*n=144*		*n=77*		*n=151*		*N=372*	
How many years have you been qualified?								
Average number of years qualified	16.9		21.7		21.4		20	
Answered question:	*n =144*		*n=77*		*n=151*		*N=372*	
Please indicate which qualifications you hold								
Undergraduate	62.9	90	63.6	*49*	63.9	94	63.4	233
Postgraduate	*37.1*	*53*	36.4	*28*	*36.1*	*54*	36.6	136
Total answered: *n* =	*n=143*		*n=77*		*n=147*		*367*	

The age of practitioners' increased between 41 – 50 years and then numbers decreases in the age range 51 - 60 years. The average number of years a practitioner had been qualified was similar across both community (21.7%) and oncology/haematology (21.4%) whilst AHP's had been qualified for slightly fewer years (16.9%). Higher levels of training were undertaken by approximately 37% of all 367 practitioners which included post-graduate certificate, MSc, MA, MPhil and PhD/Doctorate level qualifications.

In terms of additional training practitioners had undertaken, two questions were asked. A) *"Have you completed any courses or study days relevant to cancer care in the past 2 years?"*

B) "*What aspects of survivorship care did this training cover?"*

For question A they were provided with a free text box. These data were thematically coded and are entered below in Table 4. There were 264 responses to this question (144 AHP's, 44 community and 151 oncology/haematology practitioners).

Table 4: Courses, study days including conferences attended by practitioners in the past 2 years. Values are shown as a percentage % of (*n)* for each practitioner group answering the question

Types of courses/study days undertaken relevant to cancer care in the past 2 years.								
	AHP's		**Comms**		**Oncol**		**ALL**	
Categories:	%	*n*	%	n	%	n	%	N
Advanced Communication	46.1	53	6.7	3	35.6	37	35.2	93
Survivorship/Late-effects	9.6	11	2.2	1	11.5	12	9.1	24
Tumour specific	40.0	46	8.9	4	42.3	44	35.6	94
Psycho-social	6.1	7	4.4	2	6.7	7	6.1	16
Clinical skills	6.1	7	28.9.	13	4.8	5	9.5	25
Palliation	20.9	24	35.6	16	9.6	10	18.9	50
Answered question: *n*=	*n*=115		*n*=45		*n*=104		N=264	

Both the AHP's (40%) and oncology/haematology (42.3%) practitioners had undertaken additional courses or study days which were tumour specific, whereas community practitioners had undertaken further courses or study days mainly to update their clinical skills (28.9%) and/or skills in relation to palliation (35.6%). The analysis showed that 35.2% of all practitioners had undertaken advanced communication skills training, (20% AHP's, 14% Oncology/haematology and 1% community) with lower numbers undertaking any CPE training in the community.

There were 286 responses to Question B (113 AHP's, 37 community practitioners and 136 oncology/haematology practitioners). When we explored this question further we discovered that 77.3% of the 286 practitioners had cited communication as the main topic in survivorship training. Education in the long term consequences of cancer treatment was undertaken by 44.8%, in survivorship and cancer as a chronic illness 50.3% and in the psycho-social impact of cancer survival 59.1%. When asked about the late effects of radiotherapy, AHP's had undertaken more training than either community or oncology/haematology practitioners, whereas both AHP’s and Oncology/Haematology practitioners had undertaken a similar level of training in the late effects of chemotherapy. Table 5 illustrates the results.

Table 5: Survivorship training undertaken by practitioners. Values are shown as a percentage % of (*n)* for each practitioner group answering the question.

What aspects of survivorship care did this training cover?								
	AHP's		**Comm**		**Onc/Hae**		**ALL**	
	%	*n*	%	*n*	%	*n*	%	*N*
Survivorship and cancer as a chronic illness	54.9	62	54.1	20	45.6	62	50.3	144
Psycho-social impact of cancer survival	64.6	73	51.4	19	56.6	77	59.1	169
Fear and recurrence issues	31.0	35	43.2	16	33.1	45	33.6	96
Communication skills with patients	75.2	85	81.1	30	77.9	106	77.3	221
Cancer surgeries and subsequent effects of physiological processes	29.2	33	16.2	6	19.1	26	22.7	65
Side-effects of conventional treatments	45.1	51	37.8	14	48.5	66	45.8	131
Long term consequences of cancer treatment	49.6	56	40.5	15	41.9	57	44.8	128
Late effects of chemotherapy	31.0	35	18.9	7	33.1	45	30.4	87
Late effects of radiotherapy	41.6	47	27.0	10	28.7	39	33.6	96
Rehabilitation (e.g. physio/OT centred approach)	68.1	77	18.9	7	15.4	21	36.7	105
Specific organ effects	11.5	13	13.5	5	18.4	25	15.0	43
Referral processes within the service including to whom and when to refer	239.	27	32.4	12	23.5	32	24.8	71
Policies and procedures for operating complementary therapies in your workplace	7.1	8	13.5	5	16.2	22	12.2	35
Other	10.6	12	8.1	3	9.6	13	9.8	28
Answered question: *n* =	*n*=113		*n*=37		*n*=136		N=286	

We asked all practitioners what services were offered by practitioners following their patients’ cancer treatment and the results are shown in Table 6. Of the 493 practitioners’ who responded to this question, the management of side effects and symptoms of cancer treatments featured highly with 72.2% of all practitioners providing this service to their patients. The percentage of practitioners’ spending time reassuring patients about their health and emotions was also high at 71.2%. Lifestyle issues which included exercise, diet and nutrition advice was another area of service provision that featured prominently (64.7%) on the list of services provided to patients, as was the opportunity to talk to staff who understood a cancer diagnosis (56.4%). The long term management of medications for cancer patients was overall low (18%) but quarter of the sample in community and oncology/haematology provided services to patients in this area.

Table 6: Comparison of the practitioner groups providing a service to cancer patients following their cancer treatment. Values are shown as a percentage % of (*n)* for each practitioner group answering the question. *N=493.*

Which of the following do you provide to cancer patients following cancer treatment?

	AHP's		**Comm**		**Onc/Hae**		**ALL**	
	%	*n*	%	*n*	%	*n*	%	*N*
Review and assessment after 12 mths	24.0	48	13.2	14	43.9	82	29.2	144
Checks for cancer recurrence	7.0	14	8.5	9	38.0	71	19.1	94
Telephone follow-up	37.5	75	26.4	28	55.1	103	41.8	206
Screening advice for cancer patients	8.5	17	7.5	8	25.1	47	14.6	72
Triage and referral to the physician	7.5	15	17.0	18	47.1	88	24.5	121
Reassure patients about their health and emotions	55.5	111	77.4	82	84.5	158	71.2	351
Long term medications management for cancer therapies	6.0	12	23.6	25	29.4	55	18.7	92
Symptom and side effect management of cancer treatment	64.5	129	69.85	74	81.8	153	72.2	356
Nutritional, exercise and lifestyle advice	68.0	136	67.9	72	59.4	111	64.7	319
Opportunity to talk to staff who understand a cancer diagnosis	42.5	85	55.7	59	71.7	134	56.4	278
Other	34.5	69	12.3	13	12.8	24	21.5	106
Answered question: *n=*	*n*=200		*n*=106		*n*=187		N=493	

AHP's and community practitioners were asked "*Do you offer a late-effects service specifically to cancer patients?* There were a total of 202 AHP's (47%) and 107 community practitioners (26.2%) who answered yes to this question. We followed this question by asking *"What late effects services are offered?"* and Table 7 provides the detail from the 115 combined AHP and community practitioners who answered the question.

Table 7: Late-effects services offered by AHP's and community practitioners.

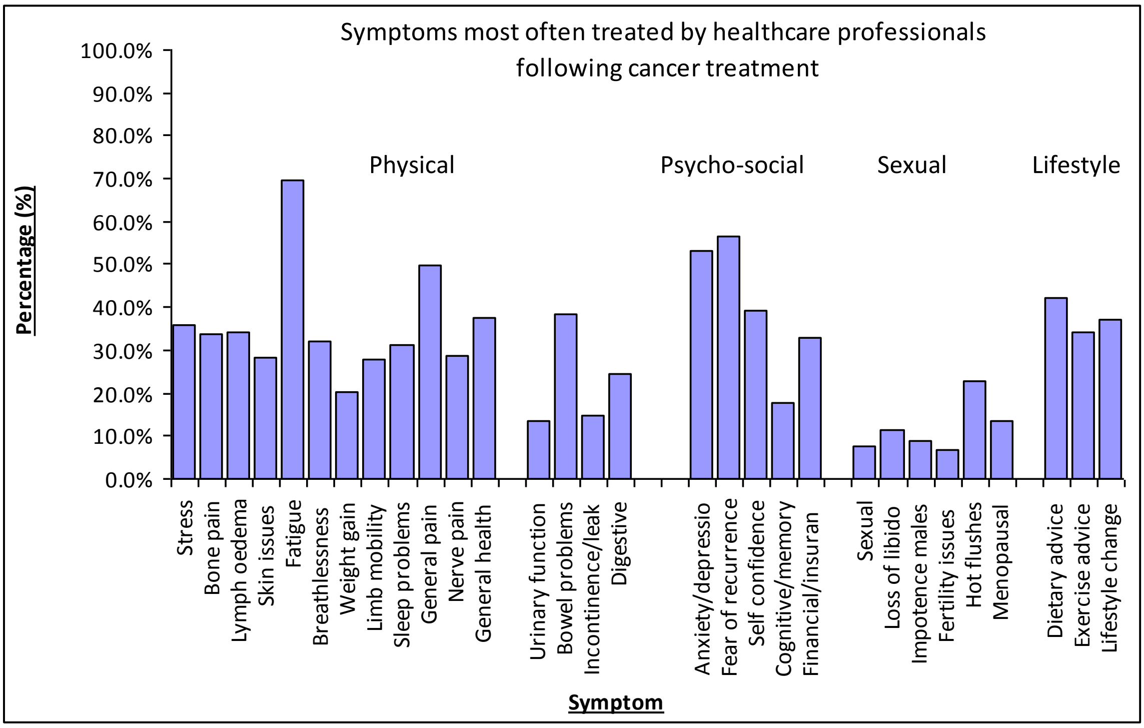
What late effects services are offered? (AHP's/Community only)

	AHP's		**Comm**		**ALL**	
	n	%	n	%	N	%
Self Management advice	63	68.5	20	87.0	83	72.1
Health checks	5	5.4	6	26.1	11	9.5
Signposting to local physical activity services	35	38.0	8	34.8	43	37.3
Rehabilitation services (physiotherapy/OT)	70	76.1	13	56.5	83	72.1
Medication reviews	6	6.5	16	69.6	22	19.1
Other	28	30.4	5	21.7	33	28.6
Answered question: *n=*	n=92		n=23		n=115	

Oncology/haematology practitioners were asked *"Do you specifically look for late adverse effects of cancer treatments?"* and 50.3% of the 187 practitioners who answered the question said that they did.

Practitioners were asked to mark on a scale (never, occasionally and often) how frequently their cancer patients sought help for symptoms and concerns recognised in the literature as commonly affecting cancer patients 12 months post treatment. The data were coded into four categories: physical, psycho-social, sexual dysfunction and lifestyle. Graph 1 shows the results for which all practitioner groups reported patients most often seek help for support. In the sub-category of physical symptoms, fatigue was the symptom for which cancer patients most often seek help (AHP's 69.3%, community 61.3% and oncology/haematology 72.7%) whilst general pain management was a recurrent symptom but more frequently a concern for patients attending community practitioners (AHP's 47.6%, community 65.6% and oncology/haematology 43.2%). High on the list for AHP's was lymph-oedema (44%) and limb mobility issues (45.2%) whilst for community and oncology/haematology practitioners bowel problems (community 52.7%, oncology/haematology 39.8%) and general health problems (community 45.2%, oncology/haematology 38.6%)) were more prevalent.

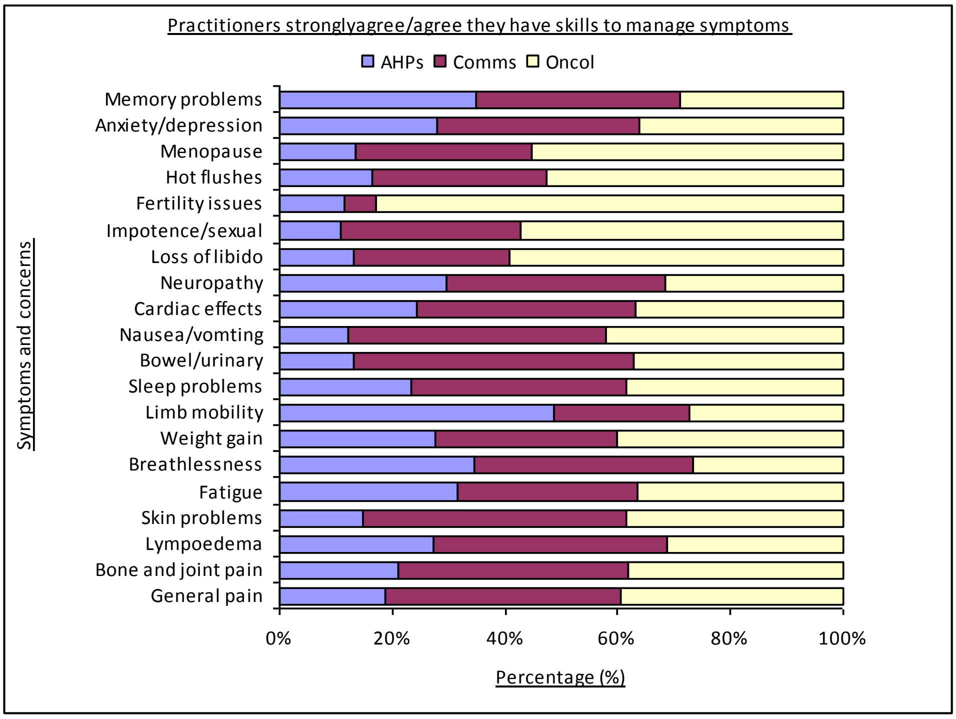
In the sub-category on psycho-social symptoms both community (48.4%) and oncology/haematology (68.2%) practitioners cared for patients who feared a recurrence of the symptoms related to cancer, whilst AHP's (54.8%) cared for patients suffering from anxiety and depression. In the sub-category coded for sexual dysfunction the biggest symptom concern were hot flushes (AHP's 18.1%, community 11.8% and oncology/haematology 33.0%). In the final sub-category on lifestyle issues 50% of AHP's were providing advice on lifestyle change whilst in the community 37.6% and 42% of oncology/haematology nurses.



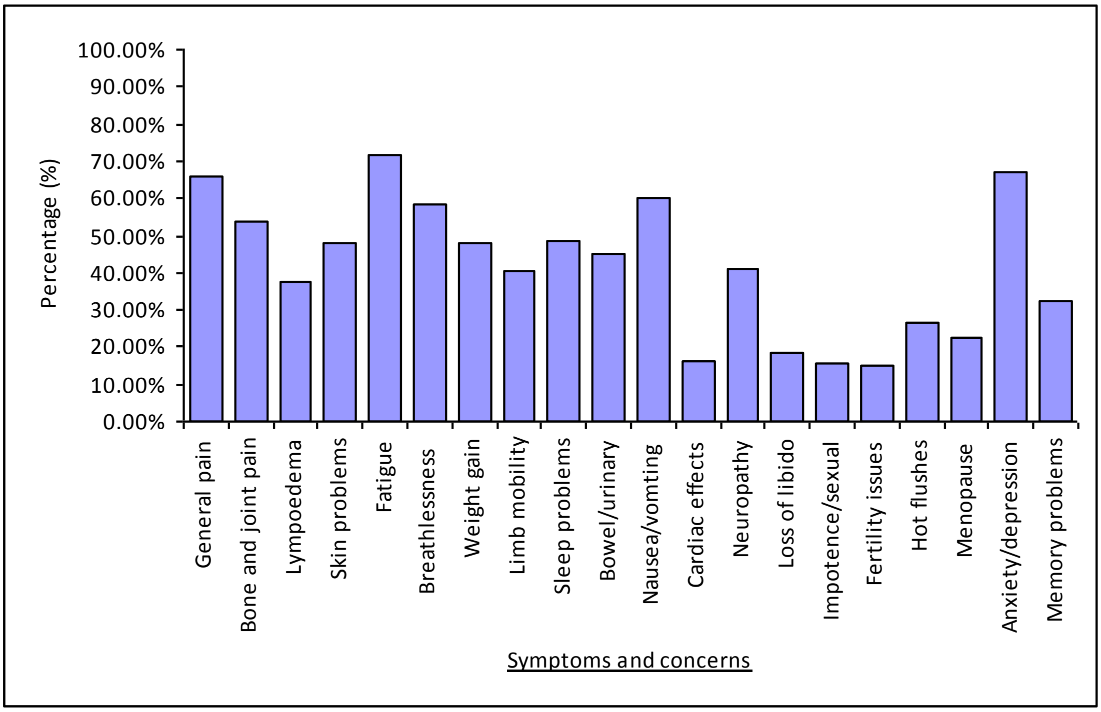
Graph 1: Comparison of symptoms most often treated by all healthcare practitioner groups *N=432* broken down as AHP's *(n=166)*, community *(n=93)* oncology/haematology *(n=173).*

Practitioners also recorded 'other' symptoms and concerns for which 35.2% provided a service including support for family and carers and 33.8%, tumour specific rehabilitation (*n=68).*

To identify the skills of practitioners in managing the long term and late effects of cancer we asked them to mark on a Likert scale whether they strongly agree, agree, neither agree nor disagree, disagree and strongly disagree with a number of statements. Results of the strongly agree and agree data were merged to show the level of skill practitioners believed they possess in managing the symptoms and concerns of cancer patients. The results of the analysis for the individual practitioners groups are shown in Graphs 2 and Graph 3 and in Table 8.



Graph 2: Breakdown of the skills practitioners identified with in managing the long term late effects of cancer treatment. The data show the individual results of each practitioners group for the Likert scale merged data - strongly agree and agree. *N* = 159 AHPs, 89 community and 173 oncology/haematology practitioners.

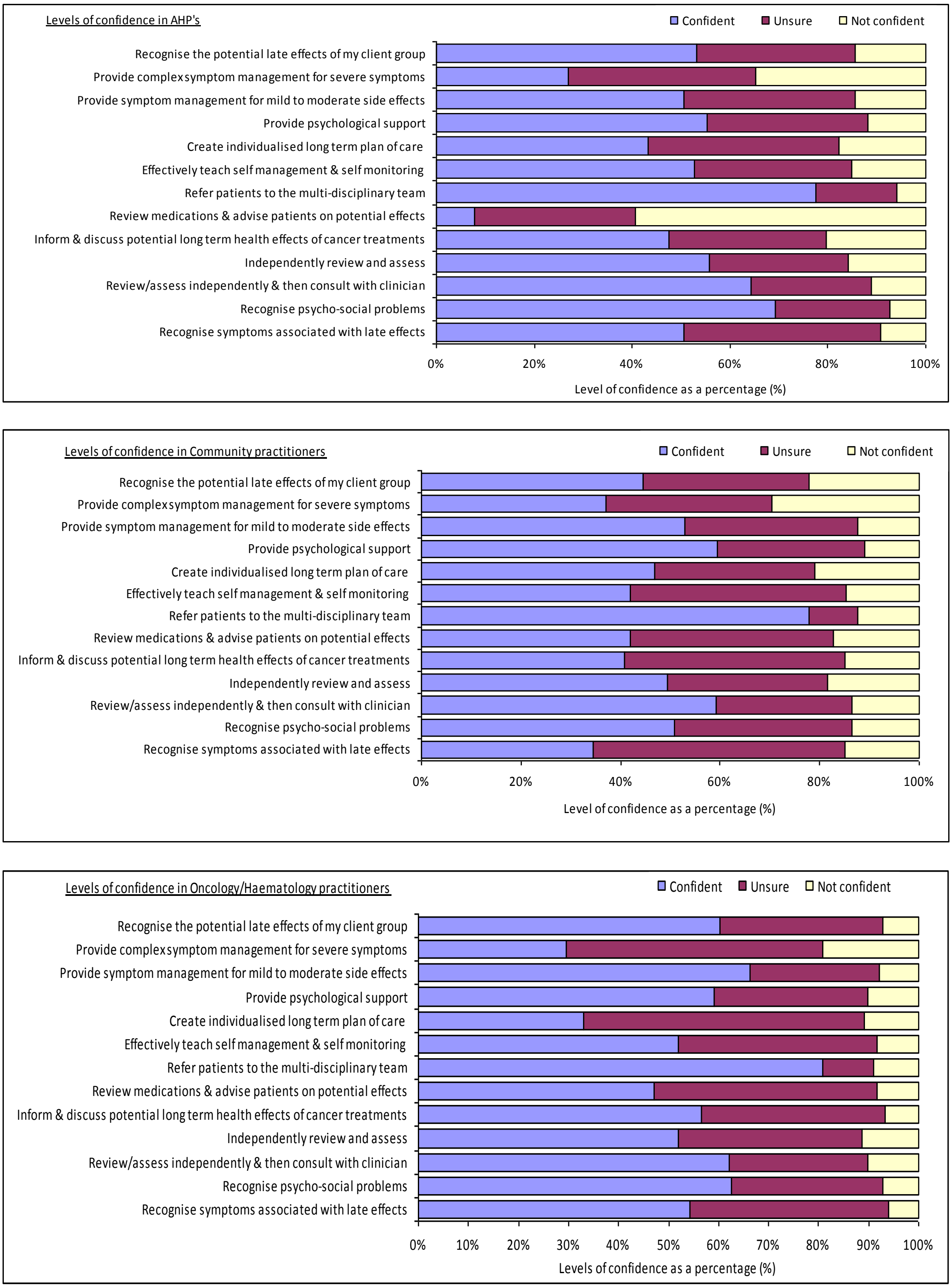


Graph 3: Breakdown of the skills practitioners identified with in managing the long term late effects of cancer treatment. The data show the results for *all* practitioners. Data for strongly agree and agree were merged, *N* = 421.

Table 8: Practitioners identified skills in managing the long term late effects of cancer treatments when data for strongly agree and agree were merged.

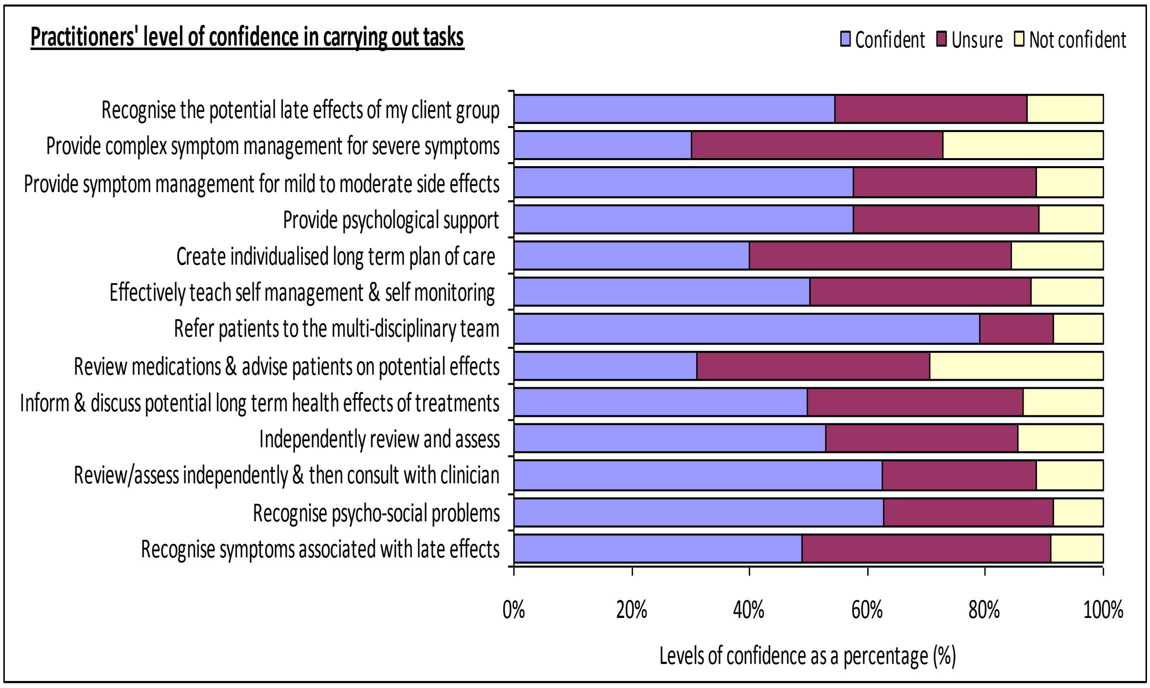
	Stronglyagree/ agree							
Symptoms & Concerns	**AHP's**		**Comms**		**Oncol**		ALL	
	N	%	N	%	N	%	n	
General pain	61	38.4	77	86.5	140	80.9	278	66.0
Bone and joint pain	56	35.2	61	68.5	110	63.6	227	53.9
Lympoedema	51	32	43	48.3	63	36.4	157	37.2
Skin problems	36	22.6	64	71.9	103	59.5	203	48.2
Fatigue	107	67.3	60	67.4	134	77.4	301	71.5
Breathlessness	99	62.3	63	70.8	83	48	245	58.1
Weight gain	62	38.9	41	46.1	98	56.6	201	47.7
Limb mobility	90	56.6	25	28.1	55	31.7	170	40.3
Sleep problems	55	34.6	51	57.3	99	57.2	205	48.6
Bowel/urinary	31	19.5	65	73.0	95	54.9	191	45.3
Nausea/vomting	37	23.3	78	87.7	139	80.3	254	60.3
Cardiac effects	19	11.9	17	19.1	31	18.0	67	15.9
Neuropathy	60	37.7	44	49.4	69	39.9	173	41.0
Loss of libido	11	6.9	13	14.6	54	31.2	78	18.5
Impotence/sexual	8	5.0	13	14.6	45	26.1	66	15.6
Fertility issues	7	4.4	2	2.2	55	31.8	64	15.2
Hot flushes	20	12.6	21	23.6	70	40.4	111	26.3
Menopause	14	8.8	18	20.2	62	35.8	94	22.3
Anxiety/depression	90	56.6	65	73.0	127	73.4	282	66.9
Memory problems	55	34.6	32	36.0	50	28.9	137	32.5
Answered question	***n=159***		***n=89***		***n=173***		***N=421***	

In order to ascertain how confident practitioners felt in managing the various tasks of follow-up, we asked them to mark on a scale of 1 – 10 how easy or difficult a particular task was for them (1=easy/10=difficult). We then sub-divided and colour coded the results into three further categories for ease of presentation so that practitioners scoring 1 – 3 were deemed to be 'confident' (shown in blue), 4 – 7 were 'not sure' (shown in burgundy) and 8 – 10 were 'not confident' (shown in yellow). The results of this evaluation for the individual practitioner groups are shown in Graph 3 and for *all* practitioner groups in Graph 4/Table 9.



Graph 3: Comparison showing the level of confidence in each of the practitioner groups for various tasks of follow-up treatment. Values are shown as a percentage (%) of *n* for each practitioner group answering the question. Top – AHP's *(n=152)*, middle – community *(n=81)* and bottom – oncology/haematology *(n=166)*.

All practitioners felt confident in referring patients to the multi-disciplinary teams (AHP's 77.6%, community 77.8% and oncology/haematology 80.7%) but only 34% of community practitioners felt confident that they would be able to recognise symptoms associated with late-effects compared with 50.7% of AHP's and 54.2% of oncology/haematology practitioners. However, when asked whether they would be able to recognise the potential late-effects of their particular client group these figures increased to 44.4% for community practitioners, 53.2% for AHP's and 60.3% for oncology/haematology practitioners. AHP's felt most confident in recognising the psycho-social problems of their client group, as did the community practitioners (59.3%). This figure was matched in the community practitioners' confidence in actually providing psychological support (59.3%) whereas for AHP's, the figure drops to 55.3%. Oncology/haematology practitioners were most confident in providing symptom management for mild to moderate side effects of cancer treatments (66.3%) but this figure drops to just 29.5% when asked if they felt confident in providing complex symptom management for severe symptoms compared to 27% for AHP's and 37% for community.



Graph 4: The levels of confidence for all practitioner groups for various tasks of follow-up treatment. Values are shown as a percentage (%) of *n* for all practitioner groups answering the question. *N*=399

Table 9: Levels of confidence expressed by *all* practitioners in performing specific tasks associated with follow-up care in cancer patients. Figures are shown as a percentage of *n* participants who answered the question. *N=399*

	Confident		Unsure		Not confident	
	%	*n*	%	*n*	%	*n*
Recognize symptoms associated with late effects	48.9	195	42.1	168	9.0	36
Recognize psycho-social problems	62.7	250	28.8	115	8.5	34
Review and assess independently & then consult with clinician	62.4	249	26.3	105	11.3	45
Independently review and assess	52.9	211	32.6	130	14.5	58
Inform & discuss potential long term health effects of treatments	49.9	199	36.6	146	13.5	54
Review medications & advise patients on potential effects	31.1	124	39.3	157	29.6	118
Refer patients to the multi-disciplinary team	78.9	315	12.5	50	8.5	34
Effectively teach self management & self monitoring	50.1	200	37.6	150	12.3	49
Create individualized long term plan of care	39.8	159	44.6	178	15.5	62
Provide psychological support	57.6	230	31.3	125	11.0	44
Provide symptom management for mild to moderate side effects	57.6	230	31.1	124	11.3	45
Provide complex symptom management for severe symptoms	30.1	120	42.6	170	27.3	109
Recognize the potential late effects of my client group	54.4	217	32.6	130	13.0	52

Of the 399 combined practitioners who answered this question, the highest levels of confidence were identified in the ability to refer patients to the multi-disciplinary team at 78.9%, whilst the lowest level of confidence was found in their perceived ability to provide complex symptom management for severe symptoms at 30.1%.

Comparisons across the groups

Checks for homogeneity of variance using the Levene's test were carried out prior to evaluating correlations within our data and across all groups. Based on the outcome of the Levene's test we were able to carry out our analysis using the non parametric Spearman's rho test. The Spearman's rho test first of all ranks the data and then applies a Pearson's equation to the ranks [56] We hypothesised a directional relationship between questions and therefore selected a 1-tailed test. For each set of data analysed, selective comparisons were made based upon a relational hypothesis.

Using a bivariate correlation we were able to correlate two variables a) whether the services provided (Q2) by practitioners impacted on b) their levels of confidence (Q8). Table 10 shows the results of the analysis. Of those where we hypothesised a relationship there were no significant correlations between the service provision: *triage and referral to the physician* and the task: *review medications and advise patients on their potential effects* (r_s=.06, p>.068) and the service: *long term medications management for cancer therapies* and the task: *review medications and advise patients on their potential effects* (r_s= -.07, p>.428).

We hypothesised that certain services would require specific training so we asked whether there was a relationship between the services provided by our practitioners and the training they had received. Our data analysis show that both telephone follow-up (r_s=.30, p<.001) and reassuring patients about their health and emotions (r_s=.32, p<.001) were significantly correlated with communication skills. Symptom and side effect management of cancer treatments were significantly correlated with training received on the side effects of conventional treatment (r_s=.25, p<.001), the late effects of chemotherapy (r_s=.21, p<.001) and the late effects of radiotherapy (r_s=.22, p<.001). Triage and referral to the physician and training received on referral processes within the service, including to whom and when to refer also revealed a significant correlation r_s=.19, p<.001, whilst reviewing and assessing patients after 12 months and survivorship and cancer as a chronic illness training were significantly correlated to r_s=.12, p<.001. The final significant correlation in our analysis was seen between the service: nutritional, exercise and lifestyle advice and training received on rehabilitation, e.g. physiotherapy/OT centred approach to treatment (r_s=.07, p=.026), albeit weak.

Table 10: Relationship between service provision and confidence levels in carrying out specific tasks. ** shows that the correlation is significant at the 0.01 level (1-tailed). *n=618*. Only the data where there is a statistic shown in the table below, were analyzed for a relationship.

		Review and assessment after 12 months	Checks for cancer recurrence	Telephone follow-up	Screening advice for cancer patients	Triage and referral to a physician	Reassure patients about their health and emotions	Long term medications management for cancer therapies	Symptom and side-effect management for cancer treatment	Nutritional exercise and lifestyle advise	Opportunity to talk to staff who understand a cancer diagnosis
Recognize symptoms associated with late effects	Correlation coefficient Sig. (1-tailed)	.110** .003		.169** .000					.338** .000		
Recognize psycho-social problems	Correlation coefficient Sig. (1-tailed	.118** .002		.208** .000			.347** .000				
Review/assess independently & then consult with clinician	Correlation coefficient Sig. (1-tailed		.114** .002	.179** .000		.117** .002	.336** .000				
Independently review and assess	Correlation coefficient Sig. (1-tailed		.097** .008	.189** .000	.126** .001	.128** .001					.287** .000
Inform & discuss potential long term health effects of treatments	Correlation coefficient Sig. (1-tailed	.098** .007		.156** .000							.234** .000
Review medications & advise patients on potential effects	Correlation coefficient Sig. (1-tailed			.170** .000		.060 .068		-.007 .428			
Refer patients to the multi-disciplinary team	Correlation coefficient Sig. (1-tailed	.150** .000	.136** .000	.180** .000		.160** .000					
Effectively teach self management & self monitoring	Correlation coefficient Sig. (1-tailed			.192** .000	.081** .022					.233** .000	
Create individualized long term plan of care	Correlation coefficient Sig. (1-tailed			.201** .000	.104** .005					.233** .000	
Provide psychological support	Correlation coefficient Sig. (1-tailed			.177** .000		.145** .000	.328** .000				
Provide symptom management for mild to moderate side effects	Correlation coefficient Sig. (1-tailed			.183** .000		.118** .002			.320** .000		
Provide complex symptom management for severe symptoms	Correlation coefficient Sig. (1-tailed			.185** .000					.324** .000		
Recognize the potential late effects of my client group	Correlation coefficient Sig. (1-tailed	.106** .004		.164** .000		.157** .000	.352** .000		.319** .000		

Cancer patients present with a number of symptoms and concerns following their cancer treatments and we wanted to know whether or not practitioner's skills matched the symptoms and concerns they were most often presented with by cancer patients. We therefore carried out Spearman's rho correlations to evaluate this relationship. Our results are shown in Table 11. There were strong correlations for fatigue r_s=.58, p<.001 and also for anxiety and depression r_s=.53, p<.001 both of which show statistical significance at the 0.01 level, whilst others show a weak correlation, albeit statistically significant e.g. menopausal concerns r_s=.09, p=.011.

Table 11: Non parametric Spearman's rho correlations identifying the relationship between the symptoms and concerns of cancer patients and the skills practitioners possess in managing them. *n=618.* **Correlation is significant at the 0.01 level (1-tailed), *correlation is significant at the 0.05 level (1-tailed).

How often cancer patients seeks help for:	Possess the skills to manage:	Correlation Coefficient	Sig. 1-tailed
Sexual dysfunction (women)	Impotence/sexual dysfunction	.186**	.000
Bone pain	Bone and joint pain	.374**	.000
Lymphoedema	Lymphoedema	.386**	.000
Skin issues	Skin problems	.382**	.000
Fatigue	Fatigue	.581**	.000
Urinary function	Bowel/urinary problems	.235**	.000
Breathlessness	Breathlessness	.400**	.000
Weight gain	Weight gain	.275**	.000
Limb mobility issues (E.g. shoulder)	Limb mobility issues	.317**	.000
Sleep problems	Sleep problems	.443**	.000
Bowel problems	Bowel/urinary problems	.333**	.000
Nerve pain	Neuropathy	.474**	.000
Anxiety/depression	Anxiety/depression	.535**	.000
Loss of libido	Loss of libido	.203**	.000
Impotence (erectile dysfunction in men)	Impotence/sexual dysfunction	.114**	.002
Fertility issues	Fertility issues	.126**	.001
Hot flushes	Hot flushes	.166**	.000
Menopausal concerns	Menopausal concerns	.092*	.011

In analysing skills and confidence we made a reasonable assumption that there would be a relationship between post-graduate training and the confidence levels of practitioners. However, analysis of the data showed only a weak correlation between post-graduate qualifications and confidence levels. Of the 618 practitioners who provided details on their level of qualification, 367 of them recorded a post-graduate qualification of either a post graduate certificate, MSc, MA, MPhil or PhD/doctorate. Results are shown in Table 12. There were only weak correlations between post-graduate qualification and confidence levels.

Table 12: Spearman's rho correlation showing the relationship between practitioners holding a post-graduate qualification, e.g. Post-graduate certificate, Masters, MPhil or PhD/Doctorate and their level of confidence in carrying out specific tasks. *n=367*, **correlation is significant at the 0.01 level (1-tailed) and * at the 0.05 level.

	Correlation coefficient	Sig. (1-tailed
Recognize symptoms associated with late effects	-.147**	.002
Recognize psycho-social problems	-.180**	.000
Review/assess independently & then consult with clinician	-.135**	.005
Independently review and assess	-.171**	.000
Inform & discuss potential long term health effects of treatments	-.147**	.002
Review medications & advise patients on potential effects	-.129**	.007
Refer patients to the multi-disciplinary team	-.077	.071
Effectively teach self management & self monitoring	-.125**	.008
Create individualized long term plan of care	-.031	.280
Provide psychological support	-.153**	.002
Provide symptom management for mild to moderate side effects	-.147**	.002
Provide complex symptom management for severe symptoms	-.088*	.046
Recognize the potential late effects of my client group	-.174**	.000

DISCUSSION

This survey was to identify the readiness of the UK nursing and allied health care workforce to manage the increasing and future needs of cancer survivors. The study identified that only 80% of nurses and allied health care practitioners manage the care of cancer patients 12 months and beyond cancer therapy and that this proportion is smaller for community nurses. Despite planning for change it is clear from this research that there is limited confidence from practitioners in providing care for patients who have long term consequences of cancer treatment. Important areas where practitioners felt most confident were in communicating with patients and in providing psychosocial support which reflects the high level of advanced communications skill training of the sample.

We found that regardless of speciality the average age range for practitioners who participated in the survey was 41 – 50 years. This highlights we need to consider succession planning as a recent report by Buchan and Seccombe [57] shows we are at risk of losing many of our experienced workers over the next 10 - 15 years. Clinical Nurse Specialists are an older workforce and this is apparent in the survey identifying that any training needs to reflect those newer members of staff to acquire the appropriate competencies in managing the long term and late consequences of cancer treatment.

Understandably acute service provision was the main focus of oncology and haematology care, however fewer community nurses or allied health professionals managed patients long term and late effects services were limited. With the predicted increase in the number of cancer survivors there will be a growing demand for service provision within the community [58]. Recognition that the management of such services is expanding beyond specialists care is vital for those providing education programmes of the future. Community practitioners in particular have the ability to manage co-morbid conditions but in this study did not feel confident to identify and manage the long-term and late effects of cancer treatments. Whilst survivorship programmes are beginning to emerge within nursing education worldwide [58] there are still gaps in the skills and confidence of practitioners that need to be addressed.

Health care practitioners felt most confident in areas of acute symptom management and subsequently saw these most frequently. Approximately 70% of the practitioners' surveyed identified fatigue as the most often treated symptom and 71.5% either strongly agreed or agreed that they had the skills to manage this condition in follow-up. On average 53.2% of practitioners reported that patients sort help for anxiety and depression and 66.9% felt they had skills to manage this. A number of assessment tools were used by practitioners in our survey for this purpose including, psychological assessment (9.5%) the Distress Thermometer (30.4%) and the Hospital Anxiety and Depression scale (30.4%). There were strong correlations between the symptoms and concerns presented by patients and the practitioners' confidence in managing them. Another skill strength was the practitioners' ability to manage general pain, however the correlation between bone pain as a symptom and concern and the skill to manage bone and joint pain, showed only a weak correlation, suggesting that more specific pain may be more difficult to manage.

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Areas where healthcare professionals feel their skills were weak were in several areas and this differed only slightly between professional groups. Our results showed some degree of differentiation between the symptoms and concerns presented by patients and the practitioners' confidence in recognizing and managing those symptoms. Of the questions asked, the main areas where practitioners felt they lacked skills were:

- Reviewing medications and advising patients on the potential effects
- Providing complex symptom management for severe symptoms
- Creating an individualised long term plan of care
- The ability to recognise symptoms associated with late effects

Many post-treatment medications are taken orally and rely upon the patients to take them in a specific manner. However, there is a strong history of non-compliance in cancer medications, particularly when adverse-effects have an impact on quality of life. The ability to discuss medications in a manner that encourages compliance and understanding is a skill infrequently taught in cancer education. The ability to recognise late effects and care planning are interlinked in that planning future care requires understanding of risk, assessment strategies as well as understanding surveillance. Late effects expertise is lacking in all areas and the low prevalence of symptoms seen by clinicians around pelvic late effects and sexual problems may reflect a lack of assessment. Clinical tools used in practice reflected mainly psychosocial or acute symptom concerns and more research may be required to determine if these tools under report chronic symptoms as a consequence of cancer and therapies. An area of concern was that community nurses had the least level or opportunity for CPE of all practitioners and also the lowest level of confidence in all domains. This highlights that despite the assertion that community practitioners are well placed to manage chronic illness in those with cancer, few of the sample felt confident to do so. Further training needs was identified across all three practitioner groups in late effects, lifestyle change and complex symptom management.

Results from our survey are based on practitioners' self-reported views of their skills and confidence in managing the long term late effects of cancer treatments and therefore has limitations. Practitioners' undergoing self-assessment are known to assess themselves higher than observed and it is debateable therefore whether the skills and confidence perceived by practitioners is a true reflection of competence in practice.

Preparing staff with appropriate skills is important for managing care for the increasing number of cancer survivors and clearly acute care practitioners still provide the majority of this management. Long term follow up will increasingly be managed remotely and integrated to community and primary care provision. The findings from our survey highlight some important priorities and training needs for both primary but also acute care. Training is required as a priority in care planning, managing cancer medications in the adjuvant setting as well as late effects recognition, assessment and management.

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