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A narrative review exploring whether the standardisation of interprofessional oncology education in allied health professional (AHP) training programmes could improve referral rates to supportive services.

Abstract:

Aim: To identify if there are shortcomings in the current oncology knowledge being provided in allied health professional (AHP) training programmes, that could be influencing referral patterns to support services in cancer care.

Methodology: A narrative review was conducted using the databases OVID Medline, Embase, AMED, APA PsycInfo and APA PsycArticles. Using relevant keywords, 54 publications were reviewed of which 24 were considered relevant and a further 15 publications were identified based on the dominant emerging themes. A total of 39 publications are included in the review.

Results: Gaps in knowledge influencing referral were identified in five specific areas; Cancer-related fatigue; Nutrition; Psychosocial Wellbeing; Physical functionality and Palliative Care.

Conclusion: A lack of cancer-specific education is a common reason cited for lack of referral to support services. Cancer-specific education, including focus on the five identified areas in this review, could be easily integrated into existing interprofessional education (IPE) curricula. Standardisation of this oncology IPE at a national and international level is recommended to enable evaluation of its impact on referral patterns to supportive services.

Keywords: interprofessional; education; referral; oncology; cancer; health professional

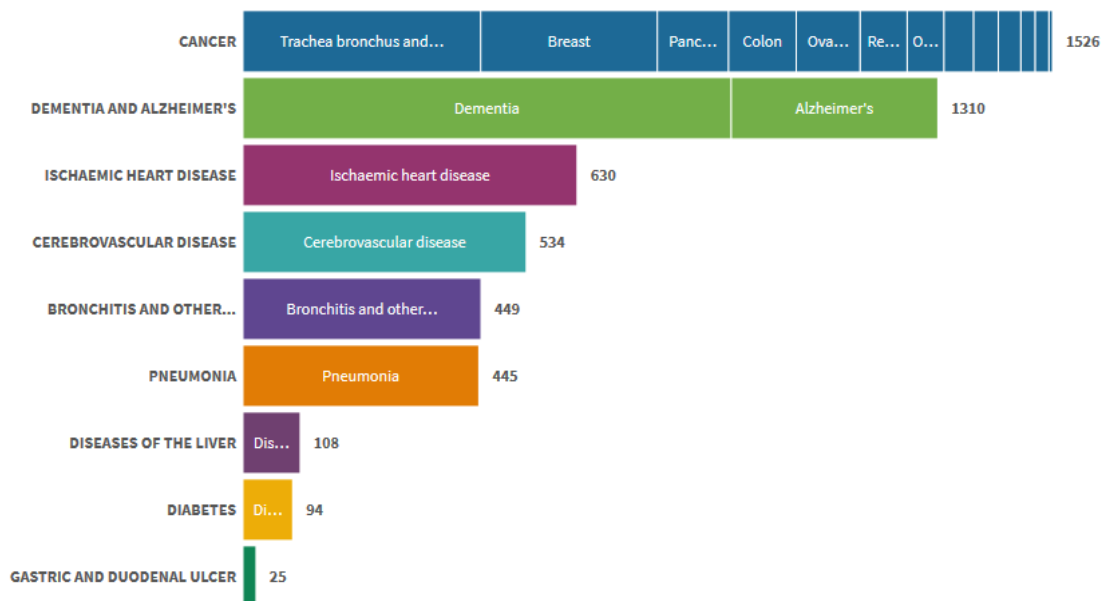
Introduction:

There are fourteen allied health professions in the UK, together forming the third largest workforce in the NHS¹. Over 367,000 new cancer cases are diagnosed in the UK every year² with cancer being one of the leading causes of death³ of all chronic conditions (See Figure 1). Recent work undertaken by Health Education England (HEE) highlighted the unique roles that all 14 AHPs have in the care of oncology patients, demonstrating the importance of each individual AHP in the cancer pathway⁴. While a range of AHPs are involved in many chronic conditions, cancer is one of the few chronic conditions where all 14 AHPs have an active role in some aspect of patient care. Increasingly, patients are living longer after a diagnosis of cancer, which can often result in living with long-term side effects of cancer and its associated treatments⁵. Chronic issues associated with cancer can include physical, cognitive, emotional, relational and social issues initiated and perpetuated by the diagnosis⁶. Each allied health profession provides expertise to physically and/or psychologically aid the recovery of oncology patients and improve their quality of life. Although each AHP profession has its own area of specialism, health professionals also require excellent communication skills along with empathy and sensitivity in order to optimise patient care and wellbeing⁷. However, people with cancer and their carers, often perceive their interactions with health professionals as being uncaring and insensitive⁷. Some evidence suggests that health professionals may feel that the psychosocial wellbeing of the cancer patient lies outside of their professional role and often miss vital opportunities for supporting patients' emotional wellbeing and making referrals to appropriate support services and other allied health professionals^{8,9}. Kam et al.'s study⁹ found that a significant portion of health professionals never referred cancer patients to even

basic help and support, with those who do provide guidance, generally referring patients to a cancer helpline rather than streamlined referrals to other allied health professionals and/or complementary therapies⁹. While it is likely that there are many factors which contribute to AHPs referral patterns, this review is specifically exploring whether knowledge deficits exist which could be affecting referrals and consequently whether introducing additional education in oncology into AHP training programmes, could theoretically improve AHPs' ability and tendency to refer to suitable support services when working with oncology patients. As healthcare providers, it is essential that AHPs collectively are alert to the bio-psychosocial impact of cancer and provide effective support within their scope of practice while making referrals appropriately to achieve a holistic approach to cancer patient care. In order to achieve this, AHPs need to have an understanding of each other's roles. To address the need for increased AHP cohesion, interprofessional education, which involves students from various health-related professions learning together, has been increasingly integrated into undergraduate (omit) allied healthcare programme curricula¹⁰ and IPE initiatives are now established in Canada, the United States, the United Kingdom, Australia, and in many European countries³. Common aims of this education involve improving collaboration between healthcare professionals and increasing their understanding of each other's role¹⁰. However, there is currently no standardization in this education and the content, delivery and length of IPE varies considerably even within each country³.

The aim of this review is to explore if AHP professionals have proficient knowledge to enable them to advise and refer their oncology patients appropriately to support services, including other AHPs. The secondary aim is to use this review to determine suitable content for oncology curriculum if this adaptation is deemed appropriate.

Figure 1



This graph shows the leading causes of death in women in England and Wales in 2018 from chronic conditions. (Age standardised death rates per million women). [Data taken from ONS Death Registration Summary Tables, 2018]³

Table 1: 14 Allied Health Professions in the UK (NHS England)¹

1. Art Therapists.	8. Orthoptists
2. Drama therapists.	9. Osteopaths
3. Music therapists.	10. Paramedics
4. Chiropodists/podiatrists.	11. Physiotherapists
5. Dietitians.	12. Prosthetists and Orthotists
6. Occupational therapists.	13. Radiographers (Diagnostic and Therapeutic)
7. Operating Department Practitioners.	14. Speech and language therapists

Methodology

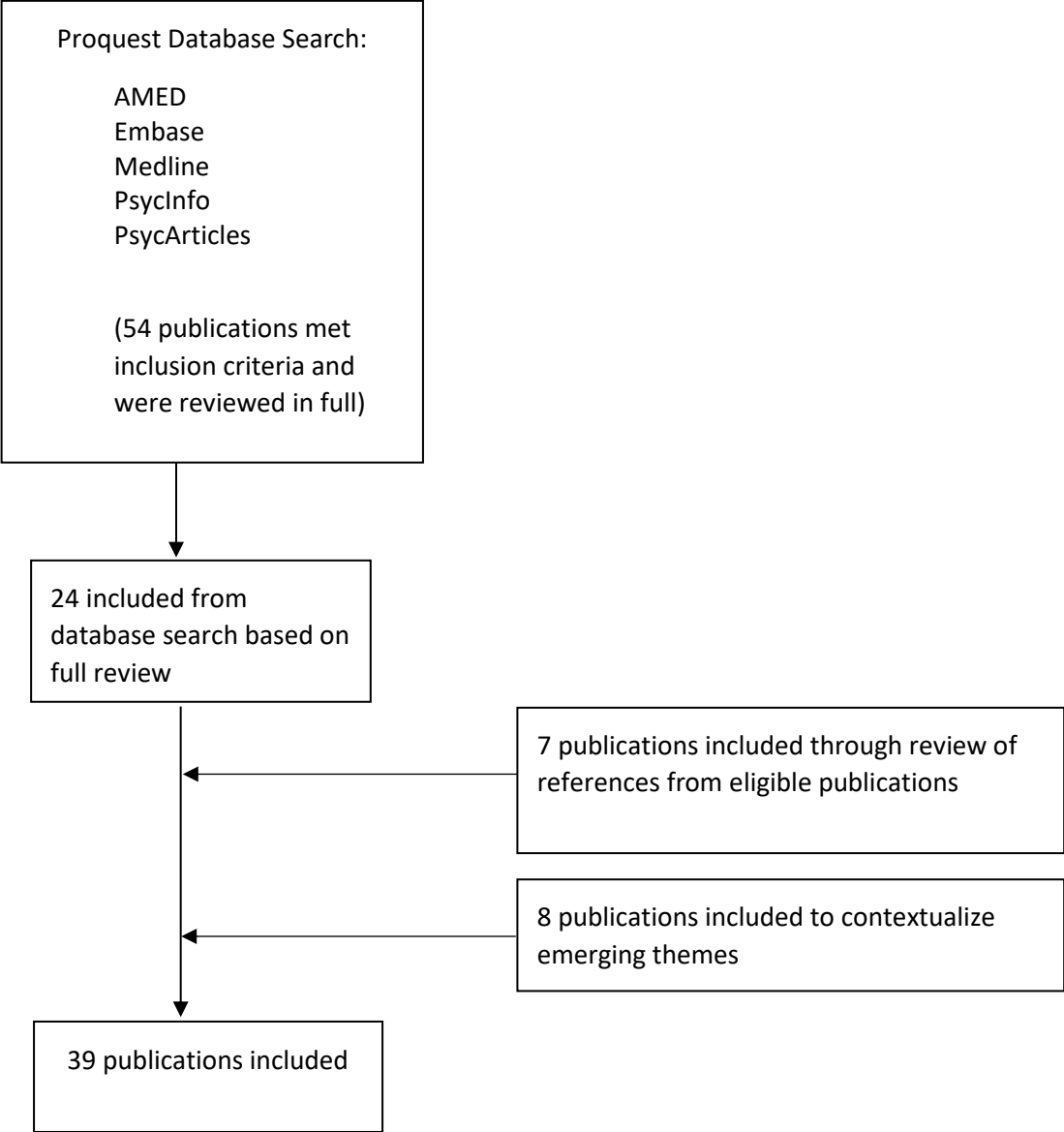
A narrative review was chosen as the most appropriate methodology to elicit themes from the literature as well as enabling contribution based on the authors' own extensive experience¹¹ in teaching oncology and interprofessional education. The narrative review was conducted, following the SANRA checklist¹², using OVID Medline, Embase, AMED, APA PsycInfo and APA PsycArticles databases and included all publications with any of the 14 identified AHPs (including short-hand, abbreviated or alternative options) or 'health professional or health practitioner' in the title with the following keywords in the abstract;

- refer or referring or referral*
- cancer or oncology

Results were limited to 2007-present and English language only, yielding 54 publications. Many studies were excluded due to discussing referral for diagnostic services rather than support services during cancer treatment. Some articles involved nurses or non-allied health professionals and therefore had limited direct relevance to the review. Consequently, 24 of the 54 publications were included. A review of the references within these 24 publications, resulted in the addition of 7 additional publications. 8 further supporting publications were integrated into the review to support and contextualise each theme. Table 2 summarizes all 39 included publications. The authors acknowledge that by its very nature, the narrative review is subject to potential bias but its strength lies in its inclusion of current experience in this field of education and the transparency of the methodology involved. Full methodology details are included in the PRISMA flow chart (Figure 2).

Insert Table 2 here

Figure 2. PRISMA flow chart based on keyword searches described in methodology



Results

This review resulted in the emergence of five dominant areas of clinical practice where referral rates and patterns were directly impacted, at least in part, due to gaps in oncology IPE.

1. Cancer-related fatigue

Cancer-related fatigue (CRF) is now recognized as one of the most common and distressing symptoms of cancer affecting 60-100% of patients^{5,13}. CRF is multifactorial in terms of possible causes including anemia, emotional distress, altered nutritional status and change in activity levels⁵. It has been suggested that this symptom is also partially physiological, due to a reduction in neuromuscular efficiency caused by cancer-associated cellular modifications⁵. The most comprehensive international guidelines regarding CRF were developed by the National Comprehensive Cancer Network (NCCN), recommending regular screening of all cancer patients for fatigue⁵. Despite these recommendations and the prevalence of this condition, assessment and management of CRF by health professionals is poorly executed. An Australian survey, provided to one hundred and twenty-nine health professionals involved in cancer care, showed that only 15% of the participants had received specialist education regarding cancer-related fatigue¹⁴. Twenty-eight percent of participants were not able to list even one intervention for CRF¹⁴. The most common barrier for referral, cited by sixty-three percent of participants, was a 'lack of awareness about possible interventions by referrers'. Due to the physiology of CRF, physiotherapy can play a role in improving fatigue by improving neuromuscular efficiency through tailored exercise programmes and encouraging cancer patients to be active⁵. However, numerous studies have indicated that health professionals are commonly providing inappropriate information in relation to exercise for CRF, encouraging cancer patients to be more inactive^{5,15}. Tolson & Jessop's study¹³, which interviewed 17 therapeutic radiographers prior to an educational intervention, reported that radiographers strongly agreed that more undergraduate training was needed in order for them to effectively manage CRF and that they had gained their CRF knowledge through 'on-the-job experience'. Collectively, these studies highlight a gap in AHP education regarding CRF and its management. Pearson et al.¹⁴ suggest that an 'inter-professional approach using interventions tailored to individuals' needs' is needed to achieve optimal care when managing CRF' (p3521).

2. Nutrition

Cancer and its associated treatments, can have profound effects on the body's metabolism and physiology, often leading to significant changes in nutritional requirements¹⁶. The wide variety of cancers makes this phenomena complex requiring individual patient assessment to gauge specific nutritional needs. Even in patients with localised cancer, the risk of malnutrition is high from the time of diagnosis¹⁷. 'Individualized nutritional advice can improve dietary intake and potentially decrease some of the toxicities associated with cancer treatments.'(p245)¹⁶. Consequently, international guidelines state that the nutritional status of all cancer patients should be checked regularly¹⁷. Despite the key role of dieticians in nutritional support, referral to this specialised service is poor and inconsistent¹⁸ with reports of up to two thirds of malnourished cancer patients receiving no nutritional support¹⁷. Mullee et al.'s¹⁹ survey of 74 cancer patients found that the patients relied mostly on family and friends for dietary advice rather than health professionals. Lorton et al.'s study¹⁷ of referrals to dieticians in Ireland, found that around half of the referrals to dieticians should have occurred earlier as significant weight loss at

the point of referral had already occurred. This finding was supported by Planas et al.'s study²⁰ conducted in Spain, which reported that approximately 67% of hospitalised oncology patients with high nutritional risk at discharge, had not been provided with access to a nutritional specialist. However, none of these three studies^{17,18,19} explored the reasons for these lower/late rates of referral by healthcare professionals to nutritional specialists.

Boléo-Tomé et al.¹⁸ designed a training program for health professionals to enable them to integrate nutrition screening as a routine part of their daily practice when working with cancer patients. A team of dietitians with specialist oncology backgrounds taught various health professionals to use the Malnutrition Universal Screening Tool (MUST) according to British Association for Parenteral and Enteral Nutrition (BAPEN) guidelines. The AHPs involved in this study were 20 Therapeutic Radiographers and their adherence to the assessment post-training was deemed excellent at 80-85%. The MUST tool enables early identification of high-risk patients and the study demonstrated that when provided with the correct skill set, AHPs willingly adapt and refine their approach to cancer patient care in order to ensure the highest quality care for their patients.

Education relating to the variety of causes of nutritional deficiency could be taught in interprofessional modules alongside common nutritional screening tools that can be easily integrated in to AHP daily practice.

3. Psychosocial wellbeing

In general, depression has been found to be higher in patients with cancer, with specific cancers like pancreatic cancer (33-50%), having very high incidences²¹. Consequently, multidisciplinary screening for depression and distress is recommended^{21,22}. Schouten et al.'s study⁶ explored various health professionals' perspectives on their provision of psychosocial care to cancer patients in their roles including barriers to successful provision. From the 368 respondents who fully completed the survey, the vast majority of health professionals did not use a systematic approach when it came to assessing their patients' wellbeing though 97% felt that psychosocial support was part of their role. Worryingly, however, 9% felt that they never give sufficient attention to the psychosocial support of their patients. The three most prevalent support and care interactions offered were: listening (38.5%), providing advice (29.4%) and referring to other services (19.3%). While spontaneous support can be extremely helpful for patients, a systematic approach and referral to dedicated services is key to making a long-term impact on patient wellbeing⁶. Participants expressed feeling that they had insufficient knowledge or education to effectively meet the psychosocial needs of the cancer patient and indicated a limited awareness of referral options. The study also reported that while the majority of AHPs were comfortable providing support related to a variety of psychosocial topics, sexual health was one of the topics which was most infrequently addressed in the clinical setting. Vermeer et al.²³ supported this finding in their research and highlighted additional studies which support the notion that sexual health topics are often considered taboo and avoided in clinical settings due to embarrassment around the subject²³. Aligned to this concept, a study by Dodd et al.²⁴, including 15 health professionals involved with head and neck cancer care, found that health professionals had concerns regarding their knowledge of humanpapillomavirus (HPV) and its associated cancers, resulting in their inability to adequately address patient concerns and questions. One participant commented that "we would be best off receiving some degree of training in terms of how to communicate this information to patients" (p399)²⁴. Given the high

levels of unmet needs related to sexual health, especially post-radiotherapy²⁵, this is an area where AHP interprofessional education might be improved.

Schouten et al.⁶ reported that work-related issues were also infrequently addressed by health professionals. Desiron et al.²⁶ supports this finding adding that cancer patients feel that they are given little support or information from health professionals regarding managing and returning to work. These publications highlight the need for a systematic approach by all healthcare providers and provision of appropriate training for undergraduate healthcare students collectively in this area.

A study by Langbecker and Yates²⁷, elicited responses from 40 patients with brain tumours to access their perspective on referrals to services. While referral to physical rehabilitation services was more common, few patients reported being referred by health professionals to psychosocial support services. Kam et al.'s study⁹ also reported underutilization of psychosocial referrals, finding that only a third of the 72 oncology professionals thought referral to a complementary therapy would be beneficial despite the evidenced clinical benefit of therapies like acupuncture and pastoral care^{28,29}. Participants indicated that their primary reason for non-referral was lack of awareness of services available⁹.

Despite advice from health professionals being one of the most effective methods to encourage people to quit smoking³⁰, Gallaway et al.'s study³¹ found that one third of patients who were smokers during their cancer treatment, did not receive any information from health professionals about smoking. This finding aligned to Odahowski et al.'s³² study, which also reported that only 63% of patients who attended lung cancer screening, were provided with smoking cessation information. Gallaway et al.³¹ recommend that all health professionals involved with the care of the cancer patient, should be responsible for ensuring that patients understand the implications of smoking during cancer treatment and are directed to cessation resources for help.

While the reasons for not referring are not comprehensively investigated in some of these studies, collectively they demonstrate that education regarding optimal psychosocial support is inconsistent with clear gaps in knowledge in certain areas such as sexual health, work-related issues and referral pathways. Discussing sensitive topics interprofessionally within AHP training programmes will help to ensure that these topics are normalised which will help newly qualified AHPs to address all of their cancer patients' concerns.

The Patient and Practitioner Voices Project, conducted by Health England in 2019, revealed that both patients and healthcare professionals felt that they would like to be more knowledgeable about support services which help patients emotionally through their cancer journey⁴.

4. Physical functionality

Through cancer or its associated treatment, many patients report having limited physical function and an inability to complete daily tasks; both of which significantly affect their quality of life³³. For example, toxicity from cancer treatment can increase the risk of falls; especially in older patients^{33,34}. Occupational therapists (OTs) have the potential to limit and reverse cancer-related disability but currently their services are severely underutilized in this population³⁵. One of the barriers to referral to OTs is poor awareness of the role of occupational therapists among other allied health professionals and poor understanding of how to access this service³³. A small UK research study³⁶ which interviewed six

physiotherapists, reported that physiotherapists felt frustrated by the lack of knowledge that AHPs had regarding upper limb movement impairments (ULMI) after breast surgery. They cited that this lack of knowledge often resulted in lack of referral and incorrect information being provided to the patient. Lattanzi et al.³⁷ interviewed patients with breast cancer-related impairments and found a dominant theme to be challenges with obtaining referral. One patient commented "Why don't they tell you to gradually start these exercises? Why don't they do that before rather than waiting till you're, you got this heavy arm, and THEN you go to the therapist?" (p260)³⁷. Reasons for the lack of referral were not discussed in the study.

Another common complication faced by patients with cancer is lymphoedema, which is defined as a persistent swelling caused by lymph fluid buildup due to obstruction, removal or damage to lymphatic vessels³⁸. The cancer itself as well as surgery and radiotherapy both contribute to lymphoedema in a variety of cancers including breast cancer, head and neck cancer and pelvic cancers³⁹. Lymphoedema management includes complex decongestive physiotherapy (CDP), 'which includes manual lymphatic drainage (MLD), compression therapy, exercise, and skin care' (p712)³⁹. In the head and neck region, lymphoedema is associated with restricted neck motion and difficulties with swallowing, compromising nutritional intake³⁸. McGarvey et al.³⁸ state that 'a deeper understanding of the impact of lymphoedema on affected patients might allow health professionals to offer better support and management' (p319)³⁸. Their small study of 10 health professionals found that while referral for lymphoedema associated with breast cancer treatment was relatively common, referral for head and neck lymphoedema was not routine and very uncommon. There was also considerable variation in the healthcare professionals' perceptions of the psychosocial impact of lymphoedema on the patient despite extensive study in this area. This demonstrates knowledge gaps which could be impacting health professionals direct care and referral patterns when working with patients with cancer. Dominick et al.'s study⁴⁰ highlights the importance of referrals of patients with lymphoma to all appropriate services, both during and after active treatment.

5. Palliative Care

Referrals for palliative cancer patients from AHPs have been shown to be particularly low. Jones & Browning's⁴¹ review of referrals of cancer patients to their Art Therapy service, housed within a Palliative Care Resource centre in Wales, found that the majority of referrals to the service were from specialist nurses and palliative care nurses with no referrals during the 2 year period coming from AHPs. Similarly, a physiotherapy service in Ireland found that 73% of referrals to their service over a 6 month period, came from nurses, again with very few referrals from AHPs⁴². An Australian study by Horne-Thompson et al.⁴³ also supported these findings noting that almost half of the referrals of palliative patients to their music therapy, came from nurses with only 16% of referrals coming from AHPs. With music therapists prioritising palliative cancer patients in their workload²⁷, it is vital that AHPs are not missing opportunities to improve the quality of life of patients in their care. Unfortunately, the authors of the studies did not explore the reasons for poor referral from AHPs.

Taylor & Bryan⁴⁴ highlight a number of studies that have shown that little time is spent on palliative care education during undergraduate AHP didactic training. Despite current guidelines stating that palliative care is the responsibility of every healthcare professional that comes into contact with a patient with cancer, one of the main barriers to palliative care is poor knowledge regarding appropriate

rehabilitation for this patient group⁴⁴. Taylor & Bryan's semi-structured interviews with 12 physiotherapists found that participants felt that the word 'palliative' indicated no chance of improvement and therefore were deemed of low priority for physiotherapists⁴⁴. Participants in this study also felt that other health professionals did not refer palliative cancer patients to their service due to their lack of knowledge of the value of physiotherapy for this patient group. Physiotherapists are uniquely positioned to benefit palliative cancer patients when they experience 'musculo-skeletal problems, pain, mobility, neurological dysfunction, and respiratory difficulties' (p334)⁴⁴. A similar pattern emerges when exploring referral patterns of cancer patients to Speech and Language therapists (SLTs). Roe et al.'s survey⁴⁵ of 42 SLT teams found that referrals prior to oncology treatment were high at 71% and remained high during active treatment. However, O'Reilly and Walshe's international survey⁴⁶ of SLTs concluded that the role of SLTs in palliative care is frequently unrecognised and misunderstood and that improved education of health professionals is needed to ultimately improve the quality of care provided to palliative oncology patients. Chahda et al.'s scoping review⁴⁷ also highlights the importance of SLTs receiving foundation knowledge of palliative care in their pre-registration training.

Discussion and Conclusion

The review highlights gaps in oncology knowledge among qualified AHPs based on current undergraduate education and this is likely to be contributing to suboptimal referrals to cancer support services. IPE has been increasingly integrated into undergraduate allied healthcare programmes with common aims of this education involving improving collaboration between healthcare professionals and increasing their understanding of each other's role¹⁰. Given the prevalence of cancer and frequency of AHP involvement with this patient group, there is a need for content specific high quality oncology education across all AHP programmes. Targeted interprofessional education, including the topics discussed in this review, has the ability to improve attitude, confidence and competence in the identified areas of clinical practice.¹³ Throughout the review, it is not always clear what IPE training health professionals have received as participants within any one study are likely to have received their education from one of a number of different universities. Due to the lack of standardisation across the higher education sector, their IPE education is likely to vary considerably. Therefore, it is impossible to understand exactly what training they have had in the area of oncology. By standardising oncology IPE, it could provide a unique opportunity within undergraduate AHP curriculum to improve awareness of AHP roles, increase oncology knowledge and improve understanding of when and how to refer to specialist support services. Having a standard curriculum in place for AHP oncology training would also make comparison of patient outcomes more streamlined for data analysis. Many publications in this review highlighted the lack of AHP understanding of each other's role and appropriate referral pathways. Olson and Bialocerkowski's recent systematic review of IPE education¹⁰, recommends introducing AHPs to each other's role early in IPE education to maximize the effectiveness of early IPE interventions¹⁰. Cancer-specific topics can be introduced much later in the IPE curriculum once students have a greater understanding of how they will be professionally involved with this patient group.

It is important also to consider that, globally, the education and scope of practice of many allied health professions differs considerably¹⁰ and oncology IPE may be difficult to implement. A lack of resources and staff availability, teaching workloads, length of professional education and the leadership of the institution and/or government, are all potential barriers to implementation of this education³.

The review is not suggesting that knowledge is the only obstacle to optimal referral practice to cancer support services. Other barriers reported in this review include inadequate availability of cancer support services, insufficient staff prioritisation of cancer-related conditions, time constraints, and a tendency to view the general practitioner as the patient's care coordinator^{14,48}. In many of the articles cited in the review, no reasons are provided for the low/late referrals to this service. However, this review does highlight that by standardising the oncology content in IPE, we can ensure that AHPs have the knowledge required to enable them to fully access the holistic needs of their cancer patients at various time points and refer to the correct support services to address aspects of care beyond their scope of practice.

The systematic review conducted by Olson and Bialocerkowski, also reported that while many institutes have assessed the impact of IPE directly on the student learning, there is little research into how this IPE translates into clinical practice behaviours which directly impact cancer patient care¹⁰. Following the implementation of new oncology content and supporting assessment into curricula, it is essential that these changes are assessed using patient reported outcome measures (PROMs) in addition to assessing student learning outcomes.

As is often the case with narrative reviews, this review serves to provoke thought around the topic⁴⁹ and encourage educators to consider the potential impact of including standardised oncology education in AHP IPE curriculum alongside other important IPE topics. Gaps in oncology knowledge are evident and without standardisation in oncology IPE education, there will always be a number in the oncology content taught throughout AHP curricula that directly impact the ability of AHPs to holistically support and refer their patients to appropriate support services.

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