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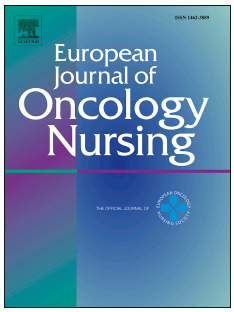

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The Future of Cancer Nursing in Europe: addressing professional issues in education, research, policy and practice

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Abstract

Cancer nursing has evolved to meet the demands of rising cancer incidence, newer and more complex treatment options, and the emergence of specialist roles supporting patients from pre-diagnosis, through treatment, survivorship and end of life care. Nurses are involved in direct and in-direct care of people at risk of, living with and after cancer in diverse contexts. As a result, nurses are positioned to have a significant influence on the processes and outcomes of cancer care, through education, research, policy, practice and leadership. However, nursing and cancer care face challenges, arising from workforce shortages, under-investment in services and under-representation in decision-making. This paper discusses the evolution of cancer nursing across education, policy, research, profession and practice, and sets an agenda for innovation and disruption across these domains to ensure sustainability of cancer care services and care for people living with and after cancer. We argue for the continued advancement of cancer nursing with critical focus on identifying and addressing inequities in role recognition and access to specialist cancer nursing education throughout Europe. Partnership, exchange of learning, and co-design will be central to progressing education, evidence and policy to support future growth in the cancer nursing workforce and embed cancer nurses in research and policy setting at local, national and international levels.

Keywords: Cancer; Nursing; Workforce; Innovation; Disruption; Leadership; Education; Research; Policy; Practice

Introduction

Europe accounts for a tenth of the world's population with 446.8 million, and 25% of the world's cancer cases (European Commission, 2021a; Eurostat, 2022). In 2020, 2.7 million people in the European Union were diagnosed with cancer, and another 1.3 million people lost their lives to the disease (European Commission, 2021a). Without intervention, it is projected that the mortality rates attributed to cancer will increase by 24% by 2035 (European Commission, 2021a). As a result, there have been strong mandates at European level to tackle the burden of cancer, both across Europe and at national level (European Commission, 2021a, b). As the largest group of healthcare providers (50%), nurses interact with people throughout their lifespan more than any other profession (World Health Organisation, 2022). This offers great opportunities to impact people's health and contribute to the mission of the European Beating Cancer Plan and EU Cancer Mission (European Commission, 2021a, b).

Nurses can be seen as the backbone of the healthcare system (Bvumbwe and Mtshali, 2018). Cancer nurses play an important and often-varied role caring for people affected by cancer. Nurses are often the first point of contact for people who are diagnosed with cancer within the healthcare system, and play a pivotal role in cancer care and services (Mitema et al., 2019). There is a growing body of evidence that care delivered by cancer nurses has a positive impact on quality of care and patient outcomes (Campbell et al., 2017; Charalambous et al., 2018; Kelly et al., 2022; Tuominen et al., 2019). Cancer nurses provide essential nursing care, patient, family and community education and support, administer, monitor and evaluate treatment outcomes, identify and manage complications, provide supportive and palliative care, and collaborate on clinical research (European Oncology Nursing Society, 2019; Young et al., 2020).

Cancer nursing is evolving as a profession to meet the demands of rising cancer incidence, newer and more complex treatment options, and the emergence of specialist roles supporting patients from pre-diagnosis, through treatment, survivorship and end of life care (Charalambous et al., 2018; Miller et al., 2022). This evolution has occurred against the backdrop of significant innovation and investment in cancer care and therapies over the past four decades, which have positively impacted on cancer survival rates and outcomes in some regions of the world (Miller et al., 2022; Wild et al., 2020). Innovation, by its definition, refers to new interventions which have the potential to drive change (Fuller and Hansen, 2019; Wild et al., 2020). Many innovations introduced in cancer care and cancer nursing build upon existing processes and practices, with the objective of adding value for patients, healthcare professionals and the systems tasked with delivery of cancer care (Campbell et al., 2020; Fuller and Hansen, 2019).

Beyond the healthcare industry, “innovation” has become synonymous with “disruption” (Callander and Matouschek, 2022; Christensen et al., 2015; Millar et al., 2018). While several notably disruptive innovations have emerged in cancer treatment over the past decade (e.g. CAR-T, Robotic Surgery, etc), rarely is innovation within healthcare systems and cancer care disruptive, such that it results in reforming services or patterns of care so dramatically that they are radically different or distinct from preceding services (Fuller and Hansen, 2019). Nevertheless, innovations in cancer prevention, treatment and care continue to evolve, increasing the complexity of cancer care delivery, and the needs of people living with and after cancer (Boland et al., 2022; Hart et al., 2022). Therefore, the impact of emerging treatments and technologies on the care and outcomes of the person living with cancer should be at the forefront, regardless of the degree of disruption arising from the innovation (European Commission, 2021b). Furthermore, the impact of such innovations upon the education, practice and emerging needs of the cancer care workforce should be a key consideration in the implementation of new approaches to care, particularly in the face of emerging challenges for cancer care (Challinor et al., 2016).

Nurses are the largest profession within the cancer care and healthcare workforce, and work in diverse settings throughout cancer care services across practice, administration, research, education, policy, management and leadership (World Health Organisation, 2020). Despite this, the nursing profession faces significant challenges, including workforce shortages, under-investment and under-representation in decision-making (Challinor et al., 2016; Iro and Catton, 2021; World Health Organisation, 2020). The recruitment and retention of nurses has been further impacted by the COVID-19 pandemic. Since the onset of the pandemic, there has been increasing turnover intention within the nursing workforce, attributable to the emotional impact of the pandemic on healthcare workers, and organisational resilience and system responses, adding to a deteriorating outlook on the global shortfall in nurses forecasted prior to the pandemic (Buchan et al., 2022; Falatah, 2021; World Health Organisation, 2020; Wynne et al., 2021). These developments represent a significant threat to the future of cancer nursing. Given the dispersal and diversity of cancer nursing roles throughout the cancer care health system, the implications of changing workforces will have a detrimental impact on service delivery, patient care and patient outcomes (World Health Organisation, 2020).

How the forthcoming challenges in cancer care and healthcare systems are addressed will not simply be a case of health and education systems doing more of the same. Meaningful system and policy responses to the challenges facing nursing will require meaningful engagement and involvement of nurses, and truly disruptive innovation across nurse education, practice, policy, research and leadership. Furthermore, ensuring equal and consistent recognition and value of the role and unique

contributions of the nursing workforce will be vital. Considering the diversity of nursing roles, horizontally throughout the cancer trajectory, and vertically from bedside to leadership, nurses will be integral to the development and implementation of innovation, with roles as influencers, validators and strategic advisors in healthcare innovation and disruption (Fuller and Hansen, 2019). This manuscript will discuss the evolution of cancer nursing across education, policy, research, profession and practice, and set an agenda and recommendations for future directions for innovation and disruption to ensure sustainability of cancer care services and care for people living with and after cancer.

Education

Nurse education has undergone a significant transformation over the past 150 years, in parallel to significant political, social, technological and professional changes; from the first nurse training programmes established by religious orders in the mid-1800s, to apprenticeship training in the 1900s (Helmstadter and Godden, 2011; McDonald, 2009). EEC directives introduced in 1977 mandated mutual recognition of the professional qualifications of nurses (Directive 77/452/EEC), the specific requirements of nurse training programmes (Directive 77/453/EEC) and comparable and compatible education standards across Europe (Bologna Process Committee, 1999). The 1977 EEC Directives and Bologna Declaration have underpinned some of the most significant developments in nurse education in Europe, including transition to degree-based education, and specialist postgraduate qualifications available in some parts of the word today (Loughrey, 2019; O'Dwyer, 2007).

There is a wealth of research which highlights the benefits of nurses educated to bachelor degree level for more positive healthcare outcomes for patients (Aiken et al., 2008; Aiken et al., 2017; Ball et al., 2018). Despite this, rhetoric suggesting degree programmes erode the quality of nursing care remains pervasive, even 24 years since the Bologna Process (Adams and Smith, 2018; Dean, 2017; Ford, 2018). Much of this discourse coincides with critique of underfunded and under-resourced health systems contributing to clinical safety issues, and burnout among health professionals, which have been further exacerbated by the COVID-19 pandemic (Buchan et al., 2022; Challinor et al., 2020; Falatah, 2021; Furlow, 2020; Mansour and Tremblay, 2019; World Health Organisation, 2020; Wynne et al., 2021). Forecasted shortages in the nursing workforce, and cancer workforce shortages create an increasing need for interventions which serve to attract and retain nurses (Challinor et al., 2020; Kelly et al., 2020). In the context of increasing incidence of cancer, and improving survival rates, specialist cancer nurses will continue to play a critical role in care and support for people at risk of cancer, and living with and after cancer, underlining the particular need to increase

recruitment and retention of nurses to the specialist field of cancer care (Kelly et al., 2020; Pilleron et al., 2021; Sung et al., 2021).

Cancer care is a highly specialised field of nursing practice, which requires a higher level of training and competence, beyond undergraduate education (Challinor et al., 2016; Ross and Burrell, 2018). There is consensus that specialist education in cancer nursing (and other specialist areas of nursing) should be competence-based (Breast Cancer Now, 2020; European Oncology Nursing Society, 2022; Royal College of Nursing, 2019, 2022; Vila et al., 2017). However, throughout Europe, there remains little agreement regarding the specialist role of cancer nurses, and the elements of education and training which are required for specialization and the continued growth of the profession (Campbell et al., 2017; Kelly et al., 2022; Kelly et al., 2020). The implementation of specialised training in oncology nursing differs greatly between eastern and western Europe (Challinor et al., 2020; European Oncology Nursing Society (EONS), 2020; Kelly et al., 2020). Economic and linguistic disparities throughout the European region present further barriers to specialist education, hindering mobility and access to specialist training provided within the European region (Drury and Diez de Los Rios, 2021). Furthermore, a lack of cross-recognition of professional registrations between countries within Europe creates additional barriers for those who wish to undertake specialist clinical programmes in oncology in countries where they are available (Kelly et al., 2020).

Cancer care and cancer nursing roles are becoming increasingly complex, and there is a growing requirement for specialist and advanced practice nursing in the area of oncology to address service demands (Campbell et al., 2019; Challinor et al., 2020; Kelly et al., 2020). Specialist education and training will remain key factors to enable advancement of nursing practice throughout Europe into the future, to ensure that cancer nurses are prepared to meet the varied, often long-term and end-of-life care needs of people affected by cancer (Klemp et al., 2011). However, when considered in the context of economic, linguistic and geographical barriers both within Europe, and internationally, we must evaluate whether current approaches to basic nursing education, and subsequent specialist education of cancer nurses, and the cancer workforce more broadly, are fit for purpose. This has implications not only in Europe, but across the world, and particularly in low and middle income countries, where the burden of cancer is predicted to increase by more than 60% by 2030 and deficits in the nursing workforce will be most significant (Azad et al., 2020; Challinor et al., 2016; Duncan et al., 2019).

Workforce capacity-building for cancer nurses will be fundamentally underpinned by initiatives that enhance access to basic and specialist nurse education. However, nurse education has been shaped by dominant ideologies, from its earliest iterations as assistants to physicians (Group and Roberts,

2001); as nurse education has evolved, discourses have been heavily influenced by power relations, patriarchy, colonialism and heteronormative perspectives (Browne, 2001). These discourses are core to the socialisation of nurses and cancer nurses; and a failure to recognise diversity within the nursing workforce will result in the marginalisation of underrepresented groups, both within our profession and patient population, in a political landscape where workforce diversity has been labelled a priority (Shalala et al., 2011).

To ensure high-quality nurse education, training and care, clinical and higher education institutions must make a commitment to developing cultures that value diversity and inclusion (Cary et al., 2020). There are several national and international standards and competency frameworks which provide guidance regarding the fundamental knowledge, skills and competencies required by nurses who care for people affected by cancer (Breast Cancer Now, 2020; European Oncology Nursing Society, 2022; Lubejko and Wilson, 2019; Macmillan, 2020; Royal College of Nursing, 2019, 2022). However, there remains challenges to the consistent implementation of educational standards, and nurses' access to specialist education, particularly within the European region where nursing practice and educational requirements are regulated at a national level (Challinor et al., 2020; Drury and Diez de Los Rios, 2021; Drury et al., 2022; Drury et al., 2023b; European Oncology Nursing Society (EONS), 2020; Kelly et al., 2020; Lahtinen et al., 2013). Furthermore, there are gaps in evidence demonstrating the clinical and educational effectiveness of cancer nursing education frameworks (Campbell et al., 2019).

In the context of nurse education, a shift is required to recognise and cater to diversity in learning styles and enhance access to (and accessibility of) basic and specialist education in nursing. Disruption is essential to ensure equity in the distribution of knowledge, resources and power to foster inclusive approaches to nurse education and professional development (Gilmore et al., 2022). Three key strategies are required to promote equity in nursing education, particularly at graduate level: 1) enhanced accessibility of education; 2) recognition of specialist cancer nursing qualifications, 3) development and co-design of open access education for cancer nurses. Universal design for learning (UDL) is one mechanism to support inclusion and accessibility in learning. UDL advocates for teaching and learning strategies which enables students to engage with learning based on needs and strengths, and to acquire and demonstrate essential skills, knowledge and competence in a variety of ways, via multiple means of i) engagement, ii) representation and iii) expression, providing greater opportunities for learner success (CAST, 2011; Gilmore et al., 2022).

Evaluation of clinical competence is a critical feature of specialist nursing education. However, it will remain difficult to achieve role recognition and development of specialist and advanced practice

nursing roles in cancer care in countries where such qualifications are not available or not recognised. In countries where specialist cancer nursing qualifications are unavailable or remain unrecognised, digital micro-credentials and continuing professional development programmes provide a valuable opportunity for personal and professional development. However, practical, economic and linguistic considerations are key to ensure the accessibility of these programmes to nurses who need them most will be critical to their value and success (Drury and Diez de Los Rios, 2021; Drury et al., 2023b). Low and Middle Income Countries (LMICs) represent those with some of the greatest need, with cancer burden estimated by more than 60% by 2040 (International Agency for Research on Cancer, 2020). Therefore, development of programmes must take into consideration the needs of LMICs where there is a significant need for capacity-building within the cancer nursing workforce, to support development of core, specialist and advanced practice skills and expansion in the scope of nursing practice (Challinor et al., 2020).

Consultation with experts by profession and experience in specialist areas of cancer nursing and use of co-design methodology will ensure that curricula developed within the sphere of cancer nursing will be relevant and sensitive to the diversity of needs of nurses and patient groups throughout European countries, and beyond (Drury et al., 2023a; Drury et al., 2022; Drury et al., 2023b). Investment and innovation will be necessary to find creative solutions to barriers of competence assessment within remote learning programmes. The development and implementation of clinical and academic nursing fellowships, simulation-based learning and assessment, and formal mentoring programmes each offer potential solutions to these challenges; however, policymakers, regulators and employers must be engaged in the development and implementation processes to ensure that the product of such initiatives can impact the development and advancement of nursing roles (Ann de Villiers et al., 2019; Gillett et al., 2022; La Cerra et al., 2019; Lee et al., 2014; Loke et al., 2014; Mazzella Ebstein et al., 2020; Motola et al., 2013; Struksnes and Engelien, 2016)

Research

The transition of nursing qualifications to university level education across the Europe, has created a need for a new nursing workforce capable of engaging in teaching, learning, research and scholarly activities (Jackson et al., 2011). Nursing is a relatively new entrant to academia, and critiques of nursing as lacking a theoretical evidence base are extensive, compounded by a dearth of doctorally-prepared nursing academics (Carroll, 1998; Kessenich et al., 1997; Ketefian and Redman, 2015; McInerney and Suleman, 2010; McNamara, 2010; McNamara et al., 2010; Pravikoff et al., 2005; Yam, 2004). Over the last two decades, nursing academics have endeavoured to advance nursing science, and significant efforts were made to support nursing faculty to achieve PhD-level education (Begley

et al., 2014; Finotto et al., 2013). These developments are providing a new foundation for nursing knowledge, and driving continued developments within the profession, including increasingly autonomous nursing roles (Department of Health, 2019; Heale and Rieck Buckley, 2015).

Undergraduate and postgraduate nursing programmes include research modules; however, these modules are often delivered independent of clinical theory modules, and there are limited efforts to integrate research into clinical research modules (Horntvedt et al., 2018). The ability to critique and interpret research is a basic nursing competence, and at specialist and advanced practice levels, competence in the design and conduct of clinical research and evidence translation are core skills (European Oncology Nursing Society, 2022; Lal, 2021; Latter et al., 2019; Lubejko and Wilson, 2019; Royal College of Nursing, 2019, 2022). Yet, the segregation of evidence critique from clinical practice curriculum appears to contribute to issues including students' undervaluing the importance of evidence to support practice, use of poor-quality sources and misinterpretation of research in practice-based assessments. While nurses' express interest in research activity, there remains barriers to nurse-led research activity, including time, research culture, mentorship, leadership, funding, research supports and confidence in research skills (Cordrey et al., 2022; Scarsini et al., 2022; Siedlecki and Albert, 2017). Furthermore, nurses roles in clinical research are often conceptualised as supporting, rather than leadership roles; and it is imperative that the distinction between clinical research nursing roles and nursing research roles are clearly articulated if the expectation for clinical nurses to be engaged in research to support quality improvement is to be realised (Flocke et al., 2017; Jones, 2015).

Nurses play a key role in cancer prevention, cancer care, survivorship and palliative and end of life care; and nursing research has played a pivotal role in advancing understanding of the experiences of people who are living with and after cancer and in the development and implementation of interventions to promote quality of life at all stages of the cancer trajectory (Campbell et al., 2020; Campbell et al., 2019; Ives Erickson and Pappas, 2020; Lal, 2021). Despite the presence of research teaching within nursing curricula, studies have demonstrated that between 0% and 5% of specialist nurses time is spent on research activity, and as low as 2% in the oncology context (Latter et al., 2019). Further factors influencing nurses' engagement in research activity arise from underdevelopment of research training programmes, opportunities for clinical-academic career pathways, and access to funding to support nurse-led research (Cordrey et al., 2022; Ferguson et al., 2021; Scarsini et al., 2022). More than three-quarters of nursing publications indexed in Web of Science between 2009 and 2017 did not declare research funding support (Kokol et al., 2019). However, nursing studies with funding published within this period were predominantly undertaken within the USA, UK and Australia (Kokol et al., 2019; Zhu et al., 2021).

Considering the barriers to nursing research, and disparities in the geographical location of published nursing research, strategies must be developed to enhance the representation of the diversity of nursing researchers within research funding, research conduct and dissemination. There are disparities in access to specialist nursing education and implementation of specialist roles within Europe (Campbell et al., 2020; Campbell et al., 2019; Kelly et al., 2020). These disparities in research education and training undoubtedly contribute to discrepancies in nurse-led research within countries which are most underserved. Furthermore, within the European area, hetrogeneity in languages and English literacy may also present a further barrier to dissemination (Drury and Diez de Los Rios, 2021; Drury et al., 2023b).

As a first step towards addressing the education-practice gap, greater innovation is required in research teaching practices to support interest and application of knowledge and skills; the principles of universal design for learning again have relevance in this context, supporting students to develop confidence in critical appraisal skills through formative peer assessment strategies (De Brún et al., 2022). In countries with limited access to specialist education, particularly Masters-level education, efforts are needed to provide access to research training, funding and mentorship through international partnerships which can support the development of resarch capacity within nursing for these countries. With research identified as a core nursing competency, there is a need for clinical organisations to integrate research activity within nursing roles, through evidence-based practice initiatives and supporting nurses to engage in research at all levels of nursing, for example through buy out of clinical time and seed funding. Mentorship and access to research support infrastructure are a fundamental barrier to clinical research activity among nurses (Cordrey et al., 2022; Scarsini et al., 2022; Siedlecki and Albert, 2017). Providing clear pathways for nurses working within clinical settings to secure mentorship for research activity is essential; collaboration agreements with academic partners and strategic investment in clinical-academic appointments provide opportunity to integrate mentorship and access to research infrastructure (Ferguson et al., 2021). Finally, efforts must be made to evaluate and articulate the impact of nursing research; to demonstrate return on investment, and value of nurse-led cancer research to society (Campbell et al., 2019).

Policy

Nurses are often at the forefront of policy implementation, and are uniquely positioned to see the impact of health policy on people at risk of cancer, and people living with and after cancer, and their families, and the general public in various contexts (Kunaviktikul, 2014). Nurses interact with people throughout the lifespan, and are equipped with skills to identify, understand, and act on issues and

inequities that influence health and wellbeing, including social, cultural and economic determinants of health (Edmonson et al., 2017). These skills and experiences, in combination with specialist, higher level education position nurses as powerful advocates for change within their workplace, nursing organisations, government agencies, or directly with political stakeholders to address health inequities (Alhassan et al., 2019; Brokaw, 2016; Kunaviktikul, 2014; Sarnkwawkum and Oumtanee, 2019). National and international organisations advocate for greater activism from the within the nursing profession and greater opportunities for nurses to influence policy (Boschma, 2014; International Council of Nurses, 2012, 2019; Khoury et al., 2011; Salvage and White, 2019; World Health Organisation, 2020).

Despite the recognised value of nursing contributions to policy making, and an increasingly skilled and educated nursing workforce, several studies highlight the limited involvement or influence of nurses in policy making at local, national and international levels, even at advanced practice and leadership levels (AbuAlRub and Foudeh, 2017; Ahoya, 2016; Juma et al., 2014; O'Rourke et al., 2017; Rasheed et al., 2020). Factors that influence nursing engagement in policy making include power dynamics influenced by professional and managerial hierarchies, confidence, education, motivation, interest and understanding of the processes and opportunities for involvement in policy (AbuAlRub and Foudeh, 2017; Ahoya, 2016; Asuquo, 2019; Hajizadeh et al., 2021; Juma et al., 2014; Rasheed et al., 2020; Shariff, 2014). Where opportunities arise for nurses to become involved in formal policy initiatives, their views may be undervalued, marginalised or overlooked within political fora, or adopt passive roles within policy development and implementation (Alhassan et al., 2019; Asuquo, 2019; Hajizadeh et al., 2021; Juma et al., 2014; O'Rourke et al., 2017; Rasheed et al., 2020; Shariff, 2014).

Nurses have the potential to play a critical role as change agents (Sarnkwawkum and Oumtanee, 2019). However, to actualise this potential impact, efforts are needed to position, empower and engage nurses at all levels. As a first step towards fostering a culture of policy engagement among nurses is to showcase and role model nursing activism in policy making at all levels. Acculturation to nursing roles in policy making and socialisation to political activism at formative points during education and initiation to the workforce are essential to support this. The COVID-19 pandemic has disrupted nursing roles, and spawned much activism within nursing practice and engagement in policymaking to effect positive adaptations to the healthcare services, and ensure continuity and quality of service delivery for cancer patients (Turale et al., 2020). Despite the impact of the pandemic on nurses' engagement in policy making; nursing leadership in policy development prior to, and independent of the pandemic must not be overlooked. The evidence of impact of nursing research, clinical practice and advocacy efforts on advances in national and international policies

related to patient safety, occupational safety and recognition of specialist cancer nursing roles are extensive (Aiken et al., 2012; Directive 2022/431, 2021; European Oncology Nursing Society (EONS), 2018, 2020; Kutney-Lee et al., 2015; McHugh et al., 2013; Sharp et al., 2019; Ullgren et al., 2021; Ullgren et al., 2020).

As we shift to a new cancer policy landscape, we must take this opportunity to consider where nursing fits within national, European and international policy initiatives. The EU Cancer Mission (European Commission, 2021c) and Europe's Beating Cancer Plan (European Commission, 2021a) provide a significant foundation for research and innovation in the field of cancer care in Europe; the potential for nursing to contribute to the implementation of these major European strategies must be leveraged. Nurses have a significant role to play in cancer prevention, early detection, promotion of equitable cancer care and ourcomes, and improving quality of life and delivery of high-quality cancer care from diagnosis to survivorship (Charalambous et al., 2018; Kelly et al., 2022; Sarnkwawkum and Oumtanee, 2019).The European Cancer Groundshot, Europe's Beating Cancer Plan and EU Cancer Mission make strategic recommendations to address under-funded and under-researched topics in cancer care, including cancer prevention, quality of life and cancer survivorship (European Commission, 2021a, b; Lawler et al., 2022); areas which have been the domain and long-standing priorities of nursing research and clinical practice (Bradford et al., 2022; Jones et al., 2021; Von Ah, 1969; Zanville et al., 2021).

With strong frameworks in place to support advancement in these strategic priority areas, there is a significant opportunity to leverage this agenda to advance nursing practice, including specialist education, role recognition and leverage funding streams to support strategic programmes which have short- and long-term impacts on policy and patient outcomes at all levels. To ensure the pathway to impact and translation of learning from innovations in nursing practice and research are realised, engagement in the development of timely and targeted policy briefs is essential (Benton et al., 2020). The nursing workforce must now mobilise to ensure that the imminent implementation of European cancer policy is influenced and shaped by nurses at national and international levels. A critical priority to achieve this is to undertake a comprehensive priority-setting exercise for cancer nursing throughout Europe and at national levels which are aligned with national and European policies to ensure nursing is positioned to leverage the opportunities (European Commission, 2021a, b; Lawler et al., 2022).

Profession and Practice

As nursing faces unprecedented workforce shortages over the coming decade, it is essential that the nursing profession, regulators, employers and governments recognise the potential contributions of

nurses at all points in their career from newly qualified nurse to advanced practice and leadership roles (Challinor et al., 2016; Iro and Catton, 2021; World Health Organisation, 2020). The last three decades have seen significant developments in cancer treatment modalities and care models which have influenced the expansion and diversification of cancer nursing roles, including greater substitution of roles and more independent roles for nurses throughout the cancer continuum (Department of Health, 2019; Heale and Rieck Buckley, 2015; Kelly et al., 2022; Kelly et al., 2020; Young et al., 2020). Increasingly complex and personalised cancer treatments, nurse-led models of care and transitions to out-patient-based care have created need for an increasingly specialised cancer nursing workforce internationally (Clauser et al., 2011; Latter et al., 2018). However, there are emerging challenges surrounding nursing roles, particularly in countries where "nurse" is not a consistently protected title (Carter, 2010; Leary et al., 2017). In the absence of a protected title for nursing, confusion in role and registration requirements, qualification, and scope of practice have arisen, undermining the recognition of specialist and advanced practice roles in nursing (Leary et al., 2017). Furthermore, this creates a basis for the erosion of nursing roles, particularly leadership roles; to address nursing workforce shortages; in the absence of a protected title, healthcare and other workers who are not registered nurses can and have been recruited to fill nursing vacancies (Leary et al., 2017).

In the face of emerging workforce challenges, the contribution of registered nurses to patient care must not be overlooked. Europe makes a significant contribution to the evidence-base for nurse-led cancer care addressing physical and psychological wellbeing (Charalambous et al., 2018). More than half of clinical trial studies evidencing nurse-led cancer care originated within Europe, utilising face-to-face, online and telephone-based care models involving direct patient care, psychological support, teaching, assessment, monitoring and case management (Charalambous et al., 2018). These interventions showed significant effectiveness across several cancer symptoms including fatigue, nausea and vomiting, constipation, depression, anxiety and mood when compared with usual care (Kelly et al., 2022). However, it is difficult to compare the outcomes of the intervention studies due to heterogeneity in outcome measures. To ensure the impact of cancer nursing interventions are effectively captured, a minimum core dataset for measuring the outcomes of cancer nursing interventions is essential to strengthen the quality of nurse-led intervention studies. Furthermore, multi-national studies, including countries with varying recognition of specialist and advanced cancer nursing roles is necessary to understand disparities in care and provide a greater evidence-base for specialist and advanced practice capacity-building within these countries.

Given the evidence for the positive impact of nurse-led interventions on symptom management and supportive care outcomes for patients with cancer, there is a basis to argue that well-trained cancer

nurses are a core component in the delivery effective supportive cancer care (Kelly et al., 2022). However, in the absence of consistent access to specialist cancer nurses throughout Europe, the recruitment and retention of cancer nurses must be a priority to ensure the achievements in cancer-related outcomes can be sustained (Breast Cancer Now, 2019). While pay and conditions are often the focus of narratives surrounding workforce retention, issues of recruitment and retention are often more complex (Kelly et al., 2020; Lagerlund et al., 2015). For example, among early career nurses, adjustment and acculturation to the profession, access to continuing professional development, access to mentorship and supportive practice environments are factors which influence intention to leave nursing (Cosgrave et al., 2018; Flinkman and Salanterä, 2015; Hussein et al., 2017; Kelly et al., 2020; Laschinger et al., 2009; Mazzella Ebstein et al., 2019; Price and Reichert, 2017; Rudman and Gustavsson, 2011; Sexton et al., 2008). Meanwhile, interventions to address retention of early career nurses may only superficially address these issues, focusing on short-term objectives through orientation and internship, rather than long-term career planning (Barhate and Dirani, 2022; Brook et al., 2019; Drury and Diez de Los Rios, 2021). Interventions to address recruitment and retention require targeted, co-designed interventions for the specific populations they wish to serve. Understanding the diversity of the unmet needs experienced within the cancer nursing workforce is essential to the tailoring of interventions to support retention of cancer nurses, and in the longer-term, the advancement of the profession.

Conclusion

The impact and legacy of the COVID-19 pandemic have created significant challenges for the nursing workforce, following significant evolution and advancement in cancer nursing roles and recognition (Charalambous et al., 2018; Miller et al., 2022; Wild et al., 2020). As we look to the future for cancer nursing, we must combine and leverage learning from the pandemic, integrating the achievements in progression of cancer nursing and the spirit of disruption and innovation within healthcare which has been sparked by the pandemic. While we argue for the continued advancement of cancer nursing; the focus must shift to addressing inequities in the role recognition and access to specialist education throughout Europe and globally. Partnership, exchange of learning, and co-design will be central to progressing education, evidence and policy to underpin shifts in recognition of cancer nursing, support growth in the cancer nursing workforce and embed cancer nurses in policy setting at local, national and international levels. To achieve this vision for cancer nursing; we propose that disruption is needed to shift the status quo, and ensure that activities which seek to build nursing capacity in education, research, policy and practice contexts are relevant and sensitive to diversity within the nursing workforce, and the patients, families and communities they serve.

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