The Oncology Clinical Nurse Specialist

Subjects: Health Policy & Services

Contributor: Ori Kapra , Noam Asna , Mazal Amoyal , Osnat Bashkin , Keren Dopelt

The role of a clinical nurse specialist in oncology varies greatly between healthcare systems, and implementing this healthcare role with its multifaceted and co-existing responsibilities may prove challenging. While already integrated into healthcare systems and services in several European countries, Asia, Canada, and the United States, other countries are just beginning to develop clinical nursing specialties.

clinical nurse specialist advanced nurse practitioner oncology

1. Introduction

A clinical nurse specialist is “an Advanced Practice Nurse who provides expert clinical advice and care based on established diagnoses in specialist clinical fields of practice” [1]. The role includes diverse components, operating together, including providing information, counseling and support; managing care; and engaging in research, teaching, and service developments, usually focusing on leadership and education [2][3]. The requirements and training for clinical nurse specialist roles vary significantly between countries and even between different states in the United States. Responsibilities, supervision, and the ability to work independently without a doctor’s supervision also vary between countries.

There have been several attempts to analyze the clinical nurse specialist role, with the aim of creating a normative framework to organize its diverse, multifaceted, and co-existing responsibilities. The United Kingdom’s Royal College of Nursing [4] has proposed that, depending on clinical specialty, a clinical nurse specialist role should be 67% clinical, 21% administration, 6% education, 4% research, and 2% consultation. Bryant-Lukosius et al. [5] observed that oncology advanced practice nurses in Ontario undertake roles combining all the above components with a high degree of role variability, yet, on average, allocate most of their time to providing direct clinical care (62.7%), education (13.0%), organizational leadership (11.5%), research (6.7%), and scholarly and professional development (6.5%).

Internationally, the absolute minimum requirement for oncology clinical nurse specialist roles is a master’s degree in nursing, which includes courses in oncology. Healthcare systems in different countries vary in their additional requirements for oncology clinical nurse specialist roles. The Japanese certification board stipulates that oncology clinical nurse specialist candidates must have 5 years of clinical experience (including 3 years in a defined specialty area, at least one post-graduation), and that oncology clinical nurse specialists must reapply to the certification board every 5 years for license renewal [6]. In contrast, in the United States, standardized clinical experience requirements are seldom stipulated, a situation that has prompted national-level strategies to help newly graduated oncology clinical nurse specialists who have just arrived in an oncology clinical setting, including a web-based training program [7].

While the role of the clinical nurse specialist is integrated into healthcare systems and services in several European countries, Asia, Canada, and the United States, other countries are just beginning to develop clinical nursing specialties [8]. Many studies suggest that oncology clinical nurse specialists with experience of treating cancer patients likely have the most suitable skillset to provide an efficient and dignified therapeutic response to cancer patients in their lengthy, complex, and often frustrating journeys. For example, the assistance of an oncology clinical nurse specialist to help meet the goals of rapid cancer diagnosis and treatment is viewed as essential to the United Kingdom’s National Health Service [9].

2. Global Situation Regarding the Role of the Clinical Nurse Specialist in Oncology

- The United States

Oncology clinical nurse specialists in the United States (often referred to as oncology nurse practitioners) are graduates with a master's degree in nursing with expertise in oncology and the treatment of a defined patient population [10]. They are trained to provide comprehensive care, including various expert-level skills, such as taking a patient's medical history, ordering and interpreting medical examinations, making a diagnosis, providing acute and chronic treatment, managing cancer symptoms, and prescribing pharmacological and non-pharmacological treatments (chemotherapy, narcotic drugs, psychotherapy, and support frameworks) [11]. The scope of an oncology clinical nurse specialist's role is not defined by the work environment but by the needs of the patient [10]. Oncology clinical nurse specialists are exceptional among healthcare providers in terms of their ability to establish a high degree of trust with patients, including forming relationships that last for many years [12]. This high level of trust, which is also expressed in terms of high satisfaction ratings by patients who are treated by oncology clinical nurse specialists [13], provides specialist nurses with special opportunities to implement behavioral modifications in the treatment and prevention of cancer while being sensitive to a patient's psychosocial condition [14]. These include behavior modifications that are perceived by patients and healthcare services as impossible to implement or as not being important enough [15]. In addition to the reported patient satisfaction rates, it seems that in the United States, there is also an economic rationale for expanding and improving the oncology clinical nurse specialist role, since such nurses can not only administer high-quality treatment and potentially reduce high patient costs, but are also less expensive to hire compared to doctors [13]. In the vast majority of cases, advanced nursing degrees in the United States offer only ancillary courses in oncology, and this specialty is not the main focus of the degree. This is reflected in surveys, which indicate that that the majority of nursing students at the start of their careers do not feel qualified to deal with clinical issues such as chemotherapy, toxicity in drug administration, or emergency treatment [16]. The National Cancer Institute has funded the establishment of network-based programs, and researchers aim to bridge this gap by assisting oncology clinical nurse specialists who have just entered the oncology care environment [7]. To address the issue of nonstandard training, efforts are being made to create a national standard for the certification and licensing of nurse experts, which includes the renewal of oncology clinical nurse specialist licenses. However, as of 2018, fewer than half of all states in the United States operate according to a uniform standard for registering specialist clinical nurses [11].

- Canada

According to the Canadian Association of Nurses in Oncology [17], an oncology clinical nurse specialist is "a licensed nurse with at least a master's degree who has acquired in-depth knowledge and clinical experience in oncology". The Canadian Nurses Association distinguishes between clinical nurse specialists (an established profession in Canada that developed within a hospital setting no later than the 1960s in a variety of specialties, including oncology) and a relatively new type of specialist clinical nurse known as an advanced nurse practitioner, a role characterized by a combination of different degrees of professional knowledge including education, organizational leadership, research, direct patient care, and professional learning and development [17]. This type of oncology clinical nurse specialist role, unlike the older clinical nurse specialist roles, is not limited to the organizational boundaries of the hospital but has a higher level of autonomy and is an expression of innovation that only began to emerge in the 21st century [5]. The two subtypes of oncology nurse in Canada (clinical nurse specialist and advanced nurse practitioner) both shed light on the oncology clinical nurse specialist profession since the Canadian case demonstrates that even countries with an apparently rich history of implementing this role have only recently responded to innovative applications of it, similar to countries that first need to make improvements to oncology nursing [5]. New studies have ascertained that the Canadian healthcare system, like those in most Western countries, faces difficulties in implementing innovations in the oncology clinical nurse specialist role in ways that also affect the satisfaction of clinical nurses specializing in oncology in their roles [18]. The main challenges that have been identified include poor understanding of the role by decision makers, lack of clarity about the role, lack of support from management, and misunderstandings of medical staff [19][20]. In studies that preceded the implementation of nursing reforms in European countries, such as in Ireland, it is often argued that the Canadian experience demonstrates that the oncology clinical nurse specialist is an established role [21], while ignoring calls to address new challenges that would allow better definition, planning, and implementation of the clinical oncology specialism in nursing [5]. A comprehensive poll conducted in the province of Ontario shows that of the 77 oncology clinical nurse specialists working in the province, 33% were considering leaving their profession or were actively looking for a new job, and there was agreement among administrators in the province that "new ways of working" were needed in order to establish a cancer care system that was high quality, efficient, and patient-centered [22].

- United Kingdom

Improving the cancer patients' experiences is a priority for the National Health Service in the United Kingdom. As part of this, the management of care by oncology clinical nurse specialists is central to the National Health Service strategy. According to an English population-based study using linked data from the National Cancer Registration and Analysis Service and patient experience questionnaires by the National Cancer Patient Experience Survey, of 100,885 colorectal, lung, breast and prostate cancer patients who were diagnosed between 2010 and 2014, 91.4% received a referral to a named clinical nurse specialist in one of the first stages of diagnosis or treatment [23]. The researchers suggest that providing patients with a name for their oncology clinical nurse specialist allows a relationship to grow more quickly immediately post-diagnosis, which especially helps mitigate patient frustration with the Sisyphean process of describing their concerns and needs to a large number of clinicians during a difficult time in their life and that of their family. Alongside providing direct care for patients, oncology clinical nurse specialists in the United Kingdom have played an important role in improving cancer treatment services and speeding up the diagnosis process [24][25]. An oncology clinical nurse specialist who helped establish an emergency oncology service at the Royal Liverpool and Broadgreen University Hospital NHS Trust has stated that, "The patient is at the heart of what I do, whether it be providing information, explanations, holistic support, reassurance, and bringing together all disciplines to make an informed and timely plan for the patient and treating team" [26]. According to the National Cancer Patient Experience Questionnaire, referral to an oncology clinical nurse specialist increased the sense of involvement in treatment decisions by an odds ratio of 2.69 for colorectal cancer, 2.41 for lung cancer, 2.68 for breast cancer, and 2.11 for prostate cancer (adjusted odds ratios for age, ethnicity, area, socio-economic deprivation, route to diagnosis, stage, and in lung and colorectal, sex). For all types of cancer, there was a distinct effect of referral to an oncology clinical nurse specialist in terms of feelings around care coordination, being treated with respect and dignity, and improved feelings in relation to National Health Service treatment.

While specialist clinical nursing in oncology is not new in the United Kingdom, the responsibilities of oncology clinical nurse specialists have gradually expanded with the encouragement of the National Health Service, with the stated aim of improving patient experience. However, at the same time, there is a high degree of heterogeneity and often confusion [2][27] among oncology clinical nurse specialists. It seems that the United Kingdom's Department of Health's Cancer Reform Strategy [28] was the clearest recommendation to increase autonomy and flexibility in relation to the National Health Service and to generate innovation to improve patient choice of different services under the management of a medical center, which is one of the key recommendations in the document. A survey of 103 medical centers found that most (76%) served as clinical leads for cancer patients or (11.7%) would like to establish clinics for cancer patients [2]. Most of the oncology clinical nurse specialists in the survey provided treatment that had previously been provided by doctors, in particular prescribing drugs and giving diagnoses. It seems that even in hospital teams there is a great appreciation for nursing skills and support for increasing their powers, thereby reducing the burden for various specialist doctors [29]. The most notable achievement of the Cancer Reform Strategy and the National Health Service's decision to put full trust in nurses are clinics managed by oncology clinical nurse specialists, resulting in reducing waiting times for oncology services and making treatment accessible to people who do not live close to major cities. Alongside the progressive approach and targeted innovation, there is an acknowledgement that many areas of the work of the oncology clinical nurse specialist are insufficiently regulated and are too open to interpretation. Few would argue that the flexibility and initiative taken by the National Health Service was not the right step in terms of its strategy to improve cancer survival rates, but drastic changes in oncology clinical nurse specialist responsibilities alongside a lack of supervision make it harder to monitor and evaluate the treatment that patients receive [2].

- Japan

In 1987, a Japanese government report described for the first time the "need to cultivate specialist nurses with specialist nursing knowledge" [30]. In the wake of the report, Japan's Association of University Programs in Nursing and a number of nurses' organizations established a training and certification system that began operating in 1995, covering a variety of specialties including oncology [6]. By 2010, 193 oncology-certified nurse specialists were qualified and trained in medical settings, a number that was deemed insufficient, in line with the World Health Organization's assessment that Japan would soon have a shortfall of around 270,000 nurses [31].

Responsibility for the professional capabilities of oncology-certified nurse specialists is shared by the Association of Nursing Programs in University and the Association of Oncology Certified Nurse Specialists. After completing a master's degree in nursing with a defined area of expertise, a clinical nurse can apply to the Association of Oncology Certified Nurse Specialists for certification after gaining 5 years of experience in clinical work, of which 3 years should be in oncology nursing. The certification grants a license for 5 years, after which the Association of Oncology Certified Nurse Specialists requires nurses to apply for renewal before a committee. As part of the process, nurses must also submit a report on their work and advanced training undertaken.

A survey examining job satisfaction among 200 oncology-certified nurse specialists in Japan found that factors that increased job satisfaction included: positive assessment by senior staff (OR = 13.15), independence at work (OR = 11.30), involvement in cross-sectional activities and roles (OR = 7.06), ability to charge a fee for additional pain relief management (OR = 3.78), work in radiotherapy (OR = 2.91), and work with palliative care teams (OR = 2.64) [32]. Forty-nine percent of oncology-certified nurse specialists surveyed expressed satisfaction with their work, compared to 38% of nurses who are not oncology-certified nurse specialists.

The shortfall in healthcare professionals in Japan notwithstanding, the relative success of the establishment of the oncology-certified nurse specialist profession is noteworthy within the cultural context of the Western Pacific region, where, according to the World Health Organization, countries award a limited range of professional qualifications and degrees to nurses compared to their European and North American counterparts [31]. Looking ahead, Japan's aim is to increase the number of oncology-certified nurse specialist training programs to 100 programs in universities across the country [6].

- Brazil

Calls to deepen oncology knowledge among nurses in Brazil began to emerge in 1990, led by nursing students in nursing colleges. These calls led to the creation of the oncology clinical nurse specialist and the pediatric oncology clinical nurse specialist roles, in line with the "North American model" [33]. The official foundation of the oncology specialty in nursing is set out in Resolution no. 293/2004 of the Federal Board of Nursing in 2004 [34]. At least in some workplaces, the competencies defined by the Association of Pediatric Hematology and Oncology Nurses are used for establishing this role. These include direct patient treatment, nursing consultation, systemic leadership, collaboration with nursing teams and service recipients, mentorship, research and active involvement in ethical decision-making [35]. Adaptation of the role was undertaken with inspiration from, and in cooperation with, oncology clinical nurse specialists in hospitals in Canada and the United States [33].

To qualify for the role, Brazilian clinical nurses must pass exams on chemotherapy and central venous catheterization, have at least two years of relevant clinical experience, and be involved in advanced studies [34]. An oncology clinical nurse specialist is required to graduate with at least 4608 h of practical internship and 1152 h of practical and theoretical training in oncology. The required curricula include epidemiological and bioethical issues in oncology, conceptual bases and diagnostic tools used in oncology, therapeutic models, oncology pathologies, oncological emergencies, palliative care and symptom control, and management in oncology [34]. Compared to other low- and middle-income countries, Brazil, aided by the Federal Nursing Council, stands out in its commitment to assimilating the oncology clinical nurse specialist position [36]. A unique example of this commitment is the fact that Brazilian oncology clinical nurse specialists trained for this post are able to fit central venous catheters [37]. Aside from the existing infrastructure, it has been suggested that oncology clinical nurse specialist training in Brazil is insufficiently broad or comprehensive. Of the 420 nursing schools in southeastern Brazil, the most developed region of the country, just 31 offer specialist courses in oncology, and it is estimated that between 2005 and 2013, only 150 nurses were trained as oncology clinical nurse specialists [34].

- Australia

Specialist nursing roles in oncology have existed in Australia and New Zealand for many years [38]. However, in 2005, the Australian government began funding the National Cancer Nursing Education Project, which laid the groundwork for dividing Australia's specialist cancer nursing workforce into specializations. In the process, the role of "specialist cancer nurse" was defined to work within an oncology service or center specializing in a specific type or treatment stage of cancer, or as nurses involved in coordinating treatment for patients throughout all stages of a specific disease, such as breast cancer [39], or

prostate cancer [38]. In terms of educational requirements, it was determined that these specialist professions would require a master's degree without the need for any additional approvals, but the authority to prescribe medication (and other powers) would only be granted with additional approval. A qualitative study in Australia and New Zealand that examined the perceptions of 66 staff members relating to teamwork with oncology clinical nurse specialists in the treatment of gynecological tumors found that they were a key component of teams. Furthermore, although these teams comprised a long list of medical professionals and specialist nurses, the oncology clinical nurse specialist was an almost irreplaceable focal point of "contact, communication, and coordination" [40]. In addition to the sense that gynecological cancer teams without an oncology clinical nurse specialist were deficient, shortcomings and concerns were also raised by teams that did have an oncology clinical nurse specialist, including the development of dependence on the specialist nurse, carrying out "inter-functional" tasks that dedicated staff members were capable of performing no less well, encroaching on the responsibilities of other professionals in a way that harmed the work of the team, and ambiguity of the role of the oncology clinical nurse specialist working within a multidisciplinary team and taking on burdensome tasks tirelessly and sometimes needlessly [40].

Australia is a large country, and patients in the provinces and rural areas suffer from poor access to specialist medical care and are required to travel large distances for cancer tests and treatments. At least some of the areas of expertise in oncology nursing were founded with the aim of creating flexibility in service provision to meet local needs outside of urban centers [36][41][42]. Since 2010, the Australian government has been operating rural oncology clinics under the management of specialist nurses, with the aim of bridging gaps in access to oncology services between urban and rural areas. A study that evaluated the effectiveness of this service in the state of Victoria assessed a team comprising a nurse practitioner and additional medical and nursing staff in the city of Bendigo, which is in continuous contact with a clinic in a nearby village with a population of around 1000. The nurse practitioner and the rest of the team travel by car for about 90 min every two weeks to manage treatment in the village, which is actually carried out by a nurse living in the village [43]. The study emphasized the good relationships and high level of trust between all those involved in the therapeutic model. The nurse practitioner said of the service, "we love it because the patients are grateful, it's rewarding, and they get treatment closer to home" [43], although it is not certain if the service is financially sustainable [36].

References

1. International Council of Nurses. Guidelines of Advanced Practice Nursing. 2020. Available online: https://www.icn.ch/system/files/documents/2020-04/ICN_APN%20Report_EN_WEB.pdf (accessed on 1 May 2023).
2. Farrell, C.; Molassiotis, A.; Beaver, K.; Heaven, C. Exploring the scope of oncology specialist nurses' practice in the UK. Eur. J. Oncol. Nurs. 2011, 15, 160–166.
3. Henry, R. The Role of the Cancer Specialist Nurse. Nurs. Pract. 2015, 24. Available online: https://www.nursinginpractice.com/clinical/cancer/the-role-of-the-cancer-specialist-nurse/ (accessed on 12 March 2023).
4. Royal College of Nursing. Specialist Nurses Make a Difference; RCN: London, UK, 2015; Available online: https://www.rcn.org.uk/About-us/Our-Influencing-work/Policy-briefings/pol-14092009 (accessed on 1 February 2023).
5. Bryant-Lukosius, D.; Green, E.; Fitch, M.; Macartney, G.; Robb-Blenderman, L.; McFarlane, S.; Bosompra, K.; DiCenso, A.; Matthews, S.; Milne, H. A survey of oncology advanced practice nurses in Ontario: Profile and predictors of job satisfaction. Nurs. Leadersh. 2007, 20, 50.
6. Komatsu, H. Oncology Certified Nurse Specialist in Japan. Jpn. J. Clin. Oncol. 2010, 40, 876–880.
7. Hoffmann, R.L.; Klein, S.; Connolly, M.; Rosenzweig, M.Q. Oncology nurse practitioner web education resource (ONc-PoWER): An evaluation of a web-enhanced education resource for nurse practitioners who are new to cancer care. J. Adv. Pract. Oncol. 2018, 9, 27–37.

8. Dopelt, K.; Asna, N.; Amoyal, M.; Bashkin, O. Nurses and Physicians' Perceptions Regarding the Role of Oncology Clinical Nurse Specialists in an Exploratory Qualitative Study. Healthcare 2023, 11, 1831.
9. Corner, J. The role of nurse-led care in cancer management. Lancet Oncol. 2003, 4, 631–636.
10. Kleinpell, R.M.; Grabenkort, W.R.; Kapu, A.N.; Constantine, R.; Sicoutris, C. Nurse Practitioners and Physician Assistants in Acute and Critical Care: A Concise Review of the Literature and Data 2008–2018. Crit. Care Med. 2019, 47, 1442–1449.
11. Mackey, H.; Noonan, K.; Sheldon, L.K.; Singer, M.; Turner, T. Oncology Nurse Practitioner Role: Recommendations from the Oncology Nursing Society's Nurse Practitioner Summit. Clin. J. Oncol. Nurs. 2018, 22, 516–522.
12. Morgan, B.; Tarbi, E. The Role of the Advanced Practice Nurse in Geriatric Oncology Care. Semin. Oncol. Nurs. 2015, 32, 33–43.
13. Brooten, D.; Youngblut, J.M.; Kutcher, J.; Bobo, C. Quality and the nursing workforce: APNs, patient outcomes and health care costs. Nurs. Outlook 2004, 52, 45–52.
14. Murphy, M.P.; Miller, J.M.; Siomos, M.Z.; Braun, L.; Hinch, B.; Swartwout, K. Integrating gerontological content across advanced practice registered nurse programs. J. Am. Assoc. Nurse Pract. 2014, 26, 77–84.
15. Kagan, S.H. Ageism in Cancer Care. Semin. Oncol. Nurs. 2008, 24, 246–253.
16. Rosenzweig, M.; Giblin, J.; Mickle, M.; Morse, A.; Sheehy, P.; Sommer, V. Bridging the Gap Working Group Bridging the Gap: A Descriptive Study of Knowledge and Skill Needs in the First Year of Oncology Nurse Practitioner Practice. Oncol. Nurs. Forum 2012, 39, 195–201.
17. Canadian Association of Nurses in Oncology (CANO). Standards of Care, Roles on Oncology Nursing, and Role Competencies. Ottawa. 2001. Available online: https://cdn.ymaws.com/www.cano-acio.ca/resource/resmgr/standards/Standards_of_Care_ENG.pdf (accessed on 1 May 2023).
18. Kilpatrick, K.; Tchouaket, E.; Carter, N.; Bryant-Lukosius, D.; DiCenso, A. Relationship Between Clinical Nurse Specialist Role Implementation, Satisfaction, and Intent to Stay. Clin. Nurse Spec. 2016, 30, 159–166.
19. DiCenso, A.; Martin-Misener, R.; Bryant-Lukosius, D.; Bourgeault, I.; Kilpatrick, K.; Donald, F.; Kaasalainen, S.; Harbman, P.; Carter, N.; Kioke, S.; et al. Advanced practice nursing in Canada: Overview of a decision support synthesis. Nurs. Leadersh. 2010, 23, 15–34.
20. Delamaire, M.L.; Lafortune, G. Nurses in Advanced Roles: A Description and Evaluation of Experiences in 12 Developed Countries; OECD Health Working Papers, No. 54; OECD Publishing: Paris, France, 2010.
21. Begley, C.; Elliott, N.; Lalor, J.; Coyne, I.; Higgins, A.; Comiskey, C.M. Differences between clinical specialist and advanced practitioner clinical practice, leadership, and research roles, responsibilities, and perceived outcomes (the SCAPE study). J. Adv. Nurs. 2012, 69, 1323–1337.
22. Cancer Care Ontario. New Ways of Working: A Provincial Strategy for Advanced Practice Roles in Cancer Care. Toronto. 2006. Available online: https://www.cancercareontario.ca/en/system/files_force/derivative/PEPPAToolkit_Intro.pdf (accessed on 1 May 2023).
23. Alessy, S.A.; Lüchtenborg, M.; Rawlinson, J.; Baker, M.; Davies, E.A. Being assigned a clinical nurse specialist is associated with better experiences of cancer care: English population-based study using the linked National Cancer Patient Experience Survey and Cancer Registration Dataset. Eur. J. Cancer Care 2021, 30, e13490.
24. Kerr, H.; Donovan, M.; McSorley, O. Evaluation of the role of the clinical Nurse Specialist in cancer care: An integrative literature review. Eur. J. Cancer Care 2021, 30, e13415.

25. Birrell, F.; Leung, H.Y. The Scottish prostate cryotherapy service—The role of the clinical nurse specialist. Br. J. Nurs. 2019, 28, S12–S16.
26. Varey, M. The acute oncology clinical nurse specialist. Br. J. Nurs. 2015, 24, S14–S15.
27. Raja-Jones, H. Role boundaries—Research nurse or clinical nurse specialist? A literature review. J. Clin. Nurs. 2002, 11, 415–420.
28. United Kingdom Department of Health. The Cancer Reform Strategy; Department of Health: London, UK, 2007. Available online: https://www.nhs.uk/NHSEngland/NSF/Documents/Cancer%20Reform%20Strategy.pdf (accessed on 1 May 2023).
29. Ream, E.; Wilson-Barnett, J.; Faithfull, S.; Fincham, L.; Khoo, V.; Richardson, A. Working patterns and perceived contribution of prostate cancer clinical nurse specialists: A mixed method investigation. Int. J. Nurs. Stud. 2009, 46, 1345–1354.
30. Japanese Ministry of Health and Welfare. The Report of Nursing System Advisory Committee; Japanese Ministry of Health and Welfare: Tokyo, Japan, 1987. (In Japanese)
31. McCarthy, C.; Boniol, M.; Daniels, K.; Cometto, G.; Diallo, K.; Lawani, A.D.; Campbell, J. State of the World's Nursing 2020: Investing in Education, Jobs, and Leadership; World Health Organization: Geneva, Switzerland, 2020.
32. Kitajima, M.; Miyata, C.; Tamura, K.; Kinoshita, A.; Arai, H. Factors associated with the job satisfaction of certified nurses and nurse specialists in cancer care in Japan: Analysis based on the Basic Plan to Promote Cancer Control Programs. PLoS ONE 2020, 15, e0232336.
33. Duarte, A.M.; Ibanez, A.D.S.S.; Rodrigues, D.B.; Barros, D.P.; Soares, J.D.S.; Perin, J.P.M.; Gutiérrez, M.G.R.D. Clinical nurse specialist: A model of advanced nursing practice in pediatric oncology in Brazil. Rev Esc Enferm USP 2013, 47, 1426–1430.
34. de Gutiérrez, M.G.R.; Duarte, A.M.; Dias, C.G. The clinical practice of oncology nursing in Brazil: Realities and challenges in the training of specialist nurses. Ecancermedicalscience 2014, 8, ed46.
35. National Association of Clinical Nurse Specialists. Clinical Nurse Specialist Core Competencies: Executive Summary 2006–2008. National CNS Competency Task Force. 2010. Available online: https://nacns.org/wp-content/uploads/2016/11/CNSCoreCompetenciesBroch.pdf (accessed on 1 May 2023).
36. Challinor, J.M.; Alqudimat, M.R.; Teixeira, T.O.A.; Oldenmenger, W.H. Oncology nursing workforce: Challenges, solutions, and future strategies. Lancet Oncol. 2020, 21, e564–e574.
37. Santolim, T.Q. Benefícios e Riscos do Cateter Central de Inserção Periférica (CCIP): Experiência em 1023 Procedimentos. Ph.D. Thesis, Universidade de São Paulo, São Paulo, Brazil, 2017. Available online: https://www.teses.usp.br/teses/disponiveis/5/5140/tde-03072018-091334/pt-br.php (accessed on 12 March 2023).
38. Fleure, L.; Sara, S. An exploration of the Role of the Prostate Cancer Specialist Nurse from Two International Perspectives. Semin. Oncol. Nurs. 2020, 36, 151043.
39. Aranda, S.; Yates, P. A National Professional Development Framework for Cancer Nursing, 2nd ed.; The National Cancer Nursing Education Project (EdCaN); Cancer Australia: Canberra, Australia, 2009.
40. Cook, O.; McIntyre, M.; Recoche, K.; Lee, S. "Our nurse is the glue for our team"—Multidisciplinary team members' experiences and perceptions of the gynaecological oncology specialist nurse role. Eur. J. Oncol. Nurs. 2019, 41, 7–15.
41. Crawford-Williams, F.; Goodwin, B.; March, S.; Ireland, M.J.; Hyde, M.K.; Chambers, S.K.; Aitken, J.F.; Dunn, J. Cancer care in regional Australia from the health professional's perspective. Support. Care Cancer 2018, 26, 3507–3515.

42. Sykes, J. Practice Framework and Competency Standards for the Prostate Cancer Specialist Nurse; Prostate Cancer Foundation of Australia: Sydney, Australia, 2013; Available online: https://www.pcfa.org.au/media/195759/practice_framework_and_competency_standards_for_the_prostate_cancer_specialis (accessed on 1 February 2023).
43. O'Sullivan, B.; Loorham, M.; Anderson, L.; Solo, I.; Kabwe, M. Subregional Nurse-Led Oncology Services Supported by an Outreach Oncology Team: Building an Optimal Service Framework. 2019. Available online: https://www.lmics.org.au/wp-content/uploads/2019/12/Subregional-nurse-led-oncology-services-supported-by-an-outreach-oncology-team-building-an-optimnal-service-framework.pdf (accessed on 1 February 2023).