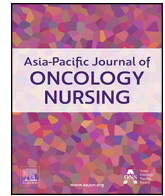


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Editorial

When clinical advances outpace knowledge: The role of nurses in precision oncology



Two years ago, while interviewing individuals with hereditary cancer syndromes, a patient remarked, “It’s amazing how much you can do for us, but can you also tell me what I can do for myself?” This person clearly understood that oncology nurses were the key to meeting their needs. By providing care, empathy, and support, oncology nurses can significantly improve the experience of individuals with hereditary cancer syndromes.

Oncology nurses are essential to patient-centered care, as they consider the patient’s circumstances and personalize care based on their needs, literacy, and emotional state. They are the largest workforce enhancing patient information, enabling patients to make informed decisions.¹ However, to support patients’ informed decisions, nurses need strong communication skills, up-to-date knowledge, and a thorough understanding of cancer care.

The landscape of oncology treatment has evolved rapidly in recent decades. One of the most significant advances in cancer treatment has been precision medicine, which allows treatment decisions to be made according to the patient’s and the cancer’s genomic profile. Precision medicine, defined as tailoring medical treatment to the individual characteristics of each person,² has brought genomics into day-to-day oncology care, guiding prevention, diagnosis, and treatment. Genomics, the study of genomes including their genes and how they interact with the environment, enables targeted treatments based on the cancer’s genomic profile (somatic testing), identifies individuals at higher risk of cancer (germline testing), and selects the right medication, timing, and dosage for each oncology patient (pharmacogenomics).³ This approach, known as personalized care, should more accurately be termed personalized treatment.

However, this revolution and its changes present challenges. One of the foremost challenges is that personalized care has not been matched by increased knowledge among health care professionals caring for these patients. Individuals with cancer, or at risk of cancer, encounter many health care professionals across primary, secondary, and tertiary care, who often have limited knowledge of precision medicine and genomics.⁴ This gap is particularly relevant for oncology nurses. Understanding genomics is crucial to reducing potential errors, enhancing patient comprehension, and improving care quality.⁵ Genomics also helps understand how different treatments interact with the body, allowing nurses to monitor specific side effects.

While there is training available for pathologists and oncologists in precision oncology, there is still limited training on genomics and precision oncology for nurses. The International Society of Nurses in Genetics (ISONG) monitors available training and information on genomics. In its latest update of the genomic repository, ISONG published two learning resources on cancer genetics: one by the Oncology Nursing Society (ONS) and another by Facing Our Risk of Cancer Empowered

(FORCE), both free and available only in English. This slow advancement in genomics education contrasts with the rapid integration of genomics into oncology.

How does the lack of knowledge among professionals affect patient care? Current research shows that while genomics is used daily, patient understanding and support are limited. Patients value health care professionals as a source of information, but this trust is undermined as patients demand better information and guidance, especially post-testing.⁶ Individuals undergoing somatic testing for their cancer often face uncertainties and lack understanding when results are delivered, indicating a failure to communicate the full implications of potential results before testing.⁷ How can patients make informed decisions if they do not understand from the start? Somatic testing often reveals the need for germline testing, but many people do not grasp the implications and differences between the two. Conversely, those undergoing germline testing find that while pre-testing communication is usually well-structured and conducted by knowledgeable professionals, they perceive a lack of information and uncertainty post-testing, when they develop questions about management and follow-up but lack access to knowledgeable professionals.^{8–10} The uncertainty, needs, and emotional suffering increase when facing the disclosure of risk to family members.

When patients cannot rely on health care professionals for information, they turn to the next easiest source: the Internet, “Dr. Google.” While they can find good information and resources online, it is challenging to distinguish valuable, up-to-date information from unreliable sources.¹⁰

Today, health care systems urgently need to implement cancer strategic plans to promote precision medicine. However, not all countries have strategic cancer plans, and disparities exist not only based on national income but also within countries, depending on ethnicity, race, and access to health care. For example, in Europe, despite the European Cancer Plan, only 12 of the 27 EU Member States have an up-to-date national cancer control plan, and very few mention precision oncology.¹¹ In Spain, despite being a high-income country with public health care, access to services varies depending on where you live.¹² Regarding genomics, guidelines like National Comprehensive Cancer Network (NCCN) and European Society for Medical Oncology (ESMO) provide professional guidance on whether a patient should be tested, but health care professionals still find it difficult to determine who should be tested, increasing inequalities depending on the professional seeing the patient.¹³

Universities should prepare to equip nurses with more competencies and knowledge about precision medicine and genomics during pre-graduate training. Although many competencies have been published to summarize what a cancer nurse should know about genomics, there is still limited training available. Nurses need to understand their value in

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improving patient care, enhancing care quality with good literacy, and most importantly, helping patients make empowered and informed decisions.

As precision oncology advocates for personalized care, this approach should start with oncology nurses, who are well-known for understanding the patient's entire context (culture, knowledge, family, concerns, etc.) and translating information into comprehensible terms. Well-informed oncology nurses will be more proactive in delivering care. This may drive a change where precision oncology leads to truly personalized care, not just personalized treatment.

Ethics statement

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Declaration of competing interest

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Declaration of generative AI and AI-assisted technologies in the writing process

No AI tools/services were used during the preparation of this work.

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Celia Díez de los Ríos de la Serna*

School of Nursing, Faculty of Medicine and Health Sciences, Bellvitge Campus, Barcelona University, Barcelona, Spain
College of Medical, Veterinary and Life Sciences, University of Glasgow, Glasgow, United Kingdom

Paz Fernández-Ortega
School of Nursing, Faculty of Medicine and Health Sciences, Bellvitge Campus, Barcelona University, Barcelona, Spain

* Corresponding author.

E-mail address: Celia.DiezdelosRiosdelaSerna@glasgow.ac.uk (C. Díez de los Ríos de la Serna).