The Australian Journal of Cancer Nursing

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Editorial

The *AJCN* aims to provide a forum where debate and the exchange of views can take place. We welcome papers on contemporary professional policy or practice issues of concern and interest to cancer nurses.

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The Cancer Nurses Society of Australia (CNSA)

Our mission

The CNSA is committed to achieving and promoting excellence in cancer care through the professional contribution of nurses.

To achieve our mission of promoting excellence in cancer care, the CNSA will act as a resource to cancer nurses around Australia, no matter what their geographical location or area of practice.

The CNSA will be the link between cancer nurses in Australia, the consumers of cancer nursing services and other health professionals involved in cancer care.

GPO Box 4708, Sydney, NSW 2001
Tel (02) 9036 3100   Fax (02) 9380 9033

The Australian Journal of Cancer Nursing

Editorial

Quality cancer care

Letitia Lancaster • Clinical Nurse Consultant, Gynaecological Oncology, Westmead Hospital, Westmead, NSW

Quality in health care frequently means different things to different people. Administrators commonly measure the quality of health care through tangible key performance indicators such as: the incidence of preventable diseases; uptakes for screening programs; cancer survival rates; surgery waiting lists; and lengths of hospital stay. Clinical staff often highlight aspects such as: evidence-based treatment protocols; robust safety systems (for example, "time out" in operating theatres); hospital-acquired infections rates; falls rates; and the incidence of pressure areas as being indicators of the quality of care.

For patients and their families, the concept of the quality of a health service is diverse. It may mean the quality of interpersonal interactions, such as staff having "time" for them and being treated with respect and dignity; or it may be about the "hotel services" in a hospital, such as variety of meals, cleanliness of clinical areas and the availability of a single room. For others, quality may be about organisation and access such as waiting times in clinics or the cost and availability of car parking at a hospital; or about impressions of skills and technical competence such as being able to cannulate a vein on the first attempt or receiving medications on time. Whilst patients might receive technically excellent care, dissatisfaction with these other aspects of a health service might affect their experience and perception of the quality of that care.

We less commonly consider the emotional health of clinical staff as being an important attribute of quality health care. Whereas providing cancer care is perceived to be stressful in terms of constantly attending to people with life-limiting illnesses, nurses frequently cite concerns about working conditions such as inadequate staffing levels, unavailability of physical resources, perceived lack of management support and poor inter-professional communication as being significant sources of stress and dissatisfaction with the quality of care provided[1,2].

This edition of the journal features three quite different papers, but each of them highlights a distinct aspect of quality cancer care. Lilian Daly explains the characteristics of quality health care and the way in which patient satisfaction surveys can help to establish and improve upon the standard of cancer care. Raymond Chan and colleagues describe the introduction of a nurse-led project to successfully implement evidence into clinical practice to reduce central venous catheter-related infections. Finally, Eileen Grafton and Elisabeth Coyne explain the emotional challenges for cancer nurses in providing supportive care in our increasingly complex health care environment and offer strategies to assist nurses in managing role-related stress.

We all have a professional responsibility to provide high-quality cancer care. These papers provide good examples of ways in which this might be achieved: listening to patients and thus improving our practice via feedback from them; embracing new evidence and supporting its implementation into clinical practice; and finding ways to mediate role-related stress for ourselves and our colleagues. These strategies will better enable us to provide high-quality care for patients and their families.

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The Australian Journal of Cancer Nursing

Developing a quality cancer system – the role of patient experience

Lilian Daly • RN, Onc Cert, MPH, Dip Clin Epi,
Program Manager, Quality Cancer Systems, Cancer Institute NSW, Sydney, NSW

Abstract

Quality cancer care is described as care that is safe, effective, patient-centred, timely, efficient, equitable and coordinated[1]. There is evidence to suggest that not all patients experience quality cancer care and that there may be substantial variation across patient and tumour groups, treatment settings and stages of disease. For some groups, important disparities in cancer outcomes may indicate significant gaps in quality and health system performance. Understanding how patients experience their care in relation to agreed and established standards can highlight significant opportunities for improvement. As such, patient experience may be regarded as a key indicator of the quality of cancer care and the overall performance of the health system. This paper explores the relationship between patient experience and the quality of cancer care, and the opportunities this rich and veritably untapped data source provides for monitoring health system performance and targeting improvements for better cancer outcomes.

Introduction

Timely and accurate diagnosis of cancer and effective, evidence-based treatments are clearly important priorities for improving cancer outcomes. Ensuring that patients have the best possible experience of care is also important, and arguably at the heart of what quality cancer care is all about. Patient experience data with feedback is increasingly recognised as an important catalyst for driving change across the health system to improve the overall quality and safety of care[2]. It is, therefore, important that patient experience data is as complete as possible, and that approaches to measurement have sufficient sensitivity and specificity to measure quality across a range of domains and settings, especially for more vulnerable groups arguably most at risk of poorer cancer outcomes. In the absence of complete data, improving patient experience involves raising the bar on quality for all patients who engage with the health system by implementing best practice, evidence-based standards of care for all patients and supporting patients to expect that these standards will be met.

Patient experience

Goodrich and Cornwell, in the UK Kings Fund publication *Seeing the person in the patient*, define patient experience as "the totality of events and interactions that occur in the course of episodes of care"[3]. The authors identify a range of groups who directly and indirectly contribute to patient experience in the hospital setting. These include clinical and non-clinical staff at the point of care and, more broadly, health executives, policy makers, government and patients themselves (individually, collectively, and in partnership with health care providers). All contribute to and, therefore, have a role to play in improving patient experience[3].

Patient experience – how do we know?

There is a variety of ways in which we obtain information about patient experience in the cancer system — each with its own strengths and limitations[4,5]. Compliments and complaints can provide important information about possible areas of focus for improving the quality and safety of care (for example, improving processes around communication or error reduction). By nature, however, compliments and complaints fall at one end of the spectrum or the other and may reflect the highs and lows of an individual's interactions with an individual member of the cancer team or service. Apart from knowing whether numbers are rising or falling, compliments and complaints provide limited information about areas for broader system-level improvements as it is not always possible to predict the groups of patients, staff or contexts of care most likely to be involved[3].

Patient satisfaction surveys, in which patients provide global ratings on their overall care, or aspects of their care, may be an important tool in the process of continuous quality improvement. However, their utility has been questioned for a number of reasons, including their susceptibility to systematic bias (for example, it is widely held that particular patients rate their care more highly than others), and the divergence between overall ratings of satisfaction with care and actual experiences of care that relate to quality[4,5]. Understanding more about the actual experiences and patient contexts that underlie overall ratings of care can provide important information to guide targeted efforts to improve service provision and the overall quality of care[6].

The systematic collection of information about patient experience of care within the health system usually involves a patient survey. At an organisational or service level, patient surveys can provide useful information for continuous quality improvement. At state and national levels, surveys can be used for monitoring the quality of care, tracking trends over time and benchmarking service and system performance across different geographical settings or patient groups[6-8]. Survey methodology frequently involves asking patients to provide global ratings of care, including satisfaction with the care they received. As such, patients generalise in order to rate their experience (always, sometimes, never), and this may account for the difference between survey responses and individual patient narratives about their experiences of care. In some cases, it has been suggested that responses may be too broad to elicit targeted and effective intervention across the system[3]. However, well-constructed surveys can elicit important information about patient experience in terms of processes or pathways of care (for example, waiting times), and areas for improvement across different patient groups and treatment settings[3,7,8].

Qualitative methods, including narrative reports about patient experience of care, provide rich data to help us better understand patient experience in a more detailed way that gets closer to the clinical service and processes of care, and the modifiable factors that impact upon both the quality of care and patient experience. A recent systematic review of the evidence of the impact of stigma and nihilism on lung cancer outcomes on lung cancer patterns of care exposed worrying indications that health-related stigma may constitute a very real part of the lung cancer patient experience, leading to psychological distress and impaired quality of life[9]. Specifically, patients felt that negative social views about lung cancer being a self-inflicted disease with a mostly fatal outcome meant that treatment might be delayed or denied; and that seeking treatment was futile[9]. The review suggests that some clinicians share nihilistic views about lung cancer and lung cancer outcomes and that this may act as a barrier to effective treatments for patients. These issues need to be better understood and appropriately addressed if we are to make significant inroads into improving lung cancer patient experience, the quality of care and patient outcomes.

Improving patient experience – why does it matter?

Improving the patient's experience of care is important for a range of ethical, clinical and economic reasons. The moral imperative to look after people when they are sick and vulnerable[3] resonates, particularly in the oncology context. Patients and carers can find themselves distressed and confused when navigating complex systems of care, involving multiple providers and care settings, and a barrage of diagnostic interventions and treatments that too frequently result in toxic and unwanted long-term effects.

How patients experience their care is also important because of the emerging relationship between this and the more traditional measures of quality, clinical performance and health outcomes[10-12]. For example, better patient perception of care has been associated with a range of clinical benefits including shorter length of hospital stay[13], reduced rates of hospital-acquired infection[14], lower 30-day unplanned readmission rates[15] and improved adherence with recommendations around treatment and prevention[16]. A recent study found a positive correlation between patient experience (relating to high-quality clinical interactions and integration of care) and clinical performance in terms of processes (for example, existence of standards of care such as regular monitoring of cardiovascular disease), and outcomes (for example, cholesterol and HbA1c levels within acceptable ranges)[12]. The broader economic and health care policy implications of these and other findings suggest that systematising good patient experience may have benefits for individual patients as well as the whole health system.

Patient experience as a component of patient-centred care

Understanding patient experience is a key element of the patient-centred approach to care. This approach aims to place the patient (and what matters to them) squarely at the centre of their own care and, increasingly, at the centre of the health system[2,17,18].

People living with cancer may be described as cancer experts by virtue of their "lived experience" of cancer and knowledge and skill they gain while navigating complex cancer systems[19]. As such, they may be well positioned to provide valuable feedback on the quality of cancer care, and important gaps in quality likely to affect outcomes for individuals and whole communities.

In Australia and overseas, governments and key organisations are increasingly and actively embracing the concept of patient-centred care as both a dimension and outcome of high-quality health care[2]. Driven by a range of factors, including active consumer engagement at all levels of the health system, and increasing public demand for an efficient, effective and responsive health system, capturing and understanding patient experience and using this information to inform health care redesign for sustainable improvement has become a justifiable, national, jurisdictional and international pursuit[2].

What is quality health care?

Quality health care is defined as the degree to which health services for individuals and populations produce desired health outcomes, consistent with current professional knowledge[20,21]. While poor-quality health care is associated with too much care, too little or inappropriate care, good-quality health care is associated with the provision of "appropriate services in a technically competent manner, with good communication, shared decision making, and cultural sensitivity"[22]. The Institute of Medicine's (IOM) landmark 2001 report, *Crossing the Quality Chasm*[22], proposed six aims for high-quality health care – that it should be safe, consistent with latest scientific evidence (effective), avoid unnecessary delays (timely), consistent with the patient's culture, individual needs and preferences (patient-centred), efficient and equitable – that neither race, ethnicity, gender or income should prevent anyone from accessing health care. Coordinated care is, in addition, explicitly linked to quality cancer care[1]. The IOM report called for fundamental change within the health system; no longer making quality care the sole responsibility of individual providers, but rather shared across the system, and at every level. As such, the report called for systematic embedding of key elements of quality health care, through the levers of policy, accreditation, regulation and health professional training[22].

Health system performance and quality health care

The performance of the health system is commonly regarded as a significant contributor to health outcomes and dependent on the degree of access to and quality of health care[20,21]. The performance of the cancer system contributes to cancer outcomes and can be assessed within domains of performance outlined in Australia's National Health System Performance Framework. These include the extent to which health care is effective, appropriate, efficient, accessible, continuous, responsive, capable, safe and sustainable[21]. Cancer patient experience is affected by factors that can impact on any of these aspects of quality, including, for many, the accessibility and cost of care. When assessing the performance of the cancer system, and health system more broadly, the National Health System Performance Framework asks us to consider: *How well does the health system perform? What is the level of quality and access to services? Is it the same for everyone? What does this performance cost?*[21]

Patient experience and the quality of cancer – it's not the same for everyone

The Organisation for Economic Co-operation and Development (OECD) Health Care Quality Indicators project has developed quality of care indicators for cancer and aims to measure and compare health service provision across different countries. The indicators are designed for international comparison and include cancer screening, survival and mortality rates across specific cancer types[20]. Overall, there are good indications that Australia performs well in international comparisons and can boast an enviable record in relation to survival for a range of common cancers[23], but, clearly, access to quality cancer care is not the same for everyone. For example, recent Australian Institute of Health and Welfare (AIHW) analysis of screening data shows that participation rates, in two of three national cancer screening programs, varies with geographic region of residence and socio-economic status. In 2009–2010, women living in very remote areas of Australia were less likely to participate in the national breast cancer screening program (BreastScreen Australia), than those living in outer regional and urban areas (47% participation in the target population versus 58% and 54% respectively)*[24]. Similarly, participation in the National Cervical Screening Program by women aged 20–69 years varies with socioeconomic status, ranging from 52% participation in the most disadvantaged areas compared with 63% in the least disadvantaged[†24]. The disturbing and disproportionate burden of cancer in Aboriginal people poses a range of questions regarding patient experience and the quality of cancer care, particularly around access to appropriate care and services. Recent Clinical Excellence Commission data suggest that Aboriginal people are more likely to present with regional or advanced cancer at diagnosis, and that even those with localised disease have poorer outcomes than their non-Aboriginal counterparts[25]. In the period 1999–2007, Aboriginal females in NSW had significantly higher rates of lung, cervix, head and neck cancers than their non-Aboriginal counterparts, in some cases double, and higher rates when compared with all females in NSW diagnosed with these cancers. Similarly, Aboriginal males had significantly higher rates of lung, head and neck and stomach cancers, and despite lower incidence of prostate cancer, mortality was almost 90% higher in Aboriginal males than non-Aboriginal males during this period[19]. These data may reflect systematic barriers to access to effective treatment and care contributing to poorer outcomes in these populations.

*Based on the number of women screened by BreastScreen Australia as a proportion of the average of the ABS estimated resident population for 2009–2010 for women in the target group and age standardised to the Australian population as at 30 June 2001 using five-year age groups.

[†] Based on the number of women screened as a proportion of the average of the ABS estimated resident population for 2009–2010 for women in the target group (adjusted for the estimated proportion who had a hysterectomy) and age standardised to the Australian population as at 30 June 2001 using five-year age groups[24].

Cancer patient surveys – perceived gaps in the quality of cancer care

Recent surveys have identified variations in patient experience with the need for targeted interventions to improve the quality of care for particular patient groups[7,8]. The CanNET Consumer Survey[7] (2009), a patient and carer survey commissioned by Cancer Australia in collaboration with other jurisdictions, identified critical intervention points during early diagnosis, treatment and long-term care along the cancer patient journey that affected actual or perceived health outcomes, quality of life and satisfaction with care. The survey also identified important information regarding perceived gaps in the quality of care, particularly around information and support, that formed the basis for a range of recommendations for improvement. Survey responses highlighted important areas requiring attention, including access to appropriate support services for people affected by cancer, and the availability of adequate information and support, particularly after and between cancer treatments[7]. Responses also highlighted the need for targeted interventions to improve the quality of care for specific patient groups, including those undergoing more complex treatments, those with less common cancers and those with lower levels of health literacy[7]. Similarly, the recent UK Cancer Patient Experience Survey (2011–12)[8] highlighted variations in the perceived quality of cancer services across tumour and patient groups and the need for targeted interventions to meet the needs of patients who are more susceptible to experiencing poorer quality care. For example, younger (those aged 16–25 years) and older patients (those aged 76 years and over) reported less favourable responses about their treatment than others, while patients from ethnic minority groups were less positive about aspects of health professional communication. Non-heterosexuals also reported less positively about aspects of communication, as well as the degree to which they felt they were treated with respect and dignity, and patients living with long-term conditions other than cancer reported less positive experiences than those without[8].

Access to equal outcomes as a core experience of the health system

Improving cancer patient experience will involve a better understanding of the experience of *different* patients with *different* types of cancer and cancer treatments, and integrating this information into better design of cancer services to meet real and unmet patient need. It will involve comparing reported patient experience with agreed standards and indicators of quality cancer care if we are to effectively address the yawning gap between quality and patient experience and ensure that quality cancer care becomes less of a lottery and more of an expectation for each and every person who engages with the cancer system. Improving cancer patient experience will also involve actively reaching out to patients who are sicker, poorer, receiving more intensive treatments, less articulate, with lower health literacy and those who experience language, cultural, geographic and other barriers to high-quality health care with timely, appropriate and accessible cancer care and services, because these groups may be most at risk of poorer cancer outcomes.

Learning cancer systems

Smarter ways of collecting, analysing and, importantly, feeding back data and information, are required at multiple levels across the health system to affect change at local and system-wide levels required to improve patient experience and cancer outcomes. The systematic collection and integration of individual patient-level data (also known as patient reported outcomes) with other relevant data systems is critical to the development of a "learning" cancer system – one that encourages iterative learning, and dissemination of that learning to improve innovation and improvements in practice – a system in which new evidence is generated as a natural consequence of good patient care[26].

Encourage patients to expect more

Patient experience data are increasingly regarded as a valid source of evidence about quality of care and health system performance. Asking people to provide feedback on their experience of care creates the opportunity to make improvements in the areas that patients say matter most to them. We need to find better ways to empower and enable patients to improve their own experience of care, both individually and collectively, by involving them in decision making, including in the design of treatment pathways and care services. We also need to encourage patients and carers to expect more from the health system by articulating standards of care and services that need to be met for all patients. Finally, we need to ensure that appropriate and tailored information is available at critical points in the cancer journey to support and assist patients and families to achieve important patient outcomes[5].

Conclusion

We have a lot to learn about how to deliver the best-quality cancer care to different patients across the spectrum of cancer care and beyond. The integration of patient experience data with other information about when and how patients interact with the health system tells a coherent and compelling story about health system performance. This story will ultimately influence the ongoing redesign of high-quality and sustainable cancer care for all Australians. By better understanding variations in patient experience, and the barriers and enablers of good patient experience, we are more likely to implement effective and targeted strategies that simultaneously improve patient experience, the quality of cancer care, the performance of the health system and, as a result, deliver better cancer outcomes.

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Using the collaborative evidence-based practice model: a systematic review and uptake of chlorhexidine-impregnated sponge dressings on central venous access devices in a tertiary cancer care centre

Raymond Javan Chan • RN, MAppSc(Research), PhD(c), FRCNA
Nurse Researcher, Cancer Care Services, Royal Brisbane and Women's Hospital, Butterfield Street, Herston, QLD 4029
Senior Research Fellow, Research Centre for Clinical and Community Practice Innovation, Griffith University, Nathan, QLD 4111
Senior Lecturer, School of Nursing and Midwifery, University of Queensland, Herston, QLD 4029

Sarah Northfield • RN, BN, GradCert(CancerNursing)
Cancer Care Services, Royal Brisbane and Women's Hospital, Butterfield Street, Herston, QLD 4029

Alison Alexander • RN
Acting Nurse Unit Manager, Oncology Day Therapy Unit, Cancer Care Services, Royal Brisbane and Women's Hospital, Butterfield Street, Herston, QLD 4029

Claire M Rickard • RN, PhD
Professor, Research Centre for Clinical and Community Practice Innovation, Griffith University, Nathan, QLD 4111
and Centre for Clinical Nursing, Royal Brisbane and Women's Hospital, Butterfield Street, Herston, QLD 4029

Abstract

Background Greater research utilisation in cancer nursing practice is needed in Australia in order to provide well-informed and effective nursing care to people affected by cancer. This paper reports the implementation of evidence-based practice in a tertiary cancer care centre.

Methods Using a case report design, this paper reports on the use of the Collaborative Model for Evidence-Based Practice in an Australian tertiary cancer care centre. The clinical case describes the uptake of routine application of chlorhexidine-impregnated sponge dressings for preventing centrally inserted catheter-related bloodstream infections – a common problem in people with cancer. The processes that resulted in a service-wide practice change are described.

Results This model was considered a feasible method for successful research utilisation. In this case report, the chlorhexidine-impregnated sponge dressings were introduced in the tertiary cancer care centre with the aim of reducing the incidence of centrally inserted catheter-related bloodstream infections and potentially improving patient health outcomes.

Conclusion The collaborative model is feasible and effective for implementing clinical evidence into cancer nursing practice. The successful implementation of evidence-based practice in cancer care centres requires cancer nurses and health administrators to ensure a supportive infrastructure and environment for clinical inquiry and research utilisation.

Background

The World Health Organization predicts that 15.5 million people will be diagnosed with cancer worldwide in 2030, compared with 11.3 million in 2007[1]. The growing number of people being diagnosed has a tremendous effect on the demand for cancer care services, presenting a number of challenges for cancer nurses in relation to their workload, nurse–patient ratio and the need to provide cost-effective and quality nursing care[2,3]. It is vital that cancer nurses continue to support and contribute to improving patient care and nursing practice, despite these challenges[2,3].

Cancer nursing is a dynamic entity, which inevitably undergoes change due to technological and scientific advances, as well as an evolving nursing profession[2,4]. A new generation of nurse innovators, leaders and researchers is required to ensure that evidence is utilised in clinical practice to justify changes to patient care[5,6]. Current literature emphasises the need for all cancer nurses to deliver evidence-based nursing care, through clinical inquiry, continual research utilisation and implementation[2,5]. However, several barriers exist when implementing nursing research into practice, leading to insufficient research utilisation within the clinical setting[2,3,5,7]. Even when evidence is used, there has been a concern about the lag time from evidence generation to evidence utilisation in practice[7,8].

A number of challenges prevent cancer nurses from being engaged in primary research and evidence utilisation in patient care[2,3]. These challenges include being too busy with clinical care to actively participate in research, having insufficient research skills, lack of interest in research, and limited time and resources[2,3]. At an organisational level, a lack of effective interventions to overcome the existing barriers inhibits nursing science from being used in practice[5,7,9]. A Cochrane systematic review conducted by Foxcroft and Cole in 2009 attempted to identify effective organisational infrastructure that supported an increase in the utilisation of research in nursing practice[10]. However, they found no studies that provided rigorous enough data to be recommended as an effective nursing research utilisation strategy.

A number of frameworks facilitate the process for implementing evidence-based practice in clinical decision making and care[11-13]. Each of these frameworks describes the steps required to utilise research in practice and consequently improve patient outcomes[11-13]. When practice is underpinned by evidence-based policies and procedures, patient outcomes should subsequently be improved[13]. However, it is unclear how these frameworks could be applied in the area of cancer nursing.

Methods

This paper uses a case report design to describe the steps involved in implementing an evidence-based framework for clinical decision making at a service level. This paper also presents the results of a systematic review investigating the effects of routine use of chlorhexidine-impregnated sponge dressings in reducing centrally inserted catheter-related bloodstream infections. Chlorhexidine-impregnated sponge dressings are small, disk-shaped sponges saturated with chlorhexidine gluconate that is released for seven days. These dressings fit around the central venous access device (CVAD) at the entry site and are then covered with traditional, transparent, polyurethane dressings to secure them in place. This case report describes a number of processes that resulted in a service-wide practice change in an Australian tertiary cancer care centre in 2009. The systematic review presented in this paper is an original work and has not been published elsewhere.

Clinical setting

The setting is a cancer centre of an Australian tertiary referral hospital. Each day the centre serves approximately 68 inpatients, 200 radiation therapy outpatients, 200 patients attending specialised cancer care clinics and 90 patients attending the day therapy unit. In 2009, there were more than 130,000 occasions of service within the centre. Two hundred and seventy full-time registered nurses provide nursing services in the centre to the departments of haematology, bone marrow transplant, medical oncology, radiation oncology and the haemophilia centre. Specialist nursing services in the team included 10 clinical nurse consultants, one nurse researcher and two nurse educators.

Theoretical model

An evidence-based practice framework is one way to guide the implementation of research into nursing practice by providing appropriate steps to improve patient outcomes[5,7]. The collaborative model was selected to guide the current case report. The model was first described by Caramanica *et al.* as a result of the collaboration of nine hospitals and educational organisations, with the aim of enabling effective nursing research utilisation[5]. Specifically, the authors described the crucial steps one might take from the research appraisal phase to ultimately revising clinical pathways and changing clinical practice. This research utilisation model includes several steps such as:

- identifying the clinical problem
- clarification of the problem
- performing research appraisal
- determining alternative solutions
- examining implications for clinical practice and testing/implementing practice change; revising current clinical pathways (based on results of trial and current research) and delivering evidence-based practice.

Case report: A service-wide uptake of chlorhexidine-impregnated sponge dressings in an Australian tertiary cancer care centre

Problem identification and clarification

CVADs are widely used internationally in oncology and haematology settings. Whilst they are an extremely effective method of delivering intravenous therapy, they also pose a risk of infection, especially to cancer patients who are already immuno-compromised. Catheter-related bloodstream infections can be life-threatening and very debilitating for patients, often requiring prolonged hospitalisation alongside increased costs for the health care provider[14-16]. Colonisation by skin flora and other organisms around the central catheter insertion site is strongly associated with an increased risk of developing catheter-related bloodstream infections[17]. It has been estimated that in the United States of America each infection has a mean attributable cost of US$18,000 and a prolonged hospital stay of 12 days per episode[14], emphasising the necessity of evaluating any potentially effective method of reducing the risk of developing an infection.

The nurse unit manager (NUM) at the day therapy unit of the cancer centre was responsible for purchasing equipment for the operations of the unit. At first, the NUM was approached by sales representatives with promotional materials, who claimed that current clinical evidence supported the routine use of the dressings in order to reduce infection rates. The standard CVAD dressing in use in the institution at that time were the gauze and tape dressings, applied at the time of insertion and then replaced at 24 hours with a transparent, polyurethane dressing. The polyurethane dressing was replaced every seven days, at any

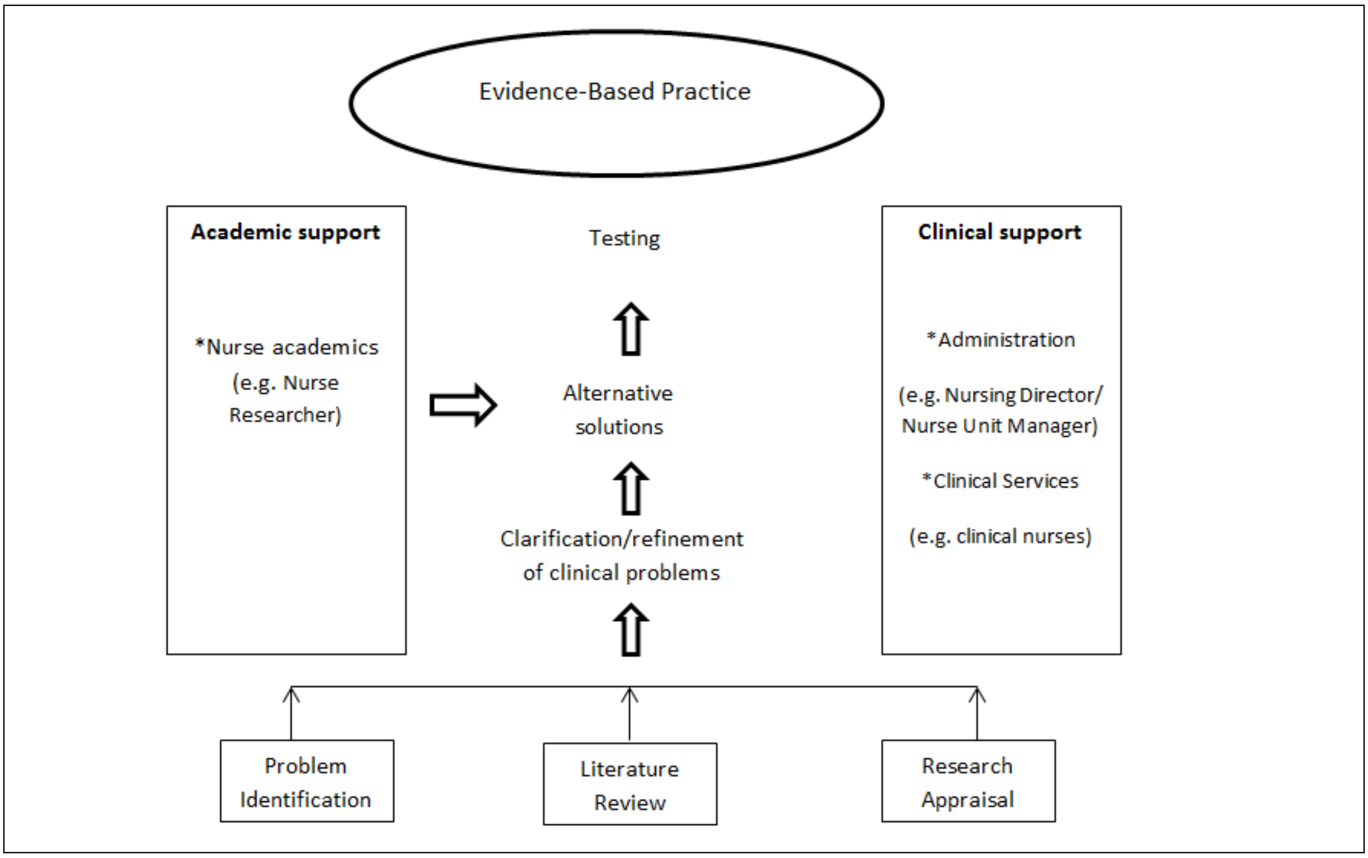


Figure 1. The Collaborative Model for Evidence-Based Practice (adapted with permission)[5].

time the dressing was soiled, loose, or had visible blood pooled under it. Both dressings are recommended under various clinical practice guidelines[18,19].

Whilst the NUM agreed that catheter-related blood stream infections are a valid clinical problem in cancer care, she was unsure whether the claims and data provided by the sales representatives were accurate. Thus a systematic review of the current clinical evidence on the effectiveness of chlorhexidine-impregnated sponge dressings to reduce catheter-related blood stream infections was warranted, prior to trialling this product in the unit. At this stage, the NUM and the nurse researcher proposed relevant clinical questions to resolve the identified clinical problem. The nurse researcher is co-located in the clinical environment of the cancer centre[2].

The clinical questions were:

- Is the routine use of chlorhexidine-impregnated sponge dressings justified for reducing catheter-related blood stream infections in cancer patients with CVADs in our cancer centre?
- Are the dressings more effective in reducing infections than the products used in current practice guidelines for CVAD dressing changes?

The Nursing Director was informed of the initiation and the progress of the project throughout the project life.

Research appraisal: conducting a systematic review

After the clinical problem had been identified and clarified, the nurse researcher conducted a literature search during 2009 locating a systematic review conducted by Ho *et al.* in 2005[20]. The use of systematic reviews has been well recognised in health care to inform clinical decisions[21]. The meta-analysis conducted by Ho *et al.* was published in 2006 and reported results that favoured the use of chlorhexidine-impregnated sponge dressings in a mixed population of neonates and adults with epidural catheters or centrally inserted catheters[20]. This systematic review searched for clinical trials up to November 2005, four years prior to the current review. Thus, an updated review, limiting the population to adult patients receiving cancer care and intensive care was needed to further validate the use of the dressings in this clinical setting. Limiting the population to adult patients in the current review was expected to provide more precise and clinically applicable data for the decision making in this instance. It was anticipated that this updated review would provide a greater precision for number-needed-to-treat analysis and be a useful clinical tool to guide and inform practice in this cancer centre.

While it was expected that this clinical case would have practice implication for all units in the cancer centre, in applying the collaborative model for practice development at the service level it was decided that the day therapy unit would be responsible for research appraisal for this clinical case. After negotiations between the nurse researcher and the NUM, a registered nurse (RN) from the day therapy unit was released from a direct clinical service provision role for 12 days to conduct an updated systematic review with the nurse researcher. The systematic review aimed to report on the results of available evidence up to September 2009, specifically focusing on adults with CVADs. The primary objective of this review was to compare the number of catheter-related blood stream infections occurring in adult patients in whom chlorhexidine-impregnated sponge dressings were used, against the number of infections occurring in patients in whom the dressings were not used, to evaluate the effectiveness of the dressings in reducing infections and catheter colonisation.

The standard methodology of the Cochrane Collaboration was used. A search was undertaken of the Cochrane Central Register of Controlled Trials (Issue 4, 2009), Medline, EMBASE and CINAHL for relevant articles. All databases were searched during September 2009, using the following MeSH terms: antimicrobial, antimicrobial dressing, Biopatch®, Broviac®, catheter, catheterisation, dressing, central venous, central, chlorhexidine, chlorhexidine gluconate-impregnated, chlorhexidine impregnated, Hickman® line and venous. Hand searching of infection, disease and cancer journals, as well as relevant conference proceedings was performed. No language or date of publication restrictions were employed during this search. Reference lists of all retrieved articles were searched for additional studies.

The RN and the nurse researcher reviewed each paper independently. Randomised controlled trials in which the effect of chlorhexidine-impregnated sponge dressings could be compared with a control group which received no chlorhexidine-impregnated sponge dressings were considered. Participants in the included studies were adult patients (>18 years) with a CVAD and a chlorhexidine-impregnated sponge dressing. There were no restrictions placed on the diagnosis of the patient or setting (for example, inpatient, outpatient) when conducting this search. This systematic review included five randomised controlled trials involving up to 2993 patients in cancer and critical care units[22-26]. This review identified an additional trial that was not included in Ho *et al.*'s 2006 review[20] involving an additional 3778 adult patients. All included published studies investigated the effects of Biopatch®, but not any other brand or type of chlorhexidine-based dressings. Two meta-analyses were performed using the results of the five included studies[22-26]. The results strongly favoured the use of chlorhexidine-impregnated sponge dressings on central catheter entry sites for reducing catheter-related blood stream infections (Odd Ratio [OR]: 0.43, 95%; Confidence Interval [CI]: 0.29, 0.64) and catheter colonisation (OR: 0.43, 95% CI: 0.36, 0.51).

The forest plots evaluated the use of the dressings versus the use of non-chlorhexidine-impregnated sponge dressings, and compared and contrasted the incidence of catheter-related blood stream infections and catheter colonisation between these two groups (shown in Figures 2 and 3 respectively). Despite the methodological differences across the included studies, heterogeneity I^2 of the meta-analysis using catheter-related blood stream infections as the main outcome was 0%. Although heterogeneity I^2 was higher for catheter colonisation (32%), it could be considered as being insignificant[27]. The insignificant heterogeneity indicated the pooling of data between these trials were appropriate. The number-needed-to-treat analysis for preventing catheter-related blood stream infections was 62; that is one episode of infection can be prevented in every 62 patients when the chlorhexidine-impregnated sponge dressings are routinely used. One episode of catheter colonisation can be prevented in every 11 patients with the use of the dressing.

Determining alternative solutions: implications for clinical practice

The nurse researcher and the NUM discussed the findings of the systematic review and the subsequent implications for clinical practice. The meta-analysis presented in this review reported results favouring the routine use of chlorhexidine-impregnated sponge dressings on CVADs[22]. This review intended to examine whether chlorhexidine-impregnated sponge dressings should be routinely used in the cancer centre. In addition to considering the evidence, a cost analysis was performed. Each dressing costs

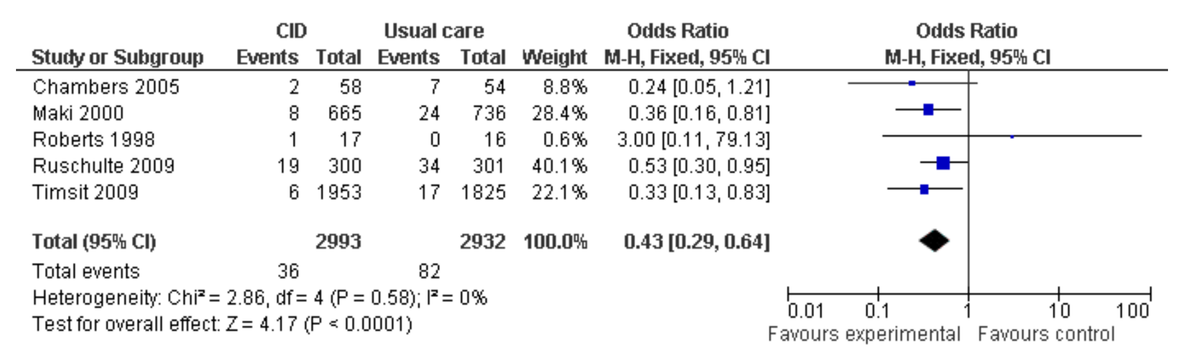
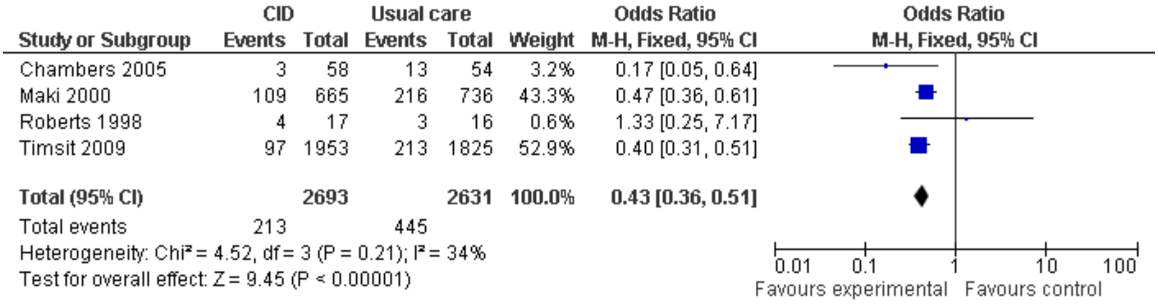


Figure 2. The forest plot comparing the use of chlorhexidine-impregnated sponge dressings versus not using chlorhexidine-impregnated sponge dressings in catheter-related bloodstream infections.



Study or Subgroup	CID Events	CID Total	Usual care Events	Usual care Total	Weight	Odds Ratio M-H, Fixed, 95% CI
Chambers 2005	3	58	13	54	3.2%	0.17 [0.05, 0.64]
Maki 2000	109	665	216	736	43.3%	0.47 [0.36, 0.61]
Roberts 1998	4	17	3	16	0.6%	1.33 [0.25, 7.17]
Timsit 2009	97	1953	213	1825	52.9%	0.40 [0.31, 0.51]
Total (95% CI)		**2693**		**2631**	**100.0%**	**0.43 [0.36, 0.51]**
Total events	213		445			

Heterogeneity: Chi^2 = 4.52, df = 3 (P = 0.21); I^2 = 34%

Test for overall effect: Z = 9.45 (P < 0.00001)

Figure 3. The forest plot comparing the use of chlorhexidine-impregnated sponge dressings versus not using chlorhexidine-impregnated sponge dressings in catheter colonisation.

A$6.25 and should be changed 24 hours after line insertion and every seven days thereafter, as per local policy and manufacturer recommendations. According to a local database, the median length of time that CVADs were in situ in cancer patients was 29 days. If a central catheter is in situ for 29 days, it will require six dressings during this time. Therefore, the cost of preventing one episode of catheter-related blood stream infection is A$2325. That is, A$6.25 (dressing cost) x 6 (number of dressings required over 29 days) x 62 (number needed to treat) = A$2325.

Although this may initially seem a significant cost, in 2007 Halton and Graves suggested that the economic implications of treating a catheter-related blood stream infection are far greater[14]. They described an episode of catheter-related blood stream infection leading to an increase of US$18,000 in hospital costs and a 12-day increase in hospital length of stay, notwithstanding the increased morbidity and mortality risks to the patient[14]. Unfortunately, Australian data on catheter-related blood stream infection were not available for comparison at the time of the project. In addition, nursing time associated with the use of such dressings was expected to be minimal. In summary, this review concluded that chlorhexidine-impregnated sponge dressings provide a simple, cost-effective method to reduce the incidence of catheter-related blood stream infections occurring in patients within the cancer centre.

Testing/implementing practice change

Upon completing the cost analysis, systematic review and subsequent educational meetings, the nurse researcher and the NUM of the day therapy unit presented the findings to the Nursing Director of Cancer Services, who held the ultimate fiscal responsibility over all the units within the cancer centre. The Nursing Director has since approved the use of the dressings throughout the service and it is now standard practice to apply the dressings, covered by a non-occlusive dressing, when changing CVAD dressings at this hospital. In this case report, the support of the Nursing Director was identified as a crucial factor to the successful roll-out of the practice.

Subsequently, the nurse researcher disseminated the results of the systematic review using posters and clinical education meetings. In these education meetings, the results of the cost analysis and systematic review on chlorhexidine-impregnated sponge dressings were presented to all RNs in the cancer care centre. The manufacturer's representative was also invited to teach the nurses about the correct application of these dressings. All nurses were asked if they had any objections to the proposed change in practice. No nurses expressed objections to using the dressings for CVADs in the cancer centre.

Discussion

The systematic review in this case report describes chlorhexidine-impregnated sponge dressings as a cost-effective and simple clinical intervention to reduce the incidence of catheter-related blood stream infections in adult patients within the cancer service. However, this case report also identified the challenges encountered by nurse administrators and clinical nurses in making evidence-based decisions. These challenges echoed the barriers as reported in the literature. Although a number of frameworks are now available to facilitate evidence-based practice, this case report demonstrated a feasible operationalisation of a collaborative model.

The collaboration between the nurse researcher, the nurse administrators and the clinical nurses was the key to the success of this clinical case. The Nursing Director's awareness of the initiation and progress of the project was important, as she was able to champion research, practice change and budgetary efficiencies. It is crucial for cancer services and health administrators to allocate sufficient resources to provide appropriate infrastructure to enable evidence generation and research utilisation at the service level. For cancer centres that have no access to a nurse researcher, formal links with university academics can be formed (for example, joint appointments/research fellows).

This case report followed the collaborative model, which described four important steps:

1. problem identification and clarification
2. literature search and research appraisal
3. determining the alternative solutions and implications for clinical practice, and
4. testing/implementing practice change.

It is also important to acknowledge that there were a number of randomised controlled trials available in the literature for meta-analysis in this case report. In cases whereby a high level of evidence does not exist, it would be prudent to await evidence for primary research prior to practice change.

The scope of this paper is limited to the report of an evidence-based practice process, but did not further evaluate the effects of the practice change in terms of clinical outcomes. However, this case report outlines the essential steps for evidence-based practice and provides the rationale and estimated analysis of cost-effectiveness to justify the practice change. It is also acknowledged that, in an ideal situation, the systematic review conducted in the evidence-based practice process should be peer-reviewed. The quality of the systematic review in this case report was upheld by adhering to the methodology of the Cochrane Collaboration for systematic review.

Conclusion

A collaborative model for research utilisation in cancer nursing is feasible to inform the practice of cancer nurses and ensure effective patient care is delivered, subsequently improving health care outcomes. A supportive infrastructure and environment for clinical inquiry and research utilisation has been identified as necessity to enable successful implementation of evidence-based practice.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

Raymond Chan and Alison Alexander contributed to the conception and design of the study. All authors were involved in the preparation of the manuscript. All authors read and approved the final manuscript.

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Practical self-care and stress management for oncology nurses

Eileen Grafton • RN, BN, MADvPrac(Hons), GradCertClinEd, OCN, MCNA
Personal and Professional Development Consultant, EmGrow Nurse Consultancy
Lecturer, School of Nursing and Midwifery, Logan Campus, Griffith University, University Drive, Meadowbrook, QLD 4131
Email e.grafton@griffith.edu.au

Elisabeth Coyne • PhD, RN, RM, BN, MN
Lecturer, School of Nursing and Midwifery, Logan Campus, Griffith University, University Drive, Meadowbrook, QLD 4131
Email e.coyne@griffith.edu.au

Abstract

This paper aims to discuss notions of supportive care, stress for oncology nurses in provision of such care, and practical strategies for stress management. Role-related stress and burn-out in oncology nurses are challenges that require effective management at both organisational and personal levels. Oncology nurses, as do others, strive to provide exemplary nursing care for people affected by cancer, and their families. These needs reach across the physical, psychosocial, cultural and spiritual dimensions, and change over time from diagnosis through to end of life[1,2,3]. One source of stress for many oncology nurses is the attempt to manage tensions that arise from trying to provide a person-centred approach to care in a biomedically driven and physically focused health care delivery system[4]. The key concepts of self-awareness, self-care and resilience will be discussed and specific practices that empower nurses to better management stress will be presented.

Keywords: holistic care, supportive care, stress, stress management, self-care, resilience.

Introduction

The total number of people affected by cancer is growing – and will continue to grow – as the incidence of cancer diagnoses increases and survival rates improve[5]. In other words, more people are living with a cancer diagnosis, and they are living longer. Thus the potential for role-related stress encountered by oncology nurses will continue and in all likelihood increase. This has implications for the ability of nurses to sustain the delivery of best-quality care for patients and families, and for retention in the oncology nursing workforce[6]. It is imperative, therefore, that organisations and individual nurses engage in practice to effectively manage work-related stress[7]. This paper draws on evidence and the authors' experience to discuss practical practices that empower individual nurses to better manage work-related and personal stress. These practices serve to not only reduce the impact of stress on the nurse, but also to enhance professional and personal relationships, resilience, personal growth and satisfaction.

Background

Patients with cancer and their families are individuals with diverse needs that change over time as their experiences and challenges change throughout their cancer journey[3]. While for some people it is a life-threatening experience, for many people it is a life-changing experience. Because the phenomenological experience is individual, the meaning of that experience is unique to the individual and changes across the cancer journey[1,8].

In light of the individual nature of the cancer experience, the aim of supportive care is to provide for those individual needs throughout the cancer continuum – from diagnosis to survivorship, or death[1,3]. Although the definition of supportive care itself is arguably somewhat biomedically focused ("the prevention and management of the adverse effects of cancer and its treatment"[3]) the aim is to provide care for the needs of individual patients and their families across bio-psycho-social-spiritual dimensions[9]. Much supportive care is provided by nurses. Care and caring are familiar terms in nursing, yet remain difficult to quantify or define. Caring has been identified as a "moral philosophy" that serves to guide nurses' behaviour[10]. A study by Hudacek[11] on caring from the nurse's perspective, using a sample of 200 nurses from several countries and work areas, identified seven main themes. From a synthesis of the paper, these themes are summarised in Table 1.

Table 1. Themes of caring from nurses' perspectives (Hudacek, 2008).

Caring	Being "attentive, concerned and knowledgeable", and a "free offering of oneself".
Compassion	Empathetic concern, going beyond just hands-on skills to being *present* physically and emotionally.
Spirituality support	Listening to patients' concerns, providing access to resources to allow for prayer and expression of faith.
Community outreach	Health promotion and advocacy within the community on behalf of the disadvantaged.
Providing comfort	Facilitating provision of relief from pain, physical and emotional distress.
Crisis intervention	Critical thinking, using knowledge, skills and intuition to recognise life-threatening situations and initiate interventions.
Going the extra distance	Acts of person to person caring, simple courtesies such as a cup of coffee, humanising the experience for patients and their families.

A key finding was that caring encompassed the body, mind and soul of the nurse in that it "entails commitment, kindness and respect for patients [and families]"[11]. Although *holistic* nursing is not specifically identified by nurses in the study, engagement of the body, mind and spirit of the nurse, the use of presence and spiritual care are mentioned as important aspects of care[11], suggesting that caring is viewed by nurses as a holistic endeavour.

Holistic nursing care is underpinned by a philosophy that recognises the whole human being and "the interconnectedness of body, mind, emotion, spirit, energy, social, cultural, relationship, context and environment"[9]. Integration of patients' physical, psychological and emotional needs with their cultural and spiritual beliefs and values is fundamental in holistic nursing practice. In providing *holistic* nursing care, therefore, the nurse considers the bio-psycho-social-spiritual dimensions of an individual and how these dimensions relate to each other[12,13]. The focus is on optimising health and wellbeing, alleviating suffering, supporting the whole person throughout their journey and finding meaning from their experience[9]. This is congruent with the intent of supportive care and, as such, oncology nurses draw on their knowledge, expertise, skills and intuition to act in therapeutic partnership with the patient and family[9,11]. Indeed, the provision of emotional, psychological and spiritual, supportive care for patients and families is seen as a core component of oncology nursing[14,15]. The provision of holistic care, however, requires nurses to give of themselves at a personal and spiritual level – within a professional relationship. In much of the holistic nursing literature, the therapeutic use of self or empathetic engagement[16,17] by the nurse is considered the single most important instrument in the provision of holistic patient care and in sustaining patient relationships[9,18,19].

Challenges for oncology nurses

Giving of oneself, however, can have costs[7]. The prevalence of stress, compassion fatigue and burn-out amongst oncology nurses has been well documented[7,20]. The very caring qualities that attract nurses to cancer nursing are also a source of their risk to the impacts of work-related stress[16]. Regardless of external workplace factors, it is the emotional and spiritual component of the role; the burden of witnessing human suffering; and feelings of unpreparedness that can create moral, emotional, and spiritual stress (intrinsic stress) for the nurse. This can lead to dissatisfaction, compassion fatigue and burn-out in nurses specialising in oncology[16,21,22].

Researchers of stress assert that it is not the actual stress itself, but an individual's response to stress that influences the individual's wellbeing stress[23]. This can deplete the inner spirit of the nurse, reduce personal resources for managing stress (such as resilience), which, in turn, can result in the individual being unable to successfully manage their stress[16,24]. This may manifest as feelings of hopelessness or ineffectiveness, or even a loss of a sense of self or purpose. These feelings, together with the loss of the ability to respond empathetically or compassionately have been characterised as compassion fatigue or burn-out[4,16,25]. The prevalence of burn-out in oncology nurses is arguably no greater than in other areas of nursing, but there is a greater prevalence of emotional dissonance and greater potential for burn-out amongst cancer nurses[26]. Cancer nurses, therefore, need effective personal strategies to counter and manage their increasing risk of work-related stress.

Key concepts for stress management

Regardless of the source of stress, an individual's response occurs inside the mind, spirit and body of the individual[7]. In order to develop better stress management strategies and practices, it is important to firstly understand the concepts of self-awareness, self-care and resilience.

Self-awareness

Self-awareness and management of the psycho-social self is known as Emotional Intelligence (EQ). This term was popularised by Goleman[27], and describes an ability to sense, perceive, use, understand and effectively manage emotions. The practice of being self-aware provides individuals with a choice about how they act, rather than responding though impulse, instinct or without thought for consequences[27]. Self-awareness, therefore, is arguably fundamental in any form of stress management[28]. Practices to develop self-awareness involve engaging in practices that enable transformation or reframing of events in order to understand them in context[28]. Practices include meditation, radical enquiry, mindfulness and reflection. Reflection or reflective practice is widely used in nursing and is a cognitive process used to guide personal and professional development[29]. Developing self-awareness at a deeper level provides insight into how our past experiences, beliefs and values inform our perceptions of events and situation, and thus shape our behaviours and response[7,27,30].

Self-care

Self-care has been defined as “the practice of activities that individuals initiate and perform on their own behalf in maintaining life, health and well-being”[31]. Therefore, self-care nurtures one’s bio-psycho-social-spiritual wellbeing by enhancing self-awareness, self-efficacy, confidence and a sense of purpose and meaning[13,16,25,32,33]. Nurses who practise self-care, develop self-awareness which, in turn, reduces their work-related stress and predisposition to burn-out; enhances their ability to provide an effective therapeutic relationship; and improves collaborative relationships with colleagues[16,31]. Examples of self-care activities include: exercise; meditation; massage; conscious breathing or breath work; yoga; aromatherapy and self-reflection[34]. When choosing self-care activities, it is important to engage in activities that are congruent with personal beliefs and culture and are thus meaningful to the self[7]. Self-care programs and practices that support bio-psycho-social-spiritual wellbeing and promote positive adaptation and transformation have been shown to result in greater resilience among nurses[7,35].

Resilience

Resilience is an eclectic concept that has been characterised as an enabling resource in managing response to stress[20]. Resilience as an individual characteristic has been described as having the ability to: restore and strengthen the bio-psycho-social-spiritual wellbeing of the “self”; cope more effectively during stressful situations; and grow and learn from the experience[25,36,37]. Importantly, resilience is able to be developed or enhanced through self-care practices that enhance bio-psycho-social-spiritual wellbeing[7,13,16,32,33].

Resilience development has been conceptualised as a cyclic process of first using one’s innate resilience to cope with stress or adversity, and then developing that innate resilience through supportive self-care practices. This, in turn, has been shown to lead to positive adaptation and cognitive transformation and, therefore, greater resilience[7]. A conceptual representation of the resilience development cycle is shown in Figure 1.

Practices for stress management and personal growth

Self-care practices such as meditation, breath work, reflection and racial enquiry enable an individual to become more self-aware and change perception and response in times of acute stress as well as support long-term wellbeing[7,38]. Cultivating a strong sense of self-awareness and engendering the practice of “taking a breath” before responding, provides an opportunity to notice when a stress response is occurring and thus moderate the response[38,39]. In the state of acute stress, a four-step process of awareness, breath, curiosity and doing things differently (ABCD) is recommended. This process is summarised in Table 2.

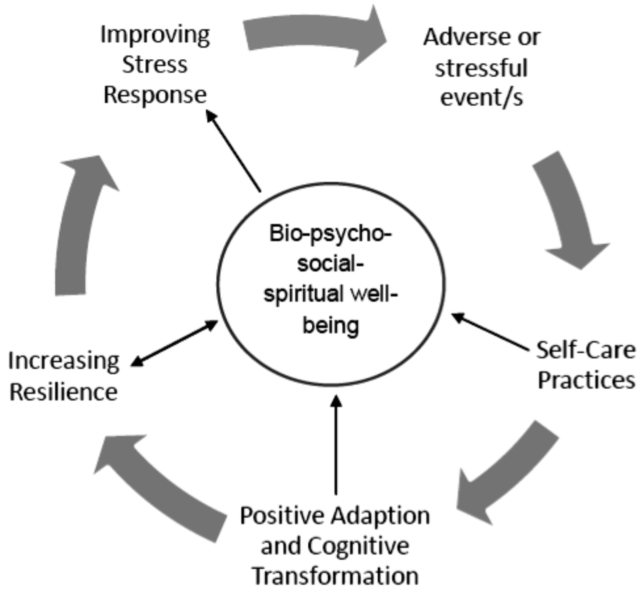

Figure 1. Cyclic Resilience Development Model (Grafton, 2009).

Table 2. The ABCD Stress Management Strategy.

A: Awareness of self
Honest, non-judgemental self-reflection
Notice and release negative self-talk
Mindfulness practices – observe, without needing to avoid or change
Acknowledge what you are feeling without judgement
Journal observations
B: Breath
Take a deep breath (abdominal, yogic or “belly” breathing)
Bring awareness to the body (scan though the body)
How is my breathing? Is the breath catching, restricted somewhere?
What do I feel? (emotion)
What sensation is there in the body? And where do I feel it?
Can I soften within – take breath to it?
C: Curiosity, compassion and choice
Who am I giving power over me? (real or imagined)
Ask “what is this feeling really about – what needs attention?”
What is driving me or underlying the feeling? (beliefs, values, ideals ...)
Create empowerment statement – “I choose to allow ...”
D: Do something differently
Nurture yourself regularly with self-care practices
Attend to the physical body – diet, sleep, rest, exercise
Nurture the emotional and spiritual body with things that are meaningful to you
Seek help
See health professional (GP, counsellor, trusted friend)
Conversation is not about justifying, defending or criticising – authentic friend will help/support your self-discovery

Following up on stressful events or experiences through practices such as reflective journal writing deepens awareness, supports release of the emotions and uncovers learning from the experience[13, 20,25,38]. Regular engagement in these and other practices that nurture the bio-psycho-social-spiritual self enhances resilience, aids the release of self-limiting beliefs and behaviour patterns, transforms perceptions and thus buffers against chronic and future stress[6,7,25,39].

Conclusion and implications for practice

Supportive care provides meaningful, timely care across the physical, psycho-social and spiritual dimensions of each person, throughout their cancer journey. Nurses engaged in provision of supportive care for patients with cancer and their families encounter intrinsic role-related stress. Active engagement in self-care practices develops awareness of the interconnectedness of the body, mind and spirit within themselves, nurtures and restores the self of the nurse, and develops resilience. Nurses who are resilient are less vulnerable to the impact of stress associated with their role and are, therefore, better equipped to be fully present and available to provide care that is holistic and sensitive to individual needs across the cancer continuum.

While this paper is aimed at practical stress management practices for nurses, the practices may be equally appropriate for patients and families. Through relationship and sharing of stress management practices, the nurse is also able to support patients and families to reflect and reframe their experiences, nurture their own resilience and find meaning in the cancer experience.

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† $p=0.0001$; based on global satisfaction scores; unblinded assessments; baseline BTP medication includes oxycodone and short-acting morphine.

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