Australian Journal of Cancer Nursing

The Official Journal of the Cancer Nurses Society of Australia

Volume 22 Number 1
May 2021

In this issue

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.

Notes for contributors
All correspondence relating to the journal should be directed to the editors. Guidelines for contributors to the journal can also be obtained from the editors. The *AJCN* is published twice a year.

ISSN 1441-2551

Australian Journal of Cancer Nursing

Volume 22 Number 1 — May 2021

Published twice a year by

CAMBRIDGE MEDIA
your publishing partner

10 Walters Drive, Osborne Park, WA 6017
Tel: (08) 6154 3911 Fax: (08) 6314 5299 Web: www.cambridgemedia.com.au

Publisher Greg Paull
Copy editor Ceridwen Clocherty
Design and layout Gordon McDade

Editorial

Jacqueline Bloomfield • RN, PhD, MN, PGDip (Prof Healthcare Ed), PGDip (Midwifery), PGCert (Onc Nursing), BN
University of Sydney Susan Wakil School of Nursing and Midwifery, Faculty of Medicine and Health, The University of Sydney, NSW, Australia
Email jacqueline.bloomfield@sydney.edu.au

Karen Strickland • RN, PhD, MSc, PGCert, BSC, FHEA, FEANS
Professor of Nursing and Head of School, School of Nursing, Midwifery & Public Health, Building 10, Room 34, Faculty of Health, University of Canberra, ACT, Australia
Email karen.strickland@canberra.edu.au

For referencing Bloomfield J & Strickland K. Editorial. Australian Journal of Cancer Nursing 2021; 22(1):1.

DOI https://doi.org/10.33235/ajcn.22.1.1

Greetings to everyone and welcome to the latest issue of the *Australian Journal of Cancer Nursing*. The year is now in full swing and, like us, you too may be finding it hard to believe that it is already April.

In Australia we have been fortunate regarding the effects of the global pandemic which is still having devastating effects in Europe, the UK, the USA and many parts of Asia. Closer to our shores, COVID-19 is causing increasing concern in Papua New Guinea, where the number of cases continues to rise; many of those affected are healthcare workers. Our thoughts go out to our professional colleagues working in Papua New Guinea, and we hope that the situation soon improves.

While the national vaccination program has now started in Australia, it has become evident that this is a mammoth challenge. Subsequently, we are now learning that it is going to take longer than anticipated. As front-line nurses and health workers, many of you may have already had your first vaccination, yet, you will also know that this is not a time for complacency. We must all stay vigilant to the dangers of the disease, and the importance of infection control. This is especially important given the vulnerability of people with cancer.

While Australia can be applauded for the way in which it is addressing the pandemic, it is unfortunate that the same cannot be said for our aged care system. In March the final report of the Royal Commission into Aged Care Quality and Safety was published.[1] This report highlighted considerable deficits related to accessing healthcare, system navigation, staffing levels and training, and funding issues. What is, however, of more concern are the number of cases of substandard care and abuse that now pervades the Australian aged care system. As stated in the report, "this is a disgrace and should be a source of national shame" (p. 68). Without doubt, it is.

Like many other countries, Australia has an ageing population. Our aged care system must now undergo extensive reform to ensure that it can fully meet the current and future needs of older people in our community. It is essential that older people are treated with the dignity and respect that they deserve. As nurses and healthcare professionals, we all have a role in this. As cancer can be considered an age-related disease, this is of particular relevance. Cancer nurses are and will be caring for people already receiving or needing aged care services in the future, and we challenge you to get involved. Improving your knowledge about aged care, increasing public awareness of available aged care resources, or advocating for the needs of older people are just some of the ways that you can help to make a difference. Collectively, our voice as nurses can lead to improvement. Working together to make aged care a national priority is now imperative.

The Editors,

Jacqueline Bloomfield and Karen Strickland

Reference

1. Royal Commission into Aged Care Quality and Safety. Final report: executive summary. Canberra: Commonwealth of Australia; 2021. Available from: https://aged care.royalcommission.gov.au/publications/final-report-executive summary

Rituximab administration guidelines for the haematology patient: a critical literature review

Christine Bristow*
School of Health and Human Sciences, Southern Cross University, Southern Cross Drive, Bilinga, QLD 4225, Australia
Email cfbristow@optusnet.com.au

Kirstine Shrubsole*
School of Health and Human Sciences, Southern Cross University, Southern Cross Drive, Bilinga, QLD 4225, Australia
Email kirstine.shrubsole@scu.edu.au

Nedeljka Rosic*
School of Health and Human Sciences, Southern Cross University, Southern Cross Drive, Bilinga, QLD 4225, Australia
Marine Ecology Research Centre, Southern Cross University, Lismore, Military Rd, East Lismore, NSW 2480, Australia
Email nedeljka.rosic@scu.edu.au

*Corresponding author

Keywords Rituximab, Lymphoma, Leukaemia, Hypersensitivity reaction, Administration

For referencing Bristow C et al. Rituximab administration guidelines for the haematology patient: a critical literature review. Australian Journal of Cancer Nursing 2021; 22(1):2-8.

DOI https://doi.org/10.33235/ajcn.22.1.2-8

Abstract

Background Rituximab is a chimeric monoclonal antibody that targets the cluster of differentiation-20 cells found in patients with B-cell leukaemia or lymphoma. Rituximab is administered in conjunction with complex chemotherapy regimens to enhance probability of longer remission. However, rituximab can cause a hypersensitivity reaction due to the large cytokine release. Therefore, rituximab is administered very slowly on the first exposure.

Objective To evaluate the current practice for rituximab administration relevant to the treatment of B-cell leukaemia and lymphoma in order to determine the presence of any evidence-based guidance concerning dose administration times post-completion of a non-reactive rituximab dose.

Methods A critical literature review of primary articles in CINAHL, Medline, PubMed and Joanna Briggs Institute was conducted up to March 2019.

Findings Eight studies met the inclusion criteria and were evaluated in the review. The rituximab hypersensitivity infusion-related reaction rate was 77% for the first dose, 3–8% for the second and 0% for subsequent doses, indicating the potential for modification of drug administration.

Introduction

The monoclonal antibody rituximab is a medication that targets the differentiation-20 cells (CD-20) antigen expressed on the surface of B-cells[1]. Rituximab is used to treat patients with B-cell leukaemia or lymphoma, typically in conjunction with a complex chemotherapy regime[2]. Rituximab is administered via an intravenous (IV) infusion every 4, 6, 8 or 12 weeks dependent on individual patient regimes for up to 24 months[1]. There is evidence to link maintenance rituximab to longer remission periods in patients with haematological cancer[1]. However, monoclonal antibodies such as rituximab often cause adverse immune system reactions due to cytokine release during the infusion.

If rituximab is administered too quickly, the release of cytokine can result in cytokine release syndrome (CRS)[3–4]. CRS is defined as an extreme immune response and can be toxic to the body[4]. The first dose of rituximab is often the most successful in reducing tumour burden and thus consequently causes a greater cytokine release reaction. Manufacturing guidelines recommend the first dose be administered over a slow titration to allow the patient's immune system time to adjust to the cytokine release[5,6]. High levels of cytokine release can trigger symptoms of fever, chills, tachycardia, hypotension, urtcaria, dysnea, bronchospasm, nausea, vomiting and pain[3,7]. Lenz[8] states up to 77% of patients receiving rituximab are likely to have an adverse infusion-related reaction during their first dose.

Following current manufacturing guidelines, the first dose of rituximab may take 4–6 hours for completion[5]. The time of completion for this first dose largely depends on whether the

rituximab infusion needs to be temporarily paused to control a hypersensitivity reaction. Once the first dose has been administered, the infusion rate for subsequent doses can be adjusted accordingly. For example, the second dose may be infused over 3–4 hours, then the third dose can be administered over 60–90 minutes if there has been no previous adverse reaction. The rate for each subsequent 'maintenance dose' is thereby continued unless a consequent hypersensitivity reaction is experienced.

However, there is little guidance available for health services about how to administer rituximab to patients after there has been a delay in their treatment regime. Consequently, individual health services and nursing units must develop their own protocols which potentially may not be evidence-based. For example, an unpublished hospital policy from a Queensland Health facility located in a metropolitan area recommends that if a patient fails to have their dose of rituximab within 12 weeks of their previous dose, the patient is required to have their dose over the first dose administration guidelines again, regardless of their history of no previous hypersensitivity reactions. This current rituximab administration guideline may cause difficulty for haematology clinics and oncology day units which are often running at capacity. Finding the availability to treat a patient for a 6-hour period is often difficult and can take days to weeks to accommodate due to the capacity within cancer care day units. Furthermore, patients themselves may get frustrated with the requirement to spend the full day within the unit when they have previously received their treatment within a 2-hour period[4].

In addition to these operational challenges and patient dissatisfaction, it is unclear if a slowly tritiated rituximab infusion is clinically necessary for patients who have already received a reaction-free infusion. Haematology patients typically experience an infusion-related reaction on the first infusion due to the first dose of rituximab being the most effective in destroying the targeted CD-20 cells[7]. Consequently, the patient's tumour burden is decreased with subsequent doses which reduces the reaction rates[7]. While a patient is on maintenance rituximab, the tumour burden should remain low, unless there is new evidence of disease relapse or progression[9].

There could be a number of potential benefits if infusion units did not need to provide a slowly titrated rituximab dose for patients who previously experienced reaction-free rituximab infusions. Patients would benefit from the altered practice due to the decreased burden on their time. Additionally, unit productivity and efficiency may improve by increasing the number of infusions which could be completed each day[7]. This could also lead to a financial benefit as the change of practice would improve utilisation of the nursing care that patients require which could be used to efficiently treat other patients[7]. Consequently, we aimed to evaluate the evidence for rituximab administration relevant to the treatment of B-cell leukaemia and lymphoma. Specifically, we sought to determine the presence of any evidence-based guidance concerning dose administration times post-completion of a non-reactive rituximab infusion by conducting a critical review of relevant literature.

Method

Design

We undertook a critical literature review to evaluate the literature pertaining to dose administration times post-completion of a non-reactive rituximab infusion. A critical literature review was selected to allow for different study designs to be incorporated into the findings, and so the research team could make iterative decisions once familiar with the literature[10]. The specific research questions this review sought to address were as follows.

In the treatment of B-cell leukaemia and lymphoma:

- What is the incidence of adverse reactions to rituximab infusions?
- What are the risk factors for a rituximab infusion reaction?
- What evidence is available to guide safe titration of rituximab administration post-completion of a non-reactive rituximab dose?

Search strategy

A systematised literature search of four databases (CINAHL, Medline, PubMed and Joanna Briggs Institute) was conducted using keywords relevant to the treatment of B-cell leukaemia and lymphoma, and the drug rituximab. The Population, Exposure and Outcome (PEO) question format was used to answer the research questions, as this is recommended for reviews of risk factors[11]. For this review, the Population was adult patients receiving rituximab in their haematology treatment regimen, the Exposure was a rapid rituximab infusion after an extended timeframe, and the Outcome was the risk of a hypersensitivity or allergic reaction during the infusion. The key search terms used were rituximab infusion, hypersensitivity reaction, infusion time and administration. Boolean terms were not used due to the number of articles yielded from the original key search terms. The only limiter applied throughout the search process was during the Joanna Briggs Institute database search which was limited to the cancer care subject. The justification for this limiter was that this review is based on treatment options for haematology patients. The search strategy, including the databases, key search terms and number of articles found in the search process are shown in Table 1.

The critical literature search was undertaken in March 2019. No search limitations were placed on the date of publication, study design nor language of publication. The authors were open to explore any studies that provided guidance for rituximab titration and examined their rationale. Articles were considered eligible for inclusion in this review if they met the following criteria:

Table 1. Databases and search terms used to identify literature for review

Database	Search terms	No. articles
CINAHL Plus	Rituximab infusion	7
AND	Hypersensitivity reactions	
Medline	Rituximab infusion	27
AND	Hypersensitivity reaction	
PubMed	Rituximab infusion	14
AND	Hypersensitivity reaction	
AND	Infusion time	
Joanna Briggs Institute	Rituximab	2
AND	Administration	
Limiters	Cancer care	
Total records identified after database searching		50
Total records after duplicates removed		41

- were published in the form of a primary research article,
- were related to any study design,
- aimed to predict or review incidences of infusion-related reactions to the monoclonal antibody rituximab, and
- involved adult patients who received rituximab for a haematological diagnosis.

Study selection, screening and data extraction

The first author conducted the literature searches, then screened potential results by title and abstract, retrieved the full text and excluded those that did not meet the inclusion criteria. This involved only one reviewer due to the scope of the paper and resource constraints[12]. For each study, the following information was extracted – study design, participant characteristics, data collection methods, study outcomes and potential limitations. The data extracted from the included studies was checked by both co-authors for accuracy. A comprehensive summary of the data extracted from each eligible study can be found in Table 2.

Results

The literature search method yielded 50 articles. Once the duplicates (n=9) were removed, titles and abstracts were screened for relevance (n=41). The main reasons for exclusion were that the article focused on other monoclonal antibody therapies in conjunction with rituximab. Another reason for exclusion was that the patient population's diagnosis or health condition was not haematological in nature. After this screening process was completed, 17 full-text articles were reviewed and those that were not primary research nor closely relevant to the research question were removed (n=8). A further (n=1) article[13] was removed due to being a duplicate of Laudati et al.[7] once entirely reviewed (see Figure 1 for a modified PRISMA[14] flow diagram).

Ultimately, eight studies were included in this critical literature review that related to factors influencing infusion-related reactions to rituximab in haematological patients. A summary of each study's design, sample, results and potential limitations is detailed in Table 2.

Study design

Five of the studies collected data from retrospective studies where the data was obtained from past patient charts. The remaining three were prospective studies that followed the rituximab patient's journey throughout the study period. There was a mixture of data collection methods and mixed studies designs.

Participant characteristics

All included studies involved adult patients only, males and females ranging between 18–93 years of age. Two studies[7,15] found females were more likely to have a hypersensitivity reaction than males; these results can be found in Table 2. The locations of the included studies according to the country are also shown in Table 2.

Infusion-related reactions: Incidence and risk factors

The included studies varied in their reasons for completing their studies, although all concentrated on analysing the cause of rituximab-related infusion reactions, the severity of the reactions, and in which cycle of treatment the reactions occurred. Lang, Keefe and Schultz's[1] primary purpose was to identify the predicting elements for an infusion-related reaction during the 90-minute rituximab infusion. The mixed method study focused on those patients undergoing rapid rituximab rather than the first slow titrated dose. Out of the 294 patients who received the rapid dose, 43 (14.6%) patients experienced an adverse reaction. Lang et al.[1] concluded patients who had higher white blood cell and lymphocyte counts were significantly more likely to experience an infusion-related reaction. The lymphocyte count was based on pathology testing prior to the administration of the planned rituximab dose. The lymphocyte count lowered throughout treatment and, consequently, Lang et al.[1] found the risk of infusion-related reaction also lowered over ongoing doses[1]. The retrospective study by Lang et al.[1] was conducted over 4 years and, overall, concluded it was safe for patients to have rapid doses of rituximab regardless of patient characteristics.

Hong et al.[9] conducted a similar mixed method study to Lang et al.[1] although over a 7-year period. Hong et al.[9] set out to evaluate patient risk factors for rituximab infusion-related reactions for patients mostly with B-cell non-Hodgkin lymphoma. Hong et al.[9] evaluated 169 patients and stated that all but one patient experienced an infusion-related reaction while undergoing the first dose of rituximab. However, only two patients went on to have another reaction in cycle two of treatment (p=0.002). Similar to Lang et al.[1], Hong et al.[9] proposed that higher lymphocyte counts may increase the probability of infusion-related reactions, and that these reactions may occur at

a greater severity due to CRS. The main findings of Hong et al.'s[9] study was that bone marrow involvement was the strongest risk factor for an infusion-related reaction. This finding highlights that bone marrow involvement should be identified and considered prior to administering rituximab, as the patient is more 48% more likely to react on their first dose[9].

Jung et al.[15] also conducted a retrospective study comparable to Lang et al.[1] and Hong et al.[9] to examine the incidence of, and risk factors for, infusion-related reactions to rituximab. The 5-year study examined 568 patients, the largest sample size of the included studies. Jung et al.[15] reported 281 (49.4%) infusion-related reactions in the study, of which 40.5% occurred in the first infusion of rituximab. While almost half of the patients experienced at least one infusion-related reaction in their treatment, Jung et al.[15] found the incidence of infusion-related reactions for patients post the first dose of rituximab significantly reduced to 3–8%.

Administration factors

Laudati et al.[7] focused their retrospective, comparative descriptive study with two arms to investigate if priming the IV line with rituximab before commencing the infusion decreased the incidence or severity of infusion-related reactions. Laudati et al.[7] studied 200 patients over a 6-month period and found the incidence of infusion-related infusions was 35% higher for those patients whose IV line was primed with a diluent of normal saline 0.9% compared to those patients primed with rituximab (19%; p=0.01). The study demonstrated a 20% decrease in reaction rates for patients undergoing their first rituximab dose. The New York healthcare centre changed practice post their retrospective review and are now priming all their IV lines with rituximab prior to commencing the infusion for patients[7].

Re-challenging rituximab

The retrospective 5-year study completed by Levin et al.[6] focused on if, or when, it is safe for a patient to re-challenge their rituximab if they experienced an infusion-related reaction during the initial dose. During the study, nine of the 67 participants were removed as they continued to have reactions post infusion one of rituximab. Levin[6] found that 63% of patients experienced at least one infusion-related reaction during their research period. The conclusion from this study was that it was considered safe to re-challenge rituximab on the same day[6] if the infusion-related reaction was only of a grade one or two. Rituximab infusion-related reactions are graded between 1–4 depending on the severity of symptoms, as per the National Cancer Institute Common Toxicity Criteria for Adverse Events[6].

Rapid rituximab practice

The remaining three prospective studies were completed by Dotson, Crawford, Phillips and Jones[16], Yokoyama et al.[2] and Atay, Barista, Gundogdu, Akgedik and Arpaci[17]. The three studies focused on the administration times post the first dose of a non-eventful dose of rituximab. Dotson et al.[16] and Yokoyama et al.[2] both focused on analysing patients tolerating rituximab

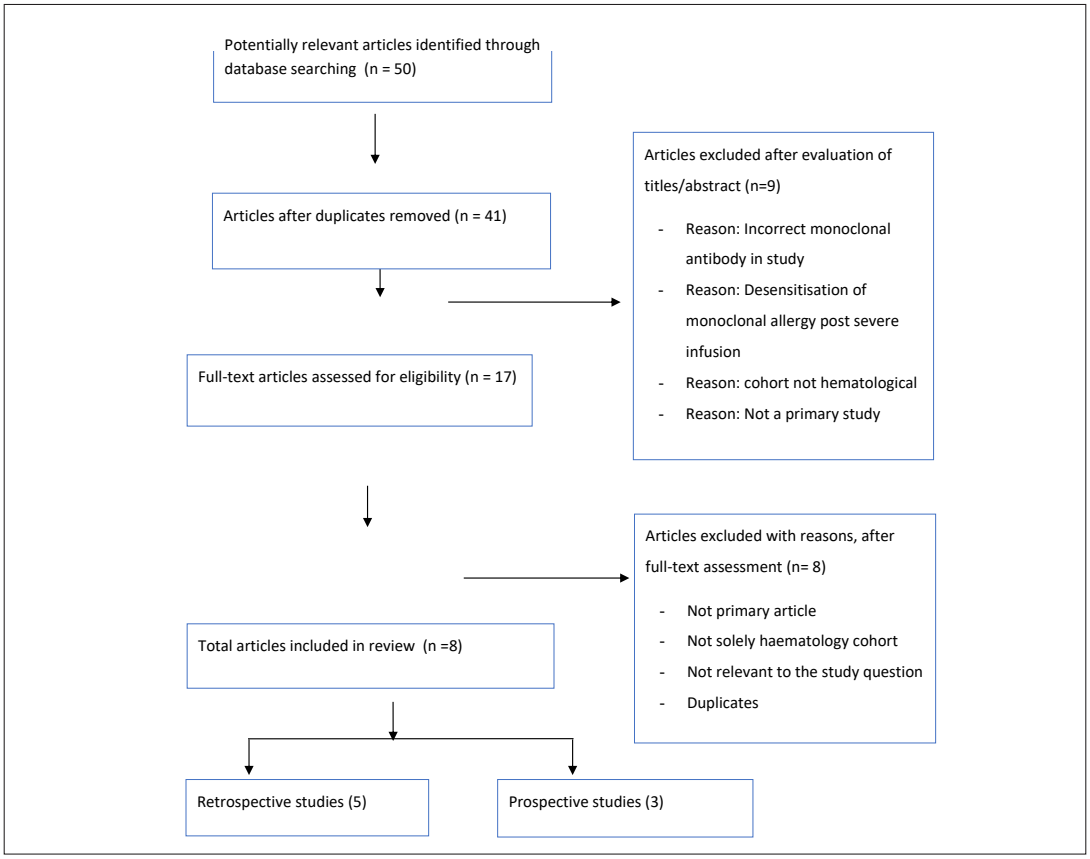

Figure 1. Modified PRISMA flow diagram of the search screening and selection process[14]

infusions safely via a 60-minute infusion. Dotson et al.[16] found that patients had no infusion-related reactions from the second dose onwards and all patients tolerated rituximab safely over a 60-minute infusion rate. Yokoyama et al.[2] also asserted that it was safe to administer rituximab rapidly over 60 minutes once a patient completed a dose of rituximab without a reaction of any severity. However, it is important to mention the Yokoyama et al.[2] study only had 18 patients included in their cohort by this stage. Yokoyama et al.[2] also only conducted their prospective study over a period of 9 months.

Atay et al.[17] examined the tolerability of a 90-minute rituximab infusion. In the 2-year study, patients commenced the 90-minute infusion from the second dose onwards if the infusion-related reaction during the first dose was classified as less than a grade three reaction. The conclusion from Atay et al.[17] was that rapid rituximab administration over 90 minutes is safe and well-tolerated from the second dose. The downfall of this study is the sample size consisted of only 75 participants which may indicate that further research on a larger sample is required.

Discussion

This study reviewed the evidence for administering rituximab infusions as part of B-cell leukaemia and lymphoma treatment. Unfortunately, no study specifically examined whether there is a relationship between the timeframe that a rituximab dose is administered and the incidence of an infusion-related reaction. However, the included literature revealed a number of potentially important risk factors and administration variables that may be used to guide titration rates for administering rituximab.

In particular, the synthesised evidence suggested that the risk of a post-infusion reaction is low if a slowly titrated dose had been previously administered with no adverse reaction or if there was no evidence of disease progression[1,16]. Specifically, it was found to be safe for patients to undergo their routine rituximab infusion rapidly over 60–90 minutes post a non-reactive dose of rituximab regardless of the time between doses[1,16]. A crucial safety element to highlight is all eight studies administered the patient's first initial dose of rituximab over the slow titrated guidelines outlined in the rituximab manufacturing pamphlet. Only from the second dose did the infusion rate increase from a minimum of 60 minutes up to 240 minutes dependent on the facility's guidelines or the study procedure[1,2,9,16]. Generally, from the studies evaluated, this rapid infusion practice occurred from the second dose of rituximab unless the infusion-related reaction was severe grade three or above in the first or previous dose. This finding aligns with the objective of the critical literature review.

The only study included in our review that excluded patients for having a 3-month break between rituximab doses was Dotson et al.[16]. The authors did not provide a reason for this exclusion criterion, which would have been a valuable and possibly contributing factor that could have altered the study conclusions. It is suggested that future research should prospectively examine whether the risk of an infusion-related reaction increases if there is a period of 12 or more weeks without a rituximab infusion.

The three retrospective studies conducted by Lang et al.[1], Hong et al.[9] and Jung et al.[15] analysed the potential contributing factors of infusion-related reactions. All three studies found that patients with lower white cell and lymphocyte counts were less likely to react to their dose of rituximab. Consequently, these medical factors should be taken into consideration, particularly when assessing the pre-medication requirement and timing of infusion. Laudati et al.[7] immediately changed practice and commenced priming all rituximab IV lines with the monoclonal. Laudati et al.[7] suggested the reason for their decrease in infusion-related reaction rates post first dose was due to the reduction in risk of CRS.

One further conclusion from the studies was that the risk of having an infusion-related reaction after the first dose of rituximab significantly decreased from 77% to 3–8% for the second dose. The studies further claimed there is almost a 0% chance of a patient experiencing an infusion-related reaction from dose three and this should be taken into consideration when prescribing pre-medication and nursing management of patients receiving rituximab[9].

Conclusion

This critical literature review regarding rituximab infusion-related reactions has synthesised the evidence regarding administration rates for rituximab in haematology patients. There were eight primary studies included and analysed. The overall conclusion is that it is potentially safe for patients to have an infusion of rituximab administered rapidly once they have successfully had a previous dose without an infusion-related reaction. Future steps should focus on developing protocols for services providing cancer care management that incorporate this evidence and lead to practice change. By changing current hospital practice there may be an increase in productivity in the treatment area by improving efficiency and nursing workflow. There may likewise be an increase in access to appointments and improved patient satisfaction; this is particularly important in an emotional healthcare setting such as cancer care.

Therefore, healthcare institutions should consider removing the requirement for patients to have rituximab slowly if they have safely had a previous dose without a hypersensitivity reaction unless the patient has evidence of progression in disease due to the increased risk of CRS. Future studies are needed to include randomised clinical trials to further assess the current guidelines of rituximab administration and provide additional evidence to guide best practice.

Conflict of interest

The authors declare no conflicts of interest.

Funding

The authors received no funding for this study.

Table 2. Methodological features and findings from reviewed studies

Author & year Location	Study design / study period	Sample size	Age range	Method of data collection	Study outcomes	Limitations
Laudati et al. (2018)[7] United States of America	Retrospective chart review comparative design Two arms: Group 1 IV line primed with a normal saline diluent. Group 2 IV line primed with rituximab	200 (109 male; 91 female)	22–93 Mean age 63	Oct 2015 – April 2016 patients received the normal saline diluent. Oct 2016 – April 2017 patients received IV line primed with rituximab prior to commencement	Patients 66% less likely to react when IV line primed with rituximab. Females (p=0.04) more likely to react than males.	Retrospective designs rely on accurate and completed documentation to be available in the patient charts Single institution
Jung et al. (2014)[15] Asia	Retrospective study 2005–2010	568 (55.3% male; 44.7% female)	Mean age 59.6±14.4	Retrospective review of patient charts for screening of patient reaction	Corticosteroids pre-medication significantly lowered reaction rate Reaction rates: -40.5% reaction in 1st dose; -7.5% in 2nd dose; -3–7% from 3rd dose Females more likely to react than males	Retrospective designs rely on accurate and completed documentation to be available in the patient charts Single institution
Levin et al. (2016) United States of America	Retrospective study 2006-2011	67 (54% male; 46% female)	Mean age 58±13	Retrospectively searched the institution's safety report system to find adverse reaction events	63% 1st dose-reaction rate Patients who have a grade one reaction are safe to be challenged in the same day	Small cohort Reliant on rituximab reactions entered in the safety report program Reliant on accurate and completed documentation to be available in the patient charts Single institution Only included the first documented reaction Some patients weren't re-challenged after grade 2 reaction
Lang et al. (2013) Australia	Retrospective mixed method study 2007–2011	294 (163 male; 131 female)	61–70	Retrospective review of patient experience and nursing management in patient charts	14.6% reacted during rapid dose 0% reaction rate post seven doses Patients with higher lymphocyte 6.9% more likely to react	Small age group of participants Single institution
Hong et al. (2012) Germany	Retrospective mixed method study 2004–2011	169	22–87 Median age 62	Retrospective review of data in charts and test results of newly diagnosed B-cell lymphoma patients	Bone marrow involvement strongest factor found for the reaction group 21.3% (n=36) reaction rate 35 patients experienced a reaction in the 1st first dose only One patient had 1st reaction on 2nd dose	B-cell lymphoma only Retrospective designs rely on accurate and completed documentation to be available in the patient charts Single institution

Cancer Nurses Society of Australia

Table 2. Methodological features and findings from reviewed studies continued

Author & year Location	Study design / study period	Sample size	Age range	Method of data collection	Study outcomes	Limitations
Atay et al. (2012)[17] Europe	2006–2008	75	19–85		90-minute infusion safe from 2nd dose	Non-Hodgkin lymphoma patients only Single institution
Yokoyama et al. (2013)[2] Japan	Prospective study Feb 2010 – Oct 2010	18 (5 male; 13 female)	38–79 Median age 56	Observational Six cohorts	60-minute rituximab infusion is safe	Small study size 8-month study Single institution
Dotson et al. (2015) United States of America	Prospective study collecting data with a mixed study format 2010–2013	50 (30 male; 20 female)	18–89 Median age 63	Data collected from two surveys with a quantitative answer format	60-minute infusion post 1st dose increases patient and nursing satisfaction 60-minute rituximab can be given safely without pre-medication	Small study size Excluded patients who had not had rituximab within 12 weeks from the previous dose Single institution Only included those patients who had grade >2 reaction previously B-cell lymphoma patients only

References

1. Lang D, Keefe D, Schultz T, Pearson A. Predictors of acute adverse events from rapid rituximab infusion. Supportive Care in Cancer 2013;21(8):2315–20.
2. Yokoyama M, Terui Y, Takeuchi K, Nara E, Nakano K, Ueda K. Infusion rate escalation study of rituximab in patients with CD20+ B-cell lymphomas: a single institution analysis in Japan. ISRN Oncology 2013;2013:1–5.
3. Yildizhan E, Kavnar, L. Cytokine release syndrome. Journal of Oncological Sciences 2018;4(3):134–141.
4. Lang D, George C. Acute adverse reactions of rapid rituximab infusion among adult patients with non-Hodgkin lymphoma and chronic lymphocytic leukemia. Joanna Briggs Institute Database of Systematic Reviews & Implementation Reports 2011;9(1):1–30.
5. Genentech. Rituxan. 2019 [cited 2019 Sep 2]. Available at: https://www.gene.com/download/pdf/rituxan_prescribing.pdf
6. Levin A, Otani I, Lax T, Hochberg E, Banerji A. Reactions to rituximab in an outpatient infusion center: a 5-Year review. Journal of Allergy and Clinical Immunology, In Practice 2017;5(1):107–113.
7. Laudati, C, Clark, C, Knezevic A, Zhang Z, Barton-Burke M. Hypersensitivity reactions: priming practice change to reduce incidence in first-dose rituximab treatment. Clinical Journal of Oncology Nursing 2018;22(4):407–414.
8. Lenz H-J. Management and preparedness for infusion and hypersensitivity reactions. Oncologist 2007;12(5):601–9.
9. Hong J, Kim JY, Ahn H, Lee S, Sym S, Park J, Cho E, Ahn J, Park S, Lee S, Shin D, Lee J. Bone marrow involvement is predictive of infusion-related reaction during rituximab administration in patients with B cell lymphoma. Supportive Care in Cancer 2013;21(4):1145–52.
10. Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology. Implementation Science 2010;5:69–78.
11. Munn Z, Stern C, Aromataris E, Lockwood C, Jordan Z. What kind of systematic review should I conduct? A proposed typology and guidance for systematic reviews in the medical and health sciences. BMC Medical Research Methodology 2018;18(1):1–9.
12. Grant M, Booth A. A typology of reviews: an analysis of 14 review types and associated methodologies. Oxford, UK; 2009:91v108.
13. Becze E. Priming lines with drug may reduce hypersensitivity reactions from rituximab. Oncology Nursing Society 2018;33–43.
14. Brownie S, Nancarrow S. Effects of person-centered care on residents and staff in aged-care facilities: a systematic review. Clinical Interventions in Aging 2013;8:1–10.
15. Jung J, Kang H-R, Lee S, Cho S. The incidence and risk factors of infusion-related reactions to rituximab for treating B cell malignancies in a single tertiary hospital. Oncology 2014;86(3):127–34.
16. Dotson E, Crawford B, Phillips G, Jones J. Sixty-minute infusion rituximab protocol allows for safe and efficient workflow. Supportive Care in Cancer 2016;24(3):1125–9.
17. Atay S, Barista I, Gundogdu F, Akgedik K, Arpaci A. Rapid-infusion rituximab in lymphoma treatment: 2-year experience in a single institution. Journal of Oncology Practice 2012;8(3):141–144.

Cancer Nurses Society of Australia

'Bridge of Support': evaluation of an acute care peer support model for women with breast or a gynaecological cancer

Meron Pitcher • MBBS
Head of Unit, General and Breast Surgery, Western Health, Footscray, VIC 3011, Australia

Sara Jorgensen • RN
Specialist Nurse Manager, Western Health, Footscray, VIC 3011, Australia

Lisa Matar • RN
Breast Care Nurse Consultant, Western Health, Footscray, VIC 3011, Australia

Darcie Vogan
Breast Care Nurse Administrative Manager, Western Health, Footscray, VIC 3011, Australia

Kellie Holland • RN
Team Leader Operations / Volunteer Coordinator, Counterpart, Melbourne, VIC 3000, Australia

Fiona McRae • BA
Manager, Counterpart, Melbourne, VIC 3000, Australia

Karen Wynter • PhD
Deakin University, Centre for Patient Quality and Safety – Western Health Partnership, Burwood, VIC 3125, Australia

Sara Holton* • PhD
Deakin University, Centre for Patient Quality and Safety – Western Health Partnership, Burwood, VIC 3125, Australia

*Corresponding author

Keywords peer support, breast cancer, gynaecological cancer, program evaluation, acute care

For referencing Holton S et al. 'Bridge of Support': evaluation of an acute care peer support model for women with breast or a gynaecological cancer. Australian Journal of Cancer Nursing 2021; 22(1):9-16.

DOI https://doi.org/10.33235/ajcn.22.1.9-16

Abstract

Objective To evaluate a hospital-based peer support program for women diagnosed with breast or a gynaecological cancer.

Methods A mixed methods study: a retrospective service data audit and surveys with women, peer support volunteers and health service staff.

Results Data were collected from February 2016 to December 2018. A total of 464 women with breast cancer and 16 with a gynaecological cancer participated in the program. A total of 50 women, 21 health service staff and three peer support volunteers completed a survey. Women's experiences were positive, and volunteers and health service staff perceived that the program had benefited women with breast or a gynaecological cancer.

Conclusions Peer support programs appear to be an effective and acceptable component of breast/gynaecological cancer care in an acute care setting, and are able to provide women with information and emotional and practical support at the time of diagnosis and during treatment.

Background

A diagnosis of breast or a gynaecological cancer and their treatments can have a significant negative effect on a patient's physical and emotional health and wellbeing, and health-related quality of life[1,2]. Given the physical and psychological impact, there is a need to provide appropriate and timely interventions to women with these cancers[3]. Cancer patients often report that they have unmet information and education needs in relation to their cancer and its treatment[4]. Social support has been identified as an important contributor to wellbeing and may include the provision of emotional, informational or practical support[1].

Peer support has been recognised as a necessary component of supportive care for people diagnosed and living with cancer[4,5]. Cancer peer support programs use trained individuals with shared experience to provide information, and emotional, social and practical support to people with cancer[6–8]. Research and systematic reviews of cancer peer support programs indicate high satisfaction and perceived psychosocial benefits among participants, including a sense of belonging, decreased feelings of isolation, and improved mood, wellbeing, quality of life, marital satisfaction and cancer self-efficacy[1,3,7,9–11]. The unique perspective of a peer facilitates sharing and practical, social and emotional coping[3,12], and can supplement informal support provided by family and friends[2]. There are a number of different models for the delivery of peer support, including one-on-one, face-to-face group, telephone and internet services[1,7].

Nevertheless, to date, research about peer support has focused almost exclusively on peer support recipients who are predominately women with breast cancer; little is known about the experiences of women with other types of cancer or those of peer support providers such as volunteers[1,11,13] or health service staff who may refer women to peer support programs. It has been suggested that more formal evaluations of peer support programs are required to assess their effectiveness in meeting the support needs of women who use them[7], especially programs in acute care settings where women may be particularly vulnerable or have specific needs given this is a time of diagnosis and active treatment.

Counterpart (formerly BreaCan) is a state-wide service in Victoria, Australia, funded by the Victorian Government's Department of Health and Human Services, which provides support and information to people affected by breast or a gynaecological cancer. The service aims to inform, support and empower women with cancer to live well. Counterpart does not provide counselling nor medical advice[14].

Counterpart's services include peer support through its Bridge of Support (BoS) program. In this outreach model of peer support service provision in an acute care setting, women undergoing chemotherapy, radiotherapy, surgery or attending an outpatient clinic for breast or a gynaecological cancer can seek support and information from a peer support volunteer. The peer support volunteers, who have themselves experienced breast or a gynaecological cancer, help to normalise women's experiences, listen to their fears and uncertainties, and discuss ways to cope and adjust to living with cancer.

The aim of this study was to evaluate the BoS program from the perspectives and experiences of women, peer support volunteers and health service staff.

Methods

Study design

This was a mixed methods study evaluating the experiences of women (program users), peer support volunteers and health service staff by collecting and analysing program users' demographic and service use data (data audit), and conducting anonymous, self-administered surveys of women with breast or a gynaecological cancer, peer support volunteers and health service staff associated with the program.

Setting and peer support program

The BoS program was introduced at Western Health's Sunshine Hospital in 2015–16 for women living in the western suburbs of Melbourne, Victoria. The program at Western Health was initially for breast cancer patients but was extended to women with a gynaecological cancer in 2018. The BoS program provides women diagnosed with breast or a gynaecological cancer at Sunshine Hospital access to a range of pathways to supportive care, including peer support volunteers who are women who have had cancer and are trained to provide practical and emotional support by listening to women and drawing on their own lived experience where it is helpful to do so. The volunteers also refer women, when requested, to current, evidence-based information to assist them with their decision-making.

Sunshine Hospital is an acute and sub-acute teaching hospital with approximately 600 beds located in the western region of Melbourne, Australia (with a population of approximately 900,000 people) and managed by Western Health. Western Health provides health services to one of the fastest growth corridors in Australia and one of the most culturally diverse communities in Victoria with more than 110 different languages/dialects and more than a third (38%) of patients speaking a language other than English at home. The community also has a diverse social economic status[15]. Western Health is the second largest provider of cancer-related services in the western and central Melbourne metropolitan area which includes a multidisciplinary breast service for over 300 women newly diagnosed with breast cancer (primary and metastases) each year.

The operation of the BoS program aligns with that of the breast and gynaecological cancer outpatient clinics, radiotherapy and day oncology services at Sunshine Hospital. Women receiving treatment for breast or a gynaecological cancer are referred to the program by clinicians, nursing and allied health staff. The BoS program coordinator liaises with health service staff and the peer support volunteers to connect women with a volunteer. The peer support volunteers provide emotional and practical support to women who are referred, and all volunteers have considerable training and experience in the provision of peer support, including in a hospital setting. Peer support is offered to women either by telephone or face-to-face during their hospital visits; these peer support 'contacts' refer to specific engagement

with a peer support volunteer which results in a conversation with a women about her diagnosis, treatment or the impact of her cancer on any aspect of her life. Data are collected about each woman, including details of each specific contact with a volunteer/the program, outcomes and any follow-up required.

Sample and recruitment

From February 2016 to December 2018, 536 women participated in the BoS program at Western Health. As this was an evaluation study, a sample size calculation was not conducted as all women (n=536), peer support volunteers (n=approximately 10), and health service staff (n=approximately 35) who had had contact with the program were invited to complete a survey.

Inclusion criteria

For data audit: BoS demographic and service data for all women (n=536) who had contact with the program from February 2016 to December 2018.

For surveys: Women included were aged 18 years or older diagnosed with breast or a gynaecological cancer receiving treatment at Western Health, who had a contact with the BoS program since 2017, could read and write English, and who had provided their email address to Counterpart. Trained peer support volunteers included were cancer survivors providing care in the BoS program at the health service during the recruitment period. Health service staff included were involved with the BoS program at the health service, including doctors, breast care nurses and administrative staff associated with the breast/gynaecological cancer clinics, day oncology and radiotherapy.

Measures

For data audit: Data audited included BoS records of 'contacts' between women with cancer and peer support volunteers. Data included:

- Participant demographic and health characteristics such as age, country of birth and preferred language, and cancer diagnosis and stage;
- The number of 'contacts', the types of topics discussed, and outcomes of the contacts (e.g. provided peer support or information about Counterpart or another organisation);
- Summary data about the number of women who received care from breast/gynaecological cancer clinics at the health service during the study period; and
- Data about the number and source of referral to the BoS program.

For surveys: Data were collected by self-administered, anonymous surveys hosted on Web Survey Creator, an online software survey tool. Three different surveys assessed the experiences and perspectives of the women, peer support volunteers and health service staff who had participated in the program. The surveys were available in English only. Completion of the surveys was taken as implied consent.

The survey that the women completed included 12 fixed-response and open-ended questions which assessed sociodemographic characteristics such as: ethnic background, preferred language; perceptions of their encounters with peer support volunteers; usefulness of their contacts with peer support volunteers; overall level of satisfaction with their contact with a peer support volunteer at the hospital; and the number and type of interactions with the peer support volunteers (telephone and face-to-face at the hospital). Women were asked to indicate their perceptions and usefulness of their contacts with peer support volunteers using 17 statements with a 5-point Likert scale ranging from 'strongly agree' to 'strongly disagree'. Women were also asked to rate their level of satisfaction with the contact they had had with a peer support volunteer in the hospital using a 5-point Likert scale ranging from 'very happy' to 'very unhappy'.

The survey that the peer support volunteers completed included 20 questions which assessed: their experiences of providing peer support in an acute care setting; their perceptions of whether women found it beneficial for the peer support volunteers to share their experiences; whether the health service staff valued the program; and whether they had received appropriate training. Fourteen statements assessed peer support volunteers' experiences and perceptions using a 5-point Likert scale ranging from 'strongly agree' to 'strongly disagree'. Six open-ended questions asked peer support volunteers about the perceived benefits and challenges of the program, their expectations about their role, ways the program could be improved, and their training needs.

The survey that the health service staff completed included nine questions which assessed: staff members' role at the hospital; interactions with the peer support volunteers; experience of the program and their perceptions of the benefits the program has for women; and confidence in and barriers to referring women to the program.

Procedure

All women, peer support volunteers and health service staff who had participated in or had contact with the BoS program (n=536) during the study period were invited to complete the survey by a member of the research team and emailed the link to the online survey.

Data management and analysis

Descriptive statistics were used to describe and summarise all study variables. Quantitative data analysis was conducted using IBM Statistics Version 25.

Owing to insufficient responses in some categories of the 5-point Likert scale, agreement ratings from women about their perceptions and usefulness of their contacts with the peer

support volunteers were recoded to binary variables – 'disagree' (strongly disagree and disagree) versus 'agree' (strongly agree and agree). Level of satisfaction ratings with the contact women had had with a peer support volunteer were also recoded to binary variables – 'happy' (very happy and happy) versus 'unhappy' (unhappy and very unhappy).

Free-text comments provided by survey respondents were also analysed. The comments were de-identified, coded and analysed using thematic analysis techniques[16]. Quotes have been used in the text to illustrate the findings. Triangulation was used to combine the quantitative and qualitative findings[17].

Ethics approval and consent to participate

Participation in the study was voluntary. The research project was approved by Western Health's Low Risk Ethics Panel (WH LREP References: QA 2016.63 and QA2020.01_59026).

Results

Data audit

A total of 536 contacts with the program from women occurred during the study period and most of these (n=464, 87.9%) were women diagnosed with breast cancer. Not all women disclosed or knew the stage of their cancer; however, approximately 15.3% (n=81) of contacts with the program were from women with advanced (metastatic) cancer. Almost half of the women (n=262, 69.5%) who had had a contact with the program were aged over 50 years, over a quarter were from a non-English speaking country (n=141, 26.2%), and more than three quarters reported that their preferred language was English (n=323, 76.3%) (Table 1).

More than half of the women (n=192, 58.0%) who had contact with the BoS program also received peer support over the telephone with peer support volunteers based in the Counterpart Resource Centre.

Women were referred to a BoS peer support volunteer from a number sources within the hospital, and some women were referred from more than one source. About a third (n=116, 30.55%) were referred by a Counterpart staff member or volunteer, approximately a quarter (n=101, 26.6%) by a breast care nurse, and a tenth (n=38, 10.0%) from another nurse (e.g. radiotherapy).

Surveys

Women's survey: An invitation to complete the evaluation survey was sent to 234 women who had contact with the program during the study period and who had provided their email address to Counterpart. Of these, 50 completed surveys were returned, a response rate of 21.4%.

Of the women who completed the survey, four (18.2%) stated that they were from a non-English speaking background. Almost half of the women (n=24, 48.0%) had their first contact with a peer support volunteer in a breast clinic, followed by day oncology (n=18, 36.0%), a surgical ward (n=5, 10.0%), and radiotherapy (n=4, 8.0%).

Table 1. Sociodemographic and cancer characteristics of women who had a contact with the BoS program

Characteristic	Number (%)
Age (n=528)	
19–30 years	19 (3.6%)
31–40 years	71 (13.4%)
41–50 years	87 (16.6%)
51–60 years	115 (21.9%)
61–70 years	97 (18.3%)
71–80 years	44 (8.3%)
More than 80 years	6 (1.1%)
Unknown	91 (17.3%)
Country of birth (n=536)	
English speaking country*	127 (23.8%)
Non-English speaking country	141 (26.2%)
Unknown	266 (49.6%)
Preferred language (n=423)	
English	323 (76.3%)
Other	100 (23.7%)
Required an interpreter (n=423)	11 (2.6%)
Cancer diagnosis (n=528)**	
Breast cancer	464 (87.9%)
Lobular carcinoma in situ (LCIS) / ductal carcinoma in situ (DCIS)	6 (1.1%)
Endometrial/uterine cancer	8 (1.5%)
Ovarian cancer	12 (2.3%)
Cervical cancer	2 (0.4%)
Other types of cancer***	40 (7.6%)
Unknown	6 (1.1%)
Cancer stage (n=528)	
Advanced (metastatic cancer)	81 (15.3%)

* English speaking countries: Australia, Ireland, New Zealand, UK, South Africa and USA.
** Some women had more than one cancer diagnosis.
*** The other types of cancer were often secondary cancers.

Just under half of the women (n=22, 44.0%) had had a contact with a peer support volunteer more than once at the hospital, and a similar proportion had had contact with a peer support volunteer over the phone (n=9, 40.9%). Of those who had experienced phone contact with a peer support volunteer, most (n=6, 70%) reported that they found it very helpful.

Most women reported positive experiences, with the peer support volunteers including that it was helpful to have someone to talk to (n=45, 91.8%), especially someone who had been through what they were going through (n=44, 89.8%), and that the volunteers helped to increase their understanding of what

Table 2. Women's perceptions of their first contact with a peer support volunteer

Survey item	Strongly agree / agree (n, %)
The person I spoke to was friendly (n=50)	48 (96.0%)
The information I received was helpful at the time (n=49)	45 (91.8%)
It was an intrusion on my treatment (n=48)	5 (10.2%)
It was helpful to have someone to talk to (n=49)	45 (91.8%)
It was annoying (n=49)	0 (0.0%)
It was helpful to meet someone who has been through what I am going through (n=49)	44 (89.8%)
It was helpful to have somewhere private to talk to a volunteer (n=49)	35 (71.4%)
It was helpful to better understand what to expect in terms of side effects of treatment (n=49)	39 (79.6%)
It was helpful meeting someone who had been diagnosed several years ago (n=49)	42 (85.7%)
It was helpful to have someone explain how Counterpart can/could provide support (n=49)	46 (93.9%)

Table 3. Women's perceptions about what was useful in their contact with a peer support volunteer

Survey item	Strongly agree / agree (n, %)
Knowing there was someone who understood what I was experiencing (n=48)	46 (95.8%)
It gave me contact with a service based outside the hospital (n=46)	38 (82.6%)
It gave me hope (n=47)	40 (85.1%)
Meeting someone who could listen (n=47)	40 (85.1%)
Meeting someone with whom I could share my experiences (n=47)	41 (87.2%)

to expect in terms of treatment and side effects (n=39, 79.6%) (Table 2).

Women found their contacts with the peer support volunteers particularly useful in terms of giving them hope (n=40, 85.1%), knowing there was someone who understood what they were experiencing (n=46, 95.8%) and with whom they could share their experiences (n=41, 87.2%), and having someone to listen to them (n=40, 85.1%) (Table 3).

Most of the survey respondents (n=45, 90.0%) reported that overall they were very happy or happy with the contact they had had with a peer support volunteer at the hospital.

Health service staff survey: A total of 64 health service staff were invited to complete a survey, and 21 surveys were completed. This is a response rate of 32.8%. The surveys were completed by clinicians and administrative staff.

Most staff (n=17, 81.0%) reported that they were confident referring women to a peer support volunteer at the hospital and did not believe there were any barriers to referring women. Those that did report barriers (n=4, 19.0%) identified that the time taken to connect the woman to a volunteer, having to remember to make a referral, knowing whether peer support volunteers were at the hospital on that particular day, and having insufficient resources to assist with the referral of women from non-English speaking backgrounds often made it difficult to refer women to the BoS program.

Peer support volunteers survey: Ten peer support volunteers were invited to complete a survey, and three surveys were completed. This is a response rate of 30.0%.

All the peer support volunteers believed that: women benefitted from the information they were able to give them and sharing their experiences; the hospital staff valued the BoS program; they had received adequate training to undertake their role; and they would like to continue in the role. None of the peer support volunteers reported that being in the hospital environment was confronting or made it difficult to provide peer support to women, they felt ill-equipped to deal with women's concerns, nor that volunteering was more challenging than they had anticipated.

Survey free-text comments: The free-text comments from all survey respondents (women, peer support volunteers and health service staff) reflected their satisfaction with the program, and the benefits of women receiving support from a peer who has had a similar lived experience:

> *It was like meeting a new friend whom you can talk to about what you have been going through* [Woman who participated in the BoS program].
>
> *Contact with my Counterpart 'angel' was invaluable. I can't put a value on the worth that I got out of my interactions with [peer support volunteer's name] and [peer support volunteer's name]. Seeing them calm, beautiful, lovely and strong women – made me have some clarity from the 'fog' that I was engulfed in. It was like a light at the end of a very long dark tunnel. I think every oncology ward should come with such 'angels' for newly diagnosed women who just have no one to talk to* [Woman who participated in the BoS program].
>
> *Women feel comforted knowing they have access to speak to another woman who has been through the same experience* [Health service staff member].
>
> *I think some women really connect and enjoy the peer aspect of the service* [Health service staff member].
>
> *I think I can offer support and comfort to women who have just been diagnosed or are having their chemotherapy – as I*

have been there and so we share 'common experiences'. The women immediately feel safe to talk and often see me as an example of someone who has been through this and so they think maybe they can to. To be able to offer someone 'hope' in this very difficult time of their life – is incredible [Peer support volunteer].

Some women indicated that although they appreciated the peer volunteer support, they did not require it at the moment; similarly, health service staff identified that the program was particularly useful at certain times in women's treatment:

The last time I spoke to someone from Counterpart she was helpful as I had completed my treatments and was ready to talk. It was reassuring to know that there was someone to talk to if I felt I had the need to do so [Woman who participated in the BoS program].

The program is especially useful in the radiotherapy setting as this is close to the end of the treatment pathway where women might have a sense of abandonment as they are no longer seeing a health professional on a regular basis. The Bridge of Support program is extremely useful in being that first line of support [Health service staff member].

It's especially helpful for patients at the one year mark when some struggle with survivorship [Health service staff member].

Barriers to accessing peer support, especially for women from different cultural and linguistic backgrounds, were also identified by the survey respondents:

I had problems with the language barrier but they were very friendly and joining the mail list was helpful [Woman who participated in the BoS program].

It's an opportunity to meet with peers. Lots of these women have not had that opportunity; different cultural/language issues critical to that [Health service staff member].

Bridge of Support is a great service. I would like to see it accessible to all women with cancer and not just breast cancer patients. I would also like to see it be more progressive in providing a service to our culturally and linguistically diverse patients. At Western Health patients are often doubly disadvantaged and the non-English speaking patients are often the one who needs our support the most but have the least access to these wonderful programs [Health service staff member].

Survey respondents reported that another benefit of the program was that it provided an additional avenue of support for women. Health service staff stated that this was particularly beneficial given the limited time they often have to spend with their patients:

The [peer support volunteer] that approached me while attending radiotherapy was lovely and made me feel people cared. I'm fortunate that I have good family support, but for people that don't, the [peer support volunteers] are a blessing [Woman who participated in the BoS program].

Their support helps cover a lot of aspects of patient care that I cannot provide as a clinician [Health service staff member].

It takes the pressure off the nursing staff to provide the support that they need, time constraints can sometimes inhibit and interrupt the care coordination pathways [Health service staff member].

Bridge of Support at Sunshine is a valuable service to many women in the west and needs to continue. For some women, the contact with [the program] may be their only means of peer support during their treatment regime. It is a strategic way of connecting with a vulnerable sector of our community – women who may have little or no cultural or family support, who are in a poor financial situation or who have poor health literacy [Peer support volunteer].

Health service staff also commented that the program had improved women's clinical outcomes:

When patients are better supported, they have better health outcomes and shorter recovery times [Health service staff member].

Discussion

The aim of this study was to evaluate the experiences and perspectives of women, peer support volunteers and health service staff who participated in an acute care peer support program for women with breast or a gynaecological cancer. The findings indicate that the BoS program is an acceptable way of providing peer support to women with breast or a gynaecological cancer in an acute care setting.

Although comparison of peer support studies can be difficult due to the range of variables that can influence the effectiveness of the support, including the form and duration of peer support as well as the instruments used to assess its effectiveness[18], similar to other studies[7,12,19,20] we found that a peer support program can provide emotional and informational support to women with cancer. Women in our study reported a high level of satisfaction with the program and particularly appreciated the perspective of the peer support volunteers who had had similar experiences. Other perceived benefits of the program reported by women included an increase in understanding and knowledge about their treatment and its side effects.

As found in other studies[19], health service staff also perceived that the peer support program had many benefits for the women who participated, including providing complementary or increasing the number of support options that are available to women who are experiencing breast or a gynaecological cancer.

This study also provides insights into the experiences of peer support volunteers. Similar to others[2], the peer support volunteers in our study reported that working as a peer support

volunteer was a positive and beneficial experience. Peer support volunteers have gained experiential knowledge through the process of surviving their cancer and are able to share that knowledge with others[19]. The peer support volunteers in our study found it particularly valuable to have the opportunity to share their common experiences with women, provide emotional and informational support, and 'normalise' women's experiences.

Strengths and limitations

This was a small study which recruited participants from one health service. A strength of this study is that it evaluated the perspectives and experiences of not only the users (women) but also the providers (peer support volunteers) of the peer support program as well as clinical and administrative staff of the health service where the program was located.

Nevertheless, the results are limited by the recruitment of participants from only one health service which was located in a metropolitan area. Accordingly, the perspectives and experiences of participants in this study may not reflect those of users and providers in other settings. The program also only included women with breast or a gynaecological cancer and therefore, it is not possible to generalise the findings to people with other cancers. It was also not possible to survey women who did not participate in the program in order to understand if their needs and preferences are different to those of women who do participate.

Implications for health practice and policy

The findings of this study suggest that a peer support model such as the BoS program is able to provide emotional and informational support for women with breast or a gynaecological cancer, can be successfully provided within an acute care setting, and is acceptable to a diverse range of women including younger women, women with metastatic cancer, and women from culturally and linguistically diverse backgrounds. Nevertheless, possible challenges to providing such a program may include implementing and sustaining referral pathways with clinicians, meeting women's needs with a limited number of peer support volunteers, promoting the program to clinicians, providing support in languages other than English, and securing funding to maintain and extend the program.

Future research

Only a small number of women with a gynaecological cancer participated in the program, and further investigations are required to ensure that the program is acceptable and meets the needs of women with a gynaecological cancer.

Although women from culturally and linguistically diverse backgrounds participated in the program, it was not possible to offer peer support to women who did not speak English. It has been suggested that peer support needs to be culturally appropriate and recognise the spiritual, linguistic, experiential and historical contexts of the intended participants[8,21]. Future research should investigate the needs and preferences of peer support for participants and volunteers from different cultural and linguistic backgrounds to ensure it meets their needs.

Conclusions

A peer support program such as BoS appears to be an effective and acceptable component of breast/gynaecological cancer care in an acute care setting and is able to provide women with information and emotional and practical support at the time of diagnosis and during treatment.

Acknowledgements

The authors are most grateful to the women, peer support volunteers and health service staff who participated in the program and evaluation, and the BoS Steering Committee, Counterpart and Western Health.

Conflict of interest

The authors declare no conflicts of interest.

Funding

The authors received no funding for this study.

References

1. Hoey LM, Ieropoli SC, White VM, Jefford M. Systematic review of peer-support programs for people with cancer. Patient Education and Counseling 2008;70(3):315–37.
2. Skirbekk H, Korsvold L, Finset A. To support and to be supported. A qualitative study of peer support centres in cancer care in Norway. Patient Education and Counseling 2018;101(4):711–6.
3. Schofield P, Juraskova I, Bergin R, Gough K, Mileshkin L, Krishnasamy M et al. A nurse- and peer-led support program to assist women in gynaecological oncology receiving curative radiotherapy, the PeNTAGOn study (peer and nurse support trial to assist women in gynaecological oncology): study protocol for a randomised controlled trial. Trials 2013;14:39.
4. Park HY, Kim MJ, Kim JY, Kim S, Choi JY, Kim JH, et al. Could peer support programs be a good resource for managing the unmet needs of cancer patients? Journal of Cancer Education 2019;34:950–7.
5. Clinical Oncology Society of Australia. Model of survivorship care: critical components of cancer survivorship care in Australia position statement. In: Group MoSCW, editor. Sydney, Australia: Clinical Oncology Society of Australia; 2016.
6. Adlard KN, Jenkins DG, Salisbury CE, Bolam KA, Gomersall SR, Aitken JF, et al. Peer support for the maintenance of physical activity and health in cancer survivors: the PEER trial – a study protocol of a randomised controlled trial. BMC Cancer 2019;19(1):656.
7. Power S, Hegarty J. Facilitated peer support in breast cancer: a pre- and post-program evaluation of women's expectations and experiences of a facilitated peer support program. Cancer Nursing 2010;33(2):E9–16.
8. Lee R, Lee KS, Oh EG, Kim SH. A randomized trial of dyadic peer support intervention for newly diagnosed breast cancer patients in Korea. Cancer Nursing 2013;36(3):E15–22.
9. Meyer A, Coroiu A, Korner A. One-to-one peer support in cancer care: a review of scholarship published between 2007 and 2014. European Journal of Cancer Care (England) 2015;24(3):299–312.
10. Tehrani AM, Farajzadegan Z, Rajabi FM, Zamani AR. Belonging to a peer support group enhance the quality of life and adherence rate in patients affected by breast cancer: a non-randomized controlled clinical trial.

Journal of Research in Medical Science: The Official Journal of Isfahan University of Medical Sciences 2011;16(5):658–65.

11. Giese-Davis J, Bliss-Isberg C, Wittenberg L, White J, Star P, Zhong L, et al. Peer-counseling for women newly diagnosed with breast cancer: a randomized community/research collaboration trial. Cancer 2016;122(15):2408–17.
12. Dunn J, Steginga SK, Rosoman N, Millichap D. A review of peer support in the context of cancer. Journal of Psychosocial Oncology 2003;21(2):55–67.
13. Huntingdon B, Schofield P, Wolfowicz Z. Toward structured peer support interventions in oncology: a qualitative insight into the experiences of gynaecological cancer survivors providing peer support. Support Care Cancer 2016;24:849–56.
14. Counterpart. Counterpart: Women supporting women with cancer Melbourne, Australia: Women's Health Victoria; 2019. Available from: https://counterpart.org.au/
15. Western Health. Western Health Annual Report 2018–19. Melbourne, Australia: Western Health; 2019.
16. Braun V, Clarke V. Using thematic analysis in psychology. Qualitative Research in Psychology 2006;3:77–101.
17. O'Cathain A, Murphy E, Nicholl J. Three techniques for integrating data in mixed methods studies. BMJ 2010;341:c4587.
18. Toija AS, Kettunen TH, Leidenius MHK, Vainiola THK, Roine RPA. Effectiveness of peer support on health-related quality of life in recently diagnosed breast cancer patients: a randomized controlled trial. Supportive Care in Cancer: Official Journal of the Multinational Association of Supportive Care in Cancer 2019;27(1):123–30.
19. Ono M, Tsuyumu Y, Ota H, Okamoto R. Subjective evaluation of a peer support program by women with breast cancer: a qualitative study. Japan Journal of Nursing Science 2017;14:38–48.
20. Campbell H, Phaneuf M, Deane K. Cancer peer support programs: do they work? Database of Abstracts of Reviews of Effects (DARE): Quality-assessed Reviews [Internet]. York (UK): Centre for Reviews and Dissemination (UK); 2004.
21. Ashing-Giwa K, Tapp C, Rosales M, McDowell K, Martin V, Santifer RH, et al. Peer-based models of supportive care: the impact of peer support groups in African American breast cancer survivors. Oncology Nursing Forum 2012;39(6):585-91.

Cancer Nurses Society of Australia

Evaluation of the novice registered nurse in developing capability in the clinical setting of oncology

Jessica A Hammersley* • RN, BN(Hons), GradDipN, MCN, FHEA, PhD Candidate
Lecturer, School of Nursing, College of Health and Medicine, University of Tasmania, Australia
Registered Nurse, Oncology Inpatients, Royal Hobart Hospital, Hobart, TAS 7000, Australia
Email janewett@utas.edu.au

Dr Patricia Bromley • RN, NICU
Lecturer, School of Nursing, College of Health and Medicine, University of Tasmania, Australia

*Corresponding author

Keywords capability, oncology, novice, registered nurse, mentor, specialised settings

For referencing Hammersley JA and Bromley P. Evaluation of the novice registered nurse in developing capability in the clinical setting of oncology. Australian Journal of Cancer Nursing 2021; 22(1):17-22.

DOI https://doi.org/10.33235/ajcn.22.1.17-22

Abstract

The oncology nurse role is wide-ranging. It involves complex patient assessment, caring for the neutropaenic septic patient, community cancer prevention and detection strategies, patient education, supportive care, and symptom management[1]. Within this specialised field, and as part of continuing professional development (CPD), the registered nurse (RN) is required to undertake practical assessments, or clinical competencies, to demonstrate competence in practice. The senior oncology nurse is required to allocate staff and workload. Anecdotally, it is difficult to determine which nurse is capable of caring for which patient(s) based on clinical competencies alone[2,3]. To help understand the decision-making process, this qualitative interpretive description study sought to explore how mentors of novice RNs evaluated capability in the oncology clinical practice through semi-structured interviews. Findings were framed and evolved, resulting in five categories of: evaluation; characteristics of capability; competency versus capability; postgraduate studies and their impact; and barriers to evaluation and capability building.

Introduction

The Registered Nurse Standards for Practice (NMBA)[4], Standard 3 states an RN "maintains capability for practice"; however, capability is not clearly defined. Exploring this area from the perspective of oncology mentors will provide insight into how capability is recognised in the clinical practice setting, adding to the body of knowledge in this area.

The diverse nature of oncology requires the RN to have expert knowledge and capability. Capability is defined as being able to work in unfamiliar environments, being able to critically analyse and to problem-solve unfamiliar problems, and having a justified confidence in clinical decisions[5,6]. Senior RNs who mentor novice nurses appraise capability not only through the application of knowledge and technical skills but also through the nurse's ability to navigate the complexities of working within the specialised healthcare setting[3]. For this study, senior level roles refer to nurses working as clinical nurse educators, nurse unit managers and associate nurse unit managers. The novice RN refers to nurses who are graduates, RNs with less than 2 years' experience, or nurses new to the field of oncology despite their clinical experience.

Within clinical practice, the oncology nurse is required to undertake in-practice assessments to show their competence in completing technical tasks such as safe administration and handling of chemotherapy medications and accessing central venous access devices. Oncology practice settings frequently use 'sign-off competencies' to determine the nurse's ability to perform a specific task. However, assessing competence in nursing practice has long been problematic, often reduced to a tick-box system of performing certain tasks or competencies[2] and, while competencies are important for improving nursing quality, challenges remain around the structure of nursing competencies[7].

Professional capability is positively influenced by maturity, greater clinical experience, and extensive continuing education[8]. Continuing education and preceptor support are fundamental for nurses who work in specialised areas where there are high levels of mortality and complex technical clinical tasks such

as oncology. One of the objectives of the research was for the participants to consider whether RNs with a postgraduate qualification in oncology were more capable than RNs without such postgraduate qualification. The RN with postgraduate qualifications is more likely to be equipped to meet the demands of complex specialised nursing and to contribute to the advancement of patient care[9]. In addition, postgraduate education may increase professional behaviours and confidence[10]. However, the link between capability and postgraduate studies has not been clearly identified. An unintended finding from this study goes some way to support the relationship between postgraduate studies and developing capability of the RN.

Aim

The broad aim of the research was to develop an understanding of how senior oncology RNs evaluate capability in novice nurses in clinical practice.

Method

Design

This study used a qualitative interpretive-description[11]. Data were collected using semi-structured interviews with senior oncology RNs with mentor roles in clinical practice. The data were analysed through identifying associations, relationships and patterns from the interviews to recognise emerging phenomenon. Bromley's[3] Capability Wheel and Capability Framework (PG Cert NIC) was adopted to determine capability in the oncology nurse.

Setting

This study was conducted in an in-patient hospital setting in Australia where RNs provide care to oncology patients.

Participants/recruitment

A letter of recruitment was distributed to purposive sampled participants at the participating healthcare organisation. Each participant received a copy of the information sheet with a request from the researcher inviting them to be involved in the study. Informed consent was gained from each participant prior to the study commencing.

Inclusion and exclusion criteria

Inclusion criteria were RNs working in senior level roles in oncology who undertook mentorship of postgraduate RNs and provided education to novice oncology RNs. RNs who did not consent to participate, those working in junior roles in the area of oncology, and enrolled nurses/assistant nurses were not included in the study.

Ethics and governance

Ethics and site approval was obtained prior to the commencement of the research (#H0018375). Due to the small scale of this study and the limited number of nurses working in senior level mentor roles within the area of oncology, special attention was given to maintaining the confidentiality of participants. Numerical codes (i.e. RN#1) were allocated to each participant. Permission to conduct the interviews was gained from the organisation's Assistant Director of Nursing, Research and Practice Development.

Data collection

Semi-structured interviews generated rich data from this research. The participants were provided with three overarching questions:

- What is the evidence provided by the novice RN that he/she has particular capability?
- Do you think students who have undertaken postgraduate studies in their specialist field are more 'capable'?
- Do clinical competencies reflect capability in the oncology nurse?

The use of semi-structured interviews provided the researcher with the opportunity to probe and explore topics further which were not at first considered in the original interview guide.

Data analysis

Each interview was recorded and transcribed to text verbatim by the researcher; transcripts were cross-checked against recordings to ensure accuracy. The data gathered were analysed using an interpretive-description approach[11]. Data were organised, revised and reorganised; analysis took place by making connections and associations between pieces of data. From this process, codes were generated to allow for consideration from different perspectives and analysed thematically in order to make comparisons across all interviews. Expert advice was sought from another investigator, Dr Patricia Bromley, to seek clarity regarding the concepts of capability. The findings for this study were framed and evolved into five categories.

Rigour

The research was conducted under the guidance of an experienced researcher and an academic team from the Tasmanian Institute of Learning and Teaching, University of Tasmania. The interpretations from each participant interview transcript were examined by the researcher at regular intervals throughout the study. Justification of the data analysis and interpretation of themes was provided from a second expert researcher which supported the findings. As the study focused on what is evaluated by mentors of the novice oncology RN, participants were purposively sampled to provide the researcher with control of any selection bias inherent in pre-existing groups[12]. The recorded interviews were listened to by the researcher several times during the coding process. This contributed to the overall coding accuracy of the study findings[13]. The words of participants were utilised within the research findings to ensure confirmability of the research[14]. While the focus population of this study was the novice oncology nurse, transferability can be implied if the findings can be applied to novice nurses within other specialised clinical fields[15].

Demographics

Five senior level RNs in mentoring roles participated in this study, with a combined experience of 55 years in oncology. Four participants were female. Professional roles included managerial and clinical education.

Findings

Findings were framed and evolved, resulting in five categories: evaluation; characteristics of capability; competency versus capability; postgraduate studies and their impact; and barriers to evaluation and capability building. The five categories align to the evaluation of capability in the novice oncology nurse, learning and teaching opportunities for both mentors and novice RNs, and how nurses are supported to allow growth in their professional careers. Within each of these categories there is a strong appreciation for individualised evaluation to novice oncology RNs and not a 'one-size-fits-all' approach [RN#4].

Evaluation

Evaluation is a vital part of professional growth and learning within nursing. This study identified that evaluation can be undertaken in various ways, illuminating how senior level nurses evaluate capability in clinical practice. RN#2 implies that evaluation of capability is multifaceted, involving face-to-face interactions, the completion of online modules and conversations with peers, proposing that:

> *... it's really about trying to unpack how much that person might know about what they're doing or the patient clinical picture in these interactions* [RN#2].

The literature describes capability as something that is often easily recognised but difficult to measure[6]. The participants also identified this; that, while evaluation was important, it is difficult to *measure* capability in the novice RN:

> *It's always very challenging, because it's not really a set [of] measurable outcomes that you can say they reach this particular level so therefore, tick* [RN#2].

The literature describes learning is best achieved when the learner is pushed a little outside of their comfort zone; Mezirow[16] describes this as "disorientating dilemmas". One participant described how exposing the novice nurse to difficult situations within a supportive environment assisted her in evaluating the nurse's level of understanding and ultimately capability:

> *If I know the newer nurse will be adequately supported, I will give them something more challenging... to help them demonstrate their capability and develop their individual goals* [RN#3].

Characteristics of capability

The findings from these interviews suggest that during the evaluation of the novice RNs in practice, these mentors were identifying characteristics of capability in the oncology novice nurse. All participants described various attitudes and values of the novice oncology RN. However, many identified the novice oncology RN as being "task-focused" and explained that the capable RN had a deeper understanding of their actions and their patients' care needs:

> *I see capability as having that deeper understanding and knowledge that goes behind, say, a particular task or a process that they're doing* [RN#2].

Other participants also identified this concept of the capable novice nurses' ability to "unpack situations" [RN#4] and being able to problem solve and think critically:

> *I want the novice RN to be able to rationalise why they're doing what they're doing essentially* [RN#5].

RN#2 described her assessment of critical thinking as being able to demonstrate:

> *... thinking of the bigger picture rather than just events in isolation* [RN#2].

Being able to work well with each other and nurture interprofessional relationships is described in the capability literature[6]. This study also identified this same key theme:

> *... we're looking for junior RNs who are effective team members who can focus on solutions rather than problems* [RN#1].

The mentors associated capability with the novices' ability to take on an equal share of work, to delegate within the team, and to show initiative in both learning and educational needs:

> *... the novice needs to be open to learning, questioning, asking, looking at the clinical reasoning [behind their actions]* [RN#1].

RN#2 further described the capable RN as one who not only utilises resources available to them, but who also looks beyond provided resources. They believed this empowered the novice, enhancing confidence, as well as improving patient assessment and communication skills:

> *I guess the capable nurse is able to articulate to me how they're travelling and how they're feeling... I get concerned if they don't give me anything and tell me 'I'm good, nothing to worry about'* [RN#3].

Interdisciplinary and interpersonal communication was considered an important indication of capability:

> *Interactions are essential... all of our interactions are hands on, there are complex relationships [between staff and patients] and you need to be pretty good at communicating to be of benefit to one another* [RN#1].

All participants identified that capability was linked to strong time management skills and the ability to prioritise patient care for complex oncology and haematology patients. RN#1 described capability as being able to balance care needs by setting priorities and being able to justify the reasoning for addressing particular care needs at specific times:

> *You have to be able to look at the demands [of the patient] in terms of medications, blood products and cell support.... How are they going to balance this, what are the priorities?* [RN#5].

The characteristics of capability described in these interviews demonstrate to the mentor how the novice RN is able to provide safe and compassionate care to all patients within the oncology space.

Competency versus capability

Within oncological clinical practice, RNs are required to undertake clinical competency assessments. The successful completion of these competencies implies the RN to be competent in, and safe to practise, these specific technical tasks. However, the participants suggested that being able to undertake these specific clinical skills does not necessarily reflect capability:

> *I have seen nurses who have been deemed competent at being able to perform a skill but they're not necessarily understanding it in its entirety in terms of if things go wrong* [RN#2].

RN#1 suggested that many of the current assessment tools used within oncology did not reflect the nurse's ability to rationalise and troubleshoot, attributes of capability:

> *They have to think more critically and that's when it can become a bit challenging... If something goes wrong that's when it becomes more complex... the novice needs to reach back into that critical thinking framework...* [RN#1].

While all participants agreed that certifications of skill competency did not reflect capability, many considered these competencies were a good starting point. Participants were asked what, if any, assessment tools could potentially reflect capability within the oncology setting. All participants identified the eviQ[17] resources – which provide evidence-based, consensus-driven cancer treatment protocols and frameworks – as an assessment tool which aided mentoring and evaluation of many characteristics of capability. For example, the novice was able to work effectively in unfamiliar environments, was able to critically analyse and problem solve unfamiliar problems, and had justified confidence in their clinical decision-making. While the eviQ[17] assessments remain a 'tick-box approach' to evaluating practice, it has a more thorough approach to assessment and provides guidance for the mentoring nurse.

Postgraduate studies and their impact

Within the regulated profession of nursing, it is essential RNs continue to meet CPD requirements and opportunities are often provided through postgraduate education. The link between postgraduate studies and capability were explored within this study. Participants agreed that while postgraduate studies provided nurses with an opportunity to gain further knowledge around pathological processes of oncological and haematological diseases and their treatments, a postgraduate qualification was not an indication of capability:

> *Having all the pieces of paper in the world does not reflect capability... the nurse is still required to apply that knowledge in a practical setting* [RN#1].

RN#2 concurred, identifying that while some nurses can be extremely intelligent and engage with postgraduate studies, this does not always translate well into the clinical context. Having said this, participants recognised that oncology nurses who have undertaken postgraduate studies were more confident in their practice, showed good insight into their education needs, were driven to seek knowledge and "were more likely to invest in their own capability building" [RN#3]. Furthermore:

> *They appear more confident and empowered on the floor... I guess it's because they have had that opportunity to unpack clinical situations and you can see them connecting things within their practice* [RN#2].

This concept of specialist expertise is described in the capability literature, whereby the capable person has the confidence to apply their knowledge and skills within changing and complex situations[6].

Barriers to evaluation and capability building

While the focus of this study was to explore how senior level nurses in the field of oncology evaluate the capability of novice RNs, throughout the data collection process it was evident that there were barriers impacting on both the novice and senior level RN in building and evaluating capability. RN#1 suggested that nurses within the oncology setting are working under demanding conditions, which in turn makes it difficult to provide support:

> *... unfortunately, there are times when we are just too time-poor that there's no alternative... We essentially need more nursing hours to be able to achieve what we want to achieve and to foster our novice nurses* [RN#1].

This was supported by other participants who describe the skill mix of nurses on any given shift as being predominantly junior, resulting in a loss of time spent with novice nurses and loss of "critical teaching moments" [RN#2]:

> *It's just little pockets of education here and there... you've got those demands of patient care and sometimes those critical moments are lost* [RN#2].

All participants explained the difficulty in allowing novice nurses the opportunity to experience challenging situations:

> *Our newer nurses and novice nurses don't get exposed to that skill set... it is the time and the pressure factor...* [RN#4].

One mentor recognised a discord between the growing complexity of the patients and the changes in skill mix of nurses on the ward; novice nurses are often missed in learning opportunities [RN#5]. This is a sentiment echoed by others:

> *.... we are put under more and more pressure to care for more complex patients with more novice nurses in the mix...*

this requires a certain skill level and in that moment the senior nurse will say 'I'll do that, you go and you go do basic care' and that becomes the default position [RN#3].

The mentors suggested that these missed learning opportunities could be attributed to changes to workplace-based education, where clinical educators are spending less time on the ward teaching facilitating novice RNs and more time in non-clinical education roles. One participant describing these changes as "leaving a gap" [RN#5] and an inability for the novice RN to consolidate learning. This has resulted in nurses being competent at skills, but not capable in problem-solving, critical thinking, time management and communication.

Discussion

While several categories were identified in this study, this discussion will focus on the *characteristics of capability* and *competency versus capability* as the participants placed great importance on these two aspects. The *characteristics of capability* highlighted the attributes being evaluated by mentoring senior nurses with a focus on how the novice RN engaged within the clinical space rather than their ability to undertake a technical task. This is supported by Scott et al.[18] who describe capable RNs as not only having a high level of technical competence, but also interpersonal and cognitive abilities. Bromley's[3] research also found that capability was associated to concepts of professionalism, skill and knowledge, interpersonal communication and relationships.

The participants within this study described interpersonal communication skills and relationships as important considerations when evaluating capability in the novice RN. Participants recognised capability as the ability to communicate in a variety of different situations and being able to navigate the oncology setting in a confident manner. Kassman et al.[19] describe communication that is clear and delivered in a sensitive manner as being beneficial to patients and families experiencing cancer. Open communication and confidence in interactions is a way of demonstrating capability to patients[19,20]. Good communication is not only based on the physical abilities of nurses within specialised clinical settings but also on their education, support and experience[21].

Capability is considered as a much broader concept than competence[6]. Evaluating competence within healthcare is often reduced to assessing the ability to perform certain tasks. Competence in this study was described as a process of becoming competent at completing clinical skills, which the participants explained did not reflect capability. Stephenson and Yorke[6] and O'Connell, Gardener and Coyer[22] recognised that work-based learning improves skill set and helps to develop a *basic understanding* of a particular process, but it does not reflect capability. Flinkman et al.[23] describe capability as a "highly abstract phenomenon which is complicated to assess and measure" (p. 1036). Tools used to assess competence are often simplistic and present a 'reductionist' tick-box approach[24] to assessing practice.

This study identified that senior level nurses within the clinical area of oncology use procedures and tools such as those derived from eviQ[17] to guide their assessment of clinical competencies. The intention of this tool is not outwardly to assess or evaluate capability. However, the participants considered this tool did go some way to capture some of the key concepts of capability. For example, when the novice is being assessed for completing a technical skill such as infusing chemotherapy, the tool prompts the mentor to ask the novice questions related to the importance of involving the patient in the evaluation process by asking questions such as *Did you understand why you were receiving this treatment? Was the communication from the RN clear?* The participants believed this approach to assessing practice aided to identify cues and behaviours from the novice that they identified as capability.

Strengths and limitations

The small sample size was a clear limitation of this study; also, all participants were known to the researcher prior to the study taking place. To mitigate for researcher bias and assumptions, the findings were peer reviewed. Another limitation was the data only captured how the senior RNs evaluate the capability of novice RNs. It was outside the scope of this research to explore the opinions of the novice RN. However, this would warrant further investigation.

The experiences and expertise of the participants is a strength of this study. The words of participants were documented within the research findings to ensure confirmability of the research[14]. While the generalisability of the findings presented is limited to the oncology clinical context, if other disciplines identify with the characteristics of this context the understandings from this study may be transferable and inform other nursing specialisations and education programs[15].

Implications and recommendations

This study has added to the limited body of knowledge which seeks to understand the capability of novice RNs working within the specialised field of oncology. The participants identified the characteristics and qualities that demonstrate capability in the novice RN. They also identified the absence of a formal framework to help guide mentoring nurses in evaluating capability. The findings support the development and implementation of a framework to provide both the mentor and the novice RN with a clear pathway to achieve capability within the oncology setting. A framework would give mentors more confidence to have conversations with the novice on professional progression and the trajectory of capability. The participants of this study identified the eviQ[17] frameworks as a useful tool to evaluate skill, knowledge and understanding related to specific practical

tasks. A potential for future research would be to critique and determine whether this tool goes some way to evaluate capability of the novice oncology nurse.

Conclusion

This is the first known qualitative study that attempts to evaluate how capability is assessed in the novice oncology RN. The findings of this study demonstrate the complex environment for nurses working in oncology and the challenges that may present to the mentor who is evaluating the novice nurse. The participants recognised the evaluation of capability is complex and difficult to measure without a guiding framework. The participants valued the eviQ[17] skill assessment tool, identifying the potential for assessing capability in practice. Postgraduate studies were also recognised as a key factor in developing the capable oncology nurse. This study goes some way to address a gap identified from the literature identifying how capability is evaluated in specialised clinical settings. It is anticipated the learnings from this research will go some way to support mentors and better prepare the capable oncology nurses.

Conflict of interest

The authors declare no conflicts of interest.

Funding

The authors received no funding for this study.

References

1. Trahan Reiger P. The role of the oncology nurse. 6th ed. Hamilton: BC Decker; 2013.
2. Sasso L, Bagnasco A, Watson R. Competence-sensitive outcomes. Journal of Advanced Nursing 2016;73(5):1002–1003.
3. Bromley P. From competence to capability. Australian Nursing and Midwifery Journal 2017;25(2):34.
4. Nursing and Midwifery Board of Australia (NMBA). Registered Nurses Standards for Practice, 2016 [cited 2019 November 22]. Available from: https://www.nursingmidwiferyboard.gov.au/Codes-Guidelines-Statements/Professional-standards/registered-nurse-standards-for-practice.aspx
5. Bromley P. Capability in the postgraduate certificate neonatal intensive care nurse. Journal of Neonatal Nursing 2018;24(5):277–283.
6. Stephenson J, Yorke M. Capability and quality in higher education. London: Routledge; 2012.
7. Fukada M. Nursing competency: definition, structure and development. Yonago Acta Medica 2018;61:001–007.
8. Powazki R. The care of the actively dying in an academic medical centre: a survey of registered nurses' professional capability and comfort. The American Journal of Hospice & Palliative Care 2013;31:619–627.
9. Duff B, Gardner G, Osborne S. An integrated educational model for continuing nurse education. Nurse Education Today 2012;34(1).104–111.
10. Cotterill-Walker SM. Where is the evidence that master's level nursing education makes a difference to patient care? A literature review. Nurse Education Today 2012;32:57–64.
11. Thorne S. Interpretive description: qualitative research for applied practice. 2nd ed. New York: Routledge; 2009.
12. Barbour R. Checklists for improving rigour in qualitative research: a case of the tail wagging the dog? British Medical Journal 2001;322(7294):1115–17.
13. Guba E, Lincoln YS. Fourth generation evaluation. Newbury Park, CA: SAGE Publications; 1985.
14. Hansen EC. Successful qualitative health research: a practical introduction. Milton Keynes, UK: Open University Press; 2006.
15. Guba E, Lincoln YS. Naturalistic inquiry. Newbury Park, CA: SAGE Publications; 1985.
16. Mezirow J. An overview on transformative learning. In: Illeris K,editor. Contemporary theories of learning. Learning theorists in their own words. London: Routledge; 2009. pp. 90–105.
17. eviQ. Clinical Resources; 2020 [cited 2020 January 2]. Available from: https://www.eviq.org.au/clinical-resources
18. Scott G, Chang E, Grebennikov L. Using successful graduates to improve the quality of undergraduate nursing programs. Journal of Teaching and Learning for Graduate Employability 2010;1(1):26–44.
19. Kassman A, Skiadaresis J, Habib S, Alexander S, Wolfe J. Moving toward quality palliative cancer care: parent and clinician perspectives on gaps between what matters and what is accessible. Journal of Clinical Oncology 2012;31(7):910–915.
20. Foster TL, Lafond DA, Reggio C, Hinds PS. Paediatric palliative care in childhood cancer nursing: from diagnosis to cure or end of life. Seminars in Oncology Nursing 2010;26:205–221.
21. Kourkouta L, Papathanasiou IV. Communication in nursing practice. Materia Socio-medica 2014;26(1):65–67.
22. O'Connell J, Gardner G, Coyer F. Beyond competencies: using a capability framework in developing practice standards for advanced practice nursing. Journal of Advanced Nursing 2014;70(12):2728–2735.
23. Flinkman M, LeinoKilpi H, Numminen O, Jeon Y, Kuokkanen L, Meretoja R. Nurse competence scale: a systematic and psychometric review. Journal of Advanced Nursing 2017;73(5):1035–1050.
24. Girot EA. Assessment of graduates and diplomates in practice in the UK: are we measuring the same level of competence? Journal of Clinical Nursing 2000;9(3):330–337.

Cancer Nurses Society of Australia

Oncology nurses' scope of practice in the identification, treatment and management of cancer-related lymphoedema: a scoping review

Madeleine Mulcahy • RN, MNSc
Department of Nursing, Melbourne School of Health Sciences, University of Melbourne, Grattan Street, Carlton, VIC 3053, Australia

Lindy Cochrane
Liaison Librarian, Nursing and Psychological Sciences, Student and Scholarly Services
Level 1, Brownless Biomedical Library, University of Melbourne, VIC, Australia

Zerina Lokmic-Tomkins* • RN, MNSc, PhD
Department of Cancer Experiences Research, Peter MacCallum Cancer Centre, Grattan Street, Parkville, VIC 3052, Australia
Department of Nursing, Melbourne School of Health Sciences, University of Melbourne, Grattan Street, Carlton, VIC 3053, Australia
Email lokmicz@unimelb.edu.au

*Corresponding author

Keywords lymphoedema, oncology, nurse, scope, practice

For referencing Lokmic-Tomkins Z et al. Oncology nurses' scope of practice in the identification, treatment and management of cancer-related lymphoedema: a scoping review Australian Journal of Cancer Nursing 2021; 22(1):23-29.

DOI https://doi.org/10.33235/ajcn.22.1.23-29

Abstract

Aim To conduct a scoping review on the scope of practice of oncology nurses in identification, management of symptoms, and treatment of cancer-related lymphoedema.

Background Cancer-related lymphoedema arises from removal and/or injury to the lymphatic system caused by cancer metastasis and/or cancer treatment. Early identification is crucial for prevention of this chronic condition.

Methods A search of six electronic databases was undertaken in May 2020 to identify relevant studies. Primary research studies that reported on the nursing scope of practice were included. Two reviewers independently screened articles and completed data abstraction including data charting.

Results 2515 references were retrieved; three studies were included for the study. One study considered the nursing scope of practice; two articles focused on general descriptions of nurses' role in patient education, symptom management and patient referral.

Conclusion Oncology nurses' scope of practice in identifying, treating and managing lymphoedema is not clearly defined.

Introduction

Cancer-related lymphoedema is a chronic accumulation of interstitial fluid (lymph) caused by impaired lymphatic drainage due to damage to the lymph nodes and associated lymphatic vessels caused by cancer metastasis or cancer-related treatment such as radiotherapy and surgical lymph node removal[1,2]. Less invasive procedures such as sentinel lymph node biopsy and partial mastectomy are also associated with cancer-related lymphoedema[3]. A systematic review and meta-analysis of 47 studies prospectively assessing cancer-related lymphoedema reported an overall incidence of lymphoedema to be 15.5% and that it varied by malignancy, with estimates being: melanoma, 16% (upper extremity, 5%; lower extremity, 28%); gynaecologic cancers, 20%; genitourinary cancers, 10%; head/neck cancers, 4%; and sarcoma, 30%. Increased lymphoedema risk was noted for patients undergoing pelvic dissections (22%) and radiation therapy (31%)[4].

Cancer survivors live longer, and the issues of survivorship are more extensive[2,5]. The impact of lymphoedema on cancer survivors is associated with negative self-identity related to the disfigurement of the body, frustration and social discomfort, impaired activities of daily living, psycho-social wellbeing, and physical wellbeing[4,5]. Impaired physical wellbeing ranges from experiencing tightness and heaviness associated with the swelling of the extremities, to chronic discomfort and pain which can progress to chronic inflammation and formation of cutaneous blisters that leak lymph (lymphorrhoea)[2,6]. Lymphoedema-induced chronic inflammation is associated with debility and

immobility, muscle wasting and weight gain, and adipogenesis, a formation of new adipose tissue which contributes to obesity[2,6,7]. The risk of recurrent cellulitis is higher[8].

The impact of cancer-related lymphoedema can be minimised if patients were to be identified early and referred to lymphoedema-specific services[1,4,8–10]. This is challenging as cancer-related lymphoedema has a broad onset of symptoms, with some cases reported up to 20 years after cancer treatment when patients are often no longer seen by their primary cancer-treating teams[1,4,11].

Nurse-led patient education regarding risk-reduction and lymphoedema associated with cancer treatment leads to better patient outcomes and is seen as one of the major roles for both oncology and non-oncology nurses[12]. Patients reported receiving lymphoedema information most often from surgeons and nurses prior to surgery; however, years after cancer treatment, patients resorted to the internet as the most frequent source of information, followed by oncologists and lymphoedema therapists, with nurses low on the list[13]. As lymphoedema care is part of a cancer patient's experience, the question arose as to what is the role of oncology nurses in lymphoedema care?

This scoping review aims to identify what is defined as the nursing scope of practice in the identification, symptom management and treatment of cancer-related lymphoedema for oncology nurses regardless of whether they are engaged in advanced practice. As cancer-related lymphoedema can occur following treatment of a variety of tumours, this scoping review focused on oncology nurses' scope of practice associated with cancer-related lymphoedema in general rather than on a specific type of cancer.

Materials and methods

Research question

This review was guided by the question What is the scope of practice for oncology nurses in identification, management and treatment of cancer-related lymphoedema? For the purposes of this study, a scoping review is defined as a research synthesis that aims to "map the literature on a particular topic or research area and provide an opportunity to identify key concepts; gaps in the research; and types and sources of evidence to inform practice, policymaking and research"[14]. The review protocol was registered through Open Science Framework[15] and a PRISMA statement was used to guide the reporting[16].

Study design

This scoping review employed the methodological framework developed by Arksey and O'Malley[17], Levac et al.[18] and the Joanna Briggs Institute[19,20] using the Population, Concept, Context (PCC) framework. The population of interest are registered nurses working in the oncology setting. The context is defined as the oncology setting which includes acute care and primary healthcare settings. The concept is the nursing scope of practice whereby the scope of practice is defined as "that in which nurses are educated, competent to perform and permitted by law"[21]. This is influenced by "the context in which the nurse practises, the health needs of people, the level of competence and confidence of the nurse and the policy requirements of the service provider"[21] and the National Registered Nurse Standard of Practice[21]. Furthermore, in Australia, it is recognised that, as per the National Professional Development Framework for Cancer Nursing, "Nurses need to be... negotiating their scope of practice with other health professionals involved in cancer control"[22,p2] with specific competencies required. Both definitions suggest an evolving, fluid scope of practice subject to context of practice, organisational policies, the needs of patients/consumers, and nurses' education and experience[22]. Within the context of this study, the scope of practice encompassed information provision, patient education, identification and symptom management, and treatment of cancer-related lymphoedema.

Eligibility criteria

Studies were eligible if they broadly defined and/or outlined nurses' scope of practice in the identification, management or treatment of a cancer-related lymphoedema. Primary research reports (qualitative and quantitative), systematic reviews, guidelines or metanalyses published with no time limits imposed and pertaining to nursing scope of practice were eligible for inclusion. Articles published in languages other than English were excluded due to no available resources for translation.

Search strategy

Literature searches were conducted in May 2020 using CINAHL (EBSCO), Cochrane Library (Wiley), EMBASE (Ovid), Medline (Ovid), Emcare (Ovid) and Scopus databases. The key search terms included truncated versions of nurse AND lymphedema. An additional search string included variations of the following terms: scope, practice, standards, competencies, role, task, responsibility, management, identify, treat, skill, knowledge, expertise, performance, care or caring, proficiency, implement, monitor, communicate, liaise, authorise, refer, function, judgement and evaluate. The inclusion of this search string proved too limiting and was excluded. No additional limits were applied to this search due to expected scarcity of available information on the topic.

Citation management

All citations were imported into EndNote X8.2 (EndNoteTM). The 2515 citations were then imported into the web-based systematic review software Covidence (Verital Health Innovation, Melbourne, Australia) where duplicates were removed, citations screened for relevance through title and abstract screening, and eligible full text articles assessed.

Title and abstract relevance screening

The eligibility criteria were used for screening citations during the title and abstract screening. A title and abstract relevance screening form was developed by the authors and pre-tested using five citations to evaluate reviewer agreement. Thereafter, the title and abstract of each citation were independently screened by two reviewers. Reviewers met regularly to resolve any conflicts.

Data charting, summary and synthesis

Following title and abstract screening, all articles eligible for full text analysis were procured. As eligible articles were retrieved, information was charted on a Microsoft Excel spreadsheet (Microsoft 365, Microsoft Corporation, Redmond, WA) that captured article title, authorship, methodology, study participants, study setting, key findings, strengths and limitations. To counteract any discrepancies, the characteristics of each full text article were extracted by two independent reviewers. Any disagreements were discussed and resolved amongst the research team. A risk of bias was not conducted since, as per the Joanna Briggs Institute Methods Manual for Scoping Reviews guidelines[20,23], this is not required for scoping reviews. The synthesis of data focused on capturing the oncology nursing scope of practice with respect to cancer-related lymphoedema and thematic analysis on what oncology nurses considered to be within their scope of practice when managing patients with cancer-related lymphoedema.

Ethics

As this is a scoping review, no ethical approval was required.

Results

Search and selection of relevant studies

The search strategy resulted in 2515 articles across six databases relevant to the research question. After removing 1437 duplicates, 1078 articles were screened for title and abstract, with 971 studies deemed irrelevant. From remaining 107 full-text studies, 104 were excluded, leaving three articles that met the inclusion criteria (Figure 1). Two articles are from the United States[11,24] and one from Jordan (Table 1)[25]. All three articles are of cross-sectional survey-based design. It is noteworthy that Fu et al.[11] and Ryan et al.[24] report from the same sample data.

There are five emerging themes that relate to the research question. These are: nursing scope of practice; nurses' knowledge of cancer-related lymphoedema; information provision and patient education; identification and symptom management of cancer-related lymphoedema; and treatment delivery of cancer-related lymphoedema.

Nursing scope of practice

Neither of the three papers defined what was meant by the nursing scope of practice. Ryan et al.[24] used the Oncology Nursing Society (ONS) professional competencies for advanced practice nurses (APNs), which includes oncology nurse practitioners and the oncology clinical nurse specialists, as the framework for their study. These competencies encompass aspects of cancer care such as prevention, diagnosis, intervention, rehabilitation and survivorship. The authors specify that across nursing positions there are commonalities such as the identification of cancer-related risks, development and implementation of treatment plans, and patient and staff education. The authors extrapolated that, within the context of lymphoedema care, the competencies encompass risk reduction, prevention, treatment and management of cancer-related lymphoedema. Ryan et al.[24]

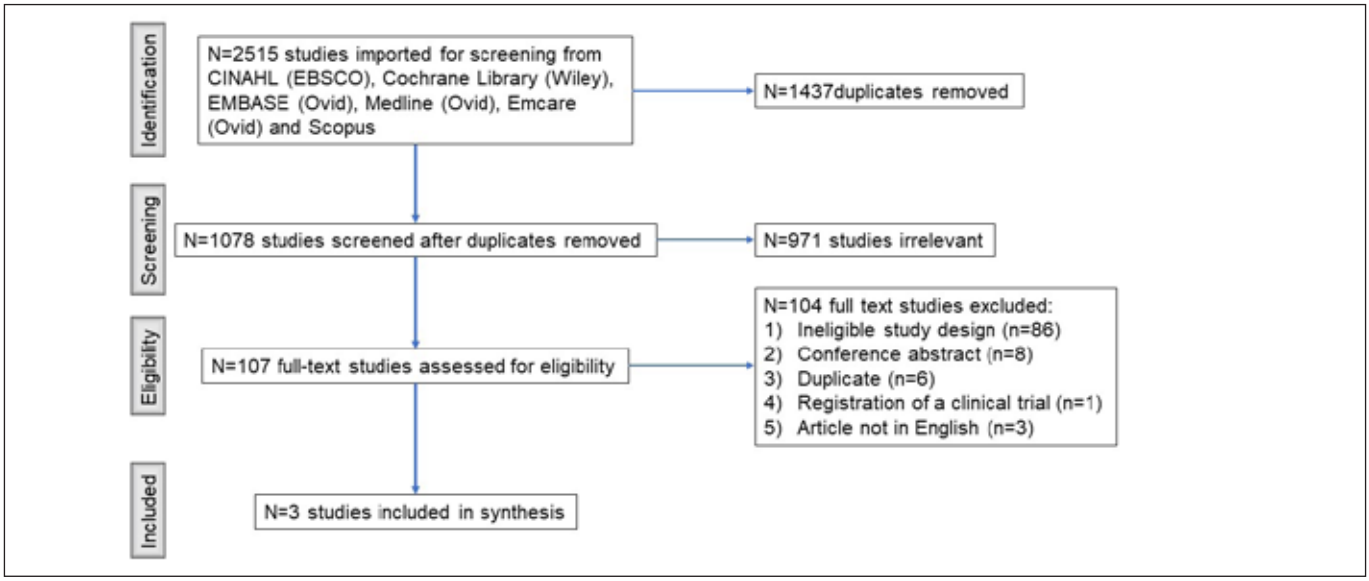

Figure 1. PRISMA study flow diagram.

Table 1. Summary of the studies that report on nursing scope of practice in early identification, treatment and management of cancer-related lymphoedema

Study / study design	Aim	Definition of nursing scope of practice / competencies	Population / settings	Key findings	Strengths	Limitations
Ryan et al.[24] Cross-sectional design, survey.	To understand the practice patterns in lymphoedema care and identify predictors influencing those patterns among oncology nurses, with particular focus on APNs.	Nursing scope of practice not defined / competencies extrapolated from Oncology Nursing Society (ONS) Professional Competencies for APNs, specifically for the oncology nurse practitioners, and the oncology clinical nurse specialist.	Members of ONS/ web-based study.	The scores for perceived knowledge of and competence in lymphoedema treatment were low for all nursing subgroups; perceived knowledge of risk reduction and self-management were higher than for treatment; highest scores across all nursing positions was obtained for patient education on risk reduction whereas the lowest scores were obtained on general knowledge of the lymphatic system; higher perceived competence in risk reduction significantly increased the odds of providing risk-reduction education; similarly, higher perceived treatment competence meant higher odds of providing patient education on self-management; when nurses considered that lymphoedema care was their responsibility, the odds of providing such care increased for risk-reduction, treatment and self-management; overall, being an APN did not increase the odds of providing education in any aspect of lymphoedema care.	Random and purposive sampling targeted 2510 ONS members with an expected 10% response rate; different categories of nursing professionals employed in oncology settings were captured; the survey was completed by 256 nurses; targeted members were those who may have the opportunity to provide lymphoedema care during daily clinical practice; content validity was ensured by 10 oncology nurses who were not participants in the study; the study examined perceived knowledge and competence followed by testing the actual knowledge.	It is not clear whether nurses' actual knowledge was assessed as multiple-choice questions or short answers; overall 32 self-identified as nurse practitioners and 41 identified as CNS i.e., 27.5% of responders were APNs; no power analysis to determine if the numbers recruited are sufficient to represent each of categories of nursing professionals.
Fu et al.[11] Cross-sectional design, survey.		Nursing scope of practice not defined / competencies extrapolated from Oncology Nursing Society (ONS) Professional Competencies for APNs, specifically for the oncology nurse practitioners and the oncology clinical nurse specialist.	Members of ONS/ web-based study.	Oncology nurse navigators demonstrated the highest perceived knowledge and perceived competence in lymphoedema risk reduction and had increased odds of providing education regarding lymphoedema risk reduction. However, they were not superior to other nurses in any of the assessed components.	238 responders; different categories of nursing professionals were captured; thorough assessment tool examining perceived and actual knowledge developed by seven lymphoedema experts; assessment tool focused on assessing lymphoedema, practice patterns, perceived knowledge, and competence; comprehensive analysis.	Study employs the same data set as Ryan et al.[24]
Abu Sharour[25] Cross-sectional design, survey.	To evaluate Jordanian oncology nurses' knowledge about lymphoedema assessment, prevention and management among women with breast cancer.	Nursing scope of practice not defined / author reports that the study outcomes can serve as a mean to develop oncology nurses' competencies when managing lymphoedema.	150 participants from surgical wards and outpatient clinics employed there for 6 months or more and who worked with patients with breast cancer-related lymphoedema; purposive sampling was undertaken from three different regional hospitals in Jordan.	Study reports that 60% of participants (n=75) failed the test knowledge, with a large percentage of participants reporting lack of knowledge on breast cancer-related lymphoedema assessment and examination (70.0%), patient education and consultation (56.7%) and follow-up appointment (63.3%); No significant relationship was found between years of experience and level of knowledge; however, significant difference was found between nurses' knowledge according to their academic qualifications (diploma degree, bachelor degree and postgraduate qualifications).	Power analysis was used to determine the needed number of study participants; data was collected by research assistants and not the researcher. Data collected captured baseline knowledge and identifies deficits in Jordanian nurses' knowledge of lymphoedema assessment, prevention and management among women with breast cancer. Findings help determine learning needs and the need to develop accompanying competencies.	Questionnaire was constructed by a single researcher; low number of questions pertaining to anatomy (two) and pathophysiology (four); Sample participants in the pilot tests were not described and therefore the reliability of the test requires careful consideration; although power analysis was used to determine the sample number, the power calculation did not consider the sample heterogeneity. Author correlated nurses' qualifications, years of experience and levels of knowledge; however, only four nurses are reported as having advanced qualifications, whereas 125 nurses held Bachelor of Nursing qualifications and 21 nurses were diploma qualified.

identifies completing referrals to lymphoedema therapists and mental health practitioners for psychosocial support as within the scope of the APNs. However, the authors did not define what is considered under 'treatment' or 'management' of cancer-related lymphoedema within the context of nursing as opposed to lymphoedema therapists, also known as lymphoedema practitioners[26], nor mental health practitioners. Fu et al.[11] hypothesised that the role of oncology nurse navigators is in risk reduction, treatment and self-management of cancer-related lymphoedema, aiming to evaluate oncology nurse navigators' perceived and actual knowledge of lymphoedema care. This study does not describe what constitutes risk reduction, treatment nor self-management components. Nevertheless, where nurses believed that it was within their scope and responsibility to provide care for lymphoedema, there was an increased likelihood that the nurse will provide care associated with risk reduction, treatment and self-management[11,24].

Abu Sharour[25] also did not define the oncology nurse scope of practice with respect to cancer-related lymphoedema care. Rather, the study aimed to establish a baseline to develop educational programs and competencies needed to provide lymphoedema care.

Nurses' knowledge of cancer-related lymphoedema

Abu Sharour[25] reported that, of 150 Jordanian oncology nurses from surgical and outpatient clinical settings managing the treatment of patients with breast cancer, 70% of participants showed a knowledge deficit on assessment and examination of lymphoedema, including prevention interventions and precautions, contributing risk factors, patient education, consultation, and follow-up appointments. In this study, 60% of participants failed the knowledge test, with 56.7% of nurses lacking knowledge on patient education and consultation. It is noteworthy that while the author reports significant difference between nurses' knowledge and academic qualifications, only four nurses with postgraduate level were included in the study as opposed to 125 nurses with a bachelor's degree[25].

Ryan et al.[24] evaluated both perceived and actual knowledge amongst 238 members of the ONS active in clinical practice. While overall perceived knowledge and competence were low for all participants, perceived knowledge and competence in risk reduction were highest for the nurse navigators, followed by clinical nurse specialists, nurse practitioners, then staff (ward) nurses. With respect to perceived knowledge on patient self-management of lymphoedema, clinical nurse specialists ranked highest, followed by staff nurses. Overall, there was a high correlation between the nurses' perceived knowledge and perceived competence for all areas of lymphoedema care[24]. When the actual knowledge was assessed, the lowest percentage score for all nursing positions (combined) was for the knowledge of lymphatic system anatomy and physiology (14% correct answers). In contrast, 88% of all nurses responded correctly to questions on patient education on lymphoedema risk reduction. Overall, nurse navigators/case managers had the highest knowledge and least variability, whereas staff nurses had the lowest scores and most variability[24], also reported by Fu et al.[11]. While nurse navigators were expected to have a greater total knowledge, they were not superior in any specific aspect of lymphoedema care[11].

Using logistic regression analysis, Ryan et al.[24] report that perceived competence in lymphoedema risk reduction, treatment and self-management significantly increased the odds of nurses providing education on risk reduction, lymphoedema treatment and self-management of lymphoedema.

Information provision and patient education

All three studies[11,24,25] highlight the importance of nurses working within the oncology setting in educating their patients appropriately on risk reduction, lymphoedema treatment and self-management of lymphoedema. Fu et al.[11] identify oncology nurse navigators as playing a significant role in lymphoedema prevention through patient assessment and education. Interestingly, Ryan et al.[24] report that clinically active APNs did not have an increased likelihood of providing education for lymphoedema care in comparison to other oncology nurses, despite being the most educated and appropriately placed to provide this education.

Fu et al.[11] add that educating patients on complete decongestive therapy (CDT), outlined to include manual lymphatic drainage, multilayer compression bandaging, remedial exercise, skin care, compression garments and ongoing patient education, is essential to help patients to reduce their risk and self-manage lymphoedema. There was a strong correlation between perceived competence for oncology nurses in risk reduction, with 95% of nurses agreeing that this was a responsibility of the nurse[11]. The study found that having a higher perceived knowledge of risk reduction increased the likelihood of providing this education to the patient. However, this study did not assess whether the patients received nurse-led education to effectively implement self-management techniques, such as CDT, and whether nurses knew they were meant to deliver this education[11].

Identification and symptom management of cancer-related lymphoedema

Ryan et al.[24] described oncology nurses as being in the ideal position to identify and prepare at-risk patients and reduce the severity of lymphoedema. However, nurses' capacity to undertake this role is questioned as Fu et al.[11] and Ryan et al.[24] report on perceived and actual knowledge of self-management for patients with lymphoedema as low. Fu et al.[11] suggest that, while the success of daily implemented self-management techniques such as CDT is increased with suitable and timely patient education, the oncology nurse navigators did not perform better than other nurses participating in the study. Nevertheless,

higher perceived competence in self-management significantly increased the odds of nurses providing education regarding self-management. Neither Ryan et al.[24] nor Fu et al.[11] report on whether the nurses had the opportunity to assess patients to identify early lymphoedema nor manage any of the symptoms of cancer-related lymphoedema.

Treatment delivery of cancer-related lymphoedema

Neither of the three studies have defined if the nursing scope of practice includes nurse-led treatment of cancer related-lymphoedema or what type of treatment can be nurse-initiated[11,24,25]. While Fu et al.[11] highlight treatments such as CDT, the authors do not define whether nurses required additional qualifications to deliver CDT. Instead, Ryan et al.[24] and Fu et al.[11] report on perceived and actual knowledge of lymphoedema treatment in the form of patient education as means of empowering the patient to self-manage lymphoedema. When examining nurses' knowledge of treatments of cancer-related lymphoedema, Fu et al.[11] and Ryan et al.[24] report that perceived knowledge of treatment was low for all groups. Ryan et al.[24] report that 69% of oncology APNs believe that the treatment of cancer-related lymphoedema is the responsibility of another discipline. However, the study did not identify which 'other' discipline is proposed as responsible nor how this impacted APNs' practice.

Discussion

Lymphoedema management is an interdisciplinary event and identification of cancer-related lymphoedema is everybody's business[2]. This scoping review identified three studies that demonstrate that, overall, the knowledge of nurses on risk reduction, symptom management and treatment of cancer-related lymphoedema is low, regardless of advanced practice qualifications[11,24,25]. Neither of the three studies[11,24,25] clearly identifies what is the nursing scope of practice in cancer-related lymphoedema care, including treatment. To improve cancer survivorship journey for patients experiencing cancer-related lymphoedema, and as oncology nurses spend more time with cancer patients than any other healthcare professional[22], it is essential that nurses are equipped with the right knowledge and defined nursing scope of practice to implement risk-reduction, symptom management and treatment of cancer-related lymphoedema. Within the Australian context, the Australasian Lymphology Association (ALA), which provides a register of accredited lymphoedema practitioners in Australia and New Zealand, recognise registered nurses as practitioners who can provide initial diagnostic assessment, ongoing assessment, and treatment of people with lymphoedema if they meet the initial and ongoing ALA accreditation requirements for lymphoedema practitioners[26]. However, how these link to Registered Nurse Standards of Practice[21] and the National Professional Development Framework for Cancer Nursing[22] remains to be investigated. This mapping is essential, as patient education on the identification and risk reduction of cancer-related lymphoedema is most effective when implemented before the cancer treatment commences and is revisited throughout cancer treatment and the survivorship journey[27].

Once the mapping is undertaken, the scope of practice can be delineated, regardless of whether the nurse has advanced practice qualifications, and crystalises when to refer the patient to other specialists managing cancer-related lymphoedema such as physiotherapists. Furthermore, clearer scope of practice may define what it means to a lymphoedema nurse specialist in the context of Australian oncology healthcare settings.

With respect to limitations of the resources, it is noteworthy that there is a paucity of original, primary research in this area to answer the review question, with most literature comprised of expert commentaries.

This scoping review reveals many avenues for future research directions within the nursing scope of lymphoedema care. For example, within Australian context, using the NMBA definition of nursing scope of practice, the National Registered Nurse Standard of Practice[21] and the National Professional Development Framework for Cancer Nursing[22], research can focus on investigating what nurses believe is within their scope of practice, regardless of their qualification levels, and how they think this relates to their interdisciplinary work with other teams such as physiotherapists or medical practitioners. Using this information and relevant frameworks, lymphoedema-specific competencies for all oncology registered nurses, accounting for advanced practice qualifications, can be developed. Through development of those competencies, oncology nurses will be better equipped to identify this patient group and initiate appropriate interventions to minimise the impact of cancer-related lymphoedema.

Conclusion

The risk of developing cancer-related lymphoedema can be decreased through concerted nurse-led efforts in patient education, empowering patients to identify early onset of lymphoedema throughout the cancer survivorship journey. Knowing when to reach out to appropriate services to receive further information on self-management and receive timely treatments and referral to lymphoedema services would assist patients in reducing the burden of this condition. By clearly defining the nursing scope of practice and competencies in the identification, management and treatment of lymphoedema in the context of delivering effective lymphoedema care, nurses can make a critical contribution to increased surveillance of cancer-related lymphoedema, thus minimising its impact on patients' quality of life.

Conflict of interest

The authors declare no conflicts of interest.

Funding

The authors received no funding for this study.

References

1. Grada AA, Phillips TJ. Lymphedema: pathophysiology and clinical manifestations. Journal of the American Academy of Dermatology 2017;77(6):1009–20.
2. Rockson SG, Keeley V, Kilbreath S, Szuba A, Towers A. Cancer-associated secondary lymphoedema. Nature Reviews Disease Primers 2019;5(1):22.
3. McLaughlin SA, DeSnyder SM, Klimberg S, Alatriste M, Boccardo F, Smith ML, et al. Considerations for clinicians in the diagnosis, prevention, and treatment of breast cancer-related lymphedema: recommendations from an expert panel, Part 2: preventive and therapeutic options. Annals of Surgical Oncology 2017;24(10):2827–35.
4. Cormier JN, Askew RL, Mungovan KS, Xing Y, Ross MI, Armer JM. Lymphedema beyond breast cancer: a systematic review and meta-analysis of cancer-related secondary lymphedema. Cancer 2010;116(22):5138–49.
5. Beckjord EB, Reynolds KA, van Londen GJ, Burns R, Singh R, Arvey SR, et al. Population-level trends in posttreatment cancer survivors' concerns and associated receipt of care: results from the 2006 and 2010 LIVESTRONG surveys. Journal of Psychosocial Oncology 2014;32(2):125–51.
6. Board J. The delivery of lymphoedema care to patients in the end stages of life: key factors and their potential to influence practice. Journal of Lymphoedema 2019;14(1):58–61.
7. Garza R, 3rd, Skoracki R, Hock K, Povoski SP. A comprehensive overview on the surgical management of secondary lymphedema of the upper and lower extremities related to prior oncologic therapies. BMC Cancer 2017;17(1):468.
8. Shallwani SM, Hodgson P, Towers A. Comparisons between cancer-related and noncancer-related lymphedema: an overview of new patients referred to a specialized hospital-based center in Canada. Lymphatic Research and Biology 2017;15(1):64–9.
9. Fu MR, Guth A, Kleinman R, Cartwright F, Haber J, Axelrod D. Proactive approach to risk reduction and early detection of breast cancer related lymphedema. Cancer Research Conference: 35th Annual CTRC AACR San Antonio Breast Cancer Symposium San Antonio, TX United States Conference Publication: 2012;72(24 SUPPL. 3).
10. Grada AA, Phillips TJ. Lymphedema: diagnostic workup and management. Journal of the American Academy of Dermatology 2017;77(6):995–1006.
11. Fu MR, Ryan JC, Cleland CM. Lymphedema knowledge and practice patterns among oncology nurse navigators. Journal of Oncology Navigation & Survivorship 2012;3(4):8–15.
12. Fu MR, Chen CM, Haber J, Guth AA, Axelrod D. The effect of providing information about lymphedema on the cognitive and symptom outcomes of breast cancer survivors. Annals of Surgical Oncology 2010;17(7):1847–53.
13. Ridner SH. Pretreatment lymphedema education and identified educational resources in breast cancer patients. Patient Education and Counselling 2006;61(1):72–9.
14. Daudt HM, van Mossel C, Scott SJ. Enhancing the scoping study methodology: a large, inter-professional team's experience with Arksey and O'Malley's framework. BMC Medical Research Methodology 2013;13:48.
15. Lokmic-Tomkins Z, Mulcahy M, Cochrane L, Fenwick C, Nayakaratne N, Conway O, et al. The oncology nurse's scope of practice in the identification, treatment and management of secondary lymphoedema: A scoping review protocol 2021. osf.io/q59hm. : https://osf.io/q59hm/
16. Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. Annals of Internal Medicine 2018;169(7):467–73.
17. Arskey H, O'Malley L. Scoping studies: towards a methodological framework. International Journal of Social Research Methodology 2005;8(1):19–32.
18. Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology. Implementation Science 2010;5:69.
19. Peters MD, Godfrey CM, Khalil H, McInerney P, Parker D, Soares CB. Guidance for conducting systematic scoping reviews. International Journal of Evidence Based Healthcare 2015;13(3):141–6.
20. Peters MDJ, Godfrey C, McInerney P, Baldini Soares C, Khalil H, Parker D. Scoping reviews. In: Aromataris E, Munn Z, editors. Joanna Briggs Institute Reviewer's Manual. Adelaide, Australia: Joanna Briggs Institute; 2017.
21. Nursing and Midwifery Board of Australia (NMBA). Registered nurse standards for practice 2017. Available from: https://www.nursingmidwiferyboard.gov.au/Codes-Guidelines-Statements/Professional-standards/registered-nurse-standards-for-practice.aspx#:~:text=Scope%20of%20practice%20is%20that,requirements%20of%20the%20service%20provider.
22. Aranda S, Yates P. A national professional development framework for cancer nursing. Canberra: The National Cancer Nursing Education Project (EdCaN), Cancer Australia; 2009.
23. Peters MDJ, Marnie C, Tricco AC, Pollock D, Munn Z, Alexander L, et al. Updated methodological guidance for the conduct of scoping reviews. JBI Evidence Synthesis 2020;18(10):2119–26.
24. Ryan JC, Cleland CM, Fu MR. Predictors of practice patterns for lymphedema care among oncology advanced practice nurses. Journal of the Advanced Practitioner in Oncology 2012;3(5):307–18.
25. Abu Sharour L. Oncology nurses' knowledge about lymphedema assessment, prevention, and management among women with breast cancer. Breast Disease 2019;38(3–4):103–8.
26. Australasian Lymphoedema Association (ALA). National Lymphoedema Practitioners Register 2021. Available from: https://www.lymphoedema.org.au/accreditation-nlpr/find-a-practitioner/.
27. Fu M, Haber J, Axelrod D. Lymphedema education and risk reduction in breast cancer survivors. Oncology Nursing Forum 2008;35(3):546.