



Original article

Research priorities of Australian cancer nurses: A national consensus survey



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ABSTRACT

Background: It is essential to investigating research priorities of cancer nurses to advance the field and keep pace with the ever-changing needs of patients, the workforce and evidence.

Aim: To identify and prioritise research priorities of cancer nurses across Australia.

Methods: A three-round online survey with feedback was used to identify and rank research priority topics nominated by cancer nurses. Topics were themed and grouped into domains. We defined consensus a priori as > 70% agreement.

Findings: Two hundred and fifty-five respondents participated in the first round, identifying 995 topics which we grouped into three broad domains: patient-reported outcomes and experiences; health services; and workforce. A large sub-domain, side-effects and symptoms was included under the patient-reported outcomes and experiences domain. Thirty-seven topics under these four domains were included in the second survey round. Eighty-seven respondents re-ranked topics in order of priority. Most (80%) topics ranked by count in the first survey round were retained in the top five priorities for each domain in the second survey. Ten respondents participated in the final survey round. Agreement was reached by 75% on the ranked order of priorities. These research priorities highlight the breadth of complexity in providing nursing care to patients with cancer.

Discussion and Conclusion: Research priorities are important in focusing efforts and directing resources around nursing education and training, career development, and research funding. Ultimately addressing the identified priorities is critical to reducing current gaps in cancer care and achieving optimal outcomes for people affected by cancer.

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Summary of relevance

What is already known

Many countries around the world have explored their national-level research priorities of cancer nurses to identify areas where new knowledge is required to advance cancer care. This information is useful for both improving outcomes for patients and health services, as well as informing research funders.

What this paper adds

This study is the first consensus study to identify research priorities of cancer nurses across all of Australia. Research priorities can be used to inform research funding to advance areas where new knowledge is required and to align initiatives, service planning and resources.

1. Introduction

An estimated 145,000 new cases of cancer will be diagnosed in Australia during 2021, averaging almost 400 new cases per day. While most (~76%) will survive, around 130 deaths occur every day from cancer (Australian Institute of Health and Welfare, 2020). Cancer and other neoplasms contribute more than 18% of the total burden of disease in Australia (Australian Institute of Health and Welfare, 2019), costing an estimated \$AUS 2 billion per year in lost labour alone (Bonnert, 2018). The lifelong impact of cancer transcends multiple domains of health and well-being, the consequences of which are felt at the individual, health service and systems level, and wider society (Campbell et al., 2017; Cancer Australia 2021). Australia's vast geography and small scattered population result in fragmented and inequitable access to services, particularly for people living in regional and remote locations (Bradford, Caffery, & Smith, 2016). Sociodemographic factors including education, employment, and Indigenous status also contribute to disparate outcomes (So et al., 2016). These are just some of the challenges clinicians encounter when planning for and providing best-practice cancer care.

The scope of cancer nursing practice encompasses providing essential care, coaching and education, and integrated support along the cancer continuum from diagnosis, throughout treatment, and survivorship, including palliative care (Decadt et al., 2020). In a society where cancer survival rates are increasing and both treatment and supportive management continue to evolve, it is essential to understand the pivotal role played by cancer nurses to address the ongoing needs of patients and carers affected by cancer (Yates et al., 2020). Given the challenges of organising and delivering services across Australia, and to continually advance the field while keeping pace with the ever-changing needs and of both patients and the workforce, it is crucial to identify and respond to research priorities (Krishnasamy et al., 2021).

Nations around the world have identified and explored research priorities within cancer nursing since the 1970's (O'Mara, 2015). In particular, the USA through the *Oncology Nursing Society* (ONS) proactively publish their research agenda and priorities every few years (LoBiondo-Wood et al., 2014; Von Ah et al., 2019). The purpose of such research is to focus efforts and direct resources for education and training, career development, and research funding opportunities to meet patient needs as new knowledge and the evidence-base continually emerge.

As different nations have different health services and populations, priority setting in one nation may not reflect or represent research priorities across different settings (Cox, Arber, Gallagher, MacKenzie, & Ream, 2017). In Australia, research priorities of cancer nurses have only been investigated in individual states, and not within the last two decades (Barrett, Kristjanson, Sinclair, & Hyde,

2001; Chang & Daly, 1996; Yates et al., 2002). Due to the continual flux of cancer control, nurses need to be responsive to changes and informed by contemporary evidence. Understanding the research priorities of cancer nurses in Australia is long overdue. The aim of this paper, therefore, is to provide a descriptive overview of the research priorities determined by cancer nurses across Australia. Findings will be used to identify and unify practice gaps and research in the Australian context, and subsequently prioritise where attention and resources should be directed.

2. Methods

2.1. Study design

This study was an initiative of the Cancer Nurses Society Australia (CNSA) Research

Committee. CNSA is a member-based organisation and independent body with approximately 1500 members representing cancer nurses throughout Australia (Cancer Nurses Society Australia, 2021). Based upon the principles of Delphi methods to achieve consensus (Ekberg et al., 2020; McPherson, Reese, & Wendler, 2018), an iterative process was used to reach agreement for research priorities over three rounds of survey and feedback with cancer nurses across Australia. Following each survey round, the research team analysed responses, collated and discussed findings during CNSA Research Committee meetings. These findings were communicated to respondents in subsequent survey rounds. Delphi methods are considered an appropriate design when the research question can be addressed by subjective information gathered from experts and those working in the field – in this case cancer nurses – to set priorities where none existed before (Hasson & Keeney, 2011; McPherson et al., 2018). The anonymity and ability to participate online regardless of geographical location allows individual opinions to be expressed without the influence of dominant fellow experts, facilitating progression from individual opinion to group consensus (Cox et al., 2017). The core principles of Delphi studies including multiple survey rounds, maintaining anonymity, and providing feedback at each round were adhered to, to foster reliable, valid, and trustworthy outcomes. (Hasson & Keeney, 2011). Our methods, however, differed from traditional Delphi methods in terms of our sample as outlined below. A summary of the process is presented in Fig. 1.

2.2. Data collection and participants

2.2.1. Stage 1: First survey

The first survey was developed by the CNSA Research Committee, informed by literature to include demographics and characteristics about respondents to ascertain their years of experience as a cancer nurse, qualifications, main role, involvement in research, understanding of research processes, and experience with implementation of nurse-led research activities (Cox et al., 2017; Monterosso, Ross-Adjie, & Keeney, 2015). This information was crucial to understand the level of expertise of cancer nurses to identify research priorities (Cox et al., 2017). Respondents were then asked to list, in free text, up to five important questions, problems or approaches relating to the nursing care of people with cancer they considered unanswered and that could be addressed through research. Study data were collected and managed using REDCap (Harris et al., 2019), a secure, web-based software platform designed to support data capture for research studies hosted at Queensland University of Technology.

Participants in the first survey round were past or attending nurses of the CNSA Annual Congress until 2019 (~3500 subscribers on the congress mailing list that included all current CNSA members). The first survey was distributed during CNSA 2019 Congress,

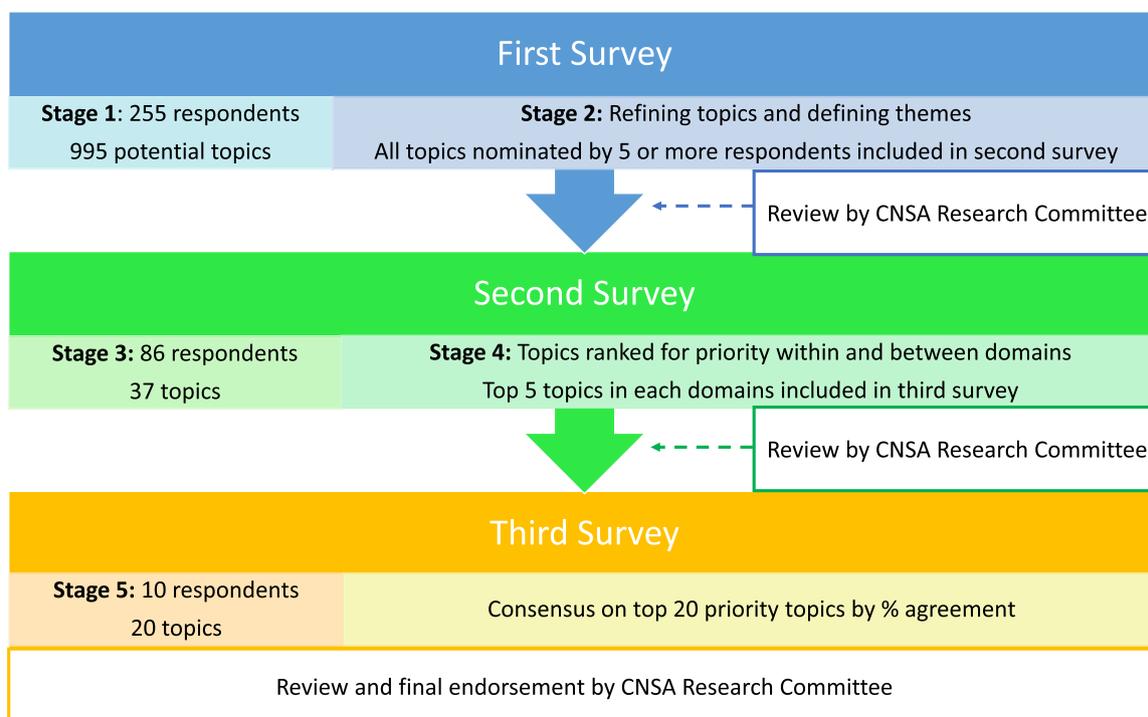


Fig. 1. Overview of methodology and results.

along with other communication about CNSA and Congress. All past or current attendees received an email inviting them to participate in the study, along with the survey link to complete the electronic questionnaire.

2.2.2. Stage 2: Refining topics and defining themes

The data generated from the surveys were analysed descriptively. Demographic characteristics were collated and summarised using frequencies and proportions. Open-ended responses from respondents’ free text in the first round were explored in NVivo qualitative software (QSR international, 2020) and analysed at a broad level using thematic analysis. Initial codes were generated based on the theme/topic of each response. These were then compared and contrasted with other codes in order to group similar codes together under higher level themes and sub-themes (Braun & Clarke, 2012). Higher level themes were then collapsed into broader domains, and sub-themes into research priority topics. The coding structure was discussed between the research team. Once agreement was obtained, the research priorities within each domain were tabulated from highest to lowest priority, where the highest priority possible was 1, according to the number of respondents that had nominated each individual topic. Summary statistics, including frequencies and proportions were used to compare sample characteristics with the research priority themes using STATA Version 16 (StataCorp, 2019). Findings were discussed at the CNSA Research Committee meetings; no changes were suggested or made. All topics nominated by five or more respondents were carried forward to subsequent survey rounds; all subsequent surveys provided free text options for topics to be nominated or comments provided ensuring the option to add important topics remained.

2.2.3. Stage 3: Second survey

The second survey was distributed via email and electronic link in March 2021 to all CNSA members (~1500). Given one of the functions of CNSA is to advance cancer nursing, and research surveys to inform practice are regularly distributed to members, it

was deemed appropriate to survey the CNSA membership only, rather than to send further unsolicited emails to past congress attendees, without other relevant information. The second survey summarised the findings from the first survey, grouping nominated research topics into domains according to the ranked order by count from the first survey. Respondents were first asked if they agreed with the domains, and then they were invited to re-rank the order of topics within domains from highest priority to lowest by numbering topics in order, where a lower number indicated a higher priority. This process provided a total score for each topic. Respondents could suggest different topics within domains in free text. Demographics were again collected, and as the survey was anonymous, respondents were asked if they had participated in the first round. If respondents were interested, they were asked to provide their email addresses to participate in future survey rounds.

2.2.4. Stage 4: Ranking research topics

Total score for each research topic (within each domain) were calculated by summing the score given to each topic by each respondent. A mean score for each research topic was calculated by summing the total score and dividing by the number of respondents. As each domain had a varying number of topics, we then transformed scores by calculating the mean score within each domain. We, then inversed the mean scores, for ease of interpretation, with a higher mean score indicating a higher priority, where the highest priority possible was 1. We did not impute missing data. Free text was analysed to assess frequency of alternative topics or comments suggested. The total scores were used to re-rank topics from highest to lowest priority. The top five priorities by mean ranked score in each domain were carried forward for the third survey. The findings were again discussed between members of the research team and presented to the CNSA Research Committee for comment; no changes were suggested or made.

2.2.5. Stage 5: Third survey

In the final survey round, the survey was distributed to all nurses who provided their email address from the second survey.

Respondents were presented with the top five research priorities in each domain, identified by the ranked mean score from the second round. Respondents were asked if they agreed or not (yes/no) with the ranked order in each domain. They were able to suggest alternative topics or make comment in a free text box. In the final survey round the proportion of agreement with topics and the proposed order of topics was calculated to determine consensus. We defined consensus as agreement by $\geq 70\%$ of respondents. The outcomes were discussed between the researchers and then again presented to CNSA Research Committee for final endorsement.

2.3. Ethical considerations

Ethical approval of the research protocol was obtained from the Queensland University of Technology (QUT) Human Research Ethics Committee (HREC) (Ref: 190000086). The online survey contained a participant information and consent form, in which respondents ticked a box to acknowledge their informed consent to participate. Respondents were informed of their ability to withdraw from the study at any time. Identifying information (email) was collected in the second survey, but this information was used only to distribute the survey. No identifiable information was used in the analysis or presentation of findings.

3. Results

3.1. Participants

The first survey was sent to subscribers of the CNSA Annual Congress (~3500), of which 255 (7%) provided informed consent to participate and completed the survey. The second survey went to CNSA membership (~1200 members), 94 responses were obtained, of which 86 were evaluable; 8 respondents provided demographic characteristics only and were excluded; the response rate was similar at 6%. The final survey round was sent to the 23 respondents from the second survey round who provided their contact email address; of these 10 responded (43%). Key characteristics of the respondents from all surveys can be seen in Table 1. Majority were female and more than half were 50 years of age or older across all surveys. There were significantly fewer nurses from regional areas in the second and third surveys (32% vs 20%). Across all surveys, most nurses worked in the public sector, and most held a post-graduate qualification. The second survey had a higher proportion of nurses with 10 years or less experience, and across all surveys nurses were involved in clinical care, management, education and research.

3.2. Stage 1 and 2: First survey

Each participant could nominate up to five research priorities and a total of 995 unique topics were coded. Upon aggregation and grouping similar themes, three overarching broad level domains emerged, under which all codes and themes were summarised resulting in 37 research topics. The three broad domains were patient-related outcomes and experiences; health services; and workforce.

A total of 387 unique topics were grouped under *patient-related outcomes and experiences*. These were ultimately condensed into 12 topics nominated by five or more respondents. Within the domain of patient related outcomes and experiences, the largest sub-theme was *side effects and symptoms*. This sub-theme was further explored and seven topics nominated by five or more respondents were identified; these topics were carried forwards for subsequent survey rounds. There were 267 unique priorities nominated under the *health service theme* which were ultimately grouped into 10

topics nominated by five or more respondents. Within the *workforce* domain, 214 unique codes were grouped into eight topics nominated by at least five respondents. While each respondent could nominate up to five topics, not all did, across the sample of 255 respondents an average of four topics were nominated providing a total of 1038 nominations for research topics. The count of nominations for each topic were summed and the ranked in order where higher counts are ranked as higher priority, where the highest priority possible within each domain is 1 (Table 2).

Supplementary Table 1 summarises the priority research topics based upon sample characteristics. There were no significant differences in the distribution of research priorities and any of the sample characteristics or demographics including employment status, location, workplace, years of cancer nursing experience, residency, primary role or highest qualification.

3.2.1. Stage 3 and 4 second survey

The 37 research topics were re-ranked within each domain based upon mean score of votes with a higher mean ranking a higher priority, where the highest priority was 1 within each domain. This resulted in a change in rank of 59% ($n = 22$) of topics (Table 2). Of note however, within each of the four domains, the top five topics only changed by 20%. That is, four out of every five topics ranked by count in the first survey remained in the top five priorities in the second survey. These top five topics within each domain were then carried forward for the third survey. Respondents also voted on the overall ranking of the three domains, in which 61% agreed patient reported outcomes and experiences were the most important, 20% voted for health services and the remaining 16% for workforce issues. While alternative research topics were suggested by 19 respondents, these were heterogenous and not carried forwards to the third survey.

3.2.2. Stage 5: Third survey

In the final survey round, $> 75\%$ ($n = 8$) respondents agreed with the ranked order established in the second survey reaching our pre-determined threshold for consensus. The ranked order was subsequently reviewed and endorsed by the CNSA Research Committee. The research priorities identified by Australian cancer nurses are summarised in Fig. 2.

4. Discussion

We used survey methodology informed by Delphi study principles to obtain consensus from Australian cancer nurses identifying 20 research priorities across the broad domains of patient-related outcomes and experiences (including a sub-domain of side effects and symptoms), health services and workforce. Consensus was reached regarding five priority topics within each domain (Fig. 2). Frequency of the identified research priorities under the broad level categories did not significantly differ across any of the sample characteristics. These priorities highlight that cancer nurses consistently focus on the needs of patients during and after cancer treatment including managing symptoms, improving experiences, providing education and optimising outcomes. Each domain is discussed in relation to the Australian context below.

4.1. Patient-related outcomes and experiences, symptoms and side effects

Over the last two decades, cancer side effects and symptoms have remained a prominent research priority reported in research priority setting studies across the world (Lopes-Júnior et al., 2016; Maree, Herbert, & Huiskamp, 2017; Yates et al., 2002). Indeed, we also identified management of symptoms and side effects as a top priority for research. Given that over 40% of respondents to our

Table 1
Sample characteristics of study respondents in survey 1 (N = 255), 2 (N = 86), and 3 (N = 10)

Variable	First survey (N = 255)		Second survey (N = 86)		Third survey (N = 10)	
	n	%	n	%	N	%
Female	220	89.8	85	98.8	10	100
Age						
18-29 years	4	1.6	3	3.5	-	
30-39 years	53	21.5	17	19.8	2	20
40-49 years	53	21.5	22	25.6	3	30
50-59 years	99	40.1	28	32.6	5	50
60 years or older	38	15.4	16	18.6	-	
Work location						
Metropolitan	168	68.3	69	80.2	8	80
Regional	54	22	15	17.4	2	20
Rural/remote	24	9.8	2	2.3		
Highest qualification						
Hospital certificate	6	2.5	-	-	-	-
Post registration certificate/diploma	27	11.2	15	18.3	1	10
Bachelor's degree	34	14.1	15	18.3	4	40
Postgraduate certificate/diploma	78	32.2	22	26.8	5	50
Masters	78	32.2	24	29.3	-	-
PhD	19	7.9	6	7.3	-	-
Workplace						
Public	165	68.8	53	63.1	7	70
Private	51	21.3	21	25	2	20
Not for profit	24	10	10	11.9	1	10
Employment status						
Full time	129	54.4	49	59.8	5	50
Part time	101	42.6	32	39	5	50
Casual	7	3	1	1.3	-	-
Years of cancer nursing experience						
Less than 10 years	38	15.8	24	28.6	1	10
10-20 years	117	48.6	28	33.3	3	30
More than 20 years	86	35.7	32	38.1	6	60
Primary role						
Patient care	99	40.7	40	47.6	6	60
Management	34	14	8	9.5	1	10
Education/Coordination	60	24.7	18	21.4	1	10
Research/Academia	26	10.7	8	9.5	1	10
Other	24	9.9	10	11.9	1	10
Participated in previous round	-	-	17	20	10	100

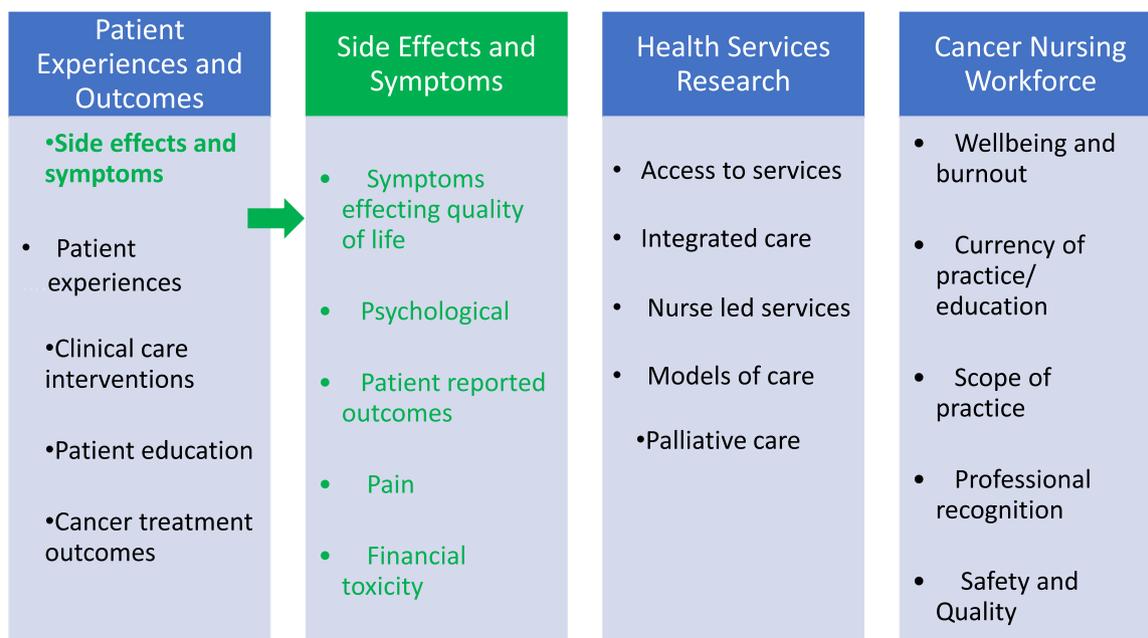


Fig. 2. Cancer nursing research priorities as identified by Australian cancer nurses.

Table 2
Priority rank of research topics within each domain for surveys 1, 2, and 3

Domain	Priority rank by countSurvey 1N = 255 ^a		Priority rank by scoreSurvey 2N = 86		Priority rank by consensusSurvey 3N = 10	
	Count of topic nominated	Rank	Mean score	rank	% agree	rank
Patient experiences and outcomes						
Patient experience	28	6	8.6	1		1
Side effects and symptoms	78	1	8.5	=2	80%	2
Clinical care interventions	52	2	8.5	=2		3
Patient education	42	3	8.4	4		4
Cancer treatment outcomes	29	5	7.0	5		5
Cancer survivorship	38	4	6.8	6		
Decision making	28	7	6.4	7		
Complications of care	20	9	6.3	=8		
Populations at risk of poorer outcomes	24	8	6.3	=8		
Caregiver support	20	10	5.6	10		
Cancer prevention	15	11	5.4	11		
Complementary/Alternative medicines	14	12	3.8	12		
Side effects and symptoms (sub domain)						
Quality of Life	9	4	5.4	1		1
Psychosocial	26	1	4.8	2	70%	2
Patient reported outcomes (in general)	31	3	4.3	3		3
Pain	6	6	3.8	4		4
Financial toxicity	13	2	3.3	5		5
Fatigue	6	7	3.3	6		
Peripheral neuropathy	7	5	3.1	7		
Health services research						
Access to health services	78	3	7.6	1		1
Integrated care	53	2	7.0	=2	80%	2
Nurse led health services	16	7	7.0	=2		3
Models of care	91	1	6.4	4		4
Palliative care	34	4	5.9	5		5
Rural and remote health services	32	5	5.8	6		
Primary care health services	17	6	4.7	7		
Implementation research	12	8	4.2	=8		
Referrals	12	9	4.2	=8		
Exercise education and intervention	7	10	4.0	10		
Nursing workforce						
Well-being and burnout	31	3	5.3	1		1
Currency of practice/education	52	1	5.1	=2	80%	2
Scope of practice	16	6	5.1	=2		3
Professional recognition	23	4	4.8	4		4
Safety and quality	21	5	4.8	5		5
Subspecialisation	45	2	4.3	6		
Valuing nursing research	12	7	3.9	=7		
Informing policy	7	8	3.9	=7		

Note: Shaded cells with bold font highlight top five topics in each survey.

^a Each participant could nominate up to 5 topics.

survey were frontline cancer nurses, this is not surprising. As new treatments, including precision medicine and multi-modal prolonged treatment pathways evolve, symptom science will necessarily remain a cornerstone of cancer nursing practice (Moug, Bryce, Mutrie, & Anderson, 2017). Promising research includes the positive effects of modifiable lifestyle factors on symptom clusters; for example, fatigue, sarcopenia and cognitive impairment can all benefit from exercise (Mustian et al., 2016). The systematic use of patient reported outcome measures (PROMs) to assess symptom burden are increasingly advocated as a mechanism to improve communication between patients and clinicians, decreasing symptom burden, and improving quality of life, satisfaction and even survival (Basch et al., 2016; Bouazza et al., 2017). The use of technology is expanding possibilities to communicate in real-time and also asynchronous about experiences, symptoms and side-effects. Where identified research priorities already have a substantial evidence base for effective interventions however, implementation science may be required to move evidence through to practice (Cox et al., 2017). Whilst out of scope for the current study, this is an important and sometimes overlooked aspect that occurs with bottlenecks between identifying problems, undertaking research, generating evidence and integrating evidence into practice.

A recent systematic review highlighted that research priorities identified by cancer nurses have remained relatively consis-

tent over the past 18 years (Cadorin, Bressan, Truccolo, & Suter, 2020). Symptom management, communication, patient education and information exchange to support decision-making are common topics across many priority-setting studies (Cox et al., 2017; Knobf et al., 2015; Young et al., 2020). The latest priority setting publication from ONS identified symptom science, disparities, palliative and psychosocial care and included cross cutting themes such as aging, survivorship, healthcare delivery and methodologies (Von Ah et al., 2019) In comparison, we identified more priorities related to health services research and workforce.

4.2. Health services research

Access to services was identified as the top priority in this domain, a topic not highlighted in cancer research priority setting studies in other nations. This may be reflective of Australia's both vast and geographically diverse population, in which rural and remote locations often experience poorer outcomes compared to more urban and metropolitan regions of the country (Bradford et al., 2016). Cancer services are by necessity, highly centralised. Access to services for rare cancers, including for cancer in children or adolescents often requires travel across great distances, and for extended periods during cancer treatment (Anderson et al., 2021). Despite established telehealth services across the nation

that can reduce patient travel and improve care coordination between cancer care services, both patients and healthcare providers recognise the inherent limitations and still value in-person consultations (Hamilton, Van Veldhuizen, Brown, Brennan, & Sabesan, 2019). Even with the rapid transition to telehealth during the COVID-19 pandemic, flexible hybrid models combining both in-person and telehealth services are likely to remain the preferred options to improve access to services (Sansom-Daly & Bradford, 2020).

4.3. Nursing workforce

Wellbeing and burnout of cancer nurses was identified as a top priority in the current study and is also a recognised problem across the world (Young et al., 2020). In a workforce challenged with affording recognition and respect for the substantial contribution nurses make to the field of cancer care and indeed more broadly healthcare, cancer nurses are expected to simultaneously be at the bedside, the clinic, recruiting to clinical trials, undertaking their own research and encouraging the uptake of evidence-based care and the creation of new knowledge wherever possible (Yates et al., 2020). High workloads, low staffing ratios, long shifts and low control contribute to burnout, and the potential consequences on nurses and patient care are severe (Dall'Ora, Ball, Reinius, & Griffiths, 2020). Characteristics of respondents in this study suggest cancer nurses are highly experienced, educated and predominantly female workforce, and also one that is aging. Understanding the cancer nursing workforce is a priority area for further research for CNSA, and key to developing, supporting and advocating for a resilient and competent workforce that can meet the demands for cancer care in Australia.

4.4. Strengths and limitations

A strength of this study is that the first survey was designed to enable respondents to provide open-ended responses in listing their top five priorities for research, that is, there was no limitation on the responses that could be provided. Conversely, other descriptive studies investigating research priorities have provided a list of structured questions or themes from which respondents were asked to rank their priorities from those provided. Another strength is that data were collected from cancer nurses representing all seven states and territories of Australia, with a diverse range of roles, experiences and ages, enabling extensive and comprehensive information on research priorities to be brought to the forefront. In addition to the research strengths, there are some limitations that need to be acknowledged. The sample of nurses was different between the first and second surveys. If we had included an option for respondents in the first survey to indicate their interest in subsequent rounds, this could have been avoided. However, between surveys, there was little difference in the ranking of priorities, and no additional topics were added. This provides reassurance that the topics nominated are considered relevant and important by most cancer nurses who responded to each survey. The response rate for the survey was low, which is an increasingly common phenomenon with the explosion of online surveys resulting in 'survey fatigue', with response rates of 10% commonly reported (Pedersen & Nielsen, 2016; Sammut, Griscti, & Norman, 2021). Identifying strategies to improve response rates are imperative; a communications plan and 'socialisation' by pre-notification and reminders about the survey, as well keeping surveys simple and as offering incentives are suggested techniques (Sammut et al., 2021).

Perhaps, however, the most important limitation is the lack of a consumer perspective in identifying important topics for research.

Our next steps are to work with consumers, and the CNSA Research Committee to formulate research questions using the priorities identified here. In this way, CNSA aims to progress the research agenda, informed by both cancer nurses and people with cancer.

5. Conclusion

This study identified and prioritised research topics of cancer nurses across Australia to focus research efforts and direct resources in education and training, career development, and research funding. The views of cancer nurses across Australia in identifying these research priorities are pivotal to addressing current gaps in cancer care and subsequently achieving optimal outcomes for people affected by cancer. The priorities identified, broadly including patient-related outcomes and experiences, health services, and workforce warrant further exploration in order to understand their links with current research, professional development opportunities, policy and practice, and consumer expectations.

Authorship contribution statement

Natalie Bradford undertook data collection, undertook analysis and drafted the manuscript; Erin Pitt undertook analysis and managed data; Kimberly Alexander conceived the study and undertook data collection; The Research Committee, Cancer Nurses Society Australia reviewed all findings and processes. All authors approved the final manuscript.

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Ethical statement

This research involved human subjects, Ethical review and approval was provided on the 13th February 2019 Queensland University of Technology (Ref: 1900000086).

Conflict of interest

Natalie Bradford is the Chair of the Research Committee, Cancer Nurses Society Australia. Kimberly Alexander is former Chair of the Research Committee the current President of Cancer Nurses Society Australia. Natalie Bradford and Kimberly Alexander did not participate in any survey rounds.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.collegian.2022.01.005](https://doi.org/10.1016/j.collegian.2022.01.005).

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