

A survey of Australian cancer nurses: The prevention and control of noncommunicable diseases (CanPaC study)

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ABSTRACT

Objective: There is global imperative to reduce the burden of noncommunicable diseases (NCD's). NCD's are the leading cause of death and disability globally. In Australia, 2010, the World Health Organization estimated cancer deaths attributable to NCD's accounted for approximately 29% of all deaths and most are preventable by modifying lifestyle associated risk factors. The International Council of Nurses (2010) identified nurses are ideally placed to contribute to prevention and control of NCD's through evidence based strategies (EBS). The aim of this study was to explore the Australian cancer nurses role, knowledge, and skills to prevent and control NCD's. **Methods:** We used nonprobability snowball sampling to collect data from an online survey distributed to 899 members of the Cancer Nurses Society of Australia. **Results:** Two hundred and fifty-seven nurses responded; >90% found it is within the scope of their role to contribute to prevention and control of NCDs, >70% assess for

modifiable risk factors, >85% refer to support services, and 70% were interested in spending more time addressing prevention. Over 60% indicated they had adequate resources, appropriate personal skills, and adequate knowledge; however 73% felt they had inadequate time to incorporate strategies within their existing workload, 56% believed their physical environment was inadequate, and 48% felt a lack of culturally appropriate resources were identified as barrier to contributing to the prevention and control of NCDs. **Conclusions:** Australian cancer nurses want to contribute to the prevention and control of NCD's although workload, physical environment, and culturally inadequate resources hinder the implementation of EBS to combat NCD's.

Key words: Non-communicable disease, attitude, nurse, cancer, survey

Introduction

There is increasing imperative globally to reduce the burden of noncommunicable diseases (NCD's) on health care, specifically, the World Health Organization (WHO) has identified a target of a 25% relative reduction in premature mortality from cancer, cardiovascular diseases,

diabetes or chronic respiratory diseases by 2025.^[1] In 2014, the WHO estimates NCD's will account for 43% of disease burden globally and will account for approximately 73% of all deaths by 2020. The WHO identifies that most of these premature deaths are preventable by reducing risk factors such as tobacco and alcohol consumption, unhealthy diets and physical inactivity.^[1] Globally the effect of NCDs is one of the greatest challenges in health today. NCD's cause unnecessary suffering and premature death globally and are rapidly rising in most countries.^[2] Disadvantaged groups are disproportionately at risk of dying from NCD's especially those from low and middle-income countries and lower socioeconomic groups especially women, the elderly disabled and those from indigenous communities.^[3]

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Alleyne *et al.* identify the adverse relationship between NCDs and the negative impact on societies; lower productivity and propensity to poverty are experienced by all societies, but the greatest impact is felt by low and middle income countries who can least afford the burgeoning costs associated with chronic preventable illness.^[4] For example, it is estimated health care associated costs from the tobacco use account for 1%-2% of global gross domestic product (GDP) annually.^[5] In 2012, global cumulative economic losses from NCD's were estimated to be nearly \$500 billion USD per year and by 2030 may total up to \$47 trillion USD. An amount almost equivalent to 75% of global GDP in 2010.^[6]

In Australia, 2010, the WHO estimated that cancer deaths attributable to NCD's accounted for approximately 29% of all deaths, and overall NCD's accounted for approximately 90% of all deaths.^[7] In 2011, WHO estimated approximately 32% of total health expenditure was spent on the management of NCDs and accounted for almost half of total hospital spending across most countries, including Australia.^[8]

Nurses and midwives are the largest group of health providers globally estimated at more than 19 million worldwide.^[9] In 2008, the Australian Joint Midwifery and Nursing Organization released a consensus statement that characterized the Australian health system as perpetuating historical and creating legislative and professional barriers to effective health promotion and chronic disease management within primary health care by limiting equity in access and value for money, however, they identified that is within the nurses scope of practice to deliver improved health outcomes for the Australian community.^[10] In 2010, the International Council of Nurses (ICN) identified that nurses are ideally placed to contribute to the prevention and control of NCD's due to the number of nurses globally, their presence across diverse settings, their collaborative capacity to work with other health care professionals and their closeness with patients, families, and their carers; this was also echoed by the WHO in their 2011 statement on "what nursing and midwifery services mean to health."^[11] The WHO Global Forum for Government Chief Nursing and Midwifery Officers identified that to successfully address the growing burden of NCD's development is needed in nursing education, research and nursing leadership in policy.^[9] It is proposed by Alleyne *et al.* that Nurses are capable of being flexible, responsive, and innovative in order to address the needs of patients families and communities within a changing health environment.^[2]

When a person experiences a diagnosis of cancer, nurses may draw on the teachable moments that present themselves

through therapeutic engagement with patients, families, and their carers to motivate individuals to adopt risk-reducing or health-protective behaviors.^[12] Nurses may implement evidence based strategies (EBS) to support behavioral change including interventions that support healthy lifestyle choices and early detection and management of NCD's.^[13] The ICN has recognized in order for nurses to fulfill their potential in preventing and controlling NCD's they require specific knowledge and skills to be able to educate, inform and support patients during interactions.^[2] Not all interventions have been tested within these vulnerable patient groups, and the implementation of the intervention may not be appropriate depending on the timing and goals of the individual patient.^[14] Prior to the implementation of strategies nurses must consider the individuals disease trajectory, motivation, and willingness to modify existing health behaviors.^[15,16] Contemporary EBS should be applicable to specific patient populations; such as the individual with a diagnosis of cancer.^[17] This is increasingly important as cancer mortality is falling over time. The Australian Institute of Health and Welfare estimate the chance of being alive 5 years after a diagnosis of cancer 65% for males and 67% for females.^[18]

International research indicates that nurses are interested in participating in the prevention and control of NCD's although workload, knowledge, and perceptions of the role of the nurse have hindered the implementation of EBS to combat NCD's by nurses.^[19] DeCola *et al.* reports in a global nursing study (excluding Australian nurses) that among the general nursing population approximately 60% believe it is within their scope of practice and they have a great deal of influence with patients to modify their risk factors and 61% refer patients onto a range of support services to assist the patient with modifying their risk behavior.^[20]

The role of Australian cancer nurses to contribute to the prevention and control of NCD's has not previously been reported in the literature. International surveys of nurses have not reported on the role of Australian nurses to contribute to prevention and control of NCD's.

The aim of this study was to explore the cancer nursing role in the prevention and control of NCD's. To better understand the perceived nursing role in the prevention and control of NCDs in the Australian context and to identify barriers and promoters to the implementation of EBS to prevent and control NCD's.

Materials and Methods

This study received approval from the Hunter New England Human Research Ethics Committee, Newcastle, Australia.

Permission was obtained from the Cancer Nurses Society of Australia (CNSA) to distribute an invitation to complete the survey to their members.

We performed a national cross-sectional online survey of Australian nurses working in cancer care. The survey was distributed to 899 members of the CNSA during July 2014. Potential participants were invited to complete an online survey using the program "SurveyMonkey."^[21] Participation was voluntary. Written consent was not sought; completion of the survey was seen as confirmation that the participant consented to take part in this study. The investigators did not have direct contact with participants. A reminder E-mail was sent 2 weeks after the initial invitation to participate. The survey closed 3 weeks following the initial invitation. All participant responses were anonymous, and snowball sampling encouraged.

Participants were encouraged to distribute the survey to their colleagues allowing us to employ nonprobability snowball sampling. The limitation of using snowball sampling is that responses may not be representative of the whole cancer nursing population in Australia; however, it enabled us to access a greater pool of potential participants by engaging nurses who were not members of CNSA when accessing large number of participants is difficult and/or costly.^[22]

The only exclusion criterion was the elimination of survey respondents who was not registered with the Australian Health Practitioner Regulation Agency as a nurse. No respondents were excluded.

The survey was designed to collect similar key data, which was reported in the study undertaken by the ICN in 2012; however we note this study did not include responses from Australian nurses.^[20] Survey questions included demographics, nursing experience, educational history, and NCD specific questions about the role of the cancer nurse, knowledge of interventions, implementation of strategies, and barriers and promoters to prevent and control NCD's. Participants completed thirty questions, including a mix of multiple choice questions and self-rated 5-point Likert scale questions (one — five) where one indicated strongly agree, and five indicated strongly disagree. The survey allowed participants to provide qualitative comments throughout.

Results

A total of 257 nurses responded to the survey during the 3-week period (July, 2014) it was open for participation. Data analysis was undertaken using statistical analysis features within the functionality of the SurveyMonkey[®]

program and further analysis using simple statistics in Microsoft Excel[®] (2010). Seventy-nine percentages of respondents were members of CNSA, no respondents identified as Aboriginal or Torres Strait Islander. Sex was not recorded.

Of the 257 respondents 70% worked in a public health institution, 74% worked in a city/metropolitan region. A majority of respondents had been nurses for ≥ 16 years (69%), 51% had worked in their current role for ≥ 6 years, and 68% spent $\geq 50\%$ of their time in face to face contact with patients [Table 1].

Table 1: Participant characteristics (n = 257)

Characteristics	Frequency (%)
Geographical location	
City or metropolitan	73.9
Regional center	18.3
Rural/country	7.8
Years in this role	
< 1-year	10
1-5 years	39
6-10 years	26
11-15 years	12
16 years and over	13
Mean years in nursing	
1-5 years	6
6-10 years	12
1-15 years	13
16 years and over	69
Primary employment	
Public hospital	70
Private hospital	12
Teaching/tertiary referral hospital	6
Other	12
Place of employment	
Day treatment center (including radiation and chemotherapy)	24.1
Inpatient unit	17.5
Outpatient clinic	12.8
Both inpatient and outpatient	29.2
Doctors rooms	1.2
Other	15.2
Postgraduate qualifications held	
Yes	56
No	44
Professional employment status	
Clinical nurse consultant	20.2
Nurse unit manager	6.6
Registered nurse	25.7
Clinical nurse specialist	18.7
Research nurse	4.3
Nurse educator	4.3
Nurse practitioner	3.5
Enrolled nurse	2.3
Other	14.4

A majority of respondents, >94%, (strongly agree or agree) that it was within the scope of their nursing role to contribute to prevention and control of NCD's and more than 85% strongly agree or agree that cancer nurses can contribute to meeting the WHO target of reducing the overall mortality from NCDs by 2025.

Respondents were asked if it was their role to contribute to the identification of risk factors and prevention and control of NCDs in three distinct populations: The person with cancer, the family member/carer of a person with cancer and within the broader community. Respondents reported it was their role to contribute to identification of risk, prevention, and control across these three populations:

- A person with cancer — 92% (strongly agree or agree)
- A family member/carer — 77% (strongly agree or agree)
- The broader community — 73% (strongly agree or agree).

Importantly respondents indicated that more than 70% currently assess patients for modifiable risk factors and >85% of respondents referred patients, families/carers, and communities to a range of support services for prevention and control of NCD's [Figure 1]. Respondents also indicated they utilize a range of resources to assist patients, families/carers, and communities prevent and control NCD's [Table 2].

More than 60% of respondents indicated they had adequate resources, appropriate personal skills, and adequate knowledge to address prevention and control of NCD's in their workplace however 73%, reported they had inadequate time to incorporate strategies within their existing daily workload.

Furthermore, 56% reported their physical environment as inadequate and 48% reported a lack of culturally appropriate resources as barriers contributing to the prevention and control of NCDs within their workplace [Figure 2].

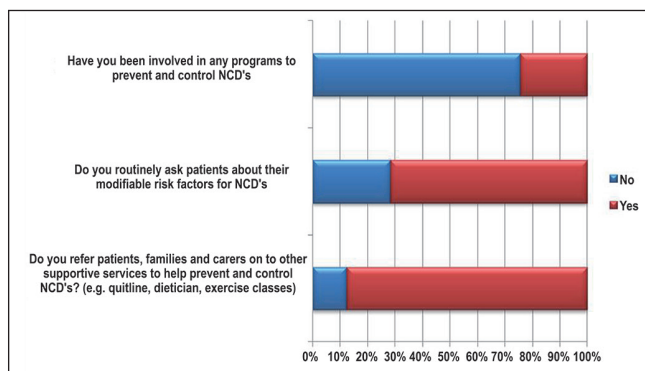


Figure 1: Cancer nurses self-reported experiences with noncommunicable disease's

Figures 3-6 indicate if nurses felt they had adequate knowledge, skills, and resources to help patients, carers and their families modify risk factors in four key areas: Tobacco use, excessive alcohol consumption, physical activity, and diet.

Respondents were asked to evaluate their personal knowledge, skills, and resources in the management of four key area that contribute to the development of NCD's including alcohol, physical activity, nutrition, and tobacco use.^[23,24]

Alcohol

Most respondents agreed or strongly agreed that they have the knowledge, skills, and resources to help patients, carers and their families and the broader community to minimize risk of harm from excessive intake of alcohol (87%, 74%, 54%, respectively).

Physical activity

Most respondents agreed or strongly agreed that they have the knowledge and skills to help patients, carers and their

Table 2: Resources nurses use to assist patients, families and carers

Resource type	Frequency (%)
Cancer council Australia	82.7
Tobacco cessation programs	61.9
Cancer Australia	53.5
General practitioner/primary care	49.6
Diabetes Australia	35
National Heart Foundation of Australia	29.2
Healthy eating websites	18.6
Australian College of Nursing	15.9
Other	8.4
International Council of Nurses "Grow Your Wellness website"	5.8
None	4

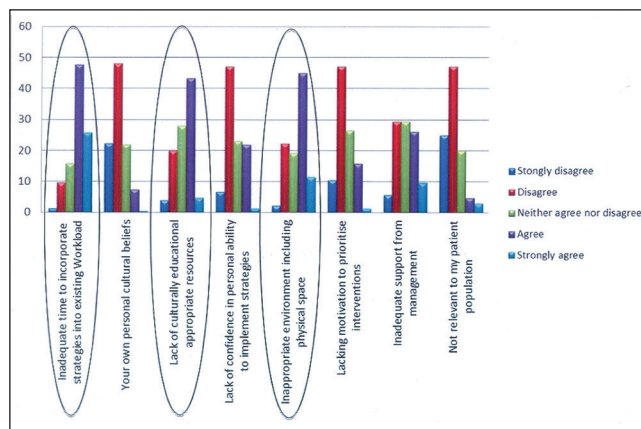


Figure 2: Cancer nurse identified barriers to implementation of strategies for prevention and control of noncommunicable disease's

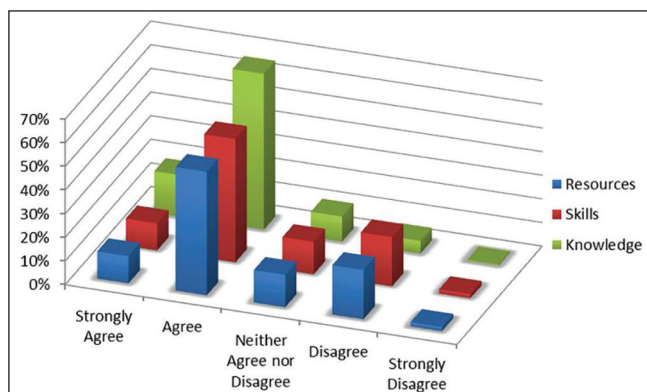


Figure 3: Cancer nurses self-reported resources, skills and knowledge in assisting the patient, carers and families: Ceasing tobacco products

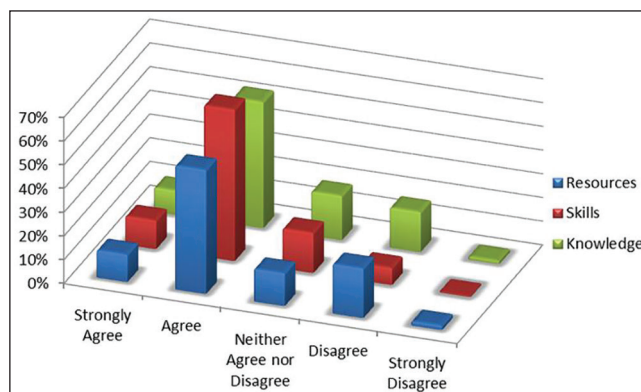


Figure 4: Cancer nurses self-reported resources, skills and knowledge in assisting the patient, carers and families: Increasing the consumption of fruits and vegetables and reducing consumption of fats, sugars, and salts

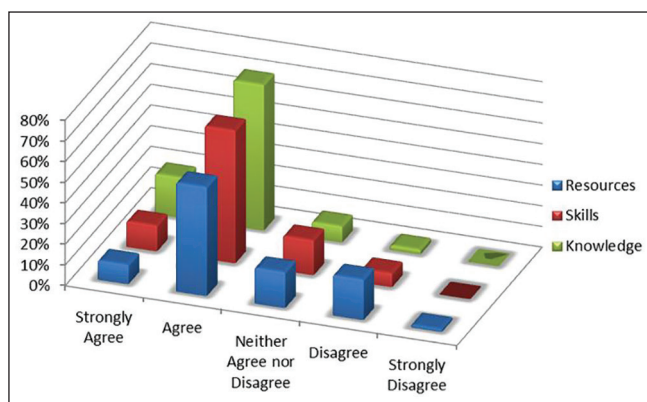


Figure 5: Cancer nurses self-reported resources, skills and knowledge in assisting the patient, carers and families: Increasing regular physical activity

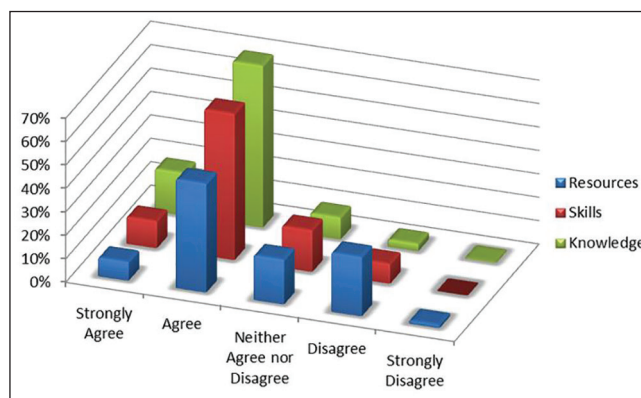


Figure 6: Cancer nurses self-reported resources, skills and knowledge in assisting the patient, carers and families: Avoiding excessive intake of alcohol

families adopt appropriate levels of physical activity (89%, 72%, respectively) however, only 62% indicated they had appropriate resources available to them.

Nutrition

Fewer respondents agreed that they have the knowledge, skills, and resources to help patients, carers and their families and the broader community to change their nutrition habits to improve their dietary intake in line with recommendations (63%, 76%, and 64%, respectively).

Tobacco

Most respondents, 84%, agreed that they have the knowledge help patients, carers and their families cease tobacco products. However, fewer respondents agreed that they have the skills (64%) and resources (64%) to help patients, carers and their families cease tobacco products.

While the results indicate many nurses feel confident in their knowledge and skills to assist patients, carers and families in these four key areas, a need still exists for some nurses to participate in educational opportunities and professional

development to improve their knowledge and skills. The NCD alliance advocates for benchmarks on adequately skilled, well-trained, and motivated health workforce.^[3] Continuing education is also important for all nurses as new EBS are proven to be effective in patients with a diagnosis of cancer are identified.

Participants were provided with an opportunity to provide any comments or further information. Of the 257 survey participants 7% ($n = 17$) provided responses. Participant responses focused on 3 main themes including resources, education, and time. In general, time was reported as being limited to address NCDs with patients. Participant comments about resources were varied and identified a lack of access to appropriate resources for certain strategies and interventions such as nutrition, physical activity, and alcohol yet an abundance of resources and tools for smoking cessation. A lack of educational opportunities was cited by participants as barriers to being able to work effectively with patients, carers and families to prevent and control NCD's. Participants also noted working within multidisciplinary

teams and the opportunity to refer onto colleagues and other service providers such as primary care physicians and nongovernment organizations to provide assistance to patients. The comment below is indicative of the general themes described by participants.

“As cancer nurses we can refer to relevant bodies to assist our patients and their families with the above practices, we certainly do not have the time for training and implementing the strategies needed,” — Respondent 25.

Discussion

NCDs have a huge impact on the lives, life chances and wellbeing of individuals, families, communities, and whole societies. NCDs are one of the greatest challenges in health today. The literature supports the need for regular contact from a health professional for a person to be fully engaged in modifying health behaviors.^[25] Nurses with the necessary knowledge and skills can have a significant impact in motivating and supporting behavioral change by administering disease management programs and enabling self-care, as well as self-management.^[9]

The literature also indicates a lack of EBS that are demonstrated to be effective in patients with a diagnosis of cancer.^[6] However, the increased risk of secondary cancers, treatment sequelae, cancer morbidity, and preexisting NCD's all affect the individual's capacity to adopt effectively healthy behaviors following a diagnosis of cancer.^[13] Moreover, it is acknowledged that the general population find it difficult to adopt appropriate health behaviors over time.^[26] While nurses may use teachable moments and EBS to encourage people to adopt risk-reducing health behaviors research indicates that even the person with a cancer diagnosis finds it challenging to make the necessary changes.^[6] The time-point immediately after diagnosis of cancer has been identified as optimal for individuals to seek out and adopt changes to modify health behaviors.^[26] The discord between the nurses desire to influence health behavior in line with international and national health policy and the individuals capacity to adopt risk-reducing health behaviors is further impeded by the barriers identified by respondents including workload, appropriate physical environment and the availability of culturally appropriate resources that is consistent with previously reported data.^[20]

The findings of this survey indicate, Australian cancer nurses identify a gap in their knowledge and skills to be able to effectively and efficiently address with patients, carers and families, the four keys modifiable lifestyle NCD associated risk factors (alcohol, physical activity, nutrition,

and tobacco). There are increasing numbers of cancer survivors living with the consequences of their treatments, which puts them at greater risk of some NCD's such as cardiovascular disease, diabetes, and malignancy than the general population. Education is particularly important to prepare cancer nursing professionals with these skills.^[20]

Limitations

The snowball sampling method allowed us to capture cancer nurses beyond those who are members of CNSA as not all nurses working in cancer care in Australia are members. Furthermore, only those nurses working in cancer care were included in the sample. Nurses knowledge and skills in the prevention and control of NCD's was not objectively assessed; participants self-reported their own knowledge and skills. We did not receive any responses from indigenous nurses.

Conclusion

NCD's continue to be a significant global health issue. Health policy alone will be insufficient to address the global burden of NCD's. Consistent with the acknowledgement by ICN of the potential for significant contribution by nurses to the prevention and control of NCD's, Australian cancer nurses in this survey have responded that it is within their scope of practice; that they have knowledge, skills, and resources available in varying degrees to assist patients, carers and their families in addressing this significant health need. Barriers remain a challenge for cancer nurses, particularly workload, appropriate physical environments, and the availability of culturally appropriate resources. Research supports the greatest impact can be achieved by targeting high-risk people, who are most likely to benefit from the intervention therefore we encourage Australian cancer nurses to focus their efforts in preventing and controlling NCDs in those who can most benefit.^[14-16] A skilled and knowledgeable cancer nursing workforce will be able to engage meaningfully with patients to modify their health behaviors. Opportunities to develop the required knowledge and skills may be garnered through education tailored to nurses' needs. Educational opportunities may include workshops, webinars, online courses, conferences or in-services provided locally by multidisciplinary experts such as dieticians and physiotherapists. With improved knowledge and skills, nurses may be able to capitalize on teachable moments as they present regardless of the physical constraints of their environment. In addition, a knowledgeable and skilled nursing workforce can contribute to interventions that limit expenditure on preventable illnesses in health care.

We recommend cancer nurses engage with relevant organizations to develop culturally appropriate resources. We also recommend ongoing research into effective EBS specific to the needs of patients with cancer and survivors of cancer to reduce their risk of developing NCDs.

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