

Indigenous cancer patient and staff attitudes towards unmet needs screening using the SCNAT-IP

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Abstract

Introduction Indigenous Australians have a higher cancer incidence, worse mortality and are less likely to receive optimal cancer treatment compared with non-Indigenous Australians. Culturally appropriate supportive care helps ensure that Indigenous patients engage in and receive optimal care. However, many existing supportive care needs tools lack cultural relevance for Indigenous people, and their feasibility with Indigenous people has not been demonstrated. The Supportive Care Needs Assessment Tool for Indigenous People (SCNAT-IP) assesses the unmet supportive care needs of Indigenous cancer patients.

Purpose This descriptive study evaluates the clinical implementation of the SCNAT-IP in routine care.

Methods Two large tertiary cancer treatment centres and two regional oncology clinics participated. Participants included 10 clinical staff and 36 adult Indigenous cancer patients (mean

age 54 years). Patients and clinicians completed brief, purpose-designed questionnaires and interviews.

Results Patients reported high ratings (means >8/10) for acceptability, helpfulness and timing items. The majority (≥80 %) of staff agreed that the SCNAT-IP was useful to clinical practice, should be used in routine care and was acceptable to their patients.

Conclusions The study provides empirical support for the feasibility and acceptability of the SCNAT-IP in routine cancer care with Indigenous Australians. Routine screening with the SCNAT-IP has the potential to improve cancer care for Indigenous people with cancer.

Keywords Indigenous · Aboriginal · Cancer · Oncology · Unmet needs · Screening

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Introduction

Aboriginal and Torres Strait Islander people (henceforth referred to as Indigenous Australians) have a higher overall incidence of cancer compared with non-Indigenous Australians [1, 2]. They are also more likely to have more advanced stages of cancer at diagnosis and have cancers where the prospects of successful treatment are poorer [3]. Additionally, Indigenous Australians with cancer have more comorbidities than non-Indigenous Australians [2, 3], as well as poorer access to care, and are less likely to receive optimal cancer treatment [4, 5]. As a result, Indigenous Australians experience a 6 % higher overall cancer incidence, 50 % higher cancer mortality and 30 % lower 5-year cancer survival compared to non-Indigenous people [2].

Misunderstandings about cancer and health beliefs may affect Indigenous people's care-seeking behaviour [6]. Practical issues such as transport and accommodation, financial hardship and displacement from family and community during treatment

may also prevent many Indigenous patients from accessing care and receiving optimal treatment [7–10]. Once engaged in treatment, a lack of access to culturally appropriate services, such as having an Indigenous health professional to talk to (e.g. Indigenous Health Workers [IHW]) and having cancer information in language that is easily understood, may also influence treatment decision-making and lead to a general sense of alienation within the hospital environment [7–10].

In recent years, there has been a considerable focus on reducing cancer outcome disparities for Indigenous Australians. For example, preventive health programs have attempted to increase Indigenous participation rates in cancer screening and reduce smoking rates [11–13]. Another emerging field which aims to improve cancer outcomes is research into the supportive care of Indigenous people with cancer. Supportive care aims to prevent, reduce and alleviate the symptoms of treatment, enhance communication between patients and clinicians and assist patients and their family to manage ongoing needs associated with the diagnosis and treatment of cancer [14]. In one of the first studies to examine Indigenous cancer patients' unmet needs, the most prevalent supportive care needs were 'money worries' (22 %); 'concerns about the worries of those close to you' (15 %); 'worrying about the illness spreading or getting worse' (14 %) and 'feeling down or sad' (13 %) [15].

There is currently limited data on the supportive care needs of Indigenous cancer patients, and until recently, no tools were available to adequately capture the unmet needs of Indigenous Australians with cancer. The Supportive Cancer Needs Assessment Tool for Indigenous Persons (SCNAT-IP) has recently been developed specifically for this purpose [8].

The original items of the SCNAT-IP were based on the Supportive Care Needs Survey-Short Form (SCNS-SF34), a tool which was developed to assess unmet supportive care needs amongst the general adult cancer population [16]. However, based on the feedback of Indigenous cancer patients and key informants in the initial stages of development, all SCNS-SF34 items were either adapted or removed and new were items added to reflect the specific cultural needs of Indigenous Australians. The full development and validation of the SCNAT-IP has been described elsewhere [8, 15]. In brief, the SCNAT-IP is a 27-item measure of unmet supportive care needs for Indigenous Australians, which is verbally administered and consists of four needs domains (*physical and psychological, hospital care, information and communication and practical and cultural*). The SCNAT-IP takes approximately 15 min to complete [8]. Full scoring can be completed in less than 5 min; however, in clinical applications, results can be very quickly scanned to identify moderate to high needs items which require further exploration and possible follow-up. The SCNAT-IP has been demonstrated to have good construct [15] and face validity [8] as well as internal consistency [15].

There is growing consensus that assessment of psychosocial concerns and supportive care should be a routine part of cancer care, and these recommendations are incorporated into many national and international clinical guidelines [17]. However, relatively few studies have investigated the implementation of screening for unmet needs into routine clinical care [18]. Whilst a number of unmet needs assessment tools have been developed and validated for use within the general adult cancer population, relatively few studies have systematically explored the acceptability of these tools or their impact on process of care outcomes [19]. The SCNS-SF34 (the questionnaire on which the SCNAT-IP was based) however has reported high completion rates amongst cancer patients [16] and that patients prefer the SCNS-SF34 over other needs assessment and quality of life questionnaires [20]. In a study of acceptability of a computerised version of the SCNS-SF34, the majority of patients reported that the survey was easy to complete, it was a good way for doctors to get information about patients' well-being, and that they would be willing to complete the survey each time they visited their oncologist [21].

The newly developed SCNAT-IP could help cancer care professionals to better detect, monitor and address the psychosocial concerns of Indigenous cancer patients to ensure that they receive optimal cancer care. Whilst the SCNAT-IP has been psychometrically tested and used in a research setting, its use in clinical settings has not previously been explored. Therefore, the objective of the current study was to explore the feasibility of using the SCNAT-IP in routine cancer care and the degree to which Indigenous Australians with cancer and health professionals find the SCNAT-IP useful and acceptable in routine care.

Methods

Setting

Ethical approval for this study was obtained from relevant institutional human research ethics committees and the Aboriginal Health and Medical Research Council of New South Wales. Participants were recruited at one of four health services located in the Northern Territory, Victoria and New South Wales. Clinics were purposely selected for this study because they (a) represented a diversity of jurisdictions, Indigenous communities and geographical settings (urban, rural and remote and very remote) and (b) included a diversity of service models with differing staff and resource levels.

No participating clinics routinely used formal unmet needs screening measures prior to this implementation trial. Details of staff composition and number, services and existing unmet needs screening practices at participating sites are shown in Table 3.

Eligibility criteria

Patients

Participants were recruited from the participating cancer clinics during a 3 to 5-month recruitment period. Eligible participants were aged ≥ 18 years, of Indigenous Australian origin and diagnosed within the past 5 years with malignant cancer of any disease stage. Additionally, they were receiving or about to receive cancer treatment (including surgery and/or chemotherapy, radiotherapy, stem cell transplant, endocrine therapy or immunotherapy) or in follow-up care. As surveys and interviews were verbally administered, participants were required to have sufficient comprehension of spoken English. Those unable to give informed consent due to cognitive and/or physical impairments were excluded.

Staff

Eligible health professionals were cancer nurses, oncology social workers, IHW or other allied health professionals who were able to give informed consent and considered by their manager as involved in providing supportive care to cancer patients as part of their routine work.

Procedure

After written informed consent was obtained, health professionals (referred to here as ‘trained clinical staff’) completed a specifically developed 3-hour study training session. Following training, other staff at participating sites were asked to identify and refer all eligible Indigenous cancer patients to trained clinical staff for needs assessment. Trained clinical staff, including nurse social workers and one clinical trial coordinator, introduced the study to patients, gained written informed consent and conducted needs assessment at routine patient clinic visits. All patient data collection methods were verbally administered. Where moderate to high level of needs were identified by the SCNAT-IP (i.e. scores of 4 or 5 on any item), these needs were discussed with patients and they were offered assistance in accordance with usual care.

Immediately following completion of the needs assessment and acceptability items, a different trained clinical staff member (preferably IHWs) conducted an audio-taped face-to-face or telephone interview with patients. This interview gathered qualitative information about their attitudes towards unmet needs screening.

At the conclusion of the data collection period, trained clinical staff who used the SCNAT-IP completed a brief telephone interview with a member of the research team (BT). They were asked to verbally complete a five-item purpose-designed questionnaire and a brief follow-up telephone interview which qualitatively explored acceptability and feasibility

of the SCNAT-IP. Non-clinical staff that did not use the SCNAT-IP in clinical practice (i.e. IHWs trained to complete patient follow-up interviews or managers) did not participate in the staff acceptability study. The results of the analysis of qualitative data are reported in a separate manuscript [22].

Measures

In addition to the SCNAT-IP, described above, patient data collection included the following:

Patient clinical and demographic characteristics Sociodemographic variables were collected to assess age, location of residence, Aboriginal and/or Torres Strait Islander status, marital status, education and parity. Clinical details including cancer type, disease status, treatment phase and cancer treatments were collected from medical records.

Patient acceptability survey This questionnaire included three purpose-designed items assessing (a) the degree to which patients liked being asked about needs (‘like’), (b) the acceptability of the timing of needs assessment (‘good time’) and (c) the perceived helpfulness of needs assessment (‘helpful’). Responses were recorded using a 0–10 visual analogue scale ranging from 0 ‘not at all’ indicated by a sad emoticon to 10 ‘very much so’ indicated by a happy emoticon, with five shown as a neutral emoticon.

Service delivery outcomes form Three items were completed by health professionals following SCNAT-IP administration to document the outcome of the needs assessment. These items recorded (a) whether a moderate to high need was identified on any item (yes/no), and (b) if so, what strategies/service options were offered to address this need(s) using pre-specified categories and an open-ended response option for ‘other’ services and (c) whether services were accepted or declined.

Health professional acceptability and feasibility survey This purpose-designed, written questionnaire included five items assessing utility, feasibility of use in routine care, patient acceptability, ease of use and interest in continued use of the SCNAT-IP in routine care.

Data analyses

Data was analysed using SPSS v22. Demographics and staff and patient acceptability data were analysed using descriptive statistics. Total acceptability ratings for patients were computed by summing the three patient acceptability items (i.e. score

out of 30). Means, standard deviations and proportions with 95 % confidence intervals were used to aggregate patient acceptability ratings.

Results

Patient participants and response rate

Forty-five participants out of 89 potentially eligible Indigenous cancer patients were invited to this study. Reasons for non-approach included patients not attending scheduled appointments, staff workload and competing clinical demands, staff leave and difficulty in coordinating appointment times for needs assessment with patients especially for those from regional areas where distance and travel issues compounded these problems. Of those invited to participate, 36 patients consented to participate (90 % response rate), four declined and five were ineligible. Reasons for ineligibility included not self-identifying as of Indigenous background ($n=2$) or being too physically and/or mentally unwell to participate ($n=3$).

Patient participants were aged from 34 to 76 years ($M=53.7$ years, $SD=11.2$), the majority had partners (53 %) and living outside of major metropolitan cities (89 %) (Table 1). Sixty percent of the sample had not completed high-school matriculation (year 12). A substantial minority (42 %) nominated an Indigenous language as the primary language spoken at home. Breast (36 %) and colorectal cancer (19 %) were the most common forms of cancer amongst participants (Table 2).

Health professional participants and response rate

A summary of health professional characteristics in the evaluation cohort is shown in Table 3. All health professionals that were invited to participate consented (100 % response rate). The SCNAT-IP study training session included 22 health professionals. Staff who completed training included eight social workers, four nurse care coordinators, one radiation therapist, one clinical trial coordinator, five IHW and three service managers with an average age of 42 years (range 25–62, SD 11.4). Of those, 10 trained clinical staff conducted patient assessments using the SCNAT-IP and eight trained staff conducted the patient follow-up interviews only. All staff who administered and evaluated the SCNAT-IP were of non-Indigenous background.

Acceptability data

Patient acceptability

Mean ratings for all three acceptability items were high ($>8/10$), and the mean total acceptability score for patients was 26.1 out

of a possible 30 (range=18–30, $SD=3.7$) (Table 4). Despite high mean acceptability, there was some variation of acceptability ratings with the greatest range of score (range=2–10) observed in relation to acceptability of timing. A high proportion of patients reported maximum acceptability ratings (10) on the acceptability items (like: 42.9 % (CI 25.6–60.1), helpful: 57.1 % (CI 39.9–74.4), good time: 45.7 % (CI 28.4–63.1), and one third of patients (34.3 % (CI 17.7–50.8) reported a maximum total acceptability rating of 30/30.

Staff acceptability ratings

In response to survey items exploring acceptability, the majority of staff (8/10) ‘agreed’ or ‘strongly agreed’ that the SCNAT-IP was useful to their clinical practice and that patients generally found the tool acceptable. Acceptability ratings were lowest for two items exploring (a) the feasibility of using the SCNAT-IP routinely with Indigenous cancer patients and (b) ease of scoring and interpretability for staff with seven out of 10 staff ‘agreeing’ with these statements. Nine out of the 10 staff surveyed either ‘agreed’ or ‘strongly agreed’ that their clinic should continue to use the SCNAT-IP for all Indigenous cancer patients. See Table 5 for a summary of staff responses to acceptability items.

Service delivery outcomes

Moderate to high unmet needs (scores of 4 or above) were reported by 21 (58 %) participants, and these needs were discussed with patients following their needs assessment. All patients with moderate to high unmet needs were offered at least one intervention, with the majority being offered multiple interventions. No patients declined the interventions offered. These interventions included emotional support (15 participants), referrals to social workers or IHW (14 participants), information or patient education (12 participants), practical assistance (3 participants), referral to care coordinators (2 participants) and referral to a general practitioner (1 participant), oncologist (1 participant) or psychologist (1 participant). Whilst it is not possible to determine what services would have been offered in the absence of SCNAT-IP screening, we observed that at least one new referral to a health professional or service was generated for 16 of the 21 (76.2 % (CI: 56.3–96.1)) patients with moderate to high needs following needs assessment using the SCNAT-IP.

Discussion

In summary, the majority of Indigenous cancer patients in this study liked being asked about their unmet supportive care needs, found the questions and format of the SCNAT-IP

Table 1 Characteristics of the clinical population, staff resources and screening practices at participating sites

| Clinic | Site description | Estimated annual new patient numbers | Estimated annual Indigenous patient numbers | Number of medical staff | Medical staff resident status | Number of nursing staff | Number of psychosocial staff (FTE)* | Number of specialist Indigenous health workers employed (FTE)* | Existing screening using formal unmet needs assessment measures | Staff completing SCNAI-IP screening |
|--------------------|---|--------------------------------------|---|-------------------------|-------------------------------|-------------------------|-------------------------------------|--|---|--|
| Setting 1 | Metropolitan tertiary cancer treatment centre | 9000 | 60 | 223 | Resident and VMO ^a | 350 | 23 | 0.8 | No | Social workers |
| Setting 2 | Tertiary cancer treatment centre servicing urban Indigenous population and remote/very remote communities | 700 | 150 | 5 | Resident and VMO | 12 | 1 | 1 | No | Clinic manager Clinical trials coordinator Clinical Nurse Consultant |
| Setting 3 clinic A | Rural oncology clinic | 400 | 5–10 | 4 | VMO | 5.4 | 0.6 | 2 | No | Social workers Care coordinator Breast care nurse |
| Setting 3 clinic B | Rural oncology clinic | 525 | 5–10 | 5 | VMO | 6.5 | 0.6 | 2 | No | Social workers Care coordinator Breast care nurse |

*FTE Full-time equivalent position

^aVMO Visiting medical officer

Table 2 Demographic and clinical characteristics of the patient sample (n=36)

| | n | % |
|---------------------------------------|----|----|
| Gender | | |
| Male | 11 | 31 |
| Female | 25 | 69 |
| Indigenous descent | | |
| Aboriginal | 34 | 94 |
| Aboriginal and Torres Strait Islander | 2 | 6 |
| Location of residence* | | |
| Major city | 4 | 11 |
| Inner regional | 6 | 17 |
| Outer regional | 20 | 56 |
| Rural | 3 | 8 |
| Remote | 3 | 8 |
| Marital status | | |
| Single | 10 | 28 |
| Married/ de facto | 19 | 53 |
| Widowed/separated/divorced | 7 | 19 |
| Children | | |
| Yes | 35 | 97 |
| No | 1 | 3 |
| Main language spoken | | |
| English | 21 | 58 |
| Indigenous language | 15 | 42 |
| Education ^d | | |
| Year 10 or below | 21 | 60 |
| Year 12 (matriculation) | 6 | 17 |
| Diploma/trade | 4 | 11 |
| Tertiary | 4 | 11 |
| Employment ^d | | |
| Employed | 9 | 26 |
| Unemployed | 13 | 37 |
| Retired/pension | 11 | 31 |
| Home duties | 2 | 6 |
| Treatment location [†] | | |
| In-patient | 2 | 6 |
| Out-patient | 34 | 94 |
| Cancer type | | |
| Breast | 13 | 36 |
| Bowel | 7 | 19 |
| Head and neck | 6 | 17 |
| Lung | 3 | 8 |
| Gynaecological | 2 | 6 |
| Haematological | 2 | 6 |
| Other | 3 | 8 |
| Treatment status | | |
| Receiving treatment ^b | 17 | 47 |
| Newly diagnosed | 5 | 14 |
| Follow-up care | 14 | 39 |

Table 2 (continued)

| | <i>n</i> | % |
|--------------------------------------|----------|----|
| Estimated cancer stage | | |
| Local disease | 12 | 33 |
| Regional spread | 6 | 17 |
| Distal metastases | 12 | 33 |
| Not applicable | 3 | 8 |
| Not known | 3 | 8 |
| Comorbidities | | |
| No known comorbidities | 24 | 67 |
| Diabetes | 8 | 22 |
| Cardiovascular | 10 | 28 |
| Respiratory | 9 | 25 |
| Other ^c | 16 | 44 |
| Surgery ^d | | |
| Completed | 23 | 64 |
| Planned | 3 | 8 |
| No/not applicable | 9 | 25 |
| Chemotherapy | | |
| Yes | 23 | 64 |
| No | 13 | 56 |
| Radiotherapy | | |
| Yes | 21 | 58 |
| No | 15 | 42 |
| Other cancer treatments ^e | | |
| Yes | 14 | 6 |
| No | 22 | 94 |

*Classified according to Accessibility/Remoteness Criteria of Australia (ARIA) † at time of interview

^a Non-Hodgkin's lymphoma

^b Includes all active hospital-based cancer treatments

^c Includes substance abuse, psychiatric, renal disease, neurological and gastrointestinal disorders

^d Does not sum to total due to missing data

^e Includes hormonal therapy, brachytherapy and microwave ablation

acceptable and found the process of needs assessment using the SCNAT-IP helpful. This trial included patients at all stages of the treatment continuum who were recruited from a diversity of service settings and geographic locations. This sample also included patients with a diversity of cancer types. The prevalence of cancer types observed in the present sample broadly represents the cancer incidence rankings seen in the Indigenous Australian population, with the exception of lung cancer which was under-represented in the present sample [1]. The high levels of patient acceptability observed in this study are consistent with the results of patient and key informant interviews conducted during the development of the SCNA T-IP [8] and consistent with past research which demonstrates the acceptability of the SCNS-SF34 amongst cancer patients in the general population. Acceptability of timing was the area

in which the greatest range of patient acceptability ratings was recorded. This sample included patients at all stages of the treatment continuum. Whilst quantitative data reported here suggests that the timing of assessment was acceptable to the majority of patients, qualitative data from subsequent patient and staff interviews [22] suggests that many participants believed that SCNAT-IP assessment would be most useful at the beginning of the treatment trajectory, supplemented by reassessment at time points throughout the cancer journey.

Screening for unmet needs and distress has been shown to improve communication between patients and clinicians and enhance psychosocial referrals [18]. It may also help better meet the needs of under-served populations, such as Indigenous cancer patients, and this is an identified priority for future research [18]. A recent Australian study has demonstrated the acceptability and feasibility of routine psychosocial [23] screening using the Distress Thermometer [24] and Kessler Psychological Distress Scale (K-10) [25] with 154 rural cancer patients and 36 clinicians [19, 23]. However, the present study is the first to have explored the feasibility or acceptability of routine psychosocial screening amongst Indigenous people with cancer. Optimal and culturally appropriate supportive care may help to better engage Indigenous

Table 3 Trained clinical health professional characteristics

| | Evaluation cohort (<i>n</i> =10) <i>n</i> |
|---|---|
| Gender | |
| Female | 10 |
| Male | 0 |
| Cultural background | |
| Indigenous | 0 |
| Non-Indigenous | 10 |
| Clinical role | |
| Oncology social worker | 6 |
| Nurse care coordinator/clinical trial coordinator | 4 |
| Education | |
| Bachelor | 1 |
| Post-graduate | 9 |
| Location | |
| Metropolitan | 5 |
| Regional/regional | 5 |
| Year of experience in current role | |
| Less than 2 years | 1 |
| 2–5 | 4 |
| 6–10 | 3 |
| More than 10 years | 2 |
| Prior needs assessment training | |
| Yes | 4 |
| No | 6 |

Table 4 Patient acceptability ratings ($n=35$)**

| | Mean* | Median* | Std. deviation | Minimum | Maximum |
|--|-------|---------|----------------|---------|---------|
| Item 1* I liked being asked about my needs | 8.66 | 9.00 | 1.59 | 4 | 10 |
| Item 2* I thought today was a good time for me to complete the questionnaire | 8.63 | 9.00 | 1.88 | 2 | 10 |
| Item 3* I found the questionnaire helpful for identifying what I needed help with | 8.80 | 10.00 | 1.68 | 5 | 10 |
| Total acceptability rating | 26.09 | 26.00 | 3.72 | 18 | 30 |

*Ratings are 0–10 where 10 is highest possible

**One patient was unable to complete follow-up interview and had missing data for acceptability items

people in cancer care thus increasing the likelihood that they complete treatment and receive optimal cancer care.

Few previous studies of screening for unmet needs or distress involving the general adult cancer population have demonstrated a significant rise in service delivery outcomes following psychosocial screening [18]. Contrary to previous studies, however, the results of the present study provide some preliminary evidence that the use of the SCNAT-IP may translate into direct service-delivery outcomes. Although the present study examined the impact on services for those included in this trial, it did not include an unscreened control group or explore the long-term impact of needs assessment on patient-reported outcomes. Further studies including a randomised control trial of the implementation of the SCNAT-IP and longitudinal studies which include patient-reported outcomes are needed to fully evaluate the impact of the SCNAT-IP on clinical care. A large study of Indigenous cancer patient supportive care needs using a longitudinal design and patient-reported outcome is currently underway and is being coordinated by members of our research team (GG and PV). The results of that study will provide national benchmark data on the prevalence and course of supportive care needs amongst Indigenous Australians with cancer.

In considering the findings of this study, some limitations should be acknowledged. Firstly, this study included a relatively small sample as approximately half of all potentially eligible patients were not invited to participate for reasons outlined above. Despite targeting sites which saw relatively

high numbers of Indigenous cancer patients, the small sample size achieved reflects the difficulties involved in gathering large samples of Indigenous cancer patients and the resource challenges of working with patients from socially disadvantaged groups [26]. Despite a lower than anticipated approach rate, a high patient response rate was achieved when patients received an invitation to the study and patients reported high mean levels of acceptability reported by patient participants. Qualitative results from staff interviews, reported in a separate manuscript [22], suggest that the difficulties encountered by staff arranging a suitable time for needs assessment with some patients would be overcome if the SCNAT-IP was routinely administered early in the treatment trajectory when other questionnaire data was also collected. A further issue which impacted upon the identification of eligible patients for this study was the inaccuracy of medical records of Aboriginal and/or Torres Strait Islander background. A small number of patients were identified by medical records as being Indigenous, but when approached for this study, they did not self-identify as being of Indigenous background. Another unforeseen circumstance during recruitment was the early onset of the wet season in the Northern Territory during this trial. This impeded patient transport from remote Indigenous communities in the Northern Territory to the clinic, thus reducing Indigenous patient numbers from remote communities during the trial. Despite these potential limitations which may impact on the generalisability of our findings, this study had a high recruitment rate and represents a sample size consistent with other

Table 5 Trained clinical staff acceptability ratings ($n=10$)

| | Strongly disagree (n) | Disagree (n) | Neither agree or disagree (n) | Agree (n) | Strongly agree (n) | % that agreed or strongly agreed |
|---|---------------------------|------------------|-----------------------------------|---------------|------------------------|----------------------------------|
| The SCNAT-IP is useful to my clinical practice. | 0 | 1 | 1 | 7 | 1 | 80 |
| The SCNAT-IP is feasible to use routinely with Indigenous cancer patients. | 0 | 1 | 2 | 6 | 1 | 70 |
| Patients generally find the SCNAT-IP acceptable. | 0 | 0 | 2 | 8 | 0 | 80 |
| The SCNAT-IP is easy for staff to score and interpret. | 0 | 3 | 0 | 7 | 0 | 70 |
| I believe that the clinic I work in should continue to screen all Indigenous patients with the SCNAT-IP | 0 | 1 | 0 | 8 | 1 | 90 |

screening implementation trials involving specialised patient groups [27, 28].

Conclusions

This study provides preliminary empirical support for the feasibility and acceptability of the SCNAT-IP for use in routine cancer care with Indigenous Australians. Gaining a better understanding of the level of unmet needs can assist policy and service development, and it also has the potential to reduce cancer outcome disparities amongst Indigenous people. However, more research is needed to fully evaluate its impact on clinical care. The SCNAT-IP is now available for use by clinicians and researchers working with Indigenous people with cancer and can be accessed free of charge by clinicians and researchers at (www.menzies.edu.au/supportivecaretool).

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Conflict of interest The authors have no conflicts of interest to declare.

References

1. Australian Institute of Health and Welfare (AIHW), The health and welfare of Australia's Aboriginal and Torres Strait Islander people: an overview 2011. Australian Institute of Health and Welfare, Editor. 2011, AIHW: Canberra
2. Australian Institute of Health and Welfare, Cancer in Aboriginal and Torres Strait Islander peoples of Australia: an overview. Australian Institute of Health and Welfare (AIHW), Editor. 2013, AIHW: Canberra
3. Miller J, Knott V, Wilson C, Cunningham J, Condon J, Roder D (2010) Aboriginal and Torres Strait Islander Cancer Control Research Project, Cancer Australia Report: Sydney, NSW
4. Cunningham J, Rumbold AR, Zhang X, Condon JR (2008) Incidence, aetiology, and outcomes of cancer in Indigenous peoples in Australia. *Lancet Oncol* 9(6):585–595
5. Valery PC, Coory M, Stirling J, Green AC (2006) Cancer diagnosis, treatment, and survival in Indigenous and non-Indigenous Australians: a matched cohort study. *Lancet* 367(9525):1842–1848
6. Shahid S, Thompson SC (2009) An overview of cancer and beliefs about the disease in Indigenous people of Australia, Canada, New Zealand and the US. *Aust N Z J Public Health* 33(2): 109–118
7. Shahid S, Finn L, Bessarab D, Thompson SC (2011) 'Nowhere to room ... nobody told them': logistical and cultural impediments to Aboriginal peoples' participation in cancer treatment. *Aust Health Rev* 35(2):235–241
8. Garvey G, Beesley VL, Janda M, Jacka C, Green AC, O'Rourke P, Valery PC (2012) The development of a supportive care needs assessment tool for Indigenous people with cancer. *BMC Cancer* 12(300):1471–2407
9. Gould J, Sinding C, Mitchell TL, Gustafson DL, Peng I, McGillicuddy P, Fitch MI, Aronson J, Burhansstipanov L (2009) Below their notice: exploring women's subjective experiences of cancer system exclusion. *J Cancer Educ* 24(4): 308–314
10. Hall B, Howard K, McCaffery K (2008) Do cervical cancer screening patient information leaflets meet the HPV information needs of women? *Patient Educ Couns* 72(1):78–87
11. Johnston V, Westphal D, Glover M, Thomas D, Segan C, Walker N (2013) Reducing smoking among indigenous populations: new evidence from a review of trials. *Nicotine Tobacco Res* 15(8):132–1338
12. Reath J, Carey M (2008) Breast and cervical cancer in Indigenous women; overcoming barriers to early detection. *Aust Fam Physician* 37(3):178–182
13. Reath J, Usherwood T (1998) Improving cervical screening in a remote Aboriginal community. *Aust N Z J Public Health* 22(6): 659–663
14. Surbone A, Baider L, Weitzman TS, Brames MJ, Rittenberg CN, Johnson J (2010) Psychosocial care for patients and their families is integral to supportive care in cancer: MASCC position statement. *Support Care Cancer* 18(2):255–263
15. Garvey G, Beesley VL, Janda M, O'Rourke P, He VYF, Hawkes AL, Elston J, Green AC, Cunningham J, Valery PC. Psychometric Properties of an Australian Supportive Care Needs Assessment Tool for Indigenous Patients With Cancer. *BMC Cancer*. doi:10.1002/cncr.29433
16. Boyes A, Girgis A, Lecathelinais C (2009) Brief assessment of adult cancer patients' perceived needs: development and validation of the 34-item Supportive Care Needs Survey (SCNS-SF34). *J Eval Clin Pract* 15(4):602–606
17. Jacobsen P, Wagner L (2012) A new quality standard: the integration of psychosocial care into routine practice. *J Clin Oncol* 30(11): 1154–1159
18. Carlson LE, Waller A, Mitchell AJ (2012) Screening for distress and unmet needs in patients with cancer: review and recommendations. *J Clin Oncol* 30(11):1160–1177
19. Carlson LE, Bultz BD (2003) Cancer distress screening. Needs, models, and methods. *J Psychosom Res* 55(5):403–409
20. Snyder CF, Dy SM, Hendricks DE, Brahmer JR, Carducci MA, Wolff AC, Wu AW (2007) Asking the right questions: investigating needs assessments and health-related quality-of-life questionnaires for use in oncology clinical practice. *Support Care Cancer* 15(9): 1075–1085
21. Boyes A, Newell S, Girgis A, McElduff P, Sanson-Fisher R (2006) Does routine assessment and real-time feedback improve cancer patients' psychosocial well-being? *Eur J Cancer Care* 15(2):163–171
22. Thewes B, Garvey G, He V, Davis E, Girgis A, Valery PC, Giam K, Hocking A, Jackson J, Jones V, Yip D, and the SCNAT-IP Implementation Group, Indigenous patient and clinician attitudes to routine screening for unmet needs amongst: a qualitative study. *J Cancer Survivorship*, Under editorial review

23. Ristevski E, Regan M, Jones R, Breen S, Batson A, McGrail MR (2013) Cancer patient and clinician acceptability and feasibility of a supportive care screening and referral process. *Health Expect*
24. National Comprehensive Cancer Network (NCCN), NCCN Clinical Practice Guidelines in Oncology Distress Management, Version 1, NCCN, Editor. 2008, National Comprehensive Cancer Network: Fort Washington
25. Andrews G, Slade T (2001) Interpreting scores on the Kessler psychological distress scale (K10). *Aust N Z J Public Health Soc Care Community* 25:494–497
26. Bonevski B, Randell M, Paul C, Chapman K, Twyman L, Bryant J, Brozek I, Hughes C (2014) Reaching the hard-to-reach: a systematic review of strategies for improving health and medical research with socially disadvantaged groups. *BMC Med Res Methodol* 14:42
27. Taenzer P, Bultz BD, Carlson LE, Speca M, DeGagne T, Olson K, Doll R, Rosberger Z (2000) Impact of computerized quality of life screening on physician behaviour and patient satisfaction in lung cancer outpatients. *Psycho-Oncology* 9:203–213
28. Thewes B, Butow P, Stuart-Harris R (2009) And greater southern area health service screening project committee, does routine psychological screening of newly diagnosed rural cancer patients lead to better patient outcomes? results of a pilot study. *Aust J Rural Health* 17(6):298–304