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ORIGINAL ARTICLE

Feasibility of implementing the 'Screening for Distress and Referral Need' process in 23 Dutch hospitals

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Abstract
Purpose In the Netherlands, the three-step process 'Screening for Distress and Referral Need' (SDRN) was developed for helping identifying, and referring cancer patients suffering from clinically relevant distress or needing a referral. This process includes (1) instrument completion, (2) patient-care provider discussion of the responses, and (3) referral based on 1 and 2. The Netherlands Comprehensive Cancer Organisation, location Groningen (IKNL-G), initiated the implementation of SDRN and developed an implementation roadmap, including procedure and materials. This exploratory study examines the feasibility of SDRN implementation in hospitals, seen from healthcare providers' perspective, responsible for implementation, and those executing SDRN.
Methods Healthcare providers, from 22 hospitals and from 5 oncology departments of the University Medical Center Groningen (=25 % of Dutch hospitals), evaluated their experiences by responding to a 26-item internet survey.
Results Twenty-five participants (response = 93 %) completed the survey. SDRN was implemented in 21 hospitals (implementation = 91 %), in two thirds of these hospitals in more than one patient group. Adoption of IKNL-G's roadmap elements varied between 84 and 100 %. Participants' average satisfaction score with SDRN was 6.5 (possible range = 0–10, range found = 5–8). Significant positive relationships were found between this satisfaction and participants' satisfaction with frequency of SDRN (p = 0.02), and keeping logistical agreements (p = 0.04). Participants were dissatisfied with SDRN's limited current availability to only select patient groups and only certain disease phases.
Conclusions The implementation of SDRN in daily practice, supported by a pre-developed implementation roadmap, is highly feasible. Continuous attention to SDRN execution, broadening implementation to all forms of cancer, and during the total disease trajectory seems vital to improve healthcare providers' satisfaction.

Keywords Implementation · Feasibility · Distress screening · Referral need · Care providers' evaluation

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Introduction

The diagnosis and treatment of cancer leads to physical and psychosocial problems in a third or more patients [1, 2]. However, a much smaller proportion is actually identified by care providers and referred for psychosocial help [3]. This suggests that a significant number of distressed patients do not seek professional care for their problems [4, 5], and/or that healthcare providers insufficiently recognize a possible need [6, 7]. This is serious, as links have been found between elevated distress levels and reduced health-related quality of life [8], decreased treatment adherence [9], and low satisfaction with care [10]. Consequently, guidelines have been developed to help identify patients suffering from distress and provide them with suitable care [11–13].

In the Netherlands, the process 'Screening for Distress and Referral Need' (SDRN) was developed, consisting of (1) completion of a screening instrument, (2) discussion between patient and care provider of the responses, (3) referral to a psychosocial and/or allied healthcare professional depending on the discussion and patient's wish [14]. This SDRN process is recorded in the guideline 'Detection of Need for Care' [15].

This process differs from that described in distress screening guidelines [11–13] and in recent literature [16, 17] in various ways. First, an important but distinct characteristic is that discussing responses on the screening instrument is considered an integral part of the process; communication takes place with all patients, regardless of a cut-off score. The rationale for this approach lies in the finding that a fifth of patients with low distress express a (maybe) referral wish [18] and half of the patients with high distress do not desire a referral [18, 19]. Thus, the instrument functions both as screening instrument and as instrument to facilitate communication about distress and need for help. Second, referral should be based on the discussion between healthcare provider and patient, based on the patients' input, and not on a cut-off score alone. This means that patients are active participants in the decision to be referred instead of assigning this role to healthcare providers on the basis of distress screening only. Third, because equal importance is given to psychosocial and physical distress, attention is given to referral to allied healthcare professionals (e.g. physiotherapist, dietician) in addition to referral to psychosocial healthcare.

Projects aimed at improving quality of care, and guidelines have added value only when recommendations are adhered to in clinical practice. However, automatic adoption of guidelines in the clinic is not guaranteed [20, 21]. With regard to distress screening guidelines, healthcare professionals' uptake and compliance to recommendations seems to be slow and problematic [22, 23], although progress has also been reported [24], particularly when a systematic implementation trajectory supported the implementation process [25, 26].

The Netherlands Comprehensive Cancer Organisation, location Groningen (IKNL-G), therefore developed a roadmap including procedural descriptions and supporting materials, to facilitate SDRN implementation. In order to improve future clinical screening practice and implementation trajectories, the present exploratory descriptive study evaluated the feasibility of implementing SDRN in oncology practice. Specifically we examined the following:

- Feasibility of implementing SDRN in oncology practice using a pre-developed implementation roadmap;
- Healthcare providers' evaluation of SDRN as presently performed in their hospital.

The implementation of SDRN was not obligatory for the hospitals.

Methods

Setting

This is a feasibility study. All 23 hospitals in the northern and eastern regions of the Netherlands were approached by IKNL-G to implement SDRN. Therefore, a randomized or experimental study design was not tenable.

Procedure and respondents

Information about study goals and a link to an internet survey were e-mailed to 27 contact persons from the 23 hospitals in the northeastern part of the Netherlands, which is IKNL-G's catchment area. These hospitals form 25 % of Dutch hospitals and are representative of the Dutch situation. Contact persons came from five oncology departments from the University Medical Center Groningen (UMCG), and each of the remaining 22 general (teaching) hospitals. The contact person was the hospital-appointed team leader for implementing SDRN in routine cancer care in (a department of) that hospital, as described below. Contact persons were instructed to consult with colleagues executing SDRN and answer survey questions based on consensus. This method was meant to obtain care providers' viewpoints of implementation as a whole, rather than gathering each member's individual opinion. A reminder was e-mailed 2 weeks later.

Implementation roadmap

IKNL-G staff developed a roadmap including procedure and materials for implementing SDRN in the hospitals. Regarding procedure, firstly, IKNL-G's representatives approached hospitals and informed oncology committees, medical specialists, nurses, psychosocial (psychologists, psychiatrists, social and pastoral workers), and/or allied (e.g. dieticians, physiotherapists, occupational therapists) healthcare providers about SDRN and its importance in daily oncologic practice by pointing to relevant literature and reports [11, 27–29]. Secondly, discussions with professionals were held to underline the belief that comprehensive cancer care includes psychosocial care. IKNL-G supported implementation only when professionals shared this belief.

Hospitals deciding to implement SDRN were urged to appoint a team leader with allotted time and means. Additionally, hospitals were encouraged to form a multidisciplinary team of professionals to ensure commitment and motivation for implementing SDRN. IKNL-G provided centralized project management. A representative was present during meetings and contactable by phone and e-mail, if needed. IKNL-G organized mono- and multidisciplinary meetings regularly for professionals to exchange experiences with implementation and with the execution of screening in clinical practice.

Regarding materials, first, the Dutch version of the Distress Thermometer and Problem List (DT&PL) that includes a referral wish question was validated [18]. The DT&PL was originally developed by the NCCN [30]. Second, we developed blueprints to record agreements on logistics (e.g. who asks patients to fill in the DT&PL, when and how often, and who discusses responses with the patient) and referral issues (who refers to whom, when, and why). This means that triage was based on discussion with the patient, together with predetermined algorithms for referral. Third, we offered hospitals examples of patient leaflets: one, explaining the importance of SDRN and the DT&PL, second, informing patients about availability and expertise of different psychosocial- and allied healthcare professionals in the hospital, and third, about professional resources available outside the hospital. Each hospital customized blueprints and patient information leaflets.

Instrument

A 26-item questionnaire was developed for this study, which was critically reviewed by colleagues for face validity. Questions focused on the roadmap's procedure and materials and on the SDRN process as presently performed in participants' practice, specifically: the participant's function (1); implementing SDRN in the hospital (4); logistical issues, namely who is responsible for instrument completion (1), frequency and timing of SDRN (2), and recording and keeping agreements (2); the instrument used for SDRN (2, one had 14 sub-questions); communication (3, one had 6 sub-questions); referral (4); patient information (2); and evaluation of the SDRN process (5). For 24 questions, answers varied from a yes/no option to a four-point scale with answers ranging from 1 = agree completely to 4 = disagree completely, to an 11-point scale ranging from 0 (extremely negative) to 10 (extremely positive). Two open questions were used to gather qualitative suggestions for improvement.

Analysis

Descriptive analyses were performed using SPSS 22. Non-parametric analyses (Mann-Whitney U tests, Kruskal-Wallis tests, and Spearman's rho, as appropriate) were conducted to examine relationships between respondents' satisfaction with how SDRN presently takes place in their hospital and characteristics of the SDRN (implementation) process.

Results

Participants

Twenty-five of the 27 persons approached participated (response = 93 %). The 25 respondents represented 21 hospitals. Of the responding team leaders, 19 were (specialist) nurses, four were managers from the oncology unit with a nursing background, and two were psychosocial healthcare providers. The two non-participants were from general hospitals. They notified us they had not implemented SDRN yet.

Implementation

Implementation rate is 91 % (21/23 hospitals). In 20 hospitals, SDRN was fully implemented. One hospital was in the phase of customizing materials at time of study; the participant from that institution did not answer all questions.

In 14 (67 %) of the participating hospitals, SDRN was implemented in more than one patient group. Regarding type of cancer, in 16 (76 %) hospitals, SDRN was implemented for breast cancer patients. Other patient groups were: colon or lung cancer and all chemotherapy patients (each N = 10(48 %)), prostate cancer (N = 6(29 %)), gynaecology cancer (N = 4(19 %)), head-neck cancer (N = 2(10 %)), surgical oncology (N = 1(5 %)), and bone tumour patients (N = 1(5 %)).

Time between preparing to implement SDRN and actual start of SDRN varied between 3 (N = 3) and 20 months (N = 2) (1 = missing). Median implementation time was 8 months. In one hospital, implementation took 72 months. In that hospital, a psychosocial care provider had unsuccessfully started preparations prior to the IKNL-G's initiative. Once IKNL-G supported this hospital, implementation took 18 months.

Twenty-one respondents (84 %) indicated that a multidisciplinary team was involved, consisting of four (N = 6), three (N = 11), and two disciplines (N = 4). Nurses and psychosocial caregivers participated in 20 teams, allied health caregivers in 13, and medical specialists in 12. Four respondents (16 %) stated that only one discipline (nurses) was involved in the implementation process.

Logistical issues

Twenty-three (92 %) responded that agreements about the logistics of SDRN had been recorded, of which 16 used an IKNL-G template. One said that the logistical process was not documented (1 = missing).

Of those who recorded agreements, nine answered that agreements were always kept, 11 that agreements were regularly kept, and two that they were occasionally kept (1 = missing).

The nurse gives the patient the DT&PL according to 24 respondents. One indicated that the medical specialist distributes the form during treatment, and the nurse mails the form to the patient during follow-up.

Regarding SDRN frequency and timing, one respondent indicated that SDRN takes place only once, during the first contact with a specialist nurse. The others reported that SDRN

Table 1 Respondents' opinions on the DT&PL

	1 = agree completely *N* (%)	2 = agree somewhat *N* (%)	3 = disagree somewhat *N* (%)	4 = disagree completely *N* (%)	Missing *N*
Supports communication	19 (79)	4 (17)	1 (4)		1
Provides insight into problem nature	11 (46)	12 (50)	1 (4)		1
Is short, to the point	10 (42)	13 (54)	1 (4)		1
Is useful for screening	10 (45)	11 (50)	1 (5)		3
Is easily usable in practice	10(43)	12 (52)	1 (4)		2
Offers insight into problem severity	9 (38)	13 (54)	2 (8)		1
Offers insight into referral wish	10 (41)	11 (46)	2 (8)	1 (4)	1
Provides insight into referral to whom	4 (17)	16 (67)	3 (13)	1 (4)	1
Is time-consuming	4 (17)	9 (39)	5 (22)	5 (22)	2
Is difficult for patients	1 (5)	8 (36)	8 (36)	5 (23)	3
I find it a burden	2 (9)	5 (22)	8 (35)	8 (35)	2
I find it of no benefit to patients		6 (29)	9 (43)	6 (29)	4
Is no addition to what we already do		4 (18)	9 (41)	9 (41)	3
I find that it burdens patients		4 (17)	12 (52)	7 (30)	2

occurs more often. Some ($N = 14$) indicated that it occurs at set moments during treatment (shortly after diagnosis and subsequently at the start, middle, and end of treatment, or when type of treatment changes). Others ($N = 6$) indicated that it occurs at regular time intervals (e.g. every 3 months). Four answered that the frequency of SDRN depends on the type of cancer and that this was recorded in patient-group specific care pathways. Eight explicitly stated that SDRN (also) occurs during follow-up.

Sixteen respondents (70 %) were satisfied with the frequency of SDRN in their hospital or department. Of these, 81 % had made agreements about frequency and timing and stated that SDRN occurred three times or more often during active treatment and/or follow-up. Six felt it occurred too infrequently, of which three indicated initiative lay with the patient. One respondent stated that SDRN occurred too often (2 = missing).

Instrument

All respondents (100 %) indicated that the DT&PL is or will be used as the screening instrument.

The statements with which the highest number of respondents (completely) agreed were 'supports communication with the patient', 'provides insight into problem nature', and 'is short, to the point'. The statements with which the highest number of respondents (completely) disagreed were 'it is no addition to what we already do' and 'I find that it burdens patients' (Table 1).

Communication

According to 22 respondents, the completed DT&PL is discussed immediately with all patients; one stated that the DT&PL is discussed only when a DT-score is above the cut-off; and one indicated that the DT&PL is discussed only with patients who (maybe) want a referral (1 = missing).

A nurse (specialist) discussed the results with the patient ($N = 23$); one responded that the medical specialist discussed the results (1 = missing).

Regarding the DT&PL as a communication tool, all respondents agreed with the statement: 'the DT&PL provides

Table 2 Respondents' experiences with discussing the DT&PL

	1 = agree completely *N* (%)	2 = agree somewhat *N* (%)	3 = disagree somewhat *N* (%)	4 = disagree completely *N* (%)	Missing *N*
Provides structure to the conversation	12 (50)	12 (50)	0 (0)	0 (0)	1
I now discuss only the problems the patient has checked off	5 (22)	14 (61)	3 (13)	1 (4)	2
I discuss topics that I never or rarely discussed before	2 (9)	12 (52)	8 (35)	1 (4)	2
I now discuss topics in more depth than before	2 (9)	9 (39)	8 (35)	4 (17)	2
It costs too much time	1 (4)	8 (35)	10 (43)	4 (17)	2
The patient now wants to discuss topics about which I do not feel completely knowledgeable	0 (0)	3 (13)	10 (43)	10 (43)	2

structure to the conversation', and only 3 agreed with 'the patient now wants to discuss topics about which I do not feel completely knowledgeable' (Table 2).

Referral

Twenty-four respondents (96 %) recorded agreements about why, when, and to whom to refer (1 = missing). Seventeen of these used the IKNL-G template.

Agreements about referral were always kept according to 13 respondents, regularly kept according to nine, and occasionally kept according to one (1 = missing).

Referral is often determined by a combination of reasons, with a patient's wish and referral based on the discussion of DT&PL responses being the most often indicated (Table 3).

According to 23 respondents (2 = missing), SDRN led to targeted referrals, meaning referral to a specific psychosocial and/or allied healthcare provider based on the patient's problems and concerns. Of these, seven replied that SDRN led to more referrals compared to before implementation, six that the number of referrals had not increased, and none indicated that SDRN led to fewer referrals (10 = missing).

Patient information

Twenty-one respondents (84 %) developed brochures about SDRN and the DT&PL, 21 created a brochure about the types of psychosocial and allied healthcare offered inside the hospital, and 12 made leaflets about care available outside of the hospital. Nine developed all three brochures.

Evaluation/satisfaction

Fourteen respondents indicated that patient care took longer after SDRN implementation, while nine stated that care took just as much time (2 = missing).

Seven respondents completely and 13 somewhat agreed with the statement that understanding of other disciplines' expertise increased during SDRN implementation. Two respondents somewhat and one completely disagreed with this statement (2 = missing).

The average score about satisfaction with how SDRN takes place in their hospital was 6.5 (N = 22, SD = 0.9, range found 5–8). Significant positive relationships were found between satisfaction with implementation and satisfaction with frequency of SDRN, and keeping logistical agreements. Six other (implementation) process characteristics were not associated with implementation satisfaction (Table 4).

Twenty respondents shared what they were satisfied with and 20 what they were unsatisfied with (Box 1). Comments can be organized into those on the SDRN implementation process and on how SDRN presently takes place in the hospital.

Box 1 Comments of satisfaction and dissatisfaction

Category	Satisfaction	Dissatisfaction
Implementation	The way that SDRN was implemented (enthusiasm, dedication, speed, competence, and effort of the care giver; quality of the process; how many patients are screened) (N = 11)	SDRN currently takes place for selected groups of patients. SDRN should also be implemented for patients with other cancers, even when no specialist nurse is involved in their care (N = 12)
	Improved communication between care providers (N = 5)	Unclarity on timing and frequency of SDRN (N = 7)
	Increased knowledge about and familiarity with SDRN (N = 2)	SDRN should take place throughout the entire treatment trajectory including hospitalization and follow-up (N = 3).
SDRN in practice	Level of structural attention care providers now give to the patient's psychosocial experience and the consequent benefit to the patient (N = 5)	Too little time to screen and discuss properly (N = 5)
	DT&PL gives quick insight into patient's problems and offers a starting point for the conversation with the patient (N = 3)	Differences between nurses and between departments in the attention/ importance given to SDRN; resulting in lack of continuity (N = 4)
	Patients are very satisfied with the attention for psychosocial care (N = 3)	The decision to give patients a stack of DT&PL's, with the risk that patients forget to complete them (N = 3)
	The DT&PL gives patients better grip on their situation (N = 2)	Lack of possibilities to complete DT&PL's on tablets or online (N = 2)
	Better communication with the patient (N = 2)	The one to whom the patient turns in a completed DT&PL should preferably discuss responses with the patient (N = 2)
	More targeted referrals, meaning referrals to specialized health care providers according to patients' problems/ concerns, and ease of referral (N = 2)	Lack of skills in recognizing problems and lack of understanding about what steps to take (N = 1)
	Medical specialists now also pay attention to patients' concerns (N = 2)	

Discussion

The present study shows that implementing the Dutch SDRN process according to the IKNL-G's roadmap is highly feasible. However, care providers are moderately satisfied with how SDRN presently takes place in their hospital.

Table 3 Reasons for referral

	Yes *N* (%)	No *N* (%)	Missing *N*
Patient wants referral	24 (100)		1
Based on discussion of DT&PL responses	19 (90)	2 (10)	4
Problem nature	19 (83)	4 (17)	2
Score above DT cut-off	14 (64)	8 (36)	3
Decision of multidisciplinary team	11 (65)	6 (35)	8

Feasibility of implementation SDRN

SDRN, consisting of DT&PL completion, patient-caregiver discussion of the responses, referral based on the discussion, and the patient's wish, occurs in 21 of the 23 hospitals in the north and east of the Netherlands, and in two-thirds of these hospitals, for more than one patient group. This suggests that hospitals and healthcare providers view SDRN as a substantial improvement to oncology patient care. This success rate is high compared to most reports of distress screening guideline implementation [22, 23], but in line with two others, who also used a pre-developed, detailed implementation strategy [25, 26], although different from ours.

Breast cancer patients are targeted most often for SDRN. This can be explained by the presence in the Netherlands of specialist nurses responsible for these patients during the entire disease trajectory. These nurses were very motivated to implement SDRN, and can be considered early adopters [31]. Such nurse 'navigators' are often not available for patients with other tumour types such as prostate cancer [32].

The IKNL-G's roadmap proved helpful for the implementation process. The adoption of roadmap elements varied between 84 and 100 %. Because of this high adoption rate, we cannot be certain which elements of the roadmap contributed to its success. Clinical experience shows that centralized project management by IKNL-G and the IKNL-G roadmap both provided structure and continuity to implementation. This is underlined by the finding that implementation time was the longest in the hospital that began implementing SDRN before the IKNL-G initiative. Another explanation for the longer implementation time could be that initiative came from a psychosocial caregiver. Normally, their role comes later in the SDRN timeline; carrying out SDRN requires involvement of caregivers directly responsible for oncological treatment and patient care. Therefore, we recommend appointing as team leader a nurse who performs SDRN daily.

Table 4 Relationships between respondents' satisfaction with implementation and characteristics of the SDRN (implementation) process

	p value
Team leader's discipline	.67†
Length of implementation time	.49*
Number of disciplines involved in implementation	.34†
Satisfaction with frequency of SDRN	.02†
Keeping logistical agreements	.03†
Respondents mean score on the DT&PL	.20*
Keeping referral agreements	.12†
Amount of time (more or equal) required for patient care including SDRN	.64‖

† Kruskal-Wallis test; * Spearmans's rho; ‖ Mann-Whitney U test

Care providers' experiences

This study reveals that care providers were moderately satisfied with how SDRN was performed in their hospital. Many respondents, speaking for their colleagues executing SDRN, specifically remarked how satisfied they were with how their clinic had embraced and implemented SDRN and with the structural attention they now give to patients' psychosocial functioning. Some point to the benefit patient experience, such as structural attention now given to patients' psychosocial and physical functioning. They remarked that SDRN led to correct and more sensible referrals, not necessarily to an increase in referrals. This is reassuring because a barrier to the implementation of screening mentioned in the literature is that distress screening would lead to an increase in referrals for which not enough professionals would be available [32]. The correctness of referrals may have increased because referral to a specific healthcare provider for a specific problem is discussed with each patient needing additional care. Also, beneficial was that, as a consequence of the implementation process, interdisciplinary communication increased, and subsequently increasing insight into each discipline's specific expertise. This may have positively affected multidisciplinary collaboration and timely and correct referrals.

Participants' opinion on the DT&PL was mainly positive. They evaluated the instrument as a useful, valuable, and practical tool for recognizing and discussing patients' problems, conforming previous research [33]. The vast majority of respondents appreciated the DT&PL's function as a communication tool, structuring and streamlining communication with the patient. Also, they valued that it provides insight into referral wish. However, some participants have negative opinions and find that DT&PL completion is time-consuming, difficult for patients, or a burden for themselves, possibly due to a lack of acceptance, of skills to discuss the DT&PL, and/or to provide psychosocial care [34–36].

Care providers' moderate satisfaction with SDRN as presently performed in hospitals suggests room for improvement. Overall

satisfaction was significantly related to satisfaction with SDRN frequency and how well agreements were kept. These are both related to consistency in executing SDRN. In hospitals where SDRN took place ≥3 times and throughout the entire disease trajectory, participants were more satisfied with how SDRN is executed than those who felt that SDRN occurred too infrequently or during part of the treatment. No evidence is available in the literature on the ideal timing of SDRN [37], although suggestions have been made, such as at every outpatient clinic visit, the beginning and end of each treatment modality, when treatment phase changes (from treatment to follow-up), and when treatment intent changes (from curative to palliative) [11, 38]. Consequently, IKNL-G did not give clear advice about this. Decisions on this subject were based on consensus within each hospital/department. Based on results, satisfaction would likely increase if clear advice was available about frequency and timing, during treatment as well as follow-up. Future studies could gain more insight into this subject.

Respondents were less satisfied when patients had been given responsibility for completing the DT&PL. This resulted in many patients forgetting to fill in the instrument or taking it with them when visiting the hospital. Effort should be made to empower patients to also take responsibility for informing their care providers about their problems and referral needs. One such effort is that an online tool has been developed enabling patients to complete the DT&PL online and email it to their care provider, wherever and whenever they want (www.lastmeter.nl).

Additionally, respondents who felt that logistical agreements were not adhered to strictly enough were less satisfied. We did not investigate why agreements were not kept. However, comments of dissatisfaction offer possible explanations: shortage of time to screen and properly discuss results. While research on the use of distress screening instruments cites this as an impediment to SDRN [25, 34], there is also research that shows that care including screening takes equal or even less time [39, 40]. Training caregivers how to efficiently screen and discuss DT&PL answers and allowing caregivers sufficient time and means can facilitate adherence to agreements, thus improving continuity of SDRN.

Finally, satisfaction seems to be negatively affected when SDRN is not fully embraced as part of oncological care for all patients. Half of the respondents believe that SDRN should be implemented for all oncology patients. Broader implementation would increase consistency and continuity. Appointing specialists nurses, like with breast cancer patients, would facilitate broader implementation.

A limitation of the present study is that from each hospital/department only one representative, a key informant, participated. This may affect reliability, validity, and representativeness [41]. However, this key informant was the team leader of the implementation process and was instructed to represent the generalized opinion of all those executing screening in daily practice in that particular hospital. A second limitation is that the small sample limits power for the identification of significant correlations. Further, the experience with SDRN in daily oncologic practice differed, which may have affected answers. In fact, one respondent was in the process of implementing SDRN while in other hospitals, SDRN had been fully implemented. The strengths of this study are that all but two hospitals participated and IKNL-G provided centralized project management. Additionally, we assessed not only the feasibility of implementation, but also healthcare providers' opinions on SDRN in practice. Their evaluation provides suggestions for improvement.

Summarizing, this study shows that implementing (with the aid of a pre-developed strategy) SDRN in oncology practice is feasible, though it does require care providers and organizations to make adjustments. Continual attention to daily execution of SDRN and expansion of SDRN for all oncology patients and during the complete disease trajectory are necessary to improve consistency in and satisfaction with SDRN in oncology care.

Future research should examine how well hospitals continued to adhere to SDRN after support from IKNL-G ended and how to sustain SDRN long-term. Additionally, it would be interesting to focus on how hospitals broadened SDRN for all types of cancer.

Compliance with ethical standards

Conflict of interest The authors declare no conflict of interest. The authors have full control of all primary data, and we agree to allow the journal to review the data if requested.

References

1. Zabora J, BrintzenhofeSzoc K, Curbow B, Hooker C, Piantadosi S (2001) The prevalence of psychological distress by cancer site. Psychooncology 10:19–28
2. Admiraal JM, Reyners AK, Hoekstra-Weebers JE (2013) Do cancer and treatment type affect distress? Psychooncology 22:1766–1773
3. Eakin EG, Strycker LA (2001) Awareness and barriers to use of cancer support and information resources by HMO patients with breast, prostate, or colon cancer: patient and provider perspectives. Psychooncology 10:103–113
4. Carlson LE, Angen M, Cullum J, Goodey E, Koopmans J, Lamont L, MacRae JH, Martin M, Pelletier G, Robinson J, Simpson JS, Speca M, Tillotson L, Bultz BD (2004) High levels of untreated distress and fatigue in cancer patients. Br J Cancer 90:2297–2304
5. Ryan H, Schofield P, Cockburn J, Butow P, Tattersall M, Turner J, Girgis A, Bandaranayake D, Bowman D (2005) How to recognize

and manage psychological distress in cancer patients. Eur J Cancer Care (Engl) 14:7–15
6. Fallowfield L, Ratcliffe D, Jenkins V, Saul J (2001) Psychiatric morbidity and its recognition by doctors in patients with cancer. Br J Cancer 84:1011–1015
7. Mitchell AJ, Hussain N, Grainger L, Symonds P (2011) Identification of patient-reported distress by clinical nurse specialists in routine oncology practice: a multicentre UK study. Psychooncology 20: 1076–1083
8. Shim EJ, Mehnert A, Koyama A, Cho SJ, Inui H, Paik NS, Koch U (2006) Health-related quality of life in breast cancer: a cross-cultural survey of German, Japanese, and South Korean patients. Breast Cancer Res Treat 99:341–350
9. Kennard B, Stewart S, Olvera R, Bawdon R, Hailin A, Lewis C, Winick N (2004) Nonadherence in adolescent oncology patients: preliminary data on psychological risk factors and relationships to outcome. J Clin Psychol Med Settings 11:31–39
10. Von Essen L, Larsson G, Oberg K, Sjoden PO (2002) 'Satisfaction with care': associations with health-related quality of life and psychosocial function among Swedish patients with endocrine gastrointestinal tumours. Eur J Cancer Care (Engl) 11:91–99
11. National Comprehensive Cancer Network (Retrieved on August 7, 2015 from www.nccn.org) NCCN clinical practice guidelines in oncology: distress management V.2.2014
12. Howell D, Keller-Olaman S, Oliver T, et al (Retrieved on August 8, 2015 from www.capo.ca/pdf/ENGLISH_Depression_Anxiety_Guidelines_for_Posting.pdf) A pan-Canadian practice guideline: screening, assessment and care of psychosocial distress (depression, anxiety) in adults with cancer
13. Butow P, Price MA, Shaw JM, Turner J, Clayton JM, Grimison P, Rankin N, Kirsten L (2015) Clinical pathway for the screening, assessment and management of anxiety and depression in adult cancer patients: Australian guidelines. Psychooncology 24(9):987–1001
14. Hoekstra-Weebers JE (2010) Psychosociale signalering in de regio van het Integraal Kankercentrum Noord Oost (IKNO). Ned Tijdschr Oncol 7:238–246
15. Netherlands Comprehensive Cancer Organisation. Dutch guideline: Detecteren behoefte psychosociale zorg, versie: 1.0. 2010. Retrieved on May 3, 2015 from http://oncoline.nl/detecteren-behoefte-psychosociale-zorg
16. Carlson LE, Groff SL, Maciejewski O, Bultz BD (2010) Screening for distress in lung and breast cancer outpatients: a randomized controlled trial. J Clin Oncol 28:4884–4891
17. Girgis A, Breen S, Stacey F, Lecathelinais C (2009) Impact of two supportive care interventions on anxiety, depression, quality of life, and unmet needs in patients with nonlocalized breast and colorectal cancers. J Clin Oncol 27:6180–6190
18. Tuinman MA, Gazendam-Donofrio SM, Hoekstra-Weebers JE (2008) Screening and referral for psychosocial distress in oncologic practice: use of the distress thermometer. Cancer 113:870–878
19. Lambert SD, Kelly B, Boyes A, Cameron A, Adams C, Proietto A, Girgis A (2014) Insights into preferences for psycho-oncology services among women with gynecologic cancer following distress screening. J Natl Compr Cancer Netw 12:899–906
20. Bero LA, Grilli R, Grimshaw JM, Harvey E, Oxman AD, Thomson MA (1998) Closing the gap between research and practice: an overview of systematic reviews of interventions to promote the implementation of research findings. The Cochrane effective practice and organization of care review group. BMJ 317:465–468
21. Cabana MD, Rand CS, Powe NR, AW W, Wilson MH, Abboud PA, Rubin HR (1999) Why don't physicians follow clinical practice guidelines? A framework for improvement. JAMA 282:1458–1465
22. Jacobsen PB, Ransom S (2007) Implementation of NCCN distress management guidelines by member institutions. J Natl Compr Cancer Netw 5:99–103
23. Tavernier SS, Beck SL, Dudley WN (2013) Diffusion of a distress management guideline into practice. Psychooncology 22(10): 2332–2338
24. Donovan KA, Jacobsen PB (2013) Progress in the implementation of NCCN guidelines for distress management by member institutions. J Natl Compr Cancer Netw 11:223–226
25. Dudgeon D, King S, Howell D, Green E, Gilbert J, Hughes E, Lalonde B, Angus H, Sawka C (2012) Cancer Care Ontario's experience with implementation of routine physical and psychological symptom distress screening. Psychooncology 21:357–364
26. Passalacqua R, Annunziata MA, Borreani C, Diodati F, Isa L, Saleri J, Verusio C, Caminiti C (2015) Feasibility of a quality improvement strategy integrating psychosocial care into 28 medical cancer centers (HuCare project. Support Care Cancer 24(1):147–155
27. Institute of Medicine (IOM) (2007) Cancer care for the whole patient: meeting psychosocial health needs. The National Academic Press, Washington, DC
28. Nationaal Programma Kankerbestrijding (2004) Deel 1—Visie en samenvatting NPK 2005–2010. Beleidsgroep NPK, Leende
29. Inspectie voor de Gezondheidszorg (2009) Zorgketen voor kanker patiënten verbeteren. Onderzoek naar de kwaliteit van de oncologische zorgketen voor patiënten die worden behandeld met radiotherapie. IGZ, Den Haag
30. Roth AJ, Kornblith AB, Batel-Copel L, Peabody E, Scher HI, Holland JC (1998) Rapid screening for psychologic distress in men with prostate carcinoma: a pilot study. Cancer 82:1904–1908
31. Rogers EM (2003) Diffusion of innovations (5th ed). Free Press, New York
32. Absolom K, Holch P, Pini S, Hill K, Liu A, Sharpe M, Richardson A, Velikova G, NCRI COMPASS Supportive and Palliative Care Research Collaborative (2011) The detection and management of emotional distress in cancer patients: the views of health-care professionals. Psychooncology 20:601–608
33. Hubbard JM, Grothey AF, McWilliams RR, Buckner JC, Sloan JA (2014) Physician perspective on incorporation of oncology patient quality-of-life, fatigue, and pain assessment into clinical practice. J Oncol Pract 10:248–253
34. Mitchell AJ, Kaar S, Coggan C, Herdman J (2008) Acceptability of common screening methods used to detect distress and related mood disorders? Preferences of cancer specialists and non-specialists. Psychooncology 17:226–236
35. Banerjee SC, Manna R, Coyle N, Shen MJ, Pehrson C, Zaider T, Hammonds S, Krueger CA, Parker PA, Bylund CL (2016) Oncology nurses' communication challenges with patients and families: a qualitative study. Nurse Educ Pract 16:193–201
36. Gosselin TK, Crane-Okada R, Irwin M, Tringali C, Wenzel J (2011) Measuring oncology nurses' psychosocial care practices and needs: results of an Oncology Nursing Society psychosocial survey. Oncol Nurs Forum 38:729–737
37. Hollingworth W, Metcalfe C, Mancero S, Harris S, Campbell R, Biddle L, McKell-Redwood D, Brennan J (2013) Are needs assessments cost effective in reducing distress among patients with cancer? A randomized controlled trial using the distress thermometer and problem list. J Clin Oncol 31:3631–3638
38. Blais MC, St-Hilaire A, Fillion L, De Serres M, Tremblay A (2014) What to do with screening for distress scores? Integrating descriptive data into clinical practice. Palliat Support Care 12:25–38
39. Schubart JR, Emerich M, Farnan M, Stanley Smith J, Kauffman GL, Kass RB (2014) Screening for psychological distress in surgical breast cancer patients. Ann Surg Oncol 21:3348–3353
40. Detmar SB, Muller MJ, Schornagel JH, Wever LD, Aaronson NK (2002) Health-related quality-of-life assessments and patient-physician communication: a randomized controlled trial. JAMA 288:3027–3034
41. Kumar N, Stern LW, Anderson JC (1993) Conducting interorganizational research using key informants. Acad Manag J 36:1633–1651