Palliative and Supporting Care

cambridge.org/pax

Evaluation of distress management in inpatients with cancer by means of the distress thermometer: A mixed methods approach

Anna Götz, M.S.C.N.[1,2], Anja Kröner, PH.D.[3], Josef Jenewein, M.D.[1,4,5] and Rebecca Spirig, PH.D.[2,6]

[1]Comprehensive Cancer Centre Zurich, University Hospital Zurich, Zürich, Switzerland; [2]Department of Nursing Science, University Witten/Herdecke, Witten, Germany; [3]Department of Oncology, Cantonal Hospital Glarus AG, Glarus, Switzerland; [4]Department of Medical Psychology and Psychotherapy, Medical University of Graz, University Hospital Graz, Graz, Austria; [5]Private Clinic Hohenegg, Meilen, Switzerland and University of Zurich, Zurich, Switzerland and [6]Institute of Nursing Science, University of Basel, Basel, Switzerland

Original Article

Cite this article: Götz A, Kröner A, Jenewein J, Spirig R (2022). Evaluation of distress management in inpatients with cancer by means of the distress thermometer: A mixed methods approach. *Palliative and Supportive Care*. https://doi.org/10.1017/S1478951522001493

Received: 23 December 2021
Revised: 01 October 2022
Accepted: 03 October 2022

Keywords:
Distress; Distress management; Screening; Distress thermometer; Evaluation; Nursing; Psycho-oncology

Author for correspondence: Anna Götz, Comprehensive Cancer Centre Zurich, University Hospital Zurich, Raemistrasse 100, Zürich CH-8091,Switzerland.
Email: Anna.goetz@usz.ch

Abstract

Objectives. To improve psychosocial care for oncology inpatients, we implemented screening for distress by means of distress thermometer (DT) at the Comprehensive Cancer Centre Zurich in 2011. Since then, several screening barriers have been reported regarding the application of the DT. This study aimed to evaluate the distress screening process between 2012 and 2016 to identify barriers preventing sustainability.

Methods. In this sequential explanatory mixed methods study, we synthesized the results of 2 quantitative retrospective descriptive studies and 1 qualitative focus group study. To compare and analyze the data, we used thematic triangulation.

Results. Nurses screened 32% ($N = 7034$) of all newly admitted inpatients with the DT, and 47% of the screenings showed a distress level $\geq$5. Of these cases, 9.7% were referred to psycho-oncological services and 44.7% to social services. In 15.7% of these cases, nurses generated a psychosocial nursing diagnosis. In focus group interviews, nurses attributed the low screening rate to the following barriers: adaptation to patients' individual needs, patient-related barriers and resistance, timing, communication challenges, established referral practice, and lack of integration in the nursing process.

Significance of results. To improve distress screening performance, the screening process should be tailored to patients' needs and to nurses' working conditions (e.g., timing, knowledge, and setting-specific factors). To gain more evidence on distress management as a basis for practical improvements, further evaluations of distress screening are required.

Background

Cancer patients experience physical, emotional, social, or spiritual distress. Without targeted interventions, distress may increase to such an extent that it reduces the quality of life and has a negative impact on adherence, on the course of the disease, and even on survival (Fradgley et al. 2020; Schouten et al. 2019). The prevalence of severe distress ranges from 33 to 55% for all cancer patients (Carlson et al. 2019; Donovan et al. 2020; Schouten et al. 2019). Worldwide, the distress thermometer (DT) is frequently used to identify distress and refer to a specialist support (Donovan et al. 2014; 2020).

Since the implementation of distress screening at the Comprehensive Cancer Centre Zurich (CCCZ) in 2011, nurses use the DT to assess cancer inpatients upon admission, thereby aiming to improve the quality of psychosocial support. Five years after the implementation, nurses reported several factors limiting the instruments' value. These factors echoed the findings of various publications including difficulties to integrate screening in the workflow and patients' refusal of screening or referrals to a specialist (Donovan et al. 2020; Ehlers et al. 2019; Ownby 2019; Smith et al. 2021).

The usefulness of distress screening is controversially discussed (Donovan et al. 2020; Ehlers et al. 2019; Jacobsen and Norton 2019; McCarter et al. 2018, 2020; Ownby 2019; Schouten et al. 2019). Screening could be beneficial to identify anxiety and depression as well as to improve quality of life or patient satisfaction, but most studies did not report any significant effect on the long-term quality of life, survival, or other clinical outcomes (Chambers et al. 2014; Donovan et al. 2014; Ma et al. 2014; Schouten et al. 2019; Sun et al. 2021). However, studies report highly heterogeneous outcome measurements, screening protocols, and implementation

CAMBRIDGE UNIVERSITY PRESS

Phase	Quantitative Data collection	Quantitative Data analysis	*Qualitative Data collection*	*Qualitative Data analysis*	Integration of quantitative und qualitative Data
year	2017	2017/2018	2018	2018/2019	2020/2021
Process	**retrospective study I** N= 22 112 admission between 2012-2016 at CCCZ **retrospective study II** N=1 711 admissions at an oncology ward	**descriptive statistics with R-Program** (One-way ANOVA; Chi-quadrat test; regression)	**semi structured interviews** interviews with 13 nurses	**content analysis according to Mayring**	**triangulation via mixed method matrix**
Data	DT (level/problems) referral nursing assessment and diagnoses workload	frequencies intergroup comparison	experience of distress screening	codes and themes	explanation of the quantitative data screening barriers recommendations

Fig. 1. MMR project.

strategies. Therefore, data indicate only general tendencies (Donovan et al. 2020; Ehlers et al. 2019; Schouten et al. 2019).

One rich source of evidence on the value of distress screening are practice-based data. For a successful implementation, guidelines recommend an interprofessional working group, a distress management program with targeted distress-reducing interventions, consideration of contextual factors and appropriate training (Ehlers et al. 2019; Jacobsen and Norton 2019; Smith et al. 2018). While numerous studies have examined DT-based screening practices in everyday oncological care, only a few have provided in-depth descriptions of problems emerging in practice several years after implementation (Groff et al. 2018; O'Connor et al. 2017). Yet, it is vital to understand barriers to sustainable implementation and subsequent management. The current article reports a comprehensive systematic evaluation of DT screening and may contribute to a more profound understanding of factors influencing DT implementation.

Aim

This study addresses long-time impeding factors of the DT implementation at the CCCZ between 2012 and 2016 by exploring the DT screening process. We reviewed screening performance, referral practice, and the documentation of psychosocial information by nurses. Additionally, we explored how nurses interpreted the results of this evaluation.

Method

Design

This sequential explanatory study is part of a Mixed Method Research (MMR) project aimed at evaluating current distress screening practices at the CCCZ (Creswell and Plano Clark 2011). We started with a quantitative retrospective descriptive health service research project (Götz et al. 2018). For this purpose, we evaluated the screening process and investigated the impact of screening results on the nursing processes (Götz et al. 2020). According to the MMR design, we performed a qualitative study in order to achieve an in-depth understanding of the quantitative results, particularly regarding nurses' attitudes toward screening. For the current study, we merged the results of the quantitative and qualitative parts via thematic triangulation, resulting in a single, comparable data set. We intended a synthesis reflecting the influencing factors having emerged during the period of 5 years between the implementation of DT screening (at the beginning of 2012) and the end of our data collection period (at the end of 2016) (Figure 1).

Distress screening at the CCCZ

According to the CCCZ policy, all newly admitted inpatients are screened by means of the DT – a patient-reported instrument consisting of an 11-point numeric scale (0 = no distress; 10 = extreme distress) and a list of distress-inducing problems. Patients are asked to circle the number corresponding to their distress level over the past week and to indicate which of the 34 practical, familial, emotional, spiritual, and physical problems they are currently experiencing (Donovan et al. 2020; NCCN 2022). The German validation of the DT showed a distress detection sensitivity of 84% and a specificity of 47% (Mehnert et al. 2006).

Ideally, the instrument is administered upon admission and the scores are evaluated with the patient during the initial nursing assessment. This assessment also included a standardized but not validated psychosocial assessment – questionnaire for all inpatients with general, open questions about disorders, coping, home care, coping of the relatives, and wishes as well as an outcome-oriented nursing assessment instrument "Acute Care about physical signs and symptoms" concerning basic nursing care (Baumberger and Hunstein 2009). Patients reporting values $\geq$5 in the DT are classified as moderate to severe distressed (Mehnert et al. 2006). Nurses recommended moderate to severe distressed patients a referral to social, psycho-oncological, or spiritual care services and asked all patients for support requests. Nurses were allowed to make a referral to the social service by their own, and physicians had to confirm the referral to psycho-oncology. Referral to spiritual care was not noted in the electronic health record (EHR) and could not be evaluated in this study. Nurses used North American Nursing Diagnosis Association (NANDA) nursing diagnoses for problems they considered relevant for the care of the patient and formulate nonstandardized interventions for the diagnoses (Herdman & NANDA International, 2014). For example, possible nursing interventions for fatigue were activation through training, planning of the daily routine with rest periods, motivational discussions, etc.

https://doi.org/10.1017/S1478951522001493 Published online by Cambridge University Press

Patients with distress level ≥5 were screened after 7 days again and those <5 after 28 days within one stay.

Since the DT implementation in 2011, we have offered a 1-hour distress screening training session to all nurses twice a year, which was attended by 60 to 80 nurses per year, but without standardized feedback loop. Additionally, we performed a monthly 1-hour training on symptom management (e.g., nausea, fatigue, pain, nutrition, and mucositis). All oncology nurses having just started to work at the CCCZ attended a 2-day basic oncology workshop addressing psychosocial distress, led by a psycho-oncologist and a nursing expert within 1 year. Furthermore, every ward receives support from a nursing expert who regularly discusses screening-related issues with the nursing team.

Triangulation

We aimed to develop a compact display of relevant quantitative and qualitative data because this allows a comprehensive overview of distress screening. This approach also allows to explain quantitative results in more detail (Guetterman et al. 2015; O'Cathain et al. 2010). For this purpose, we integrated our data in a "mixed method matrix." Thereby, we summarized, analyzed, and displayed data from each of the 3 mentioned studies (O'Cathain et al. 2010; Scharli et al. 2017). The following 3 integration steps provide an outline of the meta-matrix development.

Integration step 1

The first and last authors developed the meta-matrix framework. It was geared to the CCCZ protocol screening steps: (1) submission of the DT, (2) completion by patients, (3) nursing assessment, (4) triage, (5) referral, (6) nursing intervention, and (7) repeated screening.

Quantitative data

We analyzed the EHRs of 11,184 patients admitted between 2012 and 2016 (22,112 hospital admissions). For this purpose, we extracted data from the CCCZ clinical information system and database, thereby considering each patient's sociodemographic characteristics (age, marital status, gender, and nationality) as well as disease- and treatment-related information (diagnosis, type of admission, and length of hospital stay) (Table 1). We also examined 7,034 completed DTs (date, distress level [0–10], relevant problems on the DT problem list, patient preference (if any) for referral, and date of referral (psycho-oncological/social services). Between 140 and 160 registered nurses in 15 wards were caring for cancer inpatients between 2012 and 2016.

We determined the workload by summing up the time (minutes), which nurses recorded for the care of each patient every day per month and in the medical ward. This amount of patient-related time was divided by the total amount of the contractual working time to calculate the workload.

From this data pool, we chose 2,166 inpatients who had spent at least 1 night at one of the CCCZ oncology and radiation-oncology wards and extracted additional EHR data. In these cases, we additionally considered relevant psychosocial issues on the DT problem list, nursing assessment data (at admission), and nursing diagnoses.

We analyzed data descriptively using frequencies and inter-group comparisons as well as one-way analysis of variance and chi-square tests.

Table 1. Personal and clinical characteristics of the samples

Variables	Quantitative study 1	Quantitative study 2	Qualitative studies
Sample (*N*)	11,184	1711	13
Work experience (years)			1–30
Age (mean SD/years)	62.47 ± 15.95	59.15 ± 15.09	25–40
Geschlecht No. (%)			
Divers	0	0	0
Male	6612 (54.6%)	1150 (67.2%)	2
Female	5072 (45.4%)	562 (32.8%)	11
Cancer diagnosis			
Brain/CNS	627 (6.0%)	95 (5.5%)	
Lymphoma	682 (6.1%)	393 (23%)	
Leukemia	422 (3.8%)	191 (11%)	
Colorectal	404 (3.6%)	188 (11%)	
Head and neck	1209 (10.9%)	153 (9%)	
Lung	1092 (9.7%)	249 (14.6%)	
Melanoma	840 (7.5%)		
Gynecologic	1416 (12.6%)		
Prostata	747 (6.7%)		
All others	3 700 (33%)	3777 (21.8%)	

Note: CNS, central nervous system.

Qualitative data

After the quantitative data analysis in 2018, we conducted 3 focus group interviews in June, July, and September 2018 with 9 oncology nurses from 4 CCCZ wards and with 4 CCCZ nursing experts, who conducted screenings with the DT at least for 1 year and with working experience between 1 and 30 years. We invited nurses from different wards, caring for more than 150 cancer patients per month (around 22 nurses per ward). For the first interview, we selected nurses of 2 wards with a low screening rate (<10%), and for the second interview, we selected nurses of 2 wards with a high screening rate (>60%). For this purpose, we developed a semi-structured interview guide on the basis of quantitative results (screening rate, referral rate, and DT's influence on the nursing process). We added open questions, e.g., *What is your experience of cancer patient screening with the DT?* or *for what purpose do you use the DT on your ward?* The digitally audio-recorded interviews lasted 55 to 80 minutes.

We transcribed the interviews and anonymized them. Based on the MMR design, we chose a deductive approach to content analysis according to Mayring (2008). Thereby, we reduced the interview material to its core content, determined the levels of abstraction, and categorized it according to our meta-matrix. After each step, we discussed and revised the grouping, modified the categories, and constantly compared them with the original interviews.

Integration step 2

We assigned quantitative and qualitative study results to separate columns of the MMR matrix. After this, we grouped and

https://doi.org/10.1017/S1478951522001493 Published online by Cambridge University Press

summarized the quantitative and qualitative results separately within the screening steps. We also added a column for reflection. As recommended by O'Cathain, we used this column to note distinctive features or interpretations of the quantitative and qualitative results (O'Cathain et al. 2010). A separate table named *recommendations* (Table 4) displays a summary of improvements proposed by nurses during the interviews.

Integration step 3

We reduced the screening steps of the MMR matrix to 3 main items: *distress screening, distress evaluation* and *distress intervention*. After merging and reducing quantitative and qualitative data to key messages, we bundled them into themes. We compared qualitative themes and quantitative results concerning content. Furthermore, we assigned recommendations to 3 categories: *screening protocol, screening skills*, and *setting-related factors*. Before developing the triangulation graphic, we ensured that all important results were represented and that they were consistent within their categories. For this purpose, we reconsidered the original quantitative and qualitative data. To validate the integration process and the results, we asked all authors to check the comprehensibility of our collation, integration, and categorization and to discuss ambiguities.

Ethical considerations

The Ethics Commission of the Canton of Zurich (BASEC-N. 2016-01372) approved this project in December 2016. We reviewed only EHRs of patients having provided general consent on admission. Likewise, nurses signed informed consent forms before participating in focus group interviews. We performed the project according to our project plan.

Results of the triangulation

Distress screening

The interviewees mentioned 3 possible explanations for the low screening rate (32%): *adaptation to individual needs, patient-related barriers*, and *the difficult timing in daily clinical practice*.

The more frequently screened patient groups were males (relative risk (RR) = 1.6), emergency admissions (RR = 1.4), palliative patients (RR = 2.8), brain tumors (RR = 1.78), and leukemia (RR = 2.1) ($p < 0.001$). The interviewees reported selecting patients for screening based on their individual situations since they considered the current screening protocol too rigid. In the interviews, nurses explained that they postponed the screening if they have the impression that the patient is not emotionally ready to talk, e.g., due to a new diagnosis or physical symptoms. In contrast, screening occurs if patients have difficulties with discussing psychosocial issues because it helps to assess patients' needs comprehensively.

Ten percent of patients rejected initial screening and 19% repeated screening. Mentioned reasons were fatigue, the instrument's perceived uselessness, lack of time, and language problems. Nurses reported about patients having difficulties with assessing their distress or being stressed due to a high amount of medical examinations and therapy on the day of admission.

Nurses mentioned that physical symptoms have priority over psychosocial concerns, and patients' time-consuming medical examinations and consultations on the day of admission do not allow distress screening. This contributes to the fact that only 45.5% of newly admitted patients consented to screenings at this point. Nurses reported that heavy workloads prevented them from screening. Quantitative data, however, indicate that screening rates were independent of workload (Spearman's rho = –0.177; $p < 0.001$). According to the interviewees, discussing psychosocial distress requires a trusting relationship and is not established on admission. Further, high nursing staff turnover prevents the sustainability and development of institutional memory regarding distress management.

Screening evaluation

Almost half of the screened patients (47%) rated their distress levels above 4. Emotional problems were mentioned in 37.5% of screenings. Nurses reported *challenges in communication* and *resistance of patients*.

Distress was mentioned in 51.1% of all nursing assessments. The most obvious problem mentioned by the interviewees was a missing examination room in the wards for discussing psychosocial needs with patients. They were also unsure about bias when relatives were present during the screening. Furthermore, the interviewees reported a lack of communication skills necessary for discussing psychosocial problems with patients. Even after attending in-house communication workshops, nurses were not able to apply their newly acquired knowledge to individual patient situations. All interviewees mentioned problems with discussing distress levels with patients having a different opinion concerning distress. Despite reporting high DT distress levels ($\geq$5), only 23.5% of patients accepted referrals to psycho-oncological services, 20.2% to social services, and 10.5% to spiritual care services. Nurses mentioned that they commonly have to talk several times to patients before receiving consent. Patients declined referrals because they feared stigmatization or preferred to talk with their family and friends.

Furthermore, the interviewees talked about their concerns regarding nudging reluctant patients. There is a possibility that patients accept or request psychosocial referrals later in the hospitalization. For patients receiving chemotherapy, psycho-oncological care becomes relevant as soon as medication side effects emerge.

Interventions

Of all screened patients, 9.4% were referred to psycho-oncological services and 44.7% to social services. Of patients diagnosed as distressed, 13.7% were referred to psycho-oncological services. Nurses explained that the referral rate is influenced by the *established referral practice* and *difficulties with integrating results in the nursing process*.

Psycho-oncological referrals occurred on average 5.8 days after admission. Only 22.9% of patients were referred within 48 hours after screening. The interviewees declared that decisions regarding referrals to psycho-oncological services were mostly independent of DT results. According to the nurses, finding already existing screening data in the EHR is difficult. Therefore, the treatment team did not typically use them. Additionally, nurses decried a general lack of interprofessional interest in their results. Daily or weekly interprofessional case discussions did not include routine discussions of distress levels or mentioned problems. Instead, every profession reported its own estimation of individual patient's distress, including any need for a referral. Nurses declared that they lacked any precise knowledge of what psycho-oncologists discuss

https://doi.org/10.1017/S1478951522001493 Published online by Cambridge University Press

Table 2. DT problems, noted nursing diagnosis, and matched DT problem/nursing diagnosis

Problem	DT problems only (%)	DT problem/ nursing diagnosis (%)[a]	Nursing diagnosis only (%)
Pain	7.7	19	25
Nausea	8	6	15
Fatigue	22	8	13
Sleep	17	1	2
Getting around	8	17	22
Bathing and dressing	8	6	12
Appearance	6	0	0
Breathing	8	6	8
Eating	10	11	25
Constipation	10	4	8
Diarrhoea	6	2	9
Changes in urination	7	2	5
Anxiety	21	2	2
Sadness	17	0	0
Nervousness	15	0	0

[a]Patient-listed problem matched with nursing diagnosis in the same patient.

with patients with regard to recommendations. Referrals were often forgotten because only physicians were permitted to refer patients to psycho-oncological services. Some nurses also observed that psycho-oncological interventions offered to the patients helped only slightly and were less likely to recommend referrals.

The most common nursing diagnoses concerned pain (39.6%), personal mobility (40.9%), and eating problems (31.9%). Psychosocial nursing diagnoses were provided for 15.7% of all screened patients. The most common diagnosis, anxiety, was reported in 4.7% of all inpatients. Overall, a relationship between general nursing diagnoses and problems mentioned during the DT screening session existed only seldom (Table 2).

Nurses explained that they had problems to find the adequate diagnosis in the default list of nursing diagnosis. They lacked knowledge of effective evidence-based psychosocial nursing interventions. Without them, noting diagnosis is useless. They also mentioned that elevated psychosocial distress levels are somewhat normal in patients with cancer. However, they declared to have daily conversations with patients about their psychosocial distress, without documenting nursing diagnoses and interventions (Table 3).

Nurses' recommendations

Screening protocol

The interviewees suggested that reducing screening frequencies and adapting the frequency to patients' needs may reduce refusal rates (Table 4). They also assumed that the benefits of screening will improve if distress levels and DT-related issues were regularly discussed in the interprofessional treatment team. Screening should become a fixed subject during the ward rounds. To ensure precise referrals, nurses and physicians need a referral guideline with clearly defined areas of responsibility. At discharge, nurses would like to offer patients contact information about ambulant support services.

Screening skills

They recommended more bedside teaching as well as more support for coping with difficult situations and more hands-on opportunities to improve their screening skills. They also proposed a set of symptom pathways including at least one feasible evidence-based intervention to address each item on the problem list. Such a roadmap may facilitate interventions adapted to current screening results.

Setting-related factors

Nurses recommended standardized written information to describe in detail why screening is necessary. The information should include a list of available supportive services and potential interventions. In addition, the interviewees proposed translating the DT into different languages. The translation may allow patients' self-screening; instead, a family member or a nurse completes the form. Current and past screening results of every patient should be accessible in the EHR. Many nurses expressed the wish that each ward should have an examination room for performing the DT screening. Finally, the interviewees assumed that it would be easier and more effective that they themselves refer patients to specialist services indicated by the screening results.

Discussion

This study addresses the evaluation of the DT screening in patients with cancer at the CCCZ. By merging quantitative and qualitative results, we identified several factors hindering the distress screening process. However, DT screening also proved to be supportive for nurses with regard to distress management and psychosocial care. According to our analysis, only 32% of the admitted cancer patients were screened, with roughly half of all screened inpatients being moderate or severely distressed. Nurses stated difficulties with addressing psychosocial issues despite screening. Moreover, with only 9.4% of patients currently referred to psycho-oncological services, many patients either refuse a second screening (19%) or are never offered one.

Our screening rate is lower than other reported rates of around 60% with a variation between 25 and 97% (Azizoddin et al. 2020; Cardenas et al. 2019; Fradgley et al. 2020; Geske and Johnson 2020; Groff et al. 2018; Neal et al. 2021; Skaczkowski et al. 2020; Walker et al. 2018; Zebrack et al. 2017). However, a comparison is difficult due to differences in setting, frequency, and study design. The interviewed nurses explained that timing, frequency, and consequences of screening were not always congruent with patient needs. Since the admission day tends to be very busy for patients and nurses, there is poor time to discuss psychosocial distress. High staff workloads and a lack of reminders in the EHR proved to be major barriers to screening. Smith et al. reported similar findings (Smith et al. 2021). According to the interviews, nurses used their expertise to adjust the frequency and the point of time to patients' needs. Delays increase the risk of identifying patients' needs too late or incorrectly. Additionally, specific patient groups may be over- or underrepresented. While many experts have described similar problems, few have offered concrete solutions (Donovan et al. 2020;

https://doi.org/10.1017/S1478951522001493 Published online by Cambridge University Press

Table 3. Results of MMR Matrix

Screening process	Quantitative results		Qualitative results theme (=explanation)	Qualitative results codes
Distress screening	Screening rate 32%[a]	Dependent on patient factors: men (RR: 1.6), emergency (RR: 1.4), palliative (RR: 2.8), leukemia (RR: 2.1), and brain tumor (RR: 1.78) ($p < 0.001$)[a]	Adaptation to individual need	Time points and frequencies adapted to individual needs
		10% oblivion or refusal of the 1. screening: fatigue (2.5%), overwhelmed (9.5%), language problem (17.9%), and lack of time at admission (4.3%)[a] 19% refusal of the second screening[a]	Patient-related barriers	➢ Perceived benefit ➢ Time ➢ Fatigue ➢ Cognitive ability
		45.5% screening on admission day Workload/screening (rho = −0.177; $p < 0.001$)[a]	Timing in daily clinical practice	➢ Relationship with patient ➢ Priority of physical symptoms ➢ High workload ➢ Nursing turnover
Screening evaluation	DT level ≥5 47.0%[a]	Psychosocial subject in 51.1% of all nursing assessments (with BT 63.1% and without BT 31.1%)[b]	Communication challenges	➢ Communication skills ➢ Comfort and experience ➢ Examination room for privacy ➢ Difference between nurses' estimation and patient report ➢ Inclusion of relatives
		Referral agreement DT level ≥5 psycho-oncological services (23.3%), social service (20.2 %), and spiritual care (10.5%)[a]	Patient resistance	➢ Fear of stigmatization ➢ Social environment ➢ Development of distress during hospitalization ➢ Repeated offer ➢ Nudging
Distress intervention	Referral to psycho-oncological services 9.4%[a] to social services 44.7%[a]	22.9% referral to psycho-oncological services within 48 h after screening[a] Referral time 5.82 d (mean)[b]	Established referral practice	➢ Perceived demand and benefit ➢ Insight in documentation ➢ Interprofessional attention ➢ Knowledge about specific expertise
	Psychosocial nursing diagnosis 15.7%[b]	Little consistency between DT-indicated problems and nursing diagnoses[b]	Missing integration in nursing process	➢ Knowledge of nursing interventions ➢ Importance of psychosocial problems ➢ Documentation option

[a]Results of Quantitative Study I CCCZ ($N = 22\,112$).
[b]Quantitative Study II (one ward) ($N = 1711$).

Ehlers et al. 2019; Ownby 2019; Schouten et al. 2019). Therefore, the time of screening should be better matched with distressing events and patients' needs. If there is no standardized schedule, nurses will continue to adapt screening schedules according to their individual expertise or simply according to their own convenience. While sub-optimally timed screening is preferable to no screening at all, the lack of time-related standardization contradicts the purpose of a standardized screening instrument.

In contrast to physical problems, both nurses and patients tend to underestimate the necessity of addressing psychosocial issues. Nurses mentioned that patients, at least partially, responded with suspicion and discomfort. They were deeply concerned about communication and treatment regarding psychosocial problems and were aware that addressing patients' psychosocial distress requires specific training and support. Our training on distress and symptom management was not sufficient enough to give the nurses confidence about communication and to include the psychosocial problems into their nursing process. Furthermore, nurses stated to prefer bedside teaching and supervision, which help to act in the real patient situation and provide confidence. Implementation studies hardly describe training programs for distress screening. Simulation training is used in the communication training of medical and nursing students (Dale Maclaine et al. 2021). This may be an approach to promote communication skills.

Another key issue was nurses' uncertainty in dealing with patients refusing their referral recommendations, although their distress levels were high and psychosocial assistance clearly necessary (Donovan et al. 2020). Tondorf et al. showed that 30% of

https://doi.org/10.1017/S1478951522001493 Published online by Cambridge University Press

Table 4. Recommendations of nurses

Nurses' recommendations		
Screening protocol	Screening skills	Setting-related factors
• Reducing screening frequency	• Bedside teaching	• Patient information about screening, supportive services, and interventions
• Timing adapted to nurse/patient schedules	• Regular supervision of screening within the team	• DT translations in different languages
• Referral guideline with defined areas of specific expertise	• Practical training	• Easy access to DT-related data in the EHR
• Structured interprofessional exchange	• Symptom pathways with suggestions for evidence-based nursing interventions	• Examination rooms for privacy • Referrals made by nurses

patients with psycho-oncological referrals definitely refused them. However, another 30% of these patients are uncertain and could be persuaded by means of effective communication (Tondorf et al. 2018). Nurses are concerned that patients will regard ongoing attempts to persuade them as a kind of manipulation. Perceiving this as an ethical dilemma, some nurses discussed the question of whether nudging is appropriate. Additionally, DT is not validated to differentiate between moderate and severe distress. The acceptance of the referral increases with the number of problems and increasing distress levels (Cohen et al. 2018; Skaczkowski et al. 2018). In any case, without practical solutions, support, and evidence regarded as compelling, screening performance will remain poor (Donovan et al. 2020; Jacobsen and Norton 2019; Schouten et al. 2019; Zebrack et al. 2017).

According to the recommendation, success of DT screening heavily depends on a supportive screening environment, i.e., a collaborative care team and setting-related factors facilitating distress management (Donovan et al. 2020; Ehlers et al. 2019; Ownby 2019; Smith et al. 2021). Some of these factors can be modified. For example, nursing teams should be able to reserve a quiet, private room for undisturbed interviews. In addition, screening results should be read, recognized, and understood by the entire health-care team. Therefore, DT entries in the EHR should be clearly visible and easily accessible. Distress management should be revised by all professionals involved in cancer treatment, preferably with the participation of patients and family caregivers (Donovan et al. 2019; Smith et al. 2018). Physicians, social workers, psycho-oncologists, nurses, ethicists, and spiritual care providers should also participate (Donovan et al. 2020).

At the same time, hospital leaders should support distress management by modifying setting-specific influencing factors (Ehlers et al. 2019). Feasible and acceptable interventions commonly require not only changes in clinical workflow, professional roles, and responsibilities but also institutional resources. Realizing the maximum effect requires commitment of all parties involved (Jacobsen and Norton 2019). Put simply, improving distress management demands long-term concerted efforts. More research is necessary as a basis for improving distress management, thereby making it more effective and allowing nurses to use the DT with more confidence.

In sum, considering the required competencies for effective screening, it may be preferable to delegate distress screening to specialized nurses, particularly nurse practitioners. They may accompany each patient throughout the course of the disease. In doing so, they may develop strong relationships with patients, allowing them to effectively adapt distress management tools and techniques to meet patients' needs. Since nurse practitioners are specially trained and likely to be more confident with psychosocial themes, they could also conduct more complex self-management and psychosocial interventions. However, evidence is still lacking on whether specialist nurses would improve psychosocial care and patient outcomes.

Study limitations

Since this is a single-centre study, the results cannot be transferred to other settings without caution. Our findings compellingly emphasize the types of problems related to the implementation of distress management and associated tools, such as the DT. The quantitative data were generated via retrospective EHR reviews. Therefore, our study has potential confounders. Draw back correlations were not possible. However, the data were not biased about study conditions. This may have resulted in a higher sensibilization for psychosocial issues and a higher screening rate. Furthermore, we did not discuss our findings with patients and other health-care specialists before reporting this study.

Conclusion

To integrate psychosocial support in patient care, the DT proved to be helpful for nurses. However, to realize its benefits more fully, screening should be more closely tailored to patients' and nurses' needs. Evaluating distress screening in other settings will allow us to complete and compare our results, as well as to gain more evidence as a basis for practical recommendations. To achieve these goals, further studies are necessary. Additionally, there is a clear need for studies examining the development and implementation of nursing interventions to improve psychosocial care following DT screening.

Supplementary material. The supplementary material for this article can be found at https://doi.org/10.1017/S1478951522001493.

Data availability statement. All data supporting the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy and ethical restrictions.

Acknowledgments. This research did not receive any specific grants from funding agencies in the public, commercial, or nonprofit sectors.

Conflict of interest. The authors have no conflict of interest directly or indirectly related to the research. The authors have full control of all primary data, which they agree to allow the journal to review if requested.

References

Azizoddin DR, Lakin JR, Hauser J, *et al.* (2020) Meeting the guidelines: implementing a distress screening intervention for veterans with cancer. *Psycho-oncology* **29**, 2067–2074. doi:10.1002/pon.5565

Baumberger D, and Hunstein D (2009) The linkage of nursing assessment and nursing workload. *Studies in Health Technology and Informatics* **146**, 36–40. doi:10.3233/978-1-60750-024-7-36

Cardenas V, Abbott Y, Hirst JM, *et al.* (2019) Development, implementation, and initial results of the UC San Diego Health Moores Cancer Center Wellbeing Screening Tool. *Palliative & Supportive Care* **17**(4), 431–435. doi:10.1017/s1478951518000810

Carlson LE, Zelinski EL, Toivonen KI, ***et al.*** (2019) Prevalence of psychosocial distress in cancer patients across 55 North American cancer centers. *Journal of Psychosocial Oncology* **37**(1), 5–21. doi:10.1080/07347332.2018.1521490

Chambers SK, Zajdlewicz L, Youlden DR, ***et al.*** (2014) The validity of the distress thermometer in prostate cancer populations. *Psycho-oncology* **23**(2), 195–203. doi:10.1002/pon.3391

Cohen A, Ianovski LE, Frenkiel S, ***et al.*** (2018) Barriers to psychosocial oncology service utilization in patients newly diagnosed with head and neck cancer. *Psycho-oncology* **27**(12), 2786–2793. doi:10.1002/pon.4889

Creswell JW and Plano Clark VL (2011) *Designing and Conducting Mixed Methods Research*, 2nd edn. Los Angeles: Sage Publications.

Dale Maclaine T, Lowe N and Dale J (2021) The use of simulation in medical student education on the topic of breaking bad news: a systematic review. *Patient Education and Counseling* **104**(11), 2670–2681. doi:10.1016/j.pec.2021.04.004

Donovan KA, Deshields TL, Corbett C, ***et al.*** (2019) Update on the implementation of NCCN guidelines for distress management by NCCN member institutions. *Journal of the National Comprehensive Cancer Network* **17**(10), 1251. doi:10.6004/jnccn.2019.7358

Donovan KA, Grassi L, Deshields T, ***et al.*** (2020) Advancing the science of distress screening and management in cancer care. *Epidemiology and Psychiatric Sciences* **29**, e85. doi:10.1017/S2045796019000799

Donovan KA, Grassi L, McGinty HL, ***et al.*** (2014) Validation of the distress thermometer worldwide: state of the science. *Psycho-oncology* **23**(3), 241–250. doi:10.1002/pon.3430

Ehlers SL, Davis K, Bluethmann SM, ***et al.*** (2019) Screening for psychosocial distress among patients with cancer: implications for clinical practice, healthcare policy, and dissemination to enhance cancer survivorship. *Translational Behavioral Medicine* **9**(2), 282–291. doi:10.1093/tbm/iby123

Fradgley EA, Byrnes E, McCarter K, ***et al.*** (2020) A cross-sectional audit of current practices and areas for improvement of distress screening and management in Australian cancer services: is there a will and a way to improve? *Supportive Care in Cancer* **28**(1), 249–259. doi:10.1007/s00520-019-04801-5

Geske SJ and Johnson RL (2020) Using the distress thermometer to guide electronic referrals to psychosocial services. *Journal of Psychosocial Oncology* **38**(1), 20–35. doi:10.1080/07347332.2019.1631932

Götz A, Kroner A, Jenewein J, ***et al.*** (2018) Evaluation of the adherence of distress screening with the distress thermometer in cancer patients 4 years after implementation. *Supportive Care in Cancer* **27**(8), 2799–2807. doi: 10.1007/s00520-018-4579-1

Götz A, Kröner A, Jenewein J, ***et al.*** (2020) Adherence to the distress screening through oncology nurses and integration of screening results into the nursing process to adapt psychosocial nursing care five years after implementation. *European Journal of Oncology Nursing* **45**, 101725. doi:10.1016/j.ejon.2020.101725

Groff S, Holroyd-Leduc J, White D, ***et al.*** (2018) Examining the sustainability of Screening for Distress, the sixth vital sign, in two outpatient oncology clinics: a mixed-methods study. *Psycho-oncology* **27**(1), 141–147. doi:10.1002/pon.4388

Guetterman TC, Fetters MD and Creswell JW (2015) Integrating quantitative and qualitative results in health science mixed methods research through joint displays. *The Annals of Family Medicine* **13**(6), 554–561. doi:10.1370/afm.1865

Jacobsen PB and Norton WE (2019) The role of implementation science in improving distress assessment and management in oncology: a commentary on "Screening for psychosocial distress among patients with cancer: implications for clinical practice, healthcare policy, and dissemination to enhance cancer survivorship." *Translational Behavioral Medicine* **9**(2), 292–295. doi:10.1093/tbm/ibz022

Mayring P (2008) *Qualitative Inhaltsanalyse: grundlagen Und Techniken*, 10, neu ausgestattete Aufl. edn. Weinheim: Beltz Verlag.

Ma X, Zhang J, Zhong W, ***et al.*** (2014) The diagnostic role of a short screening tool – the distress thermometer: a meta-analysis. *Supportive Care in Cancer* **22**(7), 1741–1755. doi:10.1007/s00520-014-2143-1

McCarter K, Britton B, Baker AL, ***et al.*** (2018) Interventions to improve screening and appropriate referral of patients with cancer for psychosocial distress: systematic review. *BMJ Open* **8**(1), e017959. doi:10.1136/bmjopen-2017-017959

McCarter K, Fradgley EA, Britton B, ***et al.*** (2020) Not seeing the forest for the trees: a systematic review of comprehensive distress management programs and implementation strategies. *Current Opinion in Supportive and Palliative Care* **14**(3), 220–231. doi:10.1097/spc.0000000000000513

Mehnert A, Lehmann C, Cao P, ***et al.*** (2006) [Assessment of psychosocial distress and resources in oncology – a literature review about screening measures and current developments]. *Psychotherapie, Psychosomatik, medizinische Psychologie* **56**(12), 462–479. doi:10.1055/s-2006-951828

Neal JW, Roy M, Bugos K, ***et al.*** (2021) Distress screening through Patient-Reported Outcomes Measurement Information System (PROMIS) at an academic cancer center and network site: implementation of a hybrid model. *JCO Oncology Practice* **17**, Op2000473. doi:10.1200/op.20.00473

O'Cathain A, Murphy E and Nicholl J (2010) Three techniques for integrating data in mixed methods studies. *BMJ* **341**, c4587. doi:10.1136/bmj.c4587

O'Connor M, Tanner PB, Miller L, ***et al.*** (2017) Detecting distress: introducing routine screening in a gynecologic cancer setting. *Clinical Journal of Oncology Nursing* **21**(1), 79–85. doi:10.1188/17.Cjon.79-85

Ownby KK (2019) Use of the distress thermometer in clinical practice. *Journal of the Advanced Practitioner in Oncology* **10**(2), 175–179. doi:10.6004/jadpro.2019.10.2.7

National Comprehensive Cancer Network (2022) Distress management. In *NCCN clinical practice guidelines in Oncology (NCCCN guidelines)*. NCCN. https://www.nccn.org/professionals/physician-gls/pdf/distress.pdf (accessed 31 October 2022).

Scharli M, Muller R, Martin JS, ***et al.*** (2017) Interprofessional collaboration from nurses and physicians – a triangulation of quantitative and qualitative data. *Pflege* **30**(2), 53–63. doi:10.1024/1012-5302/a000531

Schouten B, Avau B, Bekkering G, ***et al.*** (2019) Systematic screening and assessment of psychosocial well-being and care needs of people with cancer. *Cochrane Database of Systematic Reviews* **3**, CD012387. doi:10.1002/14651858.CD012387.pub2

Skaczkowski G, Pejoski N, Kaur J, ***et al.*** (2020) Distress and problem assessment among people living with cancer from Culturally and Linguistically Diverse backgrounds. *Psycho-oncology* **29**(10), 1662–1669. doi:10.1002/pon.5503

Skaczkowski G, Sanderson P, Shand M, ***et al.*** (2018) Factors associated with referral offer and acceptance following supportive care problem identification in a comprehensive cancer service. *European Journal of Cancer Care (Engl)* **27**(5), e12869. doi:10.1111/ecc.12869

Smith TG, Beckwitt AE, van de Poll-franse LV, ***et al.*** (2021) Oncology team perspectives on distress screening: a multisite study of a well-established use of patient-reported outcomes for clinical assessment. *Supportive Care in Cancer* 30(2), 1261–1271. doi: 10.1007/s00520-021-06458-5

Smith SK, Loscalzo M, Mayer C, ***et al.*** (2018) Best practices in oncology distress management: beyond the screen. *American Society of Clinical Oncology Educational Book* **38**, 813–821. doi:10.1200/edbk_201307

Sun H, Thapa S, Wang B, ***et al.*** (2021) A systematic review and meta-analysis of the distress thermometer for screening distress in Asian Patients with Cancer. *Journal of Clinical Psychology in Medical Settings* **28**(2), 212–220. doi:10.1007/s10880-020-09705-9

Tondorf T, Grossert A, Rothschild SI, ***et al.*** (2018) Focusing on cancer patients' intentions to use psychooncological support: a longitudinal, mixed-methods study. *Psycho-oncology* **27**(6), 1656–1663. doi:10.1002/pon.4735

Walker LM, Villiger MP and Robinson JW (2018) Assessing the utility of a distress screening tool at capturing sexual concerns in a gyne-oncology follow-up clinic. *Supportive Care in Cancer* **26**(3), 887–893. doi:10.1007/s00520-017-3905-3

Zebrack B, Kayser K, Bybee D, ***et al.*** (2017) A practice-based evaluation of distress screening protocol adherence and medical service utilization. *Journal of the National Comprehensive Cancer Network* **15**(7), 903–912. doi:10.6004/jnccn.2017.0120

https://doi.org/10.1017/S1478951522001493 Published online by Cambridge University Press