



# Evaluating a professional patient navigation intervention in a supportive care setting

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## Abstract

**Purpose** Unmet supportive care needs are common among cancer patients. This study evaluates a patient navigation intervention (i.e., specially trained oncology nurse who monitors, advises, and (if needed) refers patients to supportive cancer care) in terms of need, satisfaction, advice uptake, and consumption of supportive cancer care.

**Methods** Using a cross-sectional design, the intervention was evaluated among healthcare professionals, patients who participated, and patients who did not participate in the intervention. All patients were newly diagnosed with breast cancer or melanoma. Data was collected through medical records and online surveys.

**Results** In total, 1091 patients were offered patient navigation. Most of these patients (755) were willing to consult the patient navigator (PN). Approximately 90% of patients who completed both the intervention and the questionnaire ( $N = 120$ , response rate 54%) perceived the PN as valuable, accessible, and reliable. Approximately 80% of respondents who needed advice regarding nutrition ( $n = 67$ ), fatigue ( $n = 98$ ), emotions ( $n = 106$ ), and work ( $n = 79$ ) were adequately informed by the PN. Of the 120 respondents, 59 used some form of supportive cancer care. Most of the responding healthcare professionals ( $N = 70$ , response rate 45%) perceived the intervention as a valuable addition to current cancer care ( $n = 51$ ) and mentioned that the PN should be available to all patients ( $n = 54$ ).

**Conclusions** The intervention was perceived as valuable by both patients and healthcare professionals. The results may, however, been biased by the large number of patients who were omitted from participation due to logistical reasons.

**Keywords** Patient navigation · Unmet needs · Supportive care · Cancer

## Introduction

Being diagnosed with or surviving cancer often results in psychosocial (e.g., anxiety, depression, worrying) and physical (e.g., pain, fatigue, appetite loss) problems, which occur among 35% [1] and 7–74% [2] of the patients, respectively. Most psychosocial and physical problems are successfully

managed through the use of supportive cancer care [3]. Supportive cancer care can be defined in terms of health services (e.g., physical therapy, psychosocial counseling, dietary advice) that are designed to help patients and their families prevent and/or cope with cancer-related symptoms and side effects from diagnosis to the end of life [4]. Although supportive cancer care has become a major component of the cancer care continuum, patients' needs for supportive care are often not met [5]. A possible reason for this may be that patients are more and more required to engage in and independently manage their care throughout all stages of cancer care [6]. However, due to differences in for instance sociodemographic and clinical characteristics, not all patients are able to manage their care without the help of a professional [e.g., 7]. Providing such help may increase patients' involvement in treatment-related issues and decrease their unmet needs.

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Unmet needs occur across all domains of supportive cancer care (e.g., information provision, mental well-being, daily functioning) and are characterized by a discrepancy between the level and nature of supportive care deemed necessary by a patient or healthcare professional and the extent to which such care has actually been received [8]. The larger this discrepancy, the more likely it becomes that unmet supportive care needs decrease patients' quality of life [9], well-being [5], and the likelihood of successful recovery.

A way [e.g., 10] to not only identify but also address patients' unmet supportive care needs is provided by patient navigation. Although there is no broadly accepted definition, patient navigation can be explained as a care coordination intervention that aims to reduce barriers in order to attain positive health outcomes (e.g., improved quality of life, reduced distress, and increased coping ability) [11]. Patient navigation is often provided by professional (e.g., nurses) [e.g., 12] and/or lay (e.g., volunteers) [e.g., 13] patient navigators who assist patients with different aspects of distress and facilitate accessibility as well as continuity of care. At present, patient navigation is not only gaining ground in the field of oncology, but also in other healthcare settings related to for instance HIV, diabetes, and cardiology [14–16]. Despite the increasing interest in patient navigation, effective patient navigation interventions that specifically focus on the provision of supportive cancer care are scarce [17].

To date, several randomized controlled trials have been conducted on the topic of patient navigation in supportive cancer care [e.g., 12, 13]. Most of the findings resulting from these trials are, however, not significant or mixed. One of the possible explanations of such findings is that the design of the studied interventions was inadequate in terms of attributes such as consultation timing, consultation frequency, communication mode, and/or navigators' skills. In fact, the conducted trials show that some of the studied interventions did not provide sufficient follow-up, account for face-to-face communication, and/or concerned lay navigation. Hence, the current study aims to evaluate a patient navigation intervention that facilitates timely, systematic, and adequate identification of patients' needs for supportive cancer care from the perspective of both patients and healthcare professionals. In case of patients, objectives are to evaluate (a) the need for an intervention, (b) referral and care consumption frequencies, (c) uptake of provided advice, and (d) satisfaction with the intervention. For healthcare professionals, the objective is to identify the extent to which professionals are satisfied with the content and execution of the intervention.

## Methods

### Setting

The study was conducted at the Netherlands Cancer Institute, a comprehensive cancer center that comprises both patient

care and research. The intervention was part of usual care and offered to all newly diagnosed breast cancer and melanoma patients. These patient populations were selected based on practical and logistical considerations. Patients were allowed to opt-out if they did not want to participate in the intervention. The intervention was first introduced in November 2015 and continues to be provided.

### Sample: patients

The intervention was evaluated among all patients who used email and have had their final consultation with the patient navigator between November 2015 and December 2016 ( $N = 224$ ). Sample size and inclusion/exclusion criteria were not accounted for, as the goal of the evaluation was to collect as many data as possible in order to appraise current practice. In addition, a questionnaire was also sent to all patients who used email and did not wish to consult the patient navigator between November 2015 and December 2016 ( $N = 233$ ).

### Sample: healthcare professionals

Healthcare professionals who evaluated the intervention were employees of the breast cancer, melanoma, and supportive care teams of the Netherlands Cancer Institute. Regardless of their professional training, all healthcare professionals who worked with the patient navigator received an evaluation questionnaire. Among these healthcare professionals were physicians, nurse practitioners, nurses, outpatient clinic assistants, allied health professionals, and non-medical staff.

### Design and procedure

The study used a cross-sectional design. Data were collected from medical records and study-specific questionnaires. The online questionnaire for patients who consulted the patient navigator consisted of items concerning (1) consumption of supportive cancer care (i.e., how often did you consult a psychologist during and/or after treatment), (2) satisfaction with information provision (i.e., the patient navigator provided good information on how to deal with emotions), (3) satisfaction with the patient navigator (i.e., the patient navigator is a valuable addition to current cancer care), and (4) advice uptake (i.e., after consulting the patient navigator, I changed my eating habits). The consumption of supportive cancer care and satisfaction measures were inspired by the Medical Consumption Questionnaire [18] and the Patient Satisfaction with Interpersonal Relationship with Navigator questionnaire [19], respectively. Items concerning satisfaction with information provision and advice uptake were designed for the purpose of this study. To reduce completion time and maximize response, satisfaction with provided information and advice uptake were assessed for nutrition, fatigue, emotions, and

work only. These subdomains were selected as they contain high frequencies of unmet needs [e.g., 20], are highlighted by the Dutch cancer care guidelines [21–23], and/or were considered important by patients treated at our institute. Except for the consumption of supportive cancer care, items were answered on 5-point scales ranging from fully disagree to fully agree. Consumption of supportive cancer care was assessed on a 5-point scale ranging from never to 11 times or more. In the case of “satisfaction with information provision” and “advice uptake,” respondents could tick “not applicable”.

The online questionnaire for patients who did not consult the patient navigator concerned reasons for not wanting to meet with the patient navigator (i.e., not experiencing any problems). Respondents were allowed to tick multiple reasons and add reasons if these were not provided.

In the case of the healthcare professionals, the questionnaire consisted of study-specific questions regarding satisfaction (i.e., the patient navigator is of added value to current cancer care). Items were answered on 5-point scales ranging from fully disagree to fully agree. Open boxes were provided to investigate whether healthcare professionals wanted to add or remove responsibilities from the patient navigator. Respondents could tick “do not know” or “not applicable” when appropriate.

Data were analyzed using descriptive statistics of software package SPSS 22.

## Intervention

Patient navigation was provided by three experienced oncology nurses (i.e., patient navigators) with, on average, 12 years of clinical oncology experience. Furthermore, patient navigators had excellent communication, problem-solving, and coaching skills, which are highly appreciated when appointing patient navigators [24]. The choice for an oncology nurse rather than a different healthcare professional or lay navigator was based on the fact that adequate patient navigation requires an interplay between knowledge and skills with respect to the medical, social, and practical aspects of cancer (care), which are most often found in the case of oncology nurses [25]. To make sure that the intervention was not only provided in a systematic and timely manner, but also comprised excellent advice on how to deal with potentially experienced problems, patient navigators were released from their clinical nursing duties. Doing so allowed them to fully focus on their tasks, patients, and knowledge acquisition in order to provide a high-quality intervention.

Patients’ supportive care needs were identified using three assessment tools that are widely used and recommended by the Dutch cancer care guidelines [21–23]. More specifically, patients’ overall need for supportive cancer care was identified

using the distress thermometer and problem list [26]. In addition to the distress thermometer, patients were asked to complete a single-item visual analog scale (VAS) concerning fatigue [27] and a three-item measure concerning malnutrition (i.e., Short Nutritional Assessment Questionnaire [SNAQ]) [28]. The VAS fatigue and SNAQ were used in addition to the distress thermometer as they allow for a more thorough screening of fatigue and malnutrition, which are highly prevalent among cancer patients [29, 30]. Need identification was followed by an evaluation of need severity in the form of 45-min phone or face-to-face consultations with the patient navigator. A 45-min timeslot was chosen based on experience with other consultations that comprise several topics and psycho-education. Patients could choose their preferred mode of communication. For each patient, a consultation with the patient navigator was scheduled before the start of treatment, during treatment, and after treatment by the back office. As patients’ needs can differ across the cancer care trajectory [31], needs for supportive cancer care were identified prior to each of these three consultations. In the case of care-as-usual provided at the Netherlands Cancer Institute, and consequently all patients who did not participate in the intervention, clear procedures on when, where, and by whom patients are advised on and referred to supportive care services are lacking.

Depending on the severity of unmet needs and experienced distress, the patient navigator either advised patients on how to best cope with their problems or referred them to relevant healthcare professionals (e.g., physical therapists, psychologists, and dietitians). Advice comprised three domains derived from the World Health Organization’s (WHO) definition of health (i.e., health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity [32]): daily functioning, physical functioning, and psychosocial functioning. Domain content was based on the problems included in the problem list [26]. Definitions and content of the domains are provided in Table 1. If needed, patient navigators could consult a multidisciplinary team of experts to make sure that the provided advice is correct. To maximize convenience, patients were (if possible) referred to healthcare professionals close to their place of residence. Professionals were selected from already existing registers of qualified Dutch healthcare professionals (i.e., onconet.nu, nvpo.nl, ipso.nl, and ookwijzer).

## Theoretical foundation of intervention

From a theoretical perspective, the intervention was based on the 5A’s model [33], which comprises five interrelated and iterative steps that allow healthcare professionals to facilitate health behaviors such as smoking cessation and physical activity [e.g., 34]. In sum, the five A’s of the model represent

**Table 1** Overview of intervention content

Domain	Definition	Content	Advice/information	Referral
<i>Daily functioning</i>	Daily activities performed in order to live independently or contribute to society	<ul style="list-style-type: none"> <li>• Childcare</li> <li>• Transportation</li> <li>• Housekeeping</li> <li>• Employment</li> <li>• Income</li> <li>• Informal care</li> </ul>	<ul style="list-style-type: none"> <li>• Mobilizing social network</li> <li>• Governmental support</li> <li>• Buddy care</li> <li>• Communication with employer/benefit agency/-medical officer</li> <li>• Reimbursement by health insurance</li> </ul>	<ul style="list-style-type: none"> <li>• Social worker</li> <li>• Job coach</li> <li>• Occupational therapist</li> <li>• (Online) information<sup>a</sup></li> </ul>
<i>Physical functioning</i>	Overall physical fitness	<ul style="list-style-type: none"> <li>• Nutrition</li> <li>• Fatigue</li> <li>• Endurance</li> <li>• Strength</li> </ul>	<ul style="list-style-type: none"> <li>• Consumption of protein-rich nutrition</li> <li>• Regular exercise</li> <li>• Energy balance</li> <li>• Quit smoking</li> <li>• Sleeping hygiene</li> </ul>	<ul style="list-style-type: none"> <li>• Physical therapist</li> <li>• Dietitian</li> <li>• Physiatrist</li> <li>• General practitioner</li> <li>• Occupational therapist</li> <li>• (Online) information<sup>a</sup></li> </ul>
<i>Psychosocial functioning</i>	Emotional well-being and conduct in relation to others	<ul style="list-style-type: none"> <li>• Dealing with one's own emotions/feelings</li> <li>• Dealing with (emotions/feelings) of family and friends</li> <li>• Sexuality</li> <li>• Spirituality</li> </ul>	<ul style="list-style-type: none"> <li>• Coping</li> <li>• Normalizing emotions/ feelings</li> <li>• Self-image</li> <li>• Communication</li> </ul>	<ul style="list-style-type: none"> <li>• Social worker</li> <li>• Psychologist</li> <li>• Psychiatrist</li> <li>• Sexologist</li> <li>• Art therapist</li> <li>• Spiritual counselor</li> <li>• Information and support center</li> <li>• General practitioner</li> <li>• (Online) information<sup>a</sup></li> </ul>

<sup>a</sup> Websites and/or brochures on for instance cancer, nutrition, employment, and physical activity

assessment, advice, agreement, assistance, and arrangements. In light of the current intervention, the A's can be understood as (1) assess whether patients experience unmet supportive care needs, (2) advise patients whether supportive care is required, (3) agree with patients on how supportive care needs can be met, (4) assist patients with meeting their supportive care needs, and (5) arrange follow-up to make sure that needs are met. Figure 1 shows a graphical representation of the intervention.

### Quality assurance

To assure intervention quality, navigators' knowledge and skills were brought up to date through training sessions consisting of several courses and/or master classes on communication skills, psychosocial care, nutrition, exercise, and work. In total, each patient navigator received 60 h of educational activities. In addition, patient navigators were coached by two case managers who had extensive experience with assessing cancer patients' supportive and/or rehabilitation needs during and after treatment. Both case managers also had extensive knowledge on cancer-related problems and

functional limitations, rehabilitation interventions, and referral options. Finally, patient navigators attended intervision meetings with colleagues from other Dutch hospitals.

## Results

### Response

Of all patients who, according to medical records, did not consult the patient navigator ( $N = 330$ ), 233 received and 125 completed the evaluation questionnaire, which resulted in a response of 54% (see Table 2 for sample characteristics). Of all patients who had successfully finished the intervention ( $N = 243$ ), 224 received and 120 completed the evaluation questionnaire, which resulted in a response of 54%.

In total, 155 healthcare professionals received and 68 completed the evaluation questionnaire, which resulted in a response of 44%. Of these healthcare professionals, 13% was a physician, 13% was a nurse practitioner, 21% was a nurse, 11% was an outpatient clinic assistant, 29% was an allied

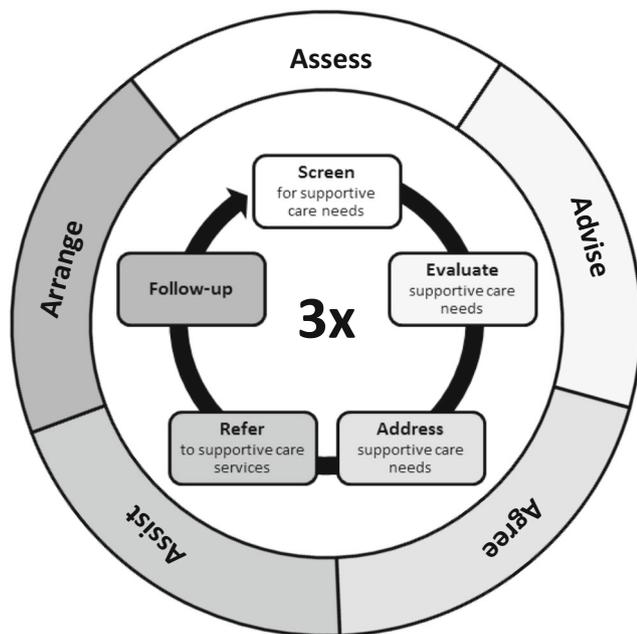


Fig. 1 Graphical representation of intervention

health professional, and 12% was non-medical staff (e.g., back office, managers).

## Patients

### Need for consultation

In total, 1091 patients were invited for a consultation with the patient navigator. Of these patients, 755 (69%) accepted the invitation. Of all patients who did not consult the patient navigator and completed the questionnaire ( $N = 125$ ), 107 (86%) mentioned not to be invited for a consultation. The remaining

18 patients did not consult the patient navigator due to (1) lack of physical and/or psychosocial problems (44%); (2) sufficient support from family, friends, and/or peers (39%); and/or (3) lack of motivation (6%). Thirteen of the 125 patients mentioned that they would like to consult the patient navigator after all. Of these 13 patients, 10 (77%) want to discuss psychosocial, 8 (62%) physical, 1 (8%) financial, and 1 (8%) spiritual difficulties. Figure 2 provides a detailed representation of patients' need for the intervention.

### Referral and consumption frequencies

According to medical records, the 243 patients who completed the intervention received a total of 333 referrals to supportive care services, of which 279 (84%) to healthcare services outside our institute (see Table 3). Most referrals were to (online) information (23%) and physical therapy (23%). Furthermore, following from the consultations, 18% of the patients who completed the evaluation questionnaire contacted a physical therapist, and approximately 12% met with a psychologist and/or medical social worker. Other types of supportive cancer care were used by 7% or less of the respondents. The supportive care service that was most often used by respondents was (online) information (27%).

### Advice uptake

Based on self-report, at least 78% of the respondents who needed advice/information on nutrition, exercise, fatigue, emotions, and/or work mentioned that they were well informed by the patient navigator (see Table 4). In addition, the advice was implemented by 28–57% of the respondents.

Table 2 Sample characteristics

	Patients who consulted patient navigator ( $N = 120$ )	Patients who did not consult patient navigator ( $N = 125$ )
Age	$M = 53.6$ ; $SD = 11.0$	$M = 59.2$ ; $SD = 12.7$
Gender		
Female	108 (90%)	102 (81%)
Male	12 (10%)	24 (19%)
Cancer type		
Mamma	95 (79%)	74 (59%)
Melanoma	25 (21%)	49 (39%)
Other	–	2 (2%)
Number of received treatments <sup>a</sup>		
1	38 (32%)	65 (52%)
2	44 (37%)	41 (32%)
3	27 (22%)	17 (14%)
4	11 (9%)	3 (2%)

<sup>a</sup> Treatment could consist of surgery, chemotherapy, radiation therapy, hormone therapy, immunotherapy, and/or preventive treatment

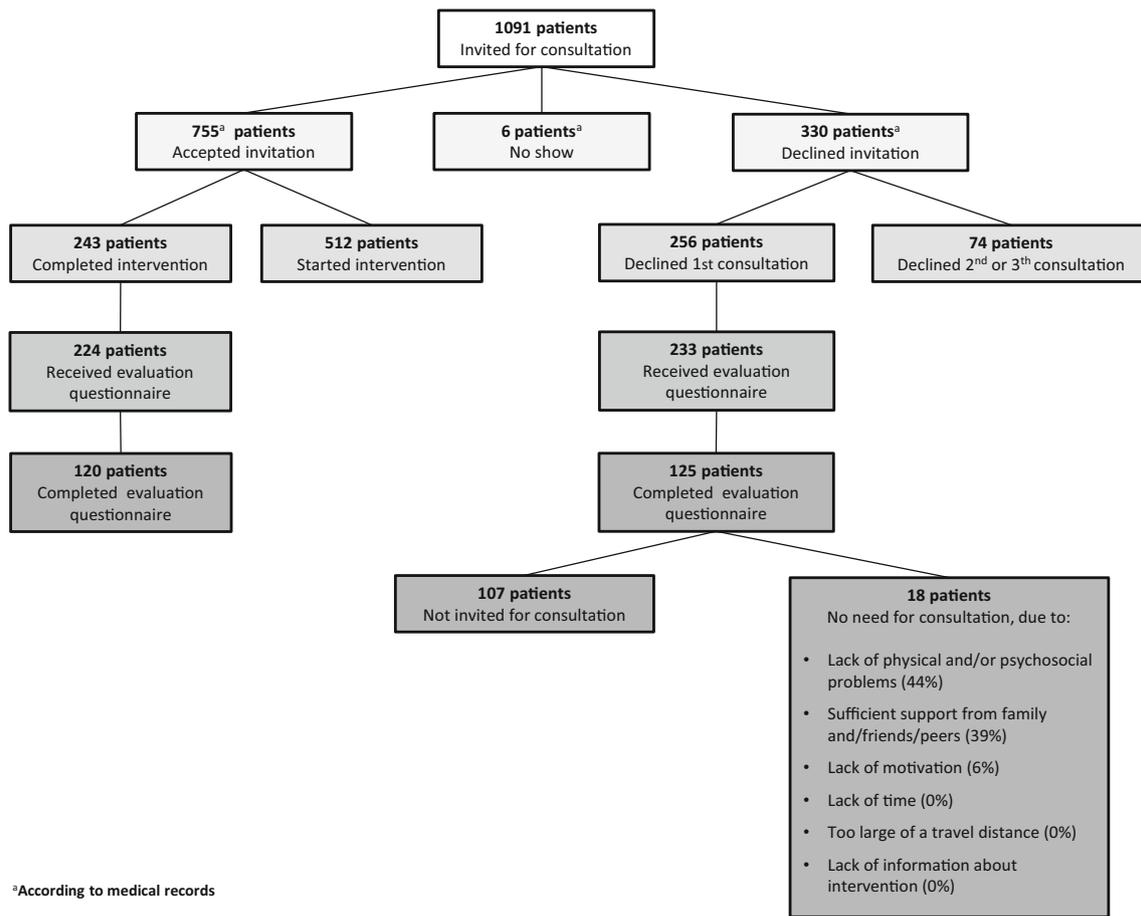


Fig. 2 Study flowchart

## Satisfaction of patients

Most of the 120 respondents perceived the patient navigator as a valuable addition to the care provided at our institute (92%). Furthermore, 90% of the respondents would recommend the patient navigator to other patients. On a 10-point scale ranging from very bad to very good, the patient navigator was awarded an average grade of 8.4 (range 3–10, standard deviation 1.16). In addition, most respondents perceived the frequency (79%) and timing (73%) of the consultations as good.

Overall, the patient navigator was perceived as accessible (91%), reliable (95%), knowledgeable (92%), respectful (97%), easy to talk to (97%), a good listener (95%), and someone who thinks along (87%). Respondents were also (very) satisfied with all advice and information provided by the patient navigator (see Table 4).

## Healthcare professionals

### Satisfaction of healthcare professionals

In general, on a 10-point scale ranging from very bad to very good, the patient navigator was awarded an average grade of

7.4 (range 2–10, standard deviation 1.25). Furthermore, 68% (45 of 68) of the healthcare professionals mentioned that they would recommend the patient navigator to their patients. In addition, a considerable part of the healthcare professionals perceived the patient navigator as a valuable addition to the care offered at our institute (75% of 68) and stated that the patient navigator should be available to all patients (79% of 68). Also, healthcare professionals believed that the patient navigator referred patients to relevant supportive care services (80% of 56), thought along when it came to supportive care (88% of 60), and provided patients with good advice (76% of 54). Half of the healthcare professionals was (very) satisfied (50% of 62) or neutral (42% of 62) about the way in which the patient navigator supported their work activities.

A substantial part of the 68 healthcare professionals did not want to add (37%) or remove (29%) any responsibilities from the patient navigator. In addition, more than half of the healthcare professionals did not know which responsibilities should be added (58%) or removed (57%). Some healthcare professionals (6%) mentioned that the activities of the patient navigator should comprise tasks such as advice on childcare, home visits, and information on the transition from hospital to home care. Some healthcare professionals (13%) stated that

**Table 3** Referrals and consumption frequencies

Healthcare professional	Referral based on medical records ( <i>N</i> = 243, per consultation)											Consumption based on self-report ( <i>N</i> = 120)			
	1st Consultation		2nd Consultation		3rd Consultation		Total <sup>a</sup>								
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	
	External	Internal	External	Internal	External	Internal	External	Internal	External	Internal	External	Internal	External	Internal	
Online info	55	0	23	12	0	5	19	0	8	77	0	23	32	–	27
Physical therapist	30	2	13	33	0	14	19	0	8	73	2	23	18	4	18
Psychologist	7	3	4	7	2	4	10	2	5	24	7	10	8	6	12
Social worker	3	10	5	2	7	4	1	1	1	5	17	7	3	10	11
Physiatrist	3	0	1	7	6	5	5	5	4	13	10	7	4	4	7
Dietitian	5	9	6	2	4	2	2	2	2	8	14	7	1	6	6
Occupational ther.	0	0	0	0	0	0	0	0	0	0	0	0	2	4	5
Art therapist	0	3	1	2	1	1	0	1	0.5	2	4	2	0	3	3
Psychiatrist	0	1	0.5	0	1	0.5	0	0	0	0	2	1	0	2	2
ISC <sup>b</sup>	5	0	2	15	0	6	9	0	4	27	0	8			
GP <sup>c</sup>	7	0	3	8	0	3	9	0	4	22	0	7			
Job coach	1	0	0.5	4	0	2	3	0	1	8	0	2			
Total	124	28	98	21	88	11			279	54					

<sup>a</sup> Frequencies are corrected for the number of patients that received multiple referrals to the same type of supportive care across consultations. Hence, totals can differ from the sum of the three consultations

<sup>b</sup> Information support center

<sup>c</sup> General practitioner

certain responsibilities of the patient navigator may overlap the activities of other healthcare professionals or may better be executed by other healthcare professionals.

## Discussion

This study aimed to describe and evaluate a professional patient navigation intervention that facilitates timely, systematic,

and adequate identification of patients' needs for supportive cancer care. The results of the study suggest that most patients are willing to consult the patient navigator. In addition, patients are satisfied with the intervention and apply the provided advice in daily life activities. In the case of the healthcare professionals, results show that most of them would recommend the patient navigator to their patients and perceived the intervention as a valuable extension of cancer care that should be provided to all patients.

**Table 4** Satisfaction with and uptake of provided advice (*N* = 120)

	Satisfaction			Uptake		
	<i>Patients who were (very) satisfied with the advice</i>			<i>Patients who implemented the advice</i>		
	<i>n</i> <sup>a</sup>	#	%	<i>n</i> <sup>a</sup>	#	% <sup>b</sup>
Emotions (self)	106	94	89%	95	50	53%
Fatigue	98	82	84%	95	54	57%
Work (continuing)	79	63	80%	75	42	57%
Work (resuming)	66	53	80%	–	–	–
Emotions (others)	95	74	78%	96	47	49%
Nutrition	67	52	78%	72	21	28%

<sup>a</sup> *N* differs across advice types as respondents were allowed to tick "not applicable"

<sup>b</sup> Percentage of patients who answered agree or fully agree

Most patients invited for a consultation with the patient navigator accepted the invitation (69%). Hence, there seems to be sufficient need for patient navigation. Moreover, the evaluation conducted among patients who, to our knowledge, declined to consult the patient navigator suggests that the need for navigation may even be higher once the logistics of the intervention are properly installed. In the current evaluation, almost 86% ( $N = 125$ ) of the patients reported not to be invited for a consultation.

The advice and information provided during the intervention were taken up by approximately half of the patients. Considering the limited impact of patient education on health behavior [e.g., 35, 36], one in two patients applying the advice in daily life activities can be seen as quite an accomplishment, which in the long run may lead to a decrease in consumption of supportive cancer care. The success of the current intervention as a monitoring, advisory, and referral tool may lie not only in the extensive screening, but also in the personal (face-to-face) evaluation of screening outcomes. Current screening tools seem insufficiently sensitive and specific to serve as ‘stand-alone’ distress assessments [37]. More specifically, while not all patients with high levels of distress require referral, some patients with low levels of distress do. Hence, when screening for supportive care needs, it is insufficient to simply rely on reported distress levels and cut-off values. To be able to meet the supportive care needs of all cancer patients, discussing screening outcomes is a must.

The findings of the evaluation show that patients are not only often referred to online information and physical therapy by the patient navigator, but also frequently use these types of supportive care. High referral to (online) information, especially during the first consultation, is not surprising, considering that information-related needs are highly prevalent among cancer patients [38]. High referral to physical therapy aligns with recent insights on exercise and cancer. More specifically, research suggests that exercise programs supervised by physical therapists have a positive effect on among others physical fitness, muscle strength, fatigue, and chemotherapy completion rates [39]. In addition to online information and physical therapy, quite some patients were referred to psychosocial counseling (e.g., psychologist, social worker). Looking at recent research, about 30–40% of cancer patients suffers from psychological distress such as depression and anxiety [40]. Furthermore, emotional distress is a significant predictor of patients’ need for referral [37]. Keeping both of these arguments in mind helps explain why psychosocial counseling was part of the three most common referrals and most often used supportive care services in this evaluation study.

Both patients and staff members were satisfied with the patient navigation intervention. This finding aligns with prior studies that report high satisfaction levels among patients who participated in similar interventions [e.g., 10, 41]. Despite the high satisfaction levels, it should be noted that patient

navigation does not necessarily increase patients’ overall satisfaction with received care [42]. A recent study showed that patients who did or did not consult a patient navigator were equally satisfied with the care they have received [43]. Moreover, as mentioned by the staff members who participated in the current evaluation study, excessive healthcare use should be prevented. Therefore, attention must be paid to potentially overlapping responsibilities of the patient navigator and other healthcare professionals such as nurse practitioners.

## Strengths and limitations

The current study was conducted in a real-life treatment setting, which results in several strengths. For breast cancer and melanoma patients of the Netherlands Cancer Institute, patient navigation was part of usual care, meaning that all patients could consult the patient navigator. Not having any inclusion or exclusion criteria reduces selection bias and with that possible misalignment with practice, which increases the likelihood of knowledge translation. Despite these strengths, this study does not come without limitations. One of these limitations is the moderate response rate (54% patients; 44% staff members), which may have contributed to a more favorable sample and consequently biased results. Secondly, the current study lacked a control group. Therefore, we cannot rule out that patients who did not consult the patient navigator experience more supportive care needs. Finally, the intervention was developed and evaluated in the context of the specific needs and facilities of the Netherlands Cancer Institute. Hence, the extent to which the findings of this study can be generalized to other clinics may be limited.

## Future research

Despite the positive results of the present study, in general, research shows limited evidence for the added value of patient navigation to supportive cancer care [e.g., 10, 12, 13, 43]. A potential reason for this may lie in the chosen outcome measures, which often are subtypes of health-related quality of life (e.g., physical functioning, emotional functioning), supportive care needs, anxiety, and depression. Outcomes that capture the essence of patient navigation such as increased knowledge on self-care, reduced distress, greater satisfaction with provided care, and improved self-efficacy are hardly used. Hence, to provide solid evidence for the added value of patient navigation to supportive cancer care future research should focus on other outcome measures than currently used. To overcome the limitations of the current study, such outcome measures should be used in a randomized controlled trial that comprises several cancer types and clinics.

## Implications for practice

Making sure that patient navigation is perceived as valuable by both patients and medical staff will promote its implementation into clinical practice. When implementing patient navigation, it is important to tailor the intervention to already established cancer care pathways, as doing so will prevent excessive health care spending due to overlapping responsibilities of healthcare professionals. Furthermore, once patient navigation is a permanent part of clinical practice, health-related advice provided through patient navigators may increase the uptake of such advice and with that stimulate self-management. In addition, implementing patient navigation will enable systematic screening for supportive care needs and, if needed, timely referral to relevant healthcare professionals.

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## Compliance with ethical standards

Permission for data collection was granted by the Medical Ethical Committee of the Netherlands Cancer Institute (registered: METC18.1633). Since the study concerned evaluation of existing healthcare, it did not fall under the Medical Research Involving Human Subjects Act (Wet Medisch Wetenschappelijk Onderzoek). Hence, obtaining informed consent was not required.

**Conflict of interest** The authors declare that they have no conflict of interest.

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