Original Article

Evaluation of Palliative Care in Cancer Patients

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Abstract

Background: Palliative care (PC) in cancer patients addresses their multiple needs and symptoms.

Aim: The aim of this study was to evaluate PC in cancer patients.

Method and Material: In this cross-sectional study were enrolled 600 patients with cancer who were hospitalized in oncology departments or in short-term hospitalization, from June 2021 to June 2023. A special questionnaire “Assessment of PC in cancer patients” was developed for data collection. Data analysis was performed with the statistical package SPSS v.23.0 at a statistical significance level of 0.05.

Results: Patients reported that their current quality of life (QoL) was excellent to very good (35.5%) and they estimated that their health in the next year will be excellent to fairly good (75.66%). Treatment chances, side effects and total treatment time are important factors for patients that influence treatment decisions ($p=0.001$, $p=0.013$, $p=0.007$, respectively). Cancer patients experience a wide range of symptoms (58.33% pain, 39.16% nausea, 23.82% loss of appetite, 20.49% diarrhea, 16.99% constipation, 47.99% nervousness, 21.32% sadness) that burden their physical, emotional and psychological health. At the same time, they have unmet needs since they report that oncology team tried to deal a lot with pain (53.83%, $p=0.023$), nausea (8.33%), loss of appetite (34.83%), diarrhea (16.33%, $p=0.005$), constipation (12.33%), nervousness (24.5%) and sadness (11%, $p=0.022$). Patients reported increased information needs about pain (40.2%, $p=0.041$), physical (49.2%, $p=0.005$) and emotional symptoms (25.5%). Many cancer patients do not know the term PC (60.7%), do not have sufficient PC experience (47.2%) and their attitude towards PC is positive (52.8%).

The majority of patients reported that it would have had a positive effect or would have been helped if PC had been included in treatment from diagnosis (64%, p=0.040).

Conclusions: The majority of patients report being optimistic about their health in the next year, positively evaluate their current QoL, desire a better QoL, face a multitude of symptoms and unmet needs, and report limited knowledge of the term PC, do not have sufficient PC experience, and their attitude towards PC is positive for approximately half of the patients. These findings may contribute to the development of better practices for the care of cancer patients.

Keywords: Palliative care, cancer care, nursing care, needs assessment, quality of life, Greece

Introduction

The World Health Organization (WHO) defines palliative care (PC) as the provision of effective and holistic care for patients with advanced, progressive illness. Specifically, PC focuses on the management of pain and other symptoms, as well as on provision of psychological, social and spiritual support with the aim of improving quality of life (QoL) (WHO, 2021). QoL of patients with cancer is significantly impacted by the disease and its treatment (Konstantinidis et al., 2024; Stylianou et al., 2024; Kyriazidou et al., 2022; Papadopoulou et al., 2022; Lavdaniti et al., 2021; Prapa et al., 2021; Bellali et al., 2020; Levine et al., 2017). Any presence or worsening of disease symptoms results in a reduction in QoL (Vanbutsele et al., 2020). The PC, aiming to improve QoL, focuses on providing psychosocial support, and adjust care for patients and their families (Fulton et al., 2019).

Patients of all ages with cancer face a wide range of health problems from diagnosis to the end of their lives (EoL), and PC appears to have a beneficial effect on their management (Deol et al., 2024; Abdelaal et al., 2023; Perdikouri et al., 2023; Hoomani Majdadabi, Ashktorab & Ilkhani, 2022; Bugaj, Oeljeklaus & Haun, 2022; Huynh & Moore, 2021; Quinn, Weiss & Crist, 2020; Levine et al., 2017). The needs of these patients are often not met effectively, thus increasing their burden such as distress, hopelessness, depression, anxiety, sadness, body image disturbance and self-perceived strain by caregivers (Adamakidou et al., 2023; Saji et al., 2023; Hart et al., 2022; Kostopoulou et al., 2018; Levine et al., 2017; Govina et al., 2015; Mystakidou et al., 2007).

A recent review on the PC needs of older patients, caregivers, and healthcare professionals showed a wide variety of unmet needs for PC among chronically older patients as well as complexity in identifying these needs and referring them to PC (Llop-Medina et al., 2022; Levine et al., 2017). Another recent systematic review showed a significant burden of disease and treatment-related burden in children with cancer (Tan, Sambhi & Shorey, 2024). Though assessment of PC needs may be comprehensive, however patient participation in decision-making is limited (Goni-Fuste et al., 2021). At the same time, cancer patients, caregivers, and healthcare professionals recognize PC as a complex process of many decisions in a difficult, multifaceted, and evolving situation where participatory care options are limited (Rabben et al., 2024). The attitudes and beliefs of cancer patients influence their level of participation in decision-making and satisfaction with it (Edwards et al., 2023; Levine et al., 2017).

Despite the rapid growth of PC, patients, caregivers and healthcare professionals consistently have a lack of knowledge, awareness and trust regarding PC over time, and there are several misconceptions (Murali et al., 2022; Patel & Lyons, 2020; Levine et al., 2017). PC improves QoL in cancer patients and its early integration into their care has benefits (Nadolny et al., 2023; Hoomani Majdadabi, Ashktorab & Ilkhani, 2022; Bugaj, Oeljeklaus & Haun, 2022; Byrne et al., 2022; Goni-Fuste et al., 2021; Quinn, Weiss & Crist, 2020). It appears that PC is not systematically and effectively implemented in cancer patients. Therefore, the aim of this study was to evaluate PC in cancer patients.

Method and Material

Study design and sample: This cross-sectional study included 600 cancer patients hospitalized in the Oncology Departments of the General Oncology Hospital of Attica Prefecture or in short-term hospitalization. The sample collection was carried out from June 2021 to June 2023. The method of sampling was a convenience one.

Inclusion and exclusion criteria: Criteria for inclusion of patients in the study were: 1. age >16 years, 2. diagnosis of neoplasia, 3. initiation of anti-neoplastic therapy at least 30 days before the interview, 4. good knowledge of the Greek language and 5. receipt of informed consent. Criteria for exclusion of patients from the study were cancer patients who came for treatment of another disease or had a diagnosis of a mental disorder.

Data collection process: The process of completing the questionnaires was done using the interview method and lasted approximately 15 minutes. Data were collected when the patients had completed their daily treatment and no intervention or examination was pending.

Measurement tool: A special questionnaire "Assessment of PC in Cancer Patients" was developed for data collection, which contains 44 questions and is divided into five sections: 1. demographic and clinical characteristics, 2. patient perceptions of the disease, 3. patient symptoms, 4. patient views of PC and 5. evaluation of their participation in the study. The highest score in each question indicates the greatest intensity of the measured characteristic. The questionnaire was based on the "Evaluating Supportive Care for Children with Cancer" scale, which was modified and used after obtaining permission (Levine et al., 2017).

Ethics: The study received approval from both the Ethics and Conduct Committees of the University of West Attica (45114/08-06-2021) and the oncology hospital where the data collection took place (873/27-07-2020). Patients participated in the study after giving written consent and being informed about the purposes of the study, while participating voluntarily and anonymously.

Statistical Analysis: The reliability of the questionnaire was checked by calculating the Cronbach's alpha index. Data analysis was performed with the SPSS v.23.0 statistical package at a statistical significance level of 0.05. Descriptive techniques were used for data analysis, including the evaluation of frequency, mean and standard deviation, median, range and interquartile range for continuous variables and frequency and percentage for categorical variables. For the quantitative variables of the study, a normality test was performed using the Kolmogorov-Smirnov test. Parametric and non-parametric analysis methods were used depending on whether the variables followed or did not follow the normal distribution. More specifically, the x^2 test (chi-square test) was used to investigate the existence of a relationship between two categorical variables.

Results

The reliability of the questionnaire for the entire questionnaire (n=160) was found to be 0.655. The Cronbach's alpha internal consistency coefficient for the items related to the 2nd section of the questionnaire was calculated at 0.816, for the 3rd section at 0.820, for the 4th section at 0.713 and for the 5th section at 0.751. A total of 600 patients aged 16-93 years participated in the study (259 men (43.2%) and 341 women (56.8%)) with a mean age of 50.91±23.346 years. The mean age of men aged 16-93 years was 52.81±24.68 years and of women aged 16-93 years was 49.46±22.20 years (Table 1).

According to their self-report, patients stated that their QoL in the next year is expected to be very or very good n=454 (75.66%) while their current QoL was very good or excellent n=213 (35.5%) (Table 2). The clinical characteristics of the sample showed that most of them suffered from breast cancer n=168 (28.0%) or digestive system cancer n=137 (22.80%), while most had undergone surgery n=580 (96.7%) (Table 3).

According to the patients' self-report of their perceptions about the disease, a statistically significant difference was found between patients who themselves and their family stated that their chances of recovery are high or relatively high (p=0.001 & p=0.001, respectively), patients who stated that the chances given to them by the doctor to be cured are relatively or very high compared to others (p=0.006), and patients who discuss with their family the chances of recovery to a great extent or quite a bit (p=0.003). A statistically significant difference was found between patients who stated that their family or doctors discussed with them to a great extent or moderately about possible physical and emotional symptoms (p=0.001 & p=0.001, respectively). A similarly statistically significant difference was found between patients who believed the discussion with their family or doctors may affect their QoL to a great extent or moderately (p=0.001). Treatment chances, side effects, and total treatment time are important factors for patients influencing treatment decisions (p=0.001, p=0.013, p=0.007, respectively) (Table 4).

If patients had to choose a treatment, the majority would probably or definitely choose the treatment that had higher cure rate despite the more side effects (n=489, 81.5%) or the treatment that involves better chances of cure despite the risk of significant side effects and poorer QoL (n=517, 86.2%) (Table 5).

Patients reported suffering from the following symptoms one month after starting treatment: pain (n=561, 93.5%), loss of appetite (n=388, 64.66%), nervousness (n=363, 60.50%), nausea (n=277, 46.16%), diarrhea (n=164, 28.83%), sadness (n=163, 27.16%), and constipation (n=120, 20%). While they stated that the oncology team tried a lot or quite a lot to deal with pain (p=0.023), diarrhea (p=0.005), and sadness (p=0.022) and that the treatment they received one month after its start was moderately or very effective in dealing with pain (p=0.023), loss of appetite (p=0.024), diarrhea (p=0.001), nervousness (p=0.028), and sadness (p=0.047) (Table 6).

The majority of patients desired the oncology team to focus on QoL a lot (n=327, 54.5%) or very much (n=196, 32.7%), while it focused sufficiently (n=339, 56.5%) and very much (n=189, 31.5%) (Table 7). No statistically significant differences were found regarding age, gender, education level or place of residence. A statistically significant difference was observed between the desire to focus on QoL and diagnosis (p=0.025) and type of treatment (p=0.001), where patients with musculoskeletal and digestive system cancer reported that the oncology team did not focus enough on QoL (n=4, 21.1% & n=19, 13.9%, respectively). Correspondingly, patients who underwent radiotherapy assessed that the oncology team focused less on QoL (p=0.047). In contrast, patients who underwent surgery reported a greater desire to focus on QoL compared to those who did not (p=0.004).

Almost 2 out of 3 participants reported to know the term PC (n=364, 60.7%), had PC experience 47.2% (n=283), positive attitude towards PC 52.8% (n=317), while lack of knowledge was reported by 38.7% (n=232) and negative attitude towards PC only by 0.2% (n=1) (Table 7). Gender does not statistically significantly affect patients' knowledge, experience or attitude towards PC.

Patients reported that if the PC group had been included in treatment from the diagnosis, it would have helped them cope with their symptoms (n=208, 34.7%), it would have extinguished hope for a cure (n=164, 27.3%), it would have had a positive impact on overall care (n=151, 25.2%), it would have helped them make decisions (n=25, 4.2%), it would have affected the treatment (n=11, 1.8%), it would have been an obstacle in the relationship with oncology team (n=1, 0.16%), while they were unsure (n=39, 6.5%). The majority of patients reported that it would have had a positive impact or would have been helped if the PC group had been included in treatment at diagnosis (n=384, 64%) (x^2=29.746, df=18, p=0.040) (Table 7).

The study provided a brief definition of a PC team: a group of healthcare professionals with expertise in symptom management and the goal of improving QoL. After patients learned that, in addition to symptom management and improving QoL, PC teams provide EoL care, they reported no change in their desire to meet the PC team immediately after diagnosis (n=411, 68.5%, p=0.353), increased their desire to meet the PC team (n=119, 19.8%), decreased their desire (n=6, 1%), and were unsure (n=61, 10.2%). Patients stated that they would like the PC team to participate: at all stages of the disease (n=219, 36.5%), at the end stage (n=179, 29.83%), if pain or other symptoms are difficult to manage (n=108, 18%), and at the beginning of treatment (n=32, 5.3%), at disease exacerbation/relapse (n=9, 1.5%), at no stage of the disease (n=2, 0.3%), while they were unsure (n=51, 8.5%) (Table 7).

Patients who self-reported their current QoL as poor, moderate, or good were more likely to indicate that PC teams should be included at all stages of the disease, if pain or other symptoms are difficult to manage, and from the beginning of cancer treatment, compared to those who rated their current QoL as very good or excellent (x^2=40.921, df=24, p=0.017).

The majority of the sample (n=578, 96.3%) rated the survey responses as important and the survey as fairly or very useful. The 98.7% rated participation in the study as not at all bothersome, and the majority rated the experience of participating in the study as fairly good (n=182, 30.3%) or very good (n=372, 62.2%).

Discussion

Cancer patients experience, to a great or very great extent, a multitude of symptoms (58.33% pain, 39.16% nausea, 23.82% loss of appetite, 20.49% diarrhea, 16.99% constipation, 47.99% nervousness, 21.32% sadness) that burden their physical, emotional and psychological health. In a study of children and adolescents with cancer to determine symptom burden early in treatment and assess attitudes toward early PC integration in pediatric oncology patient-parent pairs using the “Evaluating Supportive Care for Children with Cancer” scale, patients reported the following during the first month of cancer treatment: nausea (84.5%), loss of appetite (75.2%), pain (74.4%), anxiety (59.7%), constipation (53.5%), depression (49.6%), and diarrhea (40.3%). Participants reported significant suffering from nausea, 52.3%, loss of appetite, 50.5%, constipation 30.4%, pain 30.2%, nervousness 28.6%, sadness 28.1%, and diarrhea 23.1% (Levine et al., 2017). Additionally, a study showed that before, during and after chemotherapy the most common symptoms were: lack of energy (48-90%), feeling sad (48-79%), difficulty sleeping (54-78%), difficulty concentrating (53-74%), and nervousness (54–74%), and pain (29–67%). It was found that symptom clusters remain stable over time based on the core symptoms (Browall et al., 2017).

At the same time, a study in children with cancer showed that the disease and its treatment negatively affect self-perception of children who negatively evaluate their behavior, appearance, and performance at school and express less satisfaction and happiness (Kyritsi et al., 2007). A systematic review showed that elderly patients with multiple comorbidities face emotional and mental health needs, physical needs, informational needs, spiritual needs and cultural needs (Llop-Medina et al., 2022). While another study demonstrated significant associations between psychological suffering and physical symptoms and perceptions of dignity in patients with advanced cancer (Kostopoulou et al., 2018).

In a study examining the psychological morbidity of cancer patients, significant associations were found between pain interference with mood and enjoyment of life and hopelessness, as well as between pain and depression and cognitive status (Mystakidou et al., 2007).

Table 1. Section 1**:** Distribution of the sample according to demographic characteristics (n=600)

	n(%)
Gender	
Male	259(43.16)
Female	341(56.83)
Occupation	
Student	39(6.5)
Undergraduate student	77(12.8)
Worker	180(30.0)
Unemployed	37(6.2)
Householder	42(7.0)
Insurance	
Uninsured	30(5.0)
Public	558(93.0)
Indigent insurance	7(1.2)
Public & Private	23(0.8)
Education	
High school	209(34.8)
College	164(27.3)
University	184(30.7)
Postgraduate studies	25(4.5)
No answered	16(2.7)
Residency	
Athens (capital)	447(74.5)
Provincial town	85(14.16)
	$\bar{\chi}$±SD
Age	50.91±23.346
Monthly family income (euros)	956.15±511.86

Table 2. Section 1**:** Distribution of the sample according to their QoL self-reports (n=600)

	n(%)	**p**
How do you assess health for next year?		
A lot worse	2(0.33)	0.001
Somewhat worse	32(5.33)	
The same	112(18.66)	
Somewhat better	190(31.66)	
A lot better	264(44.0)	
How do you assess current QoL?		
Poor	26(4.3)	0.001
Fair	176(29.3)	
Good	185(30.8)	
Very good	163(27.2)	
Excellent	50(8.3)	

QoL: quality of life

Table 3. Section 1**:** Distribution of the sample according to clinical characteristics (n=600)

	n(%)
Diagnosis	
Type of cancer (system)	
Digestive	137(22.8)
Reproductive	57(9.5)
Breast	168(28.0)
Respiratory	74(12.3)
Endocrine	24(4.0)
Skin	25(4.2)
Muscular	19(3.2)
Urinary	75(12.5)
Type of therapy	
Chemotherapy	153(25.5)
Immunotherapy	168(28.0)
Surgery	580(96.7)
Radiotherapy	131(21.8)
Radioactive iodine therapy	17(2.8)

Table 4. Section 2: Distribution of the sample according to illness perceptions (n=600)

	n(%)	**p**
Chance of full recovery given by the doctor		
Chance of cure is very high	168(28.0)	0.006
Chance of cure is somewhat high	226(37.7)	
Chance of cure is not high	94(15.7)	
My doctor has not discussed the chance of cure with me	80(13.3)	
Unsure	32(5.3)	
Patients' perceived chance of cure		
Chance of cure is very high	174(29.0)	0.001
Chance of cure is somewhat high	240(40.0)	
Chance of cure is not high	116(19.3)	
Don’t Know	70(11.7)	
Family’s' perceived chance of cure		
Chance of cure is very high	168(28.0)	0.001
Chance of cure is somewhat high	203(33.8)	
Chance of cure is not high	66(11.0)	
Family do not know what the chance of cure may be	50(8.3)	
Patient don’t know what family believe about the chance of cure	113(18.8)	
Do you talk with family about illness		
A great deal	111(18.5)	0.003
A moderate amount	200(33.3)	
Some	128(21.3)	
A little bit	136(22.7)	
Not at all	23(3.8)	
Didn’t answer	2(0.3)	
Talking to family about the illness is		
Very easy	114(11.3)	0.073

Somewhat easy	242(26.0)	
Somewhat difficult	156(40.3)	
Very difficult	68(19.0)	
Unsure	19(3.2)	
Didn’t answer	1(0.2)	
Patient discussion with family & doctors before the start of treatment about		
Physical symptoms		
Yes, a lot	261(43.5)	0.001
Yes, a moderate amount	159(26.5)	
Yes, a little	148(24.7)	
No	31(5.2)	
Didn’t answer	1(0.2)	
Emotional symptoms		
Yes, a lot	226(37.7)	0.001
Yes, a moderate amount	150(25)	
Yes, a little	165(27.5)	
No	57(9.5)	
Didn’t answer	2(0.3)	
How treatment could affect QoL?		
Yes, a lot	222(37)	0.001
Yes, a moderate amount	161(26.8)	
Yes, a little	154(25.7)	
No	58(9.7)	
Didn’t answer	5(0.8)	
Importance of factors influencing the choices of treatment after diagnosis		
Chance of cure	591(98.5)	0.001
Ability to participate / enjoy daily activities	578(96.33)	0.251
Side effects	565(94.16)	0.013
Amount of time spent at hospital	515(85.83)	0.060
Total length of treatment	515(85.83)	0.007

QoL: quality of life

Table 5. Section 3: Distribution of the sample according to treatment options (n=600)

	n(%)
Choice A between: Treatment A: 80% chance of cure & occurrence of side effects of nausea/vomiting, diarrhea & pain & **Treatment B:** 75% chance of cure & significantly fewer side effects & better QoL during treatment as compared to treatment A	
Definitely A	336(56.0)
Probably A	153(25.5)
Probably B	73(12.2)
Definitely B	35(5.8)
Unsure	3(0.55)
Choice B between: Treatment A: 65% chance of cure & significantly fewer side effects & better QoL during treatment as compared to treatment B & **Treatment B:** 80% chance of cure & leads to side effects such as nausea/vomiting, diarrhea & pain	
Definitely A	23(3.8)
Probably A	57(9.5)
Probably B	180(30.0)
Definitely B	337(56.2)
Unsure	3(0.5)

QoL: quality of life

Table 6. Section 3: Patient's symptoms the first month after start of cancer treatment (n=600)

	n(%)						
Level of suffering after the start of cancer treatment, as a result of:							
	Pain	**Nausea**	**Loss of appetite**	**Diarrhea**	**Constipation**	**Nervousness**	**Sadness**
A great deal	36(6.0)	47(7.83)	75(12.5)	34(5.66)	13(2.16)	39(6.5)	23(3.83)
A lot	87(14.5)	128(21.33)	174(29.0)	80(13.33)	63(10.5)	170(28.33)	76(12.66)
A moderate amount	227(37.83)	60(10.0)	83(13.83)	29(4.83)	26(4.33)	79(13.16)	29(4.83)
A little	211(35.16)	42(7.0)	56(9.33)	21(3.5)	18(3.0)	75(12.5)	35(5.83)
Didn't at all	19(3.16)	9(1.5)	8(1.33)	9(1.5)	10(1.66)	8(1.33)	6(1.0)
Unsure / didn't know	1(0.16)	1(0.16)	1(0.16)	2(0.33)	1(0.16)	2(0.33)	7(1.16)
Didn't have	20(3.33)	313(52.16)	203(33.83)	425(70.83)	469(78.16)	371(61.83)	424(70.66)
In the first month after started cancer treatment. how much oncology care team try to treat the following symptoms?							
A lot	323(53.83)	53(8.83)	209(34.83)	98(16.33)	74(12.33)	147(24.5)	66(11.0)
A moderate amount	212(35.33)	93(15.5)	158(26.33)	56(9.33)	49(8.16)	169(28.16)	72(12.0)
A little	28(4.66)	9(1.5)	20(3.33)	6(1.0)	10(1.66)	41(6.83)	20(3.33)
They didn't try	3(0.5)	0(0.0)	4(0.66)	3(0.5)	4(0.66)	4(0.66)	3(0.5)
Unsure	0(0.0)	3(0.5)	1(0.16)	1(0.16)	1(0.16)	3(0.5)	4(0.66)
Didn't have	34(5.66)	318(53.0)	208(34.66)	436(72.66)	462(77.0)	236(39.33)	435(72.5)
p	0.023	0.435	0.278	0.005	0.318	0.184	0.022
How well did the treatment you received for the following symptoms the first month after started cancer treatment control symptoms?							
Well	150(25.0)	65(10.83)	54(9.0)	34(5.66)	42(7.0)	33(5.5)	21(3.5)
Moderately	332(55.33)	181(30.16)	268(44.66)	105(17.5)	77(12.83)	233(38.83)	94(15.66)
A little	67(11.16)	30(5.0)	66(11.0)	18(3.0)	16(2.66)	82(13.66)	37(6.16)
Not at all	4(0.66)	1(0.16)	2(0.33)	0(0.0)	1(0.16)	2(0.33)	2(0.33)
Unsure	1(0.16)	1(0.16)	0(0.0)	0(0.0)	0(0.0)	3(0.5)	2(0.33)
Didn't get treatment for	43(7.16)	322(53.66)	210(35.0)	443(73.83)	463(77.16)	247(41.16)	444(74.0)
p	0.023	0.286	0.024	0.001	0.401	0.028	0.047
Pain intensity	**0**	**1-2**	**3-4**	**5-6**	**7-8**	**9**	**10**
	33(5.5)	82(13.66)	100(16.66)	194(32.33)	158(26.33)	25(4.16)	8(1.33)

Table 7. Section 4: Patients' views (n=600)

	n(%)	**p**
Desire of oncology team to focus on QoL		
A great deal	196(32.66)	0.675
A lot	327(54.5)	
A moderate amount	71(11.83)	
A little	2(0.33)	
Unsure	4(0.66	
Perceived oncology team's focus on QoL		
Too much	189(31.5)	0.605
Enough	339(56.5)	
Not enough	63(10.5)	
Unsure	9(1.75)	
Patients desired more information provided by oncology team about		
How to treat pain	214(40.2)	0.041
How to treat physical symptoms	295(49.2)	0.005
How to treat emotional symptoms	153(25.5)	0.765
The impact of cancer and its treatment on daily activities	163(27.2)	0.635
The impact of cancer and its treatment on family life	154(25.7)	0.365
How available cancer treatments differ in the ways they affect QoL	184(30.7)	0.036
The impact of cancer and its treatment on QoL after cancer treatment	217(36.2)	0.008
The possibility of not being cured of cancer	215(35.8)	0.896
Fears and hope about illness	198(33.0)	0.075
Religious or spiritual issues	42(7.0)	0.203
Awareness about the term PC	364(60.7)	
Having PC experience	283(47.2)	
Patients attitudes towards PC		
Positive	317(52.8)	
Neither positive nor negative	50(8.0)	
Negative	1(0.2)	
Didn't know	232(39.0)	
Including PC team in care at diagnosis of cancer might have		
Been helpful for treating symptoms	208(34.7)	0.040
Helped with making initial treatment decisions	25(4.2)	
Been a positive addition to overall care	151(25.2)	
Gotten in the way of relationship with oncology doctor/care team	1(0.2)	
Taken away from hope that would be cured	164(27.3)	
Interfere with cancer therapy	11(1.8)	

Do you desire to meet with PC team at diagnosis?		
Definitely yes	362(60.3)	
Probably want to have met with the PC team	200(33.3)	
Probably not want to have met with the PC team	5(0.8)	
Unsure	33(5.5)	
Given that PC team provides care at the EoL, is it possible to affect your willingness to meet PC team at diagnosis		
It would make you more willing to meet with the PC team	119(19.8)	0.353
It would not change your willingness to meet with the PC team	411(68.5)	
It would make you less willing to meet with the PC team	6(1)	
Unsure	61(10.2)	
When do you recommend the PC team to be involved in the care of a patient with cancer		
At the beginning of cancer therapy	32(5.3)	
If pain or symptom management is a problem	108(18.0)	
If the cancer gets worse or comes back	9(1.5)	
At the EoL	179(29.83)	
Throughout all of cancer care	219(36.5)	
They should not be involved in cancer care	2(0.3)	
Unsure	51(8.5)	

QoL: quality of life, PC: palliative care, EoL: end of life

Cancer patients reported a higher prevalence of physical symptoms, mainly pain and loss of appetite (Alnajar et al., 2025). In a previous review and meta-analysis, the prevalence rates of pain in patients with cancer were 39.3% after treatment, 55.0% during cancer treatment, 66.4% in advanced, metastatic, or terminal disease, and 50.7% across all stages of cancer (Van Den Beuken-Van et al., 2016). A recent systematic review reported an overall pain prevalence of 40% during and up to 3 months after cancer treatment (Evenepoel et al., 2022).

In another study, patients with >3 years of cancer duration more frequently experienced statistically significant fatigue and pain, while patients with shorter disease duration more frequently experienced constipation and loss of appetite. With disease progression, the number of symptoms are increased and their health assessment is deteriorating. The highest severity of symptoms was associated with constipation and fatigue. When assessing pain intensity, the average was 73%. The percentage of patients who rated their average pain in the last week as mild was 34%, moderate was 56%, and severe was 10% (Lewandowska et al., 2020).

At the same time, cancer patients have unmet needs since they report that oncology team tried to deal with pain (53.83%, p=0.023), nausea (8.33%), loss of appetite (34.83%), diarrhea (16.33%, p=0.005), constipation (12.33%), nervousness (24.5%) and sadness (11%, p=0.022). More specifically, women who have undergone breast cancer surgery face a wide range of complex but unmet care need, the main ones of which were related to information/education and the psychological dimension (Ke et al., 2024). The areas related to information, self-management and sexual function were the items with the highest ranking of unmet needs in prostate cancer patients undergoing treatment (Roberts et al., 2024). A systematic review identified, in descending order of frequency, psychological, physical, interpersonal, intimacy, health system, information, cognitive, social needs, and equally frequent measures of family, practical, and patient-physician information needs (Doyle et al., 2024). Unmet needs of older cancer patients increase with age, with significant differences between age groups for emotional, financial, social/family, and sexual health (Strohschein et al., 2024).

Patient needs appear to influence treatment decision-making, with 214 (40.2%, p=0.041), 295 (49.2%, p=0.005), and 153 (25.5%) of patients in the present study wanting more information about pain, physical, and emotional symptoms, respectively. The literature review suggests that patients often experience unmet needs. People with advanced cancer reported the highest unmet needs in the areas of financial, health systems and information, psychological and physical, and daily living. Nervousness, depression, and anxiety were associated with higher unmet needs in all areas of unmet needs (Hart et al., 2022). Psychological and emotional unmet needs are prevalent in patients with gynecological cancer. Psychological support is crucial. Younger patients and those with non-ovarian cancer had more unmet care needs. These needs were associated with severe symptoms, nervousness, financial difficulties, limited social support, and poor use of cancer information websites (Siao et al., 2024). In a study, it was found that patients' needs and social support had significantly decreased at 4 months after surgery (T1) compared to the diagnosis phase (T0). Depression needs did not change significantly at T1, while anxiety levels were significantly lower at follow-up. Changes in anxiety levels were associated with changes in family-related needs, the need for help/care and support, and overall needs (Adamakidou et al., 2023). In their attempt to fulfill their needs, patients choose several solutions, for example, more than half of parents of children with cancer used an application to improve their participation in decision-making in a recent study (Han et al., 2024). Awareness of death, perceived parental caregiving ability, perceived professional competence, parents' view of symptom management, decision-making time, and being "good parents" were identified as factors influencing the participation of parents of a child with cancer in decision-making (Papadatou et al., 2021). A recent multicenter study showed that the greatest PC needs of patients were related to family or friends who were worried or upset (36.3%), feeling anxious or worried about the disease (13.3%), feeling peaceful (9.6%), sharing feelings (8.9%), pain (7.4%), and feeling depressed (9.6%). At the same time, the patients' least PC needs concerned vomiting (77%), dyspnea (67.4%), nausea (65%), information needs (60.7%), practical problems (45.2%) and constipation (43%) (Antunes et al., 2020).

The disease and its treatment seriously affect QoL of cancer patients. Patients reported that their current QoL was excellent to very good (35.5%). More specifically, patients with advanced lung cancer showed moderate levels of QoL and mild levels of symptoms intensity. Demographic and clinical characteristics influenced depression and QoL (Lavdaniti et al., 2021). Additionally, QoL reported by parents of children with cancer was high despite the fact that many of them showed emotional or behavioral symptoms (Panagiotakopoulou et al., 2022). At the same time, elderly patients with lung cancer assessed a relatively moderate QoL mainly related to physical symptoms and social support (Kyriazidou et al., 2022). Another study showed that patients with lung cancer reported poor QoL and increased rates of psychological suffering (Prapa et al., 2021). While the QoL of patients with hematological cancer decreases significantly during treatments due to multiple symptoms (Konstantinidis et al., 2024). Increased depression in hematological cancer patients was associated with decreased QoL scores, lower cognitive function, and intense fatigue, while increased anxiety was associated with decreased social and emotional functioning, decreased well-being, and increased financial difficulties (Bellali et al., 2020). Ambulatory patients undergoing chemotherapy are at risk of experiencing suffering in all aspects of daily life, along with anxiety and depression, which reduce their QoL (Papadopoulou et al., 2022). Clinically significant anxiety and depression were observed in 69.7% and 53.9% of patients, respectively. In a more recent review, diarrhea and constipation as a result of cancer and its treatment compromise the success of anticancer therapies, requiring treatment delay or withdrawal. Patients report both psychological impairment and reduced QoL as a direct result of chronic constipation which may persist up to 5 years in some cases (Moschen et al., 2022). Patients with colorectal cancer reported increased needs related to physical symptoms, psychological symptoms, care, support and information needs throughout the period from diagnosis to after the sixth cycle of chemotherapy, while their QoL and social support gradually decrease (Lian et al., 2024).

According to the results of the present study, patients reported that their health in the next year will be excellent to relatively good (75.66%). It seems that the prognosis of the disease affects patients' lives and health decision-making. More specifically, a study showed that the importance of complete cure decreased significantly with increasing age (p=0.012). In contrast, avoiding a colostomy remained of great importance for all patients. Social activities (work, travel, diet, sex life) were considered significantly more important in younger age groups (Young et al., 2018). In another study evaluating the prognostic beliefs of pediatric patients, almost half of the participants (50.5%) reported optimism about prognosis compared to a fixed objective assessment of curability. The majority of patients (78%) and parents (85%) reported to believe a very high chance of cure, although fewer reported that their doctor had informed them of a very high chance of cure (patients 57%, parents 70%), and only 43% believed that they would have a very high chance of cure. Significant differences were noted in optimism about prognosis by cancer type (p<0.0001). Patients with solid tumors were more often optimistic (83.3% optimistic, 16.7% accurate) and patients with lymphoma were more often accurate (2.8.7% optimistic, 91.3% accurate). This study shows that disease severity is associated with optimism about prognosis and reported chances of cure, and these factors influence decision-making by cancer patients (Levine et al., 2021).

Cancer and its treatment have an impact on patients' treatment decisions. If patients had to choose a treatment, the majority would probably or definitely choose the treatment that has higher cure rate despite the more side effects (81.5%) or the treatment that has a significantly better chance of cure despite the risk of significant side effects and poorer QoL (86.2%). In other study, patients received chemotherapy even if they believed that chemotherapy would not extend their life (90%) or that chemotherapy would not possibly help with cancer-related problems (89%) or patients preferred treatment focused on comfort even if it meant they would not live as long (90%). Therefore, patients who wanted to prolong life were more likely to receive chemotherapy compared to the ones focused on comfort. Patients who believed that chemotherapy would prolong their lives were more likely to receive chemotherapy than those who believed that this would be unlikely (Zafar et al., 2013).

Cancer patients report unmet needs for PC. Patients reported that oncology team tried to deal with their symptoms too much (pain 53.83%, nausea 8.83%, loss of appetite 34.83%, diarrhea 16.33%, constipation 12.33%, nervousness 24.5%, and sadness 11%). Specifically, a study found that the most common problems of patients with gynecological cancer were financial, psychological, and physical symptoms, and the most common requests for professional support were financial problems, psychological issues, and the need for information. Patients reported PC needs that varied according to their characteristics, symptom burden, and PC knowledge (Ko & Lee, 2024). A study exploring whether there was a difference in unmet PC needs between older and younger cancer patients receiving chemotherapy found that “daily living needs” and “sexual needs” were the highest and lowest, respectively. Older patients had a lower mean total score of unmet needs than younger patients. Younger patients had higher mean subscale scores for “health care and information” and “sexual needs” than older patients (Ayvat et al., 2024). In a qualitative study, patients with cancer under PC expressed the need for comprehensive patient-centered care, for the sense of autonomy and dignity, for psychological support, and the need for accessible and timely care (Basile et al., 2024). Furthermore, a systematic review identified three main themes related to the provision of PC to cancer patients: physical symptoms, psychological and social needs, and EoL care (Abdelaal et al., 2023).

Patients reported that they would like more information on the management of pain (40.2%, p=0.041), physical symptoms (49.2%, p=0.005), and emotional symptoms (25.5%). A recent study showed that cancer patients reported an average of 75.6% unmet needs, mainly in the information sector (91.75%) and in the spiritual sector (77.8%) (Alnajar et al., 2025). Additionally, in a recent study, patients reported a greater need for information about fatigue and loss of appetite, and prioritized pain (26%), fatigue (9%), and dyspnea (9%). Patients wanted information primarily about fatigue (68%), options for managing future symptoms (68%), and possible upcoming symptoms (67%) (Verhoef et al., 2020). At least half of patients in another study reported unmet information needs regarding diagnosis, tests, treatment, their future status, financing and financial support. Cancer patients would like to be given more attention from doctors (Osowiecka et al., 2024). These findings are confirmed by other studies (Li et al., 2024; Rattanakanlaya et al., 2024). Clinical approaches will be most accurate when tailored to individual patients’ profiles and provide highly valuable information, in chronic illness. Elaborate information enhance patients’ ability to handle with their needs more effectively (Polikandrioti et al., 2013).

Patients reported that they desired that oncology team had focused a lot to very much on their QoL (87.16%). A meta-analysis concluded that compared to usual care, PC had a significant impact on QoL of advanced cancer patients. However, in four reports, the effect of PC on QoL at ≥10 months of follow-up was not significant (Hoomani Majdabadi, Ashktorab & Ilkhani, 2022). A review showed a somewhat smaller decrease in QoL for patients undergoing early PC compared to those receiving routine treatment (Bugaj, Oeljeklaus & Haun, 2022).

It appears that many cancer patients are unaware of the term PC (60.7%), have insufficient PC experience (47.2%), and have a positive attitude towards PC (52.8%). The literature search found research results that confirm the findings of this study. In particular, a recent study highlighted the limited integration of PC into official documents and clinical practice for cancer patients (Stene et al., 2024). Greek parents are unaware of PC, they overestimate their children's QoL, and there is a noticeable lack of adequate discussion regarding cancer and its treatment between parents and their children (Mavrougiannou et al., 2023). Another recent study showed that approximately 34% of participants reported having at least some knowledge of PC and 41% of those who reported familiarity with PC were able to correctly answer all three basic questions about PC. It was found that self-reported PC knowledge may not reflect actual PC knowledge. Of those who had heard of PC, few agreed with statements that PC meant giving up (20%) or stopping other treatments (30%) (Zhu & Enguídanos, 2019). Findings from a more recent systematic review suggested that more than half of patients had no information about PC (Masoud, Imane & Naiire, 2023). Findings from another recent study showed that 45% of general population had high perceived knowledge of PC, of which 46% had high actual knowledge. Participants with high (vs low) perceived knowledge were more likely to associate PC with EoL care ($p<0.0001$) and less likely to believe it offered hope ($p=0.0004$). Conversely, participants with high (vs low) actual knowledge were less likely to find PC fearful ($p=0.002$) or depressing ($p=0.01$) and more likely to believe it offered hope ($p<0.0001$) (Zimmermann et al., 2024). In another study, the average knowledge score for PC was moderate. A 'good' level of knowledge was reported by 29.1% of participants; however 84.5% preferred to abandon other doctors at PC start, 71.8% considered PC for patients in the last six months of life, 84.5% considered PC for patients with cancer, and 70.9% stated that PC encourages people to discontinue treatments aimed at treating their disease (Atena et al., 2022). Limited and moderate knowledge of PC is also reported by other studies (Grant, Back & Dettmar, 2021; Boakye et al., 2020; Trivedi et al., 2019). A more recent study showed that 83% of respondents had heard of the term PC. Most respondents were aware that PC is not specifically aimed at people with cancer or exclusively at elderly populations. They were unsure about the timing and other key aspects (Mallon et al., 2021).

After patients were informed that, in addition to symptom management and QoL improvement, PC teams provide EoL care, they reported that: their desire to meet the PC team immediately after diagnosis did not change (68.5%), they had a greater desire to meet the PC team (19.8%), they would like the PC team to be involved at all stages of the disease (36.5%), in the final stage (29.83%), if pain or other symptoms were difficult to manage (18%) and they would have been helped if PC had been included in the treatment from diagnosis (64%, $p=0.040$).

Early initiation of PC is an emerging practice in adults and children that has been shown to be useful. Three key elements of early initiation of PC in the intensive care unit are shared decision-making, care planning and coping with worry (Quinn, Weiss & Crist, 2020). One study reported that few children and parents expressed opposition to participating in early PC (2 [1.6%] and 8 [6.2%]) or perceived any harmful effects on their relationship with their oncologist (6 [4.7%] and 5 [3.9%]), loss of hope (3 [2.3%] and 10 [7.8%]), or interference with treatment (3 [2.3%] and 2 [1.6%], respectively) (Levine et al., 2017). A systematic review showed different reference points for the initiation of early PC, such as time after cancer diagnosis or prognosis. The most common elements of early PC were symptom management, case management and advance care planning. The most frequently reported outcome measures were QoL, symptom intensity, resource use and patient disposition (Nadolny et al., 2023). Cancer patients reported that their past was overwhelmed by unmanaged symptoms, with harmful physical and psychosocial consequences. Early PC allowed for immediate resolution of symptoms and their consequences and their empowerment, appreciating its multidimensional approach, its focus on the patients and their environment and the need for early PC. Patients reported that discussions with the early PC group increased their acceptance of the EoL and their expectation of a pain-free future. Overall, participants perceived early PC to be beneficial (Borelli et al., 2021). A systematic review found that barriers that hinder, delay, or prohibit access to PC for adult hospitalized patients include sociodemographic characteristics, health-related characteristics, individual beliefs and attitudes, peer collaboration and support, resource availability and allocation, and emotional and prognostic challenges (Pitzer et al., 2024). While, a systematic review showed that healthcare professionals also face barriers to implementing PC (Anastasopoulou & Dousis, 2022).

Study limitations: Limited generalizability of results due to: 1. sample collection from a single oncology center, 2. type of research design (convenience sampling), 3. patients who did not speak Greek or patients from other countries and with different cultures did not participate in the study.

Conclusions: The majority of cancer patients report being optimistic about their health in the next year, positively evaluating their current QoL while desiring for a better QoL. At the same time, they face a multitude of symptoms and unmet needs that they would like to have been better addressed and report limited knowledge of the term PC, do not have sufficient PC experience and their attitude towards PC is positive for about half of the patients. These findings can contribute to the development of better practices for the care of cancer patients.

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