RESEARCH ARTICLE

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Psychosocial Support Needs and Associated Factors among Cancer Patients: A Hospital-Based, Single-Center Cross-Sectional Study in Vietnam

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Abstract

Background: Psychosocial support needs in cancer patients arise from severe emotional challenges following a definitive diagnosis, including shock, anxiety, and fear, which negatively impact mental health and reduce treatment effectiveness. Assessing psychosocial support needs is essential for developing intervention strategies to improve disease prognosis and enhance patients care experience. This study aimed to determine psychosocial support needs scores and related factors among cancer patients. **Methods:** A cross-sectional study was conducted on 130 cancer patients at the Chemotherapy Department, University Medical Center Ho Chi Minh City, from July to September 2024. Data were collected using the Psychosocial Needs Inventory (PNI) questionnaire and analyzed with multivariable linear regression to identify associated factors. **Results:** The mean (SD) general psychosocial support needs score was 3.83 ± 0.29. Multivariable linear regression analysis revealed significant associations with age, gender, and cancer type. Specifically, female patients and those under 50 years of age had higher support needs compared to other groups ($p < 0.05$). **Conclusion:** The study indicated that psychosocial support needs among cancer patients were relatively high, particularly in female and younger patients. These findings provide important scientific evidence for developing targeted psychosocial support intervention programs to improve the quality of life of cancer patients in Vietnam.

Keywords: Cancer- Social Support- Mental Health- Patient-Centered Care- Vietnam

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Introduction

Psychosocial support needs in cancer patients arise from intense emotional challenges triggered upon receiving a definitive diagnosis, including shock, anxiety, and fear, which significantly affect the patient's mental health [1, 2]. The prevalence of emotional distress is markedly higher compared to the general population, particularly among individuals diagnosed with cancer [3-5]. Previous studies demonstrated that cancer patients often experienced severe distress significantly related to the diagnosis and treatment of cancer, leading to the emergence of psychosocial support needs [6, 7, 3]. Along with the rapidly increasing global burden of cancer incidence and mortality, this situation reflected a combination of population aging and changes in the prevalence of key cancer risk factors [8].

In light of this situation, cancer treatment faces a significant barrier. Moreover, cancer treatment is a prolonged and complex process that requires a multimodal approach with various therapeutic methods. Beyond disease control, patients must cope with the entire cancer trajectory, from diagnosis through treatment, during survivorship, and even at the end-of-life stage. While current treatment methods have been proven effective in improving disease prognosis [9, 10], they are often accompanied by severe side effects that lead to physical debilitation and psychological distress [11, 12]. Notably, the emergence of psychological issues during treatment reduced treatment adherence increased the risk of early mortality, and worsened disease prognosis [13, 14].

Recommended interventions for improving symptoms in cancer patients include psychosocial support and screening for risk factors [15]. Although the role of

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psychosocial support has been emphasized in numerous international studies, such as the research conducted by Brix et al. [16], which reported that over 70% of cancer patients were identified as having psychosocial support needs these patients exhibited significantly higher fatigue scores compared to those without such needs. The authors also affirmed that spiritual support care is a crucial aspect of cancer treatment. However, the assessment of psychosocial support needs remains limited and insufficiently addressed in Vietnam, a country with one of the fastest-aging populations globally [17]. This situation presents a significant challenge to the healthcare system, necessitating comprehensive, evidence-based patient care strategies. Therefore, we conducted this study to determine the psychosocial support needs scores using the Psychosocial Needs Inventory (PNI) and to explore the associations between these scores and the general and clinical characteristics of cancer patients at the Chemotherapy Department, University Medical Center Ho Chi Minh City, Vietnam. The findings provide a scientific basis for developing appropriate intervention recommendations to enhance treatment effectiveness for patients in our research setting.

Materials and Methods

Study design

A cross-sectional study was conducted at the Chemotherapy Department, University Medical Center Ho Chi Minh City, Vietnam, from July to September 2024. A convenient sampling technique was applied for data collection through face-to-face interviews, with continuous sampling until data saturation was reached. Inclusion criteria were patients (1) aged 18 years or older with a confirmed malignant diagnosis and any of cancer type, (2) capable of making decisions independently, and (3) providing written informed consent. Exclusion criteria included patients who (1) were too weak to participate in interviews, (2) had significant communication difficulties (e.g., mute, deaf, dementia, or non-Vietnamese speakers), (3) had psychiatric disorders, or (4) did not complete 100% of the PNI scale.

The sample size was calculated using the formula for estimating a mean, with $\sigma = 0.39$ as the standard deviation of the general needs score based on Israel's study on cancer patients in the Philippines [18]. The allowable error (d) was set at 0.07, and with an additional 10% to account for non-responses, the required sample size was 130 patients.

Data collection

Data were collected using a structured questionnaire covering demographic characteristics (age, gender, residence, number of children, cohabitation status, caregiving status, and family cohesion) and clinical characteristics (duration of illness, cancer of type, cancer stage, treatment modality, and recurrence status). Family cohesion was assessed using the Family APGAR scale, which consists of five items rated on a 3-point scale: "almost always" (2 points), "sometimes" (1 point), and "hardly ever" (0 points). Family dysfunction was defined as a total APGAR score <7. The Family APGAR scale was validated in Vietnam with a Cronbach's Alpha coefficient of 0.81 [19].

The primary outcome variable was the general psychosocial support needs score, measured using the Psychosocial Needs Inventory (PNI).

The Psychosocial Needs Inventory (PNI) questionnaire

The PNI scale was developed by Thomas et al. in 2001, demonstrating internal reliability with Cronbach's Alpha > 0.7 for each of the first six domains [20]. In 2017, a study in Puerto Rico [21] confirmed its high internal consistency, with an overall Cronbach's Alpha of 0.96. The PNI consists of 48 items assessing the importance of seven domains: health professional needs (9 items), information needs (5 items), emotional and spiritual needs (15 items), identity needs (5 items), practical needs (8 items), support network needs (5 items), and practical-child care needs (1 item). Each item is rated on a 5-point Likert scale from 1 (not important) to 5 (very important). The Vietnamese version was referenced from the study conducted by Nguyen Thi Khanh Chi on the same patient population in 2023 [22].

Study procedure

To minimize information bias, the study was conducted in two phases. Phase 1 involved a pilot study with 30 cancer patients who met the inclusion criteria to evaluate the feasibility and reliability of the PNI using Cronbach's Alpha. The results from this phase were used to refine the questionnaire structure, optimize language, and adjust formatting for the target population. In Phase 2, the revised questionnaire was used for data collection in the main study. The 30 pilot samples were excluded from the final analysis.

Statistical analysis

Data were processed and analyzed using Stata 17.0. Frequencies and percentages were reported for categorical variables. Means and standard deviations were used for normally distributed continuous variables, while medians and interquartile ranges (IQR) were reported for skewed data.

Univariate analyses were conducted to explore associations between the general psychosocial needs score and independent variables. Specifically, independent-samples t-tests were used for dichotomous variables (age group, gender, place of residence, cohabitation status, healthcare status, recurrence status), one-way ANOVA was applied for variables with more than two categories (number of children, family cohesion, duration of illness, type of cancer, cancer stage, treatment modality). Variables with $p < 0.2$ in univariate analysis were included in the multivariable regression model to identify factors independently associated with psychosocial support needs. A p-value ≤ 0.05 was considered statistically significant.

Results

Before conducting the main study, we piloted the PNI scale on 30 patients who met the inclusion criteria to assess internal reliability using Cronbach's Alpha. The results

showed that the overall Cronbach's Alpha coefficient for the scale was 0.80, indicating good internal consistency. The subscales also demonstrated Cronbach's Alpha values ranging from 0.78 to 0.89, confirming that the scale was suitable and reliable for application in the official study population at our unit.

A total of 134 patients were recruited for the study. After excluding 4 cases due to type A thymoma (1 patient) and incomplete completion of the PNI questionnaire (3 patients), 130 patients aged 22 to 81 were eligible for analysis.

Participant characteristics

The median age of participants was 60.5 (52–66) years, with the majority aged 50 and above (80.8%). The gender distribution was relatively balanced, with males accounting for 53.9% (70 patients) and females 46.1% (60 patients). Most patients resided in rural areas (72.3%). Over half of the study population (65.4%) had 2–3 children. During the illness, most patients lived with family members (98.5%), with only two patients living alone; among them, 82.3% (107 patients) had a caregiver. The majority reported good family cohesion (78.4%).

Regarding clinical characteristics, the duration of illness was mainly from 0–6 months, with 35.4% diagnosed for less than three months, 30% for 3–6 months, and 34.6% for over 6 months. Gastrointestinal cancer was the most common (65.4%), followed by lung cancer (12.3%) and breast cancer (11.5%). Most patients were diagnosed at advanced stages, with 36.9% at stage III and 44.6% at stage IV. Chemotherapy was the predominant treatment modality (96.9%), while other treatments had lower proportions, with three patients receiving immunotherapy (2.3%), one underwent neoadjuvant chemoradiotherapy, one underwent a combined protocol of chemotherapy and immunotherapy, one received targeted therapy, and one received palliative care. The recurrence rate was 19.2% (Table 1).

Table 1. General Characteristics of the Study Participants (n=130)

Characteristic		Frequency (n)	Ratio (%)
Demographic characteristics			
Age		60.5 (52 – 66)*	
Age group	< 50	25	19.2
	≥ 50	105	80.8
Gender	Male	70	53.9
	Female	60	46.1
Place of residence	Urban	36	27.7
	Rural	94	72.3
Family characteristics			
Number of children in the family	≤ 1 children	11	8.5
	2 – 3 children	85	65.4
	≥ 4 children	34	26.1
Cohabitation status	Living alone	2	1.5
	Live with someone	128	98.5
Healthcare status	With a caregiver	107	82.3
	Without a caregiver	23	17.7
Family cohesion	No cohesion	6	4.6
	Poor cohesion	22	16.9
	Good cohesion	102	78.5
Clinical characteristics			
Duration of illness	0 – 3 months	46	35.4
	3 – 6 months	39	30.0
	Over 6 months	45	34.6
Type of cancer	Gastrointestinal	85	65.4
	Lung	16	12.3
	Breast	15	11.5
	Ovary	5	3.9
	Other	9	6.9
Cancer stage	Stage I	10	7.7
	Stage II	14	10.8
	Stage III	48	36.9
	Stage IV	58	44.6
Treatment modality	Chemotherapy	126	96.9
	Radiation therapy	1	0.8
	Immunotherapy	3	2.3
	Targeted therapy	1	0.8
	Palliative care	1	0.8
Recurrence status	Recurrent	25	19.2
	Non-recurrent	105	80.8

*, Median (IQR)

Characteristics of psychosocial support needs

(Table 2) presents the psychosocial support needs scores across seven domains according to the PNI questionnaire. The overall mean general needs score was 3.83 ± 0.29. Notably, emotional and spiritual needs, identity needs, and practical needs had lower scores, indicating that patients prioritized medical and professional support over psychological needs. The highest median score was for health professional needs at 5.00 (4.11–5.00), followed by information needs, support network needs, and practical-child care needs.

Association between overall PNI score and patient characteristics

The association between general needs scores and patient characteristics is described in (Table 3). Most demographic and clinical characteristics showed no statistically significant differences ($p > 0.05$). However, age and gender were significantly associated with general needs scores. Patients under 50 had a mean score 0.26 points higher than those aged 50 and above ($p = 0.014$). Female patients had a higher mean needs score of 0.23 points compared to males ($p < 0.001$). Additionally, patients with breast and ovarian cancers had a mean needs score 0.18 points higher than those with gastrointestinal cancers ($p = 0.040$).

Multivariable linear regression model

In the multivariable linear regression model, after adjusting for confounding factors, age and gender remained significantly associated with general needs scores (Table 4). Specifically, female patients had an average needs score 0.19 points higher than male

Table 2. Psychosocial Support Needs According to the PNI Questionnaire (n=130)

Characteristic	Mean ± SD	Min – Max
Health professional needs score	5.00 (4.11 – 5.00)*	3.00 – 5.00
Information needs score	4.60 (4.20 – 4.80)*	2.60 – 5.00
Emotional and Spiritual needs score	3.28 ± 0.45	2.33 – 4.67
Identity needs score	3.56 ± 0.68	1.60 – 5.00
Practical needs score	3.59 ± 0.42	2.12 – 4.62
Support network needs score	4.01 ± 0.44	2.60 – 5.00
Practical-child care need score	4.00 (3.00 – 5.00)*	1.00 – 5.00
General needs score	3.83 ± 0.29	3.02 – 4.52

*, Median (IQR)

Table 3. Association between General Needs Score and Patient Characteristics (n=130)

Characteristic		Frequency (n)	General needs score (Mean ± SD)	p-value
Demographic characteristics				
Age group	< 50	25	3.96 ± 0.29	0.014[a]
	≥ 50	105	3.70 ± 0.29	
Gender	Male	70	3.72 ± 0.28	<0.001[a]
	Female	60	3.95 ± 0.27	
Place of residence	Urban	36	3.77 ± 0.34	0.138[a]
	Rural	94	3.85 ± 0.28	
Family characteristics				
Number of children in the family	≤ 1 children	11	3.94 ± 0.31	0.224[b]
	2 – 3 children	85	3.83 ± 0.31	
	≥ 4 children	34	3.77 ± 0.25	
Cohabitation status	Living alone	2	4.05 ± 0.40	0.278[a]
	Live with someone	128	3.82 ± 0.29	
Healthcare status	With a caregiver	107	3.83 ± 0.30	0.807[a]
	Without a caregiver	23	3.81 ± 0.26	
Family cohesion	No cohesion	6	3.66 ± 0.21	0.101[b]
	Poor cohesion	22	3.74 ± 0.31	
	Good cohesion	102	3.85 ± 0.29	
Clinical characteristics				
Duration of illness	0 – 3 months	46	3.85 ± 0.33	0.720[b]
	3 – 6 months	39	3.81 ± 0.27	
	Over 6 months	45	3.81 ± 0.28	
Type of cancer	Gastrointestinal	85	3.81 ± 0.31	0.040[b]
	Lung	16	3.79 ± 0.22	
	Breast	15	3.99 ± 0.26	
	Ovary	5	3.99 ± 0.19	
	Other	9	3.65 ± 0.27	
Cancer stage	Stage I	10	3.97 ± 0.30	0.128[b]
	Stage II	14	3.86 ± 0.30	
	Stage III	48	3.86 ± 0.29	
	Stage IV	58	3.76 ± 0.29	
Treatment modality	Chemotherapy only	124	3.83 ± 0.30	0.284[b]
	Combined therapy	2	3.78 ± 0.28	
	Other treatments	4	3.60 ± 0.19	
Recurrence status	Recurrent	25	3.86 ± 0.58	0.557[a]
	Non-recurrent	105	3.82 ± 0.29	

CI, Confidence Interval; [a], T-test; [b], ANOVA

Table 4. Multivariate Regression Model of General Score and Patient Characteristics (n=130)

Characteristic		Crude			Adjusted		
		b	95% CI	p-value	b	95% CI	p-value
Gender	Male	ref			ref		
	Female	0.22	0.12 – 0.31	<0.001	0.19	0.08 – 0.30	<0.001
Age group	< 50	ref			ref		
	≥ 50	-0.16	(-0.28) – 0.03	0.014	-0.14	(-0.27) – 0.02	0.020
Place of residence	Urban	ref			ref		
	Rural	0.08	(-0.02) – 0.19	0.139	0.04	(-0.06) – 0.15	0.403
Family cohesion	No cohesion	ref			ref		
	Poor cohesion	0.08	(-0.18) – 0.35	0.531	0.06	(-0.21) – 0.33	0.660
	Good cohesion	0.19	(-0.04) – 0.43	0.114	0.17	(-0.07) – 0.42	0.180
Type of cancer	Gastrointestinal	ref			ref		
	Lung	-0.02	(-0.18) – 0.12	0.713	0.02	(-0.11) – 0.18	0.689
	Breast	0.17	0.01 – 0.33	0.035	-0.01	(-0.16) – 0.17	0.969
	Ovary	0.18	(-0.10) – 0.40	0.176	0.05	(-0.19) – 0.30	0.676
	Other	-0.16	(-0.36) – 0.03	0.100	-0.12	(-0.32) – 0.06	0.182
Health insurance	Uninsured	ref			ref		
	Partially insured	-0.17	(-0.58) – 0.23	0.402	-0.19	(-0.59) – 0.21	0.354
	Fully insured (100%)	-0.41	(-0.88) – 0.05	0.086	-0.35	(-0.79) – 0.07	0.106

b, Regression coefficient; CI, Confidence Interval

patients ($p < 0.001$). Patients aged 50 and above had an average needs score 0.14 points lower than those under 50 ($p = 0.02$).

Discussion

Psychosocial support can enhance treatment adherence and improve overall health, positively influencing cancer prognosis [23, 24]. However, the assessment of psychosocial support needs remains insufficient in Vietnam's healthcare context, which still faces many challenges [25]. Our study evaluated 130 patients at the University Medical Center Ho Chi Minh City, revealing that psychosocial support needs among cancer patients were relatively high, with gender and age significantly associated with the mean general needs score.

The median age of participants was 60.5 (52–66) years, with no significant gender disparity of 53.9% male and 46.1% female. Most patients were older adults living in rural areas. This aligns with findings from a global analysis of over 4.8 billion people [26], which showed an average cancer onset age of 65.73 years. Significantly, the study reported that the average cancer onset age was higher in developed countries (66.38 years) compared to less developed countries (61.75 years). These findings suggest that differences in cancer onset age are influenced by geographic location, population structure, and economic development levels [27, 28]. Previous studies also reported higher cancer incidence and mortality rates among patients living in rural areas compared to urban regions [29, 30, 5, 31].

Moreover, social factors play a crucial role in shaping the clinical characteristics of cancer patients. We observed that over 80% of patients were diagnosed at advanced stages, specifically stage III (36.9%) and stage IV (44.6%). Similarly, in the study by Israel et al. [18], the proportion of patients diagnosed at stage III and IV was 36.2% and 38.8%, respectively, consistent with our findings. Late-stage diagnosis can be attributed to limited access to healthcare services in underdeveloped rural areas, where patients are often diagnosed later, leading to poorer prognoses [31, 28, 32]. Notably, gastrointestinal cancer accounted for more than half of the cases in our study (65.4%). Zhao et al. also reported that out of 200 patients, 90 (45%) had gastrointestinal cancer [33]. This prevalence may be attributed to risk factors related to unhealthy dietary habits, lifestyle choices, and the consumption of alcohol and tobacco [34, 35].

Regarding the psychosocial support needs of cancer patients, the study revealed a relatively high mean general needs score, consistent with the findings of Loan et al. [36], conducted at the Oncology Hospital in Vietnam, which evaluated the same population using the same scale. Health professional needs and information needs were rated as the most important among the seven domains, aligning with previous studies [18, 33, 21, 37, 36, 38]. Additionally, support network needs and practical-child care needs were also rated as moderately high in importance. In contrast, emotional and spiritual needs, practical needs, and identity needs were considered the least important, a finding also reported in the study by Castro et al. [21]. This disparity reflects the critical need for patients to receive clear information about their health status, available services, and treatment plans. Zebrack et al. [39] emphasized the necessity of comprehensive care and support for cancer patients, from disease understanding and symptom control to mental stress relief. Moreover, Caminiti [24] highlighted that enhancing communication between patients and healthcare providers is crucial for identifying and managing psychosocial

support needs, particularly emphasizing the role of nurses as key information providers. These findings suggest the need for comprehensive intervention programs to address all aspects of support needs effectively.

The associations between psychosocial support needs, age, and gender were confirmed using a multivariable regression model. Patients under 50 years old had higher needs scores compared to those aged 50 and above ($p = 0.02$). Bazilainsky [40] also confirmed that younger age is a predictor of more severe psychosocial issues. This difference may be explained by the fact that younger patients often have high hopes for the future but face numerous challenges related to careers, family, and childcare. Additionally, younger patients tend to have greater expectations regarding disease prognosis and recovery to maintain a better quality of life. This drives their need for psychosocial support to overcome psychological crises caused by cancer [41, 42]. Furthermore, the National Cancer Institute suggests that psychosocial support can help young individuals develop skills to manage the psychological impact of cancer, enabling them to cope more effectively with treatment-related challenges [43].

Compared to men, women had higher general needs scores ($p < 0.001$). Similar findings have been reported to explain this difference, such as women being more susceptible to psychological factors due to concerns about body image changes or their tendency to care about multiple aspects of life, leading to higher needs and increased rates of anxiety and depression [44, 13]. Additionally, women are more psychologically vulnerable than men when facing lifelong risks [45]. Moreover, women play an essential role in family caregiving, with special responsibilities as wives and mothers, making their psychological and social support needs more urgent. Regarding female-related cancers, patients with breast cancer had higher general needs scores compared to those with other cancer types ($p = 0.04$), although this statistical significance was observed only in the univariate model. Breast cancer patients often face body image changes after surgery or treatment, leading to feelings of shame and low self-esteem in social relationships [16, 46]. Moreover, sexual ability and satisfaction are significantly reduced, increasing the demand for psychosocial support, particularly among female patients with breast cancer.

Our study is one of the first in Vietnam to assess psychosocial support needs and identify related factors among cancer patients at a specialized oncology treatment center, such as the Chemotherapy Department of the University Medical Center Ho Chi Minh City. To ensure the accuracy of the data collected for the main study, we validated the PNI scale during the pilot phase, achieving a good Cronbach's Alpha coefficient (0.80). Evaluating the overall needs of cancer patients provides scientific evidence for developing psychosocial support intervention programs tailored to specific needs and patient groups, thereby improving their quality of life [47, 4]. These programs should focus on high-need groups, such as women and younger patients. Although this study provides important insights into the overall needs of cancer patients, it has some limitations. The cross-sectional design does not allow for establishing causal relationships. The small sample size and the fact that the study was conducted at a single hospital reduce the generalizability of the findings. Additionally, as the study assessed patient needs at only one-time points, the self-reported data may be subject to biases related to the participants' perceptions or psychological states at the time of the survey. Future studies should conduct in-depth assessments of psychosocial support needs at multiple time points (e.g., before and after treatment initiation) and include follow-up periods to obtain more objective and accurate findings.

In conclusion, the study results indicate that psychosocial support needs among cancer patients are relatively high, with significant differences across age and gender groups. Notably, younger patients and women, particularly those with breast cancer, reported higher needs compared to other groups. These findings highlight the necessity of developing comprehensive psychosocial support intervention programs tailored to specific target groups to improve the overall health of cancer patients.

Author Contribution Statement

Conceptualization: Ho Tat Bang, Huynh Thuy Vy; Methodology: Lam Quoc Trung, Ho Tat Bang; Formal analysis: Huynh Thuy Vy, Vo Tran Trong Binh; Investigation: Huynh Thuy Vy, Dao Quang Nghia, Le Thi Ngoc Nguyen, Tran Le Thi Thanh Nam, Hoang Dinh Kinh, Hoang Thi Tam Minh; Supervision: Ho Tat Bang, Lam Quoc Trung; Writing-original draft: Huynh Thuy Vy, Ho Tat Bang; Writing - review & editing: All Authors;

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Ethical Declaration

This study was approved by the Ethics Committee of the University of Medicine and Pharmacy at Ho Chi Minh City, with approval number 727/HĐĐĐ-ĐHYD, dated June 13, 2024.

Conflict of interest

The authors have no potential conflicts of interest to disclose.

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