https://doi.org/10.59459/1859-1655/JMM.346

EVALUATION OF EMOTIONAL DISTRESS IN A COHORT OF NEWLY DIAGNOSED CANCER PATIENTS: A STUDY OF 67 INDIVIDUALS

Dang Thi Huong[1], Vu Do Thao[1]
Nguyen Trong Hoa[1], La Van Truong[1*,]

ABSTRACT

Purpose: *To evaluate distress in newly diagnosed cancer patients.*

Subjects and methods: *Cross-sectional prospective study of 67 newly diagnosed patients at the Department of Pain Management and Palliative Care, Military Central Hospital 108, from August to October, 2023. The patient's level of distress was assessed by the Distress Thermometer - DT and the Problem List (PL) of NCCN February 2022, Vietnamese version.*

Results: *The average distress score among newly diagnosed cancer patients was 4.42 ± 2.237, with 3% reporting no distress, 44.8% experiencing mild distress, and 52.2% reporting moderate to severe distress (≥ 4 points). Common sources of distress among the participants included physical discomfort (94.0%), with 73.1% reporting sleep problems and 71.6% experiencing fatigue. Emotional challenges were prevalent as well (91.0%), with 49.3% reporting feelings of sadness and 47.8% experiencing anxiety. Additionally, concerns regarding self-care (53.7%) and financial worries (43.3%) were notable contributors to distress, accounting for 76.1% of the participants' concerns overall. The rate of moderate and severe distress in newly diagnosed cancer patients were statistically significantly related to age (more prevalent in patients under 60), gender (higher in females) education level (more in those with secondary school education or less), income (higher in those with below-average incomes), health insurance benefits (higher in patients with less comprehensive coverage).*

Keywords: Newly diagnosed cancer, distress, quality of life.

Corresponding author: La Van Truong, Email: lvtruonga6108@gmail.com

Receipt date: October 25, 2023; scientific review: November 2023; accepted: January 01, 2024.

[1]*Military Central Hospital 108.*

1. INTRODUCTIONS

According to Globocan 2020, cancer is one of the most prevalent diseases, causing about 19.3 million new cases and resulting in nearly 10 million deaths globally [1]. In the context of Vietnam, the impact of cancer is profound, with an estimated 182,563 individuals newly diagnosed, 122,690 lives lost, and 353,826 individuals undergoing treatment, as reported by the same source [2].

Distress is defined by the National Comprehensive Cancer Network (NCCN) as "Distress is a multifactorial unpleasant experience of a psychological (ie, cognitive, behavioral, emotional), social, spiritual, and/or physical nature that may interfere with one's ability to cope effectively with cancer, its physical symptoms, and its treatment". Distress extends along a continuum, ranging from common normal feelings of vulnerability, sadness, and fears to problems that can become disabling, such as depression, anxiety, panic, social isolation, and existential and spiritual crisis [3]. Most importantly, the experience of suffering not only diminishes the quality of life but can also abbreviate life expectancy. Distress is known to manifests at various stages in the journey of cancer patients including diagnosis, treatment, important decision-making moments, and even post-treatment into end-of-life considerations

Due to the prevalence and severity of distress, the NCCN Clinical Practice Guidelines recommend universial distress screening among all cancer patients [3], [4]. During the process of fighting cancer, the psychological trauma when newly diagnosed with cancer needs special attention. NCCN recommends that, if the distress score is < 4 (mild distress), it can be managed by the primary cancer treatment team; If the distress score is ≥ 4 (4-7 points: moderate distress; 8-10 points: severe distress), patients require intervention to treat distress by specialties such as neurology,

psychiatry, psychology or social work specialists tailored to address the root cause of distress [3], [4].

In Vietnam, there remains a notable dearth of reports addressing distress among cancer patients, highlighting a gap in understanding and addressing the psychosocial aspects of care. In our endeavor to improve the quality of comprehensive patient care, especially cancer patients, we conducted this study to describe the reality of distress in newly diagnosed (untreated) cancer patients at the Military Central Hospital 108.

2. SUBJECTS AND METHODS

2.1. Subjects

A total of 67 patients who had been newly diagnosed with cancer, had not undergone treatment yet, were admitted to the Department of Pain management and Palliative care, Military Central Hospital 108, during the period from August 1, 2023 to October 10, 2023.

- Selection criteria: patients ≥ 18 years old, consented to participate in the study and had capacity to evaluate according to the distress scale (Distress thermometer - DT) and the problem list (Problem list - PL) Vietnamese version of the in the interview research question.

- Exclusion criteria: patients with a confirmed diagnosis or previous suspicion of cancer; individuals whose duration from learning about their cancer diagnosis to the interview exceeded one month; those with the physical or mental emergency.

2.2. Methods

- Study design: cross-sectional descriptive study.

- Research tools: distress thermometer and problems list of NCCN, Vietnamese version updated February 2022 (fdrawing). Researchers who have been trained on NCCN's to explain and guide patients to complete the assessment:

+ Distress thermometer: evaluates the intensity of depression (from 0 points to 10 points).

+ Problems list: evaluate the causes of distress (in 5 groups) and solve problems related to quality of life [3].

- Research targets:

+ Demographic characteristics: age, gender, occupation, marital status, income.

+ Disease characteristics: cancer type, disease stage (with/without distant metastases).

+ Level of distress (DT score) and distress problems (PL).

+ Relationship between level of distress and some patient characteristics.

- Statistical Analysis: data were entered and processed using SPSS 22.0 software. Continuous variables are expressed as mean (SD - standard deviation); Categorical variables were expressed as percentages. The proportions of the two groups were compared using χ^2-test, the difference was statistically significant when $p < 0.05$.

- Research ethics: the research was approved by the Hospital Ethics Council; prior to participation, patients provided informed consent; All personal information of patients was kept confidential.

3. RESULTS

3.1. Characteristics of study patients

Table 1. Characteristics of study patients

Characteristic		No. of patients	Percentage (%)
Age	< 60	34	50.7
	≥ 60	33	49.3
Gender	male	59	88.1
	Female	8	11.9
Education	Illiterate	3	4.5
	Primary school	6	9.0
	Secondary school	27	40.3
	High school	22	32.8
	College or higher	9	13.4
Marital status	Single	0	0
	Married	66	98.5
	Separated	1	1.5
Monthly Income*	Below average	28	41.8
	Average or better	39	58.2
Family income*	Below average	39	58.2
	Average or better	28	41.8
Health insurance benefit level	100%	29	43.3
	less than 100%	38	56.7
Type of cancer	lung	16	23.9
	Colorectal	15	22.4
	esophagus	9	13.4
	other	27	40.3
Stage	Has not metastasized	8	11.9
	metastasis	59	88.1
** According to the General statistics office, 2022*			

A high proportion of patients were male (88.1%), married and living with family (98.5%), The disease was found to have distant metastases in a significant portion of cases (88.1%). Conversely, lower rates were observed for the following characteristics: patients age ≥ 60 years old (49.3%), those with high school degree or higher (46.27%), individuals with incomes below the average (41.8%) and families with incomes below average (58.2%) and health insurance benefit level less than 100% (56.7%) Regarding cancer types, lung cancer (23.9%), colorectal cancer (22.4%), and esophageal cancer (13.4%) exhibited high prevalence rates

3.2. Distribution of distress score and problems list

Table 2. Distribution of patients according to distress score

Score		No. of patients	Percentage (%)
No distress		2	3.0
Mild distress	1	2	3.0
	2	12	17.9
	3	16	23.9
Moderate distress	4	6	9.0
	5	7	10.4
	6	7	10.4
	7	8	11.9
Severe distress	8	3	4.5
	9	4	6.0
	10	0	0
Mean ± SD		4.42 ± 2.237	

The mean distress score was 4.42 ± 2.237. The proportion of patients with no distress was only 3%, mild distress accounted for 44.8%, moderate and severe distress accounted for 52.2%.

Table 3. Distribution of patients according to problems list

Problems list		No. of patients	Percentage (%)
Physical concerns	Total	63	94.0
	Sleep	49	73.1
	Fatigue	48	71.6
Emotional concerns	Total	61	91.0
	Worry or anxiety	33	49.3
	Sadness or depression	32	47.8
Social concerns	Total	8	11.9
	Relationship with children	6	9.0
	Relationship with partner	3	4.5
Practical concerns	Total	51	76.1
	Taking care of myself	36	53.7
	Finances	29	43.3
Spiritual or religious concerns		0	0
Other concerns		0	0

The sources of distress among patients were: physical factors accounted for 94.0% of cases, with prevalent issues including sleep problems (73.1%) and fatigue (71.6%). Emotional distress was reported in 91.0% of patients notably characterized by feelings of sadness (49.3%) and worry (47.8%). Additionally, practical concerns contributed significantly to distress, affecting 76.1% of patients (including 53.7% worrying about self-care and 43.3% worrying about finances).

3.3. The relationship between distress scores and patient characteristics

Table 4. The relationship between distress scores and patient characteristics

Characteristics		Score		p
		< 4	≥ 4	
Age	< 60	10	24	0.002
	≥ 60	22	11	
Gender	Male	32	27	0.005
	Female	0	8	
Education	To high school	10	26	< 0.001
	Over high school	22	9	
Marital status	Married	32	34	1.0
	Separated	0	1	
Monthly Income*	Below average	9	19	0.03
	Average or better	23	16	
Family income*	Below average	11	28	< 0.001
	Average or better	21	7	
Health insurance benefit level	100%	23	6	0.001
	Less than 100%	9	29	

Characteristics		Score		p
		< 4	≥ 4	
Type of cancer	lung	5	11	0.237
	Colorectal	10	5	
	esophagus	5	4	
	other	12	15	
Stage	Has not metastasized	30	29	0.17
	Metastasis	2	6	
Physical concerns	Yes	28	35	0.047
	No	4	0	
Emotional concerns	Yes	27	34	0.096
	No	5	1	
Social concerns	Yes	0	8	0.005
	No	32	27	
Practical concerns	Yes	16	35	< 0.001
	No	16	0	

Patients < 60 years old exhibited a higher prevalence of moderate and severe distress than patients ≥ 60 years old (p = 0.002). Female patients experienced a higher rate of moderate and severe distress than male patients (p = 0.005). Patients with high school education or higher showed lower rates of moderate and severe distress compared to those with lower secondary education or less. Besides, factors such as below-average personal income and family income, inadequate health insurance coverage (less than 100%), challenges related to physical, social, and practical issues were all significantly associated with higher distress scores among patients.

4. DISCUSSIONS

4.1. Characteristics of study patients

Characteristics of patients in this study were relatively similar to patient characteristics in some published studies. Nguyen Tien Quang and colleagues (2021) studied in 300 cancer patients, found that the average age of patient was 54 (from 18-80 years old), the proportion of married people was 89%, literate 96.7% and 82% were working. The three most common types are colorectal cancer (21.7%), breast cancer (20.3%), and stomach/esophageal cancer (19.7%). More than 60% of cancer patients are in advance stage (III-IV) [6]. Abdullah Al-Shaaobia and colleagues (2021) studied in 132 cancer patients, found that the average age was 54.77 years old (range 18-87 years old), 94.7% were married, 75% was graduated from junior high school or lower; The types of cancer with high rates are lung (27.27%), gastrointestinal tract (24.24%). Sudip Thapa and colleagues (2020) studied in 784 inpatient cancer patients and 712 outpatient cancer patients, found that 56.6% had secondary school education or less and 67.5% did not exercise regularly, 80, 7% had advanced disease, 89.9% knew the diagnosis, 38.5% had stage IV cancer, 55.7% was combined treatment, 33.6% had lung cancer and 27.7% had pancreatic cancer [7]. Brandon Okeke and colleagues (2023) studied in 916 cancer patients and found that 71.3% were female; Average age is 59.1 years (range 18-93 years); The most common race was white (63%), followed by African American (20%) and Hispanic (14%); The most common was breast cancer (44%), followed by gynecological cancer (15%) and gastrointestinal cancer (11%); only 6% of patients did not have health insurance at the time of diagnosis [9].

In our study, the proportion of male patients (88.1%) and patients with distant metastases (88.1%) was higher than in the above studies. The observed trends in distress levels may be influenced by the small sample size and the predominance of male patients with lung and esophageal cancer, both common among men. The main subjects served at the Department of Pain and Palliative Care, 108 Military Central Hospital are mainly advance stage patients, so the high rate of patients with distant metastases is appropriate.

4.2. Score of distress and source of distress

There is growing evidence indicates high prevalence of distress. High levels of distress affect patients' ability to complete cancer treatments, alter their quality of life after cancer treatment, and impact overall health outcomes. Therefore, it is important to assess the level of distress before initiating treatment [9]. NCCN Distress thermometer was chosen because it is a basic survey method that is easy to use for patients. NCCN developed this scale in 1999 and updated many versions. Most studies used a cut-off score of 4 points (patients with a distress score ≥ 4 are recommended to receive specialized treatment). In our study, the average distress score of patients was 4.42 ± 2,237 score; The rate of non-distress patients was 3%, mild distress was 44.8%, moderate and severe distress is 52.2%.

Jennifer Smith and colleagues (2017) conducted 866 screenings in 445 patients, revealing that 290 (33%) had a distress score ≥ 4; Among them, 210

(24.2%) exhibited moderate distress, while 80 (9.23%) experienced severe distress. [4]. Abdullah Al-Shaaobia and colleagues (2021) screened in 130 cancer patients, reporting rates of no distress at 15.91%, mild distress at 56.07%, and moderate to severe distress at 28.02% [5]. Nguyen Tien Quang and colleagues found that the rate of cancer patients without distress was 2.3%; mild distress is 42.7%; moderate and severe distress is 55% [6]. Sudip Thapa and colleagues (2020) studied in 696 cancer patients and found that the average distress score of patients was 3.3 ± 2.6, and 46.5% of patients had moderate and severe distress [7]. Christopher J Recklitis and colleagues (2016) studied in 247 young adults (average age 20.41 ± 9.78 years) who had completed cancer treatment for 2 years or more, finding that 124 people (50.2%) had low distress (DT score < 3), 88 people (35.6%) had moderate distress (DT score from 3-6) and 34 people (13.8%) had high distress (DT score 7). Research also showed that in this group of subjects, the sensitivity and specificity of the distress score were not high, but also shows that even after completing cancer treatment for more than 2 years, distress is still a common condition [10].

Our research, along with the above results, shows that the prevalence of distress may vary according to demographic characteristics, disease characteristics, time of assessment, etc., but in general it is still very common and has a high prevalence, requires psycho-spiritual intervention.

One of the advantages that makes the NCCN distress scale widely used is its high clinical practice effectiveness. The problems list indicating the cause of distress helps doctors, social work departments, and support departments easily treat for patients. In this study, the main causes of distress in patients included: physical concerns (94.0%), of which 73.1% had sleep problems and 71.6% were fatigue; emotional concerns (91.0%), including sadness 49.3% and anxiety 47.8%; practical concerns (76.1%), including 53.7% worrying about self-care and 43.3% worrying about finances.

Hammoda Abu-Odah and colleagues (2022) studied in 366 cancer patients and found that the main causes of distress include: physical concerns (n = 355, accounting for 98.3%), emotional concerns (n = 341, accounting for 94.5%) and practical concerns (n = 308, accounting for 85.3%) [8]. In Jennifer Smith's study: out of 290 screenings with DT score ≥ 4, 109 were related to practical concerns (treatment decisions: 23%; insurance - finance: 23%; transportation: 22%; workplace - school: 19%; housing: 19%); 75 turns related to family issues; 206 visits were related to emotional problems (including 39% anxiety, 35% depression, 28% fear and 2% sadness) [4]. In the study of Sudip Thapa and colleagues (2020), the main causes of distress reported were physical concerns (n = 1174, accounting for 78.5%), emotional concerns (n = 1064 , accounting for 71.1%), practical concerns (n = 894, accounting for 59.8%), family issues (n = 464, accounting for 31.0%), and mental issues (n = 12, accounts for 0.8%) [7].

4.3. The relationship between distress scores and patient characteristics

In our study, a large proportion of moderately and severely distress patients correlated with age factors (patients < 60 years old were more distressed than patients ≥ 60 years old); gender (more females were distressed than males); education (patients with junior high school or lower were more distressed than patients with high school or higher); financial (patients with average personal income or below, family income below average, health insurance benefit less than 100% were more distressed than patients with above average personal income, family income above average and health insurance benefit 100%).

In Sudip Thapa's study, a large proportion of patients with moderate and severe distress were related to the following factors: lower education level (OR = 1.39; p = 0.01; 95%CI 1.060- 1.825), progressive disease status (OR = 1.82; p = 0.001; 95%CI 1.274-2.619), advanced cancer stage (OR = 1.85; p < 0.001; 95%CI 1.424- 2,405), lack of exercise (OR = 3.03; p < 0.001; 95%CI 2.307-3.989), emotional problems (OR = 3.54; p < 0.001; 95%CI 2.540-4.942) and physical problems (OR = 8.62; p < 0.01; 95%CI 5.468-13.594) [7].

In the study of Brandon Okeke and colleagues (2023), factors related to increased levels of distress include: female (p < 0.01), age 27-45 (p < 0.01), no health insurance (p < 0.01) and unemployed (p < 0.01). Patients with higher distress scores also had poorer overall survival, with p < 0.05 (each additional point in distress score was associated with a 1.38% decrease in overall survival; slope was shown to be significantly different from zero, with p = 0.04 [9]). Social determinants were used to predict which patients need specialized interventions to reduce distress after being diagnosed with cancer. In this study, the most common components of distress were financial difficulties (41% of patients), transportation difficulties (18% of patients), religious

conflicts (17% of patients), and needs child care (5% of patients) [9].

Our speculation suggests that the active lifestyle commonly observed in younger patients, coupled with the sudden and unexpected nature of a cancer diagnosis, could contribute to heightened levels of depression. Women may have to shoulder more responsibilities than men, potentially exacerbating their distress levels.. Many studies have shown that correlation between lower socioeconomic status and limited access to healthcare services, which could further compound distress among poorer patients [9]. Our study also points out the physical, social, and practical causes related to elevated distress scores in newly diagnosed cancer patients.

- The rate of moderate and severe distress in patients was statistically significantly associated with age (The rate of moderate and severe distress in newly diagnosed cancer patients WERE statistically significantly related to age (more prevalent in patients under 60), gender (higher in females) education level (more in those with secondary school education or less), income (higher in those with below-average incomes), health insurance benefits (higher in patients with less comprehensive coverage).

5. CONCLUSIONS

Research on 67 newly diagnosed cancer patients at Military Central Hospital 108, concluded:

- The average distress score of patients was 4.42 ± 2.237. The rate of patients without distress was 3.0%, with mild distress was 44.8%, and with moderate and severe distress is 52.2%.

- The causes of distress in patients included: physical concerns (accounting for 94.0%; of which, sleep disorders are 73.1% and fatigue is 71.6%); emotional concerns (accounting for 91.0%; of which, sadness 49.3% and anxiety 47.8%); practical concerns (accounting for 76.1%; of which, worrying about self-care is 53.7% and worrying about finances is 43.3%).

- The rate of moderate and severe distress in newly diagnosed cancer patients were statistically significantly related to age (more prevalent in patients under 60), gender (higher in females) education level (more in those with secondary school education or less), income (higher in those with below-average incomes), health insurance benefits (higher in patients with less comprehensive coverage).

REFERENCES

1. Hyuna Sung; Jacques Ferlay; Rebecca L. Siegel; Mathieu Laversanne; Isabelle Soerjomataram; Ahmedin Jemal; Freddie Bray. Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. *CA: Cancer Journal for Clinicians*; 71, 209-249.
2. *Viet Nam-International Agency for Research on Cancer, Globocan 2020*
3. *Distress Management*. Version 2.2023 - December 22, 2022. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®)
4. Jennifer Smith, Susan Berman, Jennifer Dimick, LISW, Sonya Curry, Lisa Arfons, Brian Cmolik, Robert Savinell, Kauzy Woods, Julie R Price, Polly Mazanec. Distress Screening and Management in an Outpatient VA Cancer Clinic: A Pilot Project Involving Ambulatory Patients Across the Disease Trajectory. *Federal Practitioner*. FEBRUARY 2017.
5. Abdullah Al-Shaaobia , Murad Alahdalb,c, Shiying Yud and Hongming Pan. The efficiency of distress thermometer in the determination of supporting needs for cancer inpatients. *Libyan Journal Of Medicine* 2021, VOL. 16, 1957199.
6. Tien Quang Nguyen, Tuyet Mai Do, Tuan Anh Pham. Screening for Psychological Distress in Vietnamese Cancer Patients: An Evaluation of the Distress Thermometer. *Cancer Medicine*. 2021;10:7793-7803.
7. Sudip Thapa, Huihui Sun, Gaurab Pokhrel, Bangyan Wang, Sanuja Dahal, and Shiying Yu. Performance of Distress Thermometer and Associated Factors of Psychological Distress among Chinese Cancer Patients. *Hindawi Journal of Oncology,* Volume 2020, Article ID 3293589, 8 pages.
8. Hammoda Abu-Odah, Alex Molassiotis, Ivy Y Zhao1, Jing Jing Su and Matthew J. Allsop. Psychological distress and associated factors among Palestinian advanced cancer patients: A cross-sectional study Hammoda. *Front. Psychol.* 13:1061327. doi: 10.3389/fpsyg.2022.1061327.
9. Brandon Okeke, Cheron Hillmon, Jasmine Jones, Grace Obanigba, Ann Obi, Meagan Nkansah, Nicholas Odiase1, Kamil Khanipov & Ikenna C Okereke4. The relationship of social determinants and distress in newly diagnosed cancer patients. *Scientific Reports* (2023) 13:2153
10. Christopher J Recklitis, Jaime E Blackmon and Grace Chang. Screening Young Adult Cancer Survivors for Distress With the Distress Thermometer: Comparisons With a Structured Clinical Diagnostic Interview. *Cancer,* January 15, 2016. ❑