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Psychological Distress in Cancer Patients

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Abstract

Background: Psychological distress is a type of mental stress that people experience due to various causes. This study aims to investigate psychological distress in cancer patients.

Methods: This cross-sectional study was performed during one year on cancer patients who referred to two academic hospitals affiliated with Mashhad University of Medical Sciences for treatment or follow-up. We used the psychological distress questionnaire for data collection. Results were analyzed using SPSS version 16. $P<0.05$ was considered significant.

Results: Patients had a mean ±SD age of 54±15.30 years (range: 18 to 89). The most common cancers were colorectal, gastroesophageal, and breast. Patients had a mean distress thermometer score of 5±2.99. Out of 256 patients, 173 (67.7%) scored 4 or higher. The distress thermometer scores were higher among females, rural residents, patients treated within the previous month, patients with insight of their illness, those with low education levels and low functional status, non-smokers, and divorced patients. A significant relationship existed between patients who had insight of their illness, received treatment in the previous month, and low functional status with the psychological distress score. The most prevalent cause of psychological distress among the participants was fatigue (68.8%), followed by pain (59.4%), difficulty in transportation (59.4%), anxiety (57.2%), sadness (50.4%), anger (44.5%), and depression (43.8%).

Conclusion: The results of this study have revealed higher rates of severe psychological distress in women, rural residents, patients with low educational and functional status, drug abusers, and divorced patients. Therefore, early detection of psychological distress and appropriate interventions among these groups of patients is of cardinal importance. The most prevalent causes of psychological distress among the patients in the current study are fatigue and pain. We recommend that supportive and palliative care be implemented to reduce both the pain and enhance the functional status of cancer patients.

Keywords: Psychological distress, Deprivation, Anxiety, Depression, Cancer

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Introduction

The increasing cancer incidence which, in 2012, was estimated at approximately 14 million new cases along with advances in diagnosis and treatment of this disease in recent years, have shown that cancer patients comprise a large number of the patients with chronic diseases.[1-3]

The reaction to a cancer diagnosis depends on the patient's personality, psychological structure, family, and social environment, as well as disabilities and deformities, which can affect a patient's quality of life, survival, function, ability to encounter cancer, duration of hospitalization, and therapeutic results.[4]

Currently, most oncologists prefer out-patient visits. Due to increasing number of patients, less time is spent evaluating psychological distress while it is an important component in cancer patients' medical care. Psychological distress leads to insufficient follow up by the patient. They are less likely to follow their doctor's advice about exercising, quitting smoking and an appropriate diet.[5,6]

Numerous studies investigated related factors of psychological distress in cancer patients. Watts et al. evaluated the relation between remoteness and psychological distress among cancer patients.[7] A study conducted in the United States in 2007 that assessed psychological distress in patients with malignant brain tumors reported that 52% of patients suffered from remarkable amounts of psychological distress which were mostly caused by psychological problems.[8]

Another study conducted on a heterogeneous population of 1721 cancer patients reported that fear of disease progression was the greatest cause for psychological distress. This finding was highest among breast cancer patients.[9]

Wright et al. studied the relationship between deprivations, social problems, and psychological distress in cancer patients. They concluded that gender, disease stage, and socioeconomic status affected the amount of psychological distress.[10]

These studies, along with the increasing prevalence of different types of cancer, indicate the need to use appropriate means to survey factors that affect psychological distress in cancer patients and provide medical advice tailored to their problems. In a recent study, Beck et al. have confirmed that the emotion thermometer (ET) is a reliable instrument to assess psychologic distress in cancer patients.[11]

Depression and anxiety are common complications among cancer patients. Their diagnosis is often overlooked during cancer treatment which leads to poor compliance, less pain control, decreased quality of life and desire for survival.[12] Psychological disorders caused by cancer is the first step in patient referral to receive mental health services. Mental health services assist the patient to accept the cancer diagnosis, overcome their fear, depression and anxiety, and increase their ability to deal with their disease.

The aim of this study was to evaluate the amount of psychological distress and its causes in cancer patients who referred to the Oncology Departments of two academic hospitals affiliated with Mashhad University of Medical Sciences during 2013.

Patients and Methods

We conducted this cross-sectional study on patients with any stage of cancer who referred to two academic hospitals of Mashhad University of Medical Sciences from March 2013 to March 2014 for treatment or follow up.

The sample size of the present study was calculated to be 256 by assuming a significance level (α) of 0.05 and power of 90% based on a 40% reported prevalence of psychological distress.[8]

The inclusion criteria were: at least 18 years of age, ability to communicate in Persian, pathologically confirmed cancer diagnosis, and no history of psychiatric disorders or brain malignancies. Exclusion criteria were low cognitive level and severe disabilities.

We have gathered the data according to a valid, worldwide standard questionnaire that evaluates the psychological distress of cancer patients. The validity of this questionnaire has been proven by numerous studies and recommended by National

Table 1: Mean distress score based on the patients' age.

Distress score	Female			Male		
Age (years)	N	%	Mean±SD	N	%	Mean±SD
30	9	7.75	3.1±3.38	9	6.42	3.46 ± 3.66
30-45	19	14.37	3.09± 4.9	25	17.58	3.14± 4.88
45-60	54	46.55	2.97±5.35	47	33.57	2.84±4.74
60-75	29	25	2.92±5.1	45	32.14	3.04±4.97
>75	5	4.31	2.7±4.47	14	10	2.58±3.92

Comprehensive Cancer Network (NCCN) for worldwide use.[13,14] Montazeri et al. confirmed the reliability of this questionnaire in 2005.[15]

A component of this questionnaire, the distress thermometer, is a visual analog scale where participants rate their level of distress from '0' (none) to '10' (extreme). Previous studies have shown that a cut-off score of ≥4 indicates clinically significant distress which is in need of intervention.[14,15] The questionnaire includes a section on demographic data for patient age, sex, marital status, and level of education. Additionally, we have gathered clinical information that consisted of cancer type and treatment status. Another section comprises potential causes of distress - mental, economic, family and social. Participants were also asked to designate which items from the list constituted sources of distress.

Participation in this study was completely optional for patients and we provided a complete explanation about data confidentiality. The patients were informed about the aims of the study and means of data collection. Informed consents were obtained and the study was approved by the Ethics Committee of Mashhad University of Medical Sciences. With respect to educational status of the patients, the interviewer personally assisted with form completion. The interviewer asked the person who accompanied the patient if the patient was aware of their disease.

Statistical analysis

Statistical Package for the Social Sciences (SPSS) version 16 (SPSS Inc., Chicago, IL, USA) was used for data analysis. The Kolmogorov-Smirnov test to assess for normal distribution of the psychosocial distress rate indicated that the data did not have a normal distribution (P=0.010). Therefore, we used the Mann-Whitney and Kruskal-Wallis non-parametric tests for data analysis. Descriptive statistics were also used to present quantitative and qualitative data.

Results

Participants' demographic characteristics

The present study enrolled 256 cancer patients, 140 (54.7%) males and 116 (45.3%) females. Participants had a mean±SD age of 54±15.30 years (range: 18 to 89). According to table 1, the most prevalent age range of participants was 45 to 75 years for both men and women. The most common cancers were colorectal, gastroesophageal, and breast. Participants had a mean distress thermometer score of 5±2.99. Out of 256 patients, 173 (67.7%) scored 4 or higher.

Factors associated with psychological distress

We observed greater distress thermometer scores in females, rural residents, patients who received treatment within the previous month, patients with insight of their illness, those with low levels of education and low functional status, non-smokers, and divorced patients. Among these, addiction and low functional status had a significant relation with the psychological distress score (Table 2).

Level of distress according to cancer types

Table 3 shows the frequency of severe psychological distress based on distress thermometer scores ≥4 among patients with different cancers.

Table 2. Factors associated with psychological distress in cancer patients.

Demographics	N	%	Mean psychological distress±SD	*P*-value (X^2)
Gender				**0.072**
Male	140	54.7	4.69±2.96	
Female	116	45.3	5.37±2.99	
Residency				0.827
Urban	186	72.6	4.97±3.23	
Rural	70	27.4	5.06±2.35	
Level of education				0.251
None	83	32	5.24±2.51	
Elementary school	137	53	5±3.4	
High school	33	14	4.78±3.1	
University	3	1	3.39±3.12	
Marital status				0.212
Single	6	2.3	4.2±3.22	
Married	177	68	4.98±3.01	
Divorced	30	12	8.33±1.52	
Widowed	43	17.7	5.17±2.5	
Smoking status				0.886
Smoker	90	35	4.89±3.16	
Non-smoker	166	65	5.01±2.97	
Addiction				0.004
Addict	50	20	5.89±2.3	
Non-addict	206	80	4.73±3.12	
Treatment status				0.086
Under treatment during last month	104	40	5.28±3.03	
No treatment during last month	152	60	4.61±2.9	
Insight to illness				0.155
With insight	152	59	5.36±2.93	
Without insight	111	41	4.8±3.01	
Functional status – ECOG*				$P \leq 0.001$
0	50	31	3±2.8	
1	67	26	4.58±3.6	
2	92	36	4.61±2.61	
3	37	14.6	5.7±2.71	
4	10	4	8.83±1.61	

*ECOG: Eastern Cooperative Oncology Group; ECOG 0: Fully active, no restrictions; 1: Restricted in strenuous activity, ambulatory, can carry out work; 2: Ambulatory >50% of the time, capable of self-care, unable to work/usual activities; 3: Ambulatory ≤50% of the time, capable of limited self-care only; 4: Disabled, no self-care, confined to bed or chair.

Causes of psychological distress

The most prevalent causes of psychological distress among the participants consisted of fatigue (68.8%), pain (59.4%), difficulty in transportation (59.4%), anxiety (57.2%), sadness (50.4%), anger (44.5%), and depression (43.8%). However, among those who reported severe distress (scores ≥4), the reported causes were fatigue (84.4%), pain (73.4%), anxiety (71.7%), sadness (68.8%), depression (63.6%), difficulty in transportation (62.4%), and anger (53.8%).

Discussion

Our findings indicated that drug abuse (P=0.004) and functional status (P<0.001) had a significant relation to the level of psychological distress. Similar to the current study, Dabrowski et al. evaluated the level of psychological distress in 268 breast cancer patients and found no significant relation between demographic factors and psychological distress.[16] Another study performed on 141 Iranian patients with gastrointestinal cancers showed that demographic factors such as gender, educational status, marital status,

Table 3. Psychological distress according to different cancer types.

Cancer type	Score		Total	*P*-value
	>4	<4		
Colorectal adenocarcinoma	21	26	47	
Gastric adenocarcinoma	14	31	45	
Esophageal adenocarcinoma	12	30	42	0.21
Breast	11	29	40	
Lymphoma	5	16	21	
Gall bladder	7	6	13	
Other	12	36	48	

and type of cancer had no significant relation with psychological distress.[17]

A longitudinal study by Lam et al. examined the development of psychological distress in females with advanced breast cancer. The researchers concluded that psychological distress was not affected by demographic and clinical factors, which was in line with previous studies.[18-21]

A number of studies contradicted the present study findings. A study of cancer patients that investigated the relationship between economic deprivation, social problems, and psychological distress indicated that gender, cancer stage, and economic deprivation affected the rate of psychological distress.[10] Strong et al. reported that female gender, advanced disease stage, and less than 65 years of age were determining factors for psychological distress.[22] Another study done of 7147 teenage cancer survivors and 388 race-matched controls reported that female gender, low educational status, unemployment, and acute medical conditions affected psychological distress.[23] These differences could be attributed to the large sample size of their study.

Similar studies reported that female gender, low educational status, low functional status, higher disease stage, younger age, low socio-economic status, insufficient social support, and decreased physical ability were in concordance with psychological distress.[24-31] Our results indicated that highly educated people had lower rates of psychological distress. This observation was not statistically significant and could be attributed to the small sample size.

Results of a study that evaluated the prevalence and predicators of psychological distress showed that depression, anxiety, pain, and fatigue were the major predictors of psychological distress. Variables that included disease stage and therapeutic approach did not show a relation.[32] The current study supported these findings. Another study demonstrated that family issues, emotional problems, and decreased physical function had an association with higher levels of psychological distress, which was in line with our findings.[33]

Another study showed that the risk factors of psychological distress and lower levels of quality of life included a poor doctor-patient relationship, low level of education as well as younger age, and progressive disease. These factors had a significant relationship with predictors of psychological distress.[34]

Different sample sizes, various settings (social and cultural differences), and different cancer types might be the causes for differences between the results of these studies and the present study. The most prevalent causes of psychological distress among the patients included fatigue and pain followed by anxiety, sadness, and depression. These factors were also the indicators of health-related quality of life which have been studied among a large population of cancer patients in an observational study.[35] Fatigue and pain were the prevalent problems among patients that affected their quality of life.[35]

One limitation of the current study was the cross-sectional design which did not include any follow-up or intervention for high risk patients. Another limitation was the lack of comparison of psychological distress among different cancer

types according to the disease stage, which could have more accurate results. It might be better to consider this in future studies. We assessed the addiction and insight to illness, and their correlation with psychological distress. Both negatively affected distress. However, these two items were studied less in previous researches. Emotional distress, like anxiety and depression, might have a primary role in addiction. Perhaps addiction alone does not increase emotional distress in cancer patients. Further studies would be needed to assess the role of cognitive and psychological interventions in decreasing pain, fatigue, stress, and depression, and improve quality of life in cancer patients.

Conclusion

The results of this study have indicated higher rates of severe psychological distress in women, rural residents, patients with low educational and functional status, drug abusers, and divorced individuals. Hence, early detection of psychological distress and appropriate interventions among these groups of patients is of utmost importance. The most prevalent causes of psychological distress among the current study patients were fatigue and pain. We recommend supportive and palliative care to reduce pain and enhance the functional status of cancer patients.

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Conflict of Interest

No conflict of interest is declared.

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