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Investigating stress coping strategies in cancer patients undergoing chemotherapy

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Abstract

Introduction: Cancer patients often face uncontrollable stress, and their efforts to control their stress are very challenging. The present study aimed to investigate stress coping strategies in cancer patients undergoing chemotherapy.

Materials and Methods: The statistical community of this cross-sectional study with an analytical approach study consisted of all cancer patients referred to the chemotherapy unit of Gorgan 5th Azar Educational and Medical Center during 2018-19. Amongst them, 96 patients were selected randomly. The research instrument included a demographic checklist and Stress Coping Strategy Questionnaire (Endler and Parker). The collected data were entered into SPSS software (v. 16) and analyzed using descriptive and analytical statistical tests.

Results: In this study, breast cancer was the most common cancer among the participants (051%). Based on the scores, the task-oriented coping strategy, the avoidance-oriented coping strategy, and the emotion-oriented coping strategy received high to low scores, respectively. The relationship between the duration of cancer and the emotion-oriented ($P=0.026$) and the avoidance-oriented strategies ($P=0.006$) was significant. The relationship between the type of cancer with an emotion-oriented coping style was significant ($P= 0.037$).

Conclusion: Based on the findings, the relationship between the duration of cancer and emotion-oriented and avoidance-oriented strategies was significant. So, the lowest scores in both strategies were related to the duration longer than three years.

Keywords: Cancer, Cope, Chemotherapy, Stress.

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Introduction

Cancer is one of the most important health problems in the worldwide, and afflicting it can lead to crises in physical, mental, social and spiritual dimensions (1-3). Diagnosis of cancer causes high psychological stress compared to other diseases and it affects physical, psychological, social, economic and familial dimensions. Stress is one of the most psychological problems due to cancer (1,4) which threatens patients' physical and mental health. In the other hand, physical and mental fatigue, irritability, lack of self-confidence, anxiety, fear of death, and high blood pressure are the most important stressors that impact on cancer patients' health (5-7).

Cancer patients experience more stress and psychological illness while they have lower well-being and physical-mental health compared to healthy people (8,9). The disease progression and its complications have a multifaceted effect on the individual and social functioning of patients and cause them to face many psychological problems. So, it is necessary to pay attention to solving patients' internal conflicts in order to maintain their mental health (10,11). In general, regarding to malignant and life-threatening nature of cancer and patients' perceptions of life change, the numerous studies have shown that there is a close relationship between cancer and psychological states (12,13). The type of cancer, as well as medical procedures such as hospitalization, medication, radiotherapy, various tests, and the high cost of treatment, are factors that can cause chaos, worry, and anxiety in these patients. If these stressors are persistent and prolonged, patients will feel disgust, tiredness, and reduced energy and quality of life (14-16).

In health psychology, how to cope and identify ways to deal with stress are considered to be factors influencing the psychosocial status of cancer patients (17). The concept of "coping" refers to use different methods included adaptive (beneficial) or non-adaptive (ineffective) methods to adapt to a threat for mental balance (18,19). The coping strategies lead to reduction in stress and are known as effective but some coping responses may exacerbate the problem or create a new problem (for example, substance

abuse). Therefore, the concept of coping or confrontation is sometimes very broad and does not refer to a person's behavioral efforts to solve a problem (20,21). Lazarus and Folkman stated that two main methods of coping are task-oriented and emotion-oriented, although most people use both methods to deal with stress (22,23). Based on the results of a study, stress and coping styles including social support seeking, positive reassessment, dreamy coping, avoidance, continence, escape and avoidance, were different in cancer patients comparing to healthy individuals (24). In 2017, Kargaran et al. conducted a correlational study aimed to assess the relationship between personality dimensions and stress coping strategies in patients undergoing chemotherapy. They concluded that there is a significant negative relationship between neuroticism and task-oriented strategy and flexible personality dimension with avoidance-oriented coping strategy. There was also a significant positive relationship between neuroticism and avoidance-oriented coping strategy (25). According to studies, it seems that cancer patients often struggle with uncontrollable stress, and their efforts to control their stress are very difficult (26). Given the importance expressed, the aim of this study was to investigate the stress coping strategies in cancer patients undergoing chemotherapy.

Materials and Methods

This study is an analytical-descriptive/cross-sectional study conducted after the approval of the ethics committee of Golestan University of Medical Sciences. The study population included all cancer patients referred to the chemotherapy unit of Gorgan 5th Azar Medical Center during 2018-2019. According to a study by Forat Yazdi et al. (5) and formula, the sample size was calculated equal to 96 cases.

In this study, patients with cancer diagnosis were randomly selected and interviewed by a psychiatrist for psychiatric evaluations. Then, the purpose of this study was explained to patients and written consent was obtained from them.

Inclusion criteria included: net diagnosis of cancer, willingness to participation, having ability to writing and reading, lack of substance

abuse and lack of major psychiatric problem. The patients who refused to participation were excluded. Data collection tools included a checklist of patients' demographic information (age, gender, marital status, level of education, ethnicity, duration and type of cancer). The questionnaire was Stress Coping Strategy Questionnaire (Endler and Parker).

Research instrument

A) Stress Coping Strategy Questionnaire (Endler and Parker): This questionnaire was developed by Endler and Park (27). For this study, the 48-item Coping Inventory for Stressful Situations (CISS), which was translated and adapted by Mohammadkhani (2008), was used. This questionnaire is designed to evaluate three coping strategies, practical or task-oriented coping (actively dealing with the problem in order to manage and solve it), emotion-oriented coping (or focus on emotional responses to the problem) and avoidance-oriented coping (escaping the problem). The scores related to the three types of coping behavior ranged 16 to 80. Each type which

received higher score is considered as the person's coping method.

The reliability of this questionnaire was reported 0.84 using Cronbach's Alpha method and for each of the strategies, practical or task-oriented, emotion-oriented and avoidance-oriented 0.81, 0.83 and 0.87 have been reported, respectively. The validity and reliability of the questionnaire in Iran has been confirmed (28).

B) Demographic checklist: This form included age, gender, marital status, level of education, ethnicity, duration and type of cancer. After entering the data in SPSS version 16, the descriptive tests (mean, standard deviation, frequency and percentage), and statistical tests such as independent t-test and one way ANOVA used.

Results

This cross-sectional study with an analytical approach was performed on 96 cancer patients who referred to the chemotherapy unit of 5th Azar Hospital Center in Gorgan city. The demographic data presented in Table 1.

Table 1. Demographic data of participants

Variable	Sub-variable	Number (Percent)
Gender	Female	70 (72.9%)
	Male	26 (27.1%)
Age (Year)	<50	39 (40.6%)
	≥50	57 (59.4%)
Ethnicity	Fars	57 (59.4%)
	Turkman	27 (28.1%)
	Sistani	12 (12.5%)
Marital status	Single	12 (12.5%)
	Married	69 (71.9%)
	Others	15 (15.7%)
Education	Lower than diploma	41 (42.7%)
	Diploma	38 (39.6%)
	Higher education	17 (17.7%)
Cancer duration (Year)	< 1 year	40 (41.7%)
	1-2 years	45 (46.8%)
	>2 years	15 (12.5%)

The frequency of different types of cancer was investigated. Breast cancer with a frequency of 51% was the main cancer and lung and esophageal cancer with a frequency of 3% were the least cancer observed among the participants. The overall scores of each stress coping strategy

in cancer patients were studied. Based on the scores, the task-oriented coping strategy, the avoidance-oriented coping strategy and the emotion-oriented coping strategy received high to low score respectively (Table 2).

Table 2. The scores of stress coping strategies in patients

Variable	Mean ± Standard Deviation	P
Task-oriented coping method	55.09±7.36	≥0.05
Avoidance-oriented coping method	47.94±8.53	≤0.05
Emotion-oriented coping method	43.37±10.56	≤0.05

To evaluate the status of the task-oriented stress coping strategy in cancer patients referring to the chemotherapy unit, according to demographic variables, the difference in mean scores among the subgroups studied was not significant in any of the cases. But the difference in mean scores among the subgroups studied for the type of cancer and the duration of the disease based on the one Way ANOVA statistical test was significant ($P=0.037$ and $P=0.026$), respectively. The results of the LSD Post Hoc analysis were presented in Table 3.

Table 3. Results of LSD Post Hoc analysis for emotion-oriented strategy and type and duration of cancer

Variable	Group	Group	Difference in mean	P	
Type of cancer	Chest	Esophagus	1.89	0.755	
		Stomach	-3.20	0.437	
		Colon	-6.34	0.042*	
		Prostate	7.47	0.161	
		Lung	-13.10	0.033*	
		Others	-5.71	0.054	
Duration of disease	< one year	One year	3.3	0.175	
		2 years	6.26	0.057	
		3 years	-10.68	0.083	
		> 3 years	7.9	0.048*	
		One year	< one year	-3.3	0.175
			2 years	2.96	0.38
	3 years		-13.98	0.025*	
	Two years	> 3 years	4.59	0.257	
		< one year	-6.26	0.175	
		One year	2.96	0.38	
		3 years	-16.94	0.011*	
		> 3 years	1.63	0.722	
		> 3 years	-7.9	0.048*	
	> 3 years	< one year	-4.59	0.257	
		One year	-1.63	0.722	
		2 years	-1.63	0.722	
		3 years	-18.58	0.008*	

*Significant

The difference in mean scores among the subgroups studied in term of duration of cancer

based on the One Way ANOVA statistical test was significant ($P=0.006$) (Table 4).

Table 4. Results of LSD Post Hoc analysis for avoidance-oriented strategy and duration of cancer

Variable	Group	Group	Difference in means	P	
Duration	< one year	One year	0.18	0.922	
		2 years	2.35	0.362	
		3 years	-16.54	0.001*	
		> 3 years	3.56	0.267	
		One year	< one year	-0.18	0.922
			2 years	2.16	0.416
	3 years		-16.72	0.001*	
	2 years	> 3 years	3.56	0.267	
		< one year	-2.35	0.362	
		One year	-2.16	0.416	
		3 years	-18.89	0.000*	
		> 3 years	1.39	0.701	
		> 3 years	16.54	0.001*	
	3 years	< one year	16.72	0.001*	
		One year	18.89	0.000*	
		2 years	18.89	0.000*	
		> 3 years	20.29	0.000*	

*Significant

Discussion

The present study was conducted to determine the strategies for dealing with stress in 96 cancer patients who referred to the chemotherapy unit of 5th Azar hospital center in Gorgan city. Based on the scores, the task-oriented coping strategy, the avoidance-oriented coping strategy and the emotion-oriented coping strategy received high to low scores respectively. Also, the relationship between the duration of cancer and emotion-oriented and avoidance-oriented strategies was significant. The findings of Forat Yazdi et al. study on cancer patients indicated that the task-oriented coping stress strategy (score: 49.18 ± 8.8) was the most used strategy in these patients as same as the present study (5). In many other studies, the task-oriented strategy has a higher score than other stress management strategies (29-34). However, based on the results of a study by Kim et al. Korean cancer patients used emotion-oriented strategies more than task-oriented to cope (35).

This difference in the results of various studies can be due to differences in the cultural concept of cancer experiences or different samples. It should be considered that the strategy of coping with stress is a multidimensional concept and it is influenced by individual perceptions, beliefs and values (36). Based on the results of our study, the difference in scores of different stress coping strategies was not significant between two genders same as Dunkel-Schetter et al. study (37).

But the findings of In Kim et al. study indicated that women use both task-oriented and emotion-oriented coping strategies lesser than men significantly (35). In Yahaya et al. study (38), the relationship between task-oriented strategy and gender was significant and women had higher scores than men although this difference was not seen in the emotion-oriented strategy. In the present study, the scores of all stress coping strategies in women were lower than in men, but the differences observed between the two genders were not significant. It seems that more research is needed in this subject.

In the present study, no significant relationship was found between education level and stress coping strategy in cancer patients. Dunkel-Schetter et al. study (37) indicated that lower levels of education were associated with higher use of emotion-oriented and avoidance-oriented

strategies. Ben-Zur et al. found that patients with higher levels of education use emotion-oriented strategy lesser than others (29). In the present study, patients with higher education also had higher scores in using task-oriented strategy. In fact, studies suggest that higher levels of education are expected to be a source of ability to understand the situation and use information effectively to progress and improve the stress coping process.

In the present study, there was no significant relationship between age and stress coping strategies which was similar to the results of the study conducted in South Korea (35). While in Halstead et al. study (39), older patients used more effective and appropriate strategies for coping with stress. Also Yahaya et al. indicated that the relationship between stress coping strategies and age groups was significant. So that the highest scores in the task-oriented strategy were observed mainly in individuals aged 45-36 years and highest scores in the emotion-oriented strategy was related mainly individuals younger than 35 years (38). Based on the results of the present study, a significant relationship was found between cancer type and emotion-oriented strategy; so that patients with lung cancer had the highest scores in this strategy. Genç et al. (33) and Akechi et al. (34) also found that majority of patients with lung cancer use an emotion-oriented strategy to cope stress. Lung cancer is one of the poor prognosis cancers. When patients face fear of pain, disintegration of the future and death, loss of function and social isolation, and believe in the inability to cope with the disease, they prefer to use emotion-oriented coping method (34). One of the limitations was small sample size. It is better to conduct more and multidisciplinary studies in this field. In the present study, no significant relationship was found between stress coping strategies, ethnic groups, and marital status. So, it is necessary to conduct more and more detailed studies to evaluate the relationship between these demographic factors and the type of stress coping strategy. Another limitation is its ability to generalization.

The participants of this study were selected among those who referred for chemotherapy. Referrals for treatment may be an indication of their motivation and somehow it is considered as

using the task-oriented strategy that has not been controlled in this study and should be considered in other studies.

Conclusion

Based on the findings, the relationship between the duration of cancer and emotion-oriented and avoidance-oriented strategies was significant. So, the lowest scores in both strategies were related to the duration longer than three years. It may be understood that over time and over the

course of the disease, the patient will use direct performance to reduce stress and increase stress management skills.

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