

RESEARCH ARTICLE

Does the Impairment of Functional Life Increase the Probability of Suicide in Cancer Patients?

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Abstract

Background: Cancer affects patients in many ways including physical, social, emotional, psychological and economic and restricts the functional lives. Psychiatric problems seen among cancer patients may increase the suicide probability and patients perceive suicide as a peaceful death type. The aim of this study was to examine the correlation between functional life and suicide probability among cancer patients. **Materials and Methods:** This study was conducted with 105 cancer patients as descriptive. The Functional Living Index_Cancer (FLI-C), "suicide probability scale" (SPS) and personal information form were used as data collecting tools. Data were evaluated by descriptive analysis, and Pearson's correlation. **Results:** It was determined that 34.3% of patients thought of suicide. Significant negative correlation was found between functional life and suicide probability ($r=-.641$, $p=0.000$), increase being evident in those with poor functional life. **Conclusions:** It is recommended that cancer patients should be supported for improving their functional lives with help in coping processes for illness and treatment symptoms. Evaluation of the patient mental status to prevent the suicide among this group is an important role for nurses.

Keywords: Cancer - functional life - suicide - psychiatric nursing

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Introduction

Having a considerably stressful and traumatizing diagnosis and treatment experience, cancer is a serious health problem that usually causes death unless there is early diagnosis and treatment. It constitutes 25% of deaths especially in developed countries. It is the second most common cause of all deaths (Tokgoz et al., 2008). Even though a number of cancer types are diagnosed at an early and treatable stage, cancer is frequently perceived as a life-threatening condition (Carlsson et al., 2013). Once the person gets acquainted with diagnosis, relapse or metastasis of cancer, the meaning of life changes and it may be impossible for the person to think about anything other than the disease. The patient may be reluctant and insensitive to everything. The power of coping with the diagnosis of cancer is related to numerous variables. Characteristics about the patient, symptoms causing the competence breakdown, as well as to what extent it decreases the life quality affect coping with the diagnosis of cancer (Elbi, 2001). Cancer affects patients in several aspects including their physical, social, emotional, psychological and economic conditions which result in limitations in their functional life (Dedeli et al., 2008).

Functional state is related to biological condition and illness and its symptoms. Functional state refers to one's ability to perform daily life activities, satisfy basic

needs, realize their daily roles and maintain their health and well-being. Functional state is closely tied to one's medical, emotional and cognitive health. The presence of an illness limits individual's ability to fulfill their daily responsibilities and failure in this area leads to emotional problems (Bektas Aydin and Akdemir, 2006). Cancer is a cause of death among millions of people and it is highly associated with development of psychiatric disorders. The most common psychiatric problems include adjustment disorder and major depression. Major depression is a significant psychiatric disorder which should be considered in cancer patients since it affects their quality of life, self-care, treatment compliance and over time, the severity, prognosis and therapeutic response of cancer (Gulec and Buyukkinaci, 2011; Kutlu et al., 2011). Psychiatric problems may sometimes drive cancer patients into despair and they could develop suicidal thoughts and even attempt suicide. Cancer patients choose to commit suicide rather than dying in agony from an incurable illness and regard it as a peaceful way to die. Suicidal thinking related to depression is one of the possible causes of the willingness to die among patients with terminal cancer (Aydin et al., 2012). Comparing with the general population, it is indicated that the diagnosis of cancer is a stressful life event and carries a high risk for suicide. Suicidal ideation is very high in cancer patients than the general population and this rate varies between 0.8%-

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71.4% (Nasseri et al., 2012). In their study, Leung et al. (2013) determined that 5.9% of patients had suicidal ideation, 7.1% of those who had suicidal ideation also had suicidal intention and 26.3% of those who had suicidal ideation and intention had serious levels of suicidal ideation, which continued in more than half of the day and all day long.

In the light of this information; it is extremely important to determine the suicide probability of the patient at an earlier stage and detect the variables that may be effective on this condition in order to take necessary precautions. The purpose of this study was to determine whether the impairment of functional life had any effect on probability of the suicide in patients receiving cancer treatment or not.

Materials and Methods

Design and sample

The study used a descriptive design and it was carried out between March and July 2013. The study sample consisted of 105 patients diagnosed with a variety cancer (38 men and 67 women) in who were consecutively admitted to the Department of Oncology of Gaziantep University Hospital. They entered the study based on their acceptance to the questionnaire. The majority of participants in this study were willing to contribute and fifteen patients refused to participate because of illness symptoms and insufficient time.

Data collection and tools

The data collection tools comprised an Information Form on demographic and disease-related characteristics and Functional Living Index-Cancer for assessment of functional state of individuals with cancer, Suicide Probability Scale for assessment of their probability of suicide. The data were collected face-to-face interviews conducted by researchers in the oncology inpatient and outpatient unit. The researchers introduced the questionnaire to the participants and explained the material covered. The average time for completing the questionnaires was 20 minutes. All of the participants completed the questionnaires.

Personal Information Form: The personal information form was a questionnaire comprising fifteen questions seeking the patient's demographic and disease-related characteristics.

Functional Living Index-Cancer: FLIC was first developed by Schipper et al. (1984) with the aim to assess the functional state and quality of life in cancer patients. The validity and reliability of the index for use in our country was studied by Bektas and Akdemir (2006). It is a 7-point Likert-type scale which contains a total of 22 questions and 5 subdomains including; Physical functions, Psychological functions, General well-being (cancer-related difficulties), Social functions and Gastrointestinal symptoms (nausea). The maximum possible score is 154 points and the minimum score is 22 points. Higher points indicate a greater level of functioning. Bektas and Akdemir (2006) reported that cronbach alpha reliability of the scale was high (0.88). In the current study cronbach

alpha reliability of the scale is 0.88.

Suicide Probability Scale (SPS): Scale first developed by Cull and Gill (1990) that describes the adults and adolescents with suicide attempt risk. It's validity and reliability studies for the Turkish population were performed by Tugcu (1996), Atli, Eskin and Dereboy (2009). The scale is a 36-item self-report measure and has four sub-scales, which are Hopelessness, Suicide Ideation, Negative Self-evaluation and Hostility and a Total SPS score. Each item is rated on a 4-point Likert-type scale from 1 to 4. Consequently the mean scores range between 36 and 144. Atli, Eskin and Dereboy (2009) reported that cronbach alpha reliability of the scale was high. In the current study cronbach alpha reliability of the scale is 0.82.

Statistical analysis

The data were analyzed using SPSS version 18. Percentage calculation, mean and standard deviations were calculated during data analysis, in order to analyse the descriptive properties of patients. One-sample t-test, The Mann-Whitney U-test and the Kruskal-Wallis test were used to compare the patients' descriptive statistics and the mean scores of the Scales.

The relationship between functional living status and suicide probability was tested using Pearson's correlation analysis. Cronbach's alpha was used to assess the internal consistency of the scales. The strength was expressed as odds ratios with 95% confidence intervals. The level of significance was set at $p < 0.05$.

Ethical considerations

Regarding ethical considerations, the protocol was approved by the local ethics committee in accordance with the Declaration of Helsinki. Written information was given to the participants and their oral consent was obtained. The patients were informed about the purpose of the research and assured of their right to refuse to participate in or to withdraw from the study at any stage. Anonymity and confidentiality of subjects' data were guaranteed.

Results

Of study patients, 63.8% were females, 91.1% were married, 41% were primary school graduates, 63.8% were living in urban area, 74.3% had a low income (less than

Table 1. Patient Mean Scores of Suicide Probability Scale and Functional Living Index

	X±SD	Obtained Min-Max	Possible Min-Max
SPS and Subscales			
Suicidal ideation	9.8±2.1	8.0-17.0	8.0-17.0
Desperation	19.5±3.3	14.0-30.0	12.0-48.0
Hostility	10.6±2.8	7.0-18.0	7.0-28.0
Negative self evaluation	20.2±3.4	12.0-28.0	9.0-36.0
Total SPS	60.17±8.2	44.0-83.0	36.0-144.0
FLIC and Subscales			
Physical function	32.3±7.2	17.0-51.0	9.0-63.0
Psychological function	28.4±6.0	17.0-40.0	6.0-42.0
General wellbeing	10.7±2.9	4.0-19.0	3.0-21.0
Gis functions	9.0±4.0	2.0-14.0	2.0-14.0
Social functions	11.2±3.1	2.0-14.0	2.0-14.0
FLIC	91.7±17.6	51.0-131.0	22.0-154.0

Table 2. Relationships between Suicide Probability of Patients and Functional Living Index

Scales	Suicidal ideation	Desperation	Hostility	Negative self evaluation	Total SPS
Physical function	r= -0.329***	r= -0.371***	r= -0.222*	r= -0.302**	r= -0.440***
Psychological function	r= -0.503***	r= -0.486***	r= -0.314***	r= -0.367***	r= -0.591***
General wellbeing	r= -0.344***	r= -0.383***	r= -0.323***	r= -0.358***	r= -0.508***
Social functions	r= -0.315***	r= -0.456***	r= -0.139	r= -0.359***	r= -0.466***
GIS functions	r= -0.325***	r= -0.250*	r= -0.306***	r= -0.217*	r= -0.383***
Total FLIC	r= -0.497*	r= -0.523***	r= -0.349**	r= -0.425***	r= -0.641***

*p<0.05, **p<0.01, ***p<0.001

Table 3. Comparison of the Sociodemographic Features of Patients and their Suicide Probability and Functional Living Index Scores

Characteristics	SPS X±SD	FLIC X±SD
Stage of the disease		
1	57.7±10.4	102.8±23.3
2	64.1±8.3	90.3±16.4
3	59.1±6.8	93.9±14.3
4	60.4±8.4	89.5±17.9
	KW=2.867, p=0.430	KW=4.308, p=0.230
Metastasis		
Yes	60.1±8.8	87.6±18.8
No	60.0±7.8	94.7±16.2
	t=0.058, p=0.954	t= -2.073, p=0.041
Duration of the disease		
1-5 year	60.2±8.2	91.9±17.5
6 year and upper	57.3±8.0	85.6±24.7
	MWU=123, p=0.590	MWU=120, p=0.552

expenses), 31.4% had breast cancer, 61% had Stage 4 disease, 97.1% had a disease duration between 1 to 5 years, 36.2% had a family history of death due to cancer, 42.9% had metastasis, 34.3% had an additional chronic illness, 82.9% had dependant people living in their household, 84.8% were doing household chores by themselves, 80% quitted working due to their illness, 22.9% were currently receiving psychiatric therapy and 34.3% reported that they had suicidal thoughts after they were told of their cancer diagnosis.

SPS and FLIC mean scores of patients

Table 1 shows average scores of the functional living index and the suicide probability scale for all patients. Average scores for subscales of the suicide probability scale were 9.8±2.1 points for suicide ideation, 19.5±3.3 points for hopelessness, 10.6±2.8 points for hostility, 20.2±3.4 points for negative self-evaluation and total average score of the suicide probability scale was 60.17±8.2 points. Average scores for subscales of the functional living index were 32.3±7.2 points for physical function, 28.4±6.0 points for psychological function, 10.7±2.9 points for general well-being, 9.0±4.0 points for GIS (gastrointestinal system) functions and 11.2±3.1 points for social functions and total average score was 91.7±17.6 points. For the suicide probability scale, higher scores were found for hopelessness and negative self-evaluation subscales compared to other domains and this may be explained by the fact that the majority of study participants were females and the most prevalent cancer type was breast cancer which caused impaired body perception. Lower average scores were observed for physical function and psychological function domains of the functional living index compared to other domains. This may have resulted from the presence of stage 4

disease in the majority of participants.

Relationship between suicide probability and functional living index of cancer patients

When we looked at the association between average functional living scores and average suicide probability scores, negative correlations were found between total and average subscale scores from the suicide probability scale and total and average subscale scores from the functional living index and the probability of suicide increased with worse functional living (Table 2).

Comparison of the sociodemographic features of patients and their suicide probability and functional living inventory scores

Table 3 illustrates the distribution of the mean scores of SPS and FLIC scales according to some characteristics of patients. Comparing the mean scores of SPS and FLIC according to the stage of disease; there was no significant difference between the stage of disease and mean scores of SPS (p>0.05). On the other hand, making a comparison between the stage of disease and mean scores of FLIC scale; it was observed that as the level of stage increased, the functional life impaired; however, this difference was not significant (p>0.05). It was determined that the suicide probability did not show a significant difference according to the state of having a metastasis; however, patients with metastasis had worse levels of functional life compared to those who had no metastasis. This difference was statistically significant (p<0.05). There was no significant difference between the duration of disease and mean scores of SPS and FLIC (p>0.05) (Table 3).

Discussion

In literature, it is specified that probability of the suicide increases in patients diagnosed with cancer. Patients diagnosed with cancer have suicidal ideation at the rate of 12-47% and suicide attempt varies between 4% and 16% (Misono et al., 2008; Mahdi et al., 2011; Smailyte et al., 2013; de la Grandmaison et al., 2014). In this study, it was determined that 34.3% of patients developed suicidal ideation after the diagnosis of cancer. In a study of Lee et al. (2014) it was determined that 19.7% of cancer patients have suicidal ideation. In another study, it is found out that 29.6% of the cancer patients were diagnosed with a depressive disorder and 28.1% of these depressed cancer patients had a moderate to severe level of suicidal risk (Maneeton et al., 2012).

Feeling of hopelessness is a commonly reaction in patients approaching the terminal period. Hopelessness is characterized with the loss of motivation, as well as

negative affections and expectations about the future. The feeling of hopelessness causes the negative evaluation of new conditions and a less effective coping, which creates a perception that nothing meaningful will be done. Hopelessness is an important risk factor for suicidal ideation (Akgun Sahin et al., 2013). In our study, it was determined that cancer patients had higher scores of hopelessness and negative self-evaluation compared to the other areas in the suicide probability scale, which could be associated with the fact that a great majority of patients who participated in the study were female and the cancer type was breast cancer causing a impairment in the body perception. In literature, it is reported that the rate of suicide risk is higher (50%) in women diagnosed with cancer, compared to women in the general population (Mahdi et al., 2011). It is also indicated that the frequency of suicide is higher in women with a gynaecologic cancer compared to women with other cancer types and 70% of women who commit suicide have either breast or genital cancer (Demirel Ozsoy and Esel, 2003; Anguiano et al., 2012; de la Grandmaison et al., 2014).

Pain caused by cancer, type of tumour, surgical procedures, chemotherapy and radiotherapy play an important role in functional capacities of patients with cancer (Karadibak and Ozdirenc, 2002). It was observed that mean scores of the physical function and psychological function area of the functional living inventory were lower than other areas, which could be associated with the fact that a great majority of participants were in the fourth stage of disease. In a study by Farooqui et al. (2013) it was determined that patients at very advanced stages of cancer featured a low global health status (GHS) mean score of 52.2.

Cancer is a chronic disease affecting both the patient and healthy individuals in the family. It may ruin the body image, which makes the patient think that she/he will never have a physical integrity again. Loss of physical integrity increases the risk of psychological vulnerability and the person has a difficulty in coping with other life events outside of cancer (Elbi Mete and Onen, 2001). Individuals being affected by cancer face the decrease in their skills of controlling their lives, the increase in their dependence on others and deteriorated balances in family, business and social life. Physical functionality and the decreasing performance may cause problems in conducting the daily routine and the treatment may result in the loss of physical organs and some treatment-related symptoms. There might be social anxieties about the relationships with the partner, family members or the social network (Gulec and Buyukkinaci, 2011).

It is indicated that cancer patients experiencing impairments in the areas of physical, psychological and social functionality have a great risk in terms of suicide (Anguiano et al., 2012). In this study, it was observed that there was a negative and significant relationship between the functional living score and suicide probability of patients diagnosed with cancer and patients with a lower level of functional living had a higher suicide probability. In the study of Leung et al. (2013), suicidal ideation was determined to be higher in individuals having a difficulty

in daily life activities such as personal care, independence, movement, and recreation. Even though there is no precise information about how the diagnosis of cancer affects the risk of suicide, it is asserted that psychological factors regarding cancer, pain and a bad physical functionality play an important role (Mahdi et al., 2011).

In conclusion, the following results were obtained at the end of our study which we conducted in order to determine the association between functional living and the probability of suicide among cancer patients: (1). Approximately one-third of patients developed suicidal thoughts after they were told of their cancer diagnosis, (2). Average scores for hopelessness and negative self-evaluation were higher compared to other subscales, (3). Physical function and psychological function domains were worse than other functional living domains, (4). The probability of suicide increased with worse functional living.

Being a chronic and terminal disease, cancer is an important problem causing emotional, mental and functional dysfunctions. Assessment of the functional condition may enable us to evaluate the self-care skill of the individual and her/his level of fulfilling the social roles in the daily life. As a result of this assessment; it is possible to form sound bases for both the treatment and follow-up, change the drugs and guide individuals, who are in need of a psychological support, at earlier stage. Functional condition could be enhanced with a comprehensive evaluation, efficient screening, treatment and effective consultancy methods. Besides, functional evaluation could help the individual cope with physical, psychological and social problems, become more productive in society and maintain a quality life. Since suicide is a preventable condition, it is very important to follow up cancer patients in terms of the suicide probability during their routine evaluations.

In nursing, the studies aimed at evaluating the functional conditions of individuals with cancer are thought to make a contribution to the determination of the content of care, training, and consultancy services to be provided for patients, as well as the selection of the treatment and care program, which may develop the functional capability, well-being and general health sense of patients, and the planning of nursing interventions aimed at decreasing the negative effects of the disease and treatments and increasing the life quality. Since the impairment of functionality in patients with cancer adversely affects the mental states of patients, the functional evaluation of patients and development of this evaluation may indirectly decrease the risk of suicide.

Results of this study also present the importance of extending the psycho-oncology nursing practice at oncology hospitals.

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