The depression and related factors among cancer patients and their family caregivers in Turkish Population

Türk Toplumunda kanserli hastalar ve yakınları arasındaki depresyon ve depresyonla ilişkili faktörler

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ÖZET

GİRİŞ ve AMAÇ: Kanserli hastalar arasında depresyon oranı %29 olarak bildirilmiştir. Depresyon varlığı, hem hastayı, hem de hastaya bakmakla yükümlü aile üyelerini olumsuz yönde etkiler. Bu çalışmada, kemoterapi alan hastalar ve onlara bakmakla yükümlü yakınlarında depresyon varlığını, sosyo-demografik faktörler ve günlük aktivitelerin depresyonla ilişkisini değerlendirdik.

YÖNTEM ve GEREÇLER: Toplam 302 kanser hastası ve 302 yakınını inceledik. Depresyonu Beck Depresyon Envanteri (BDE) ile değerlendirdik. Depresyon için sınır değeri 17 olarak kabul ettik ve depresyonla ilişkili sosyo-demografik özellikleri analiz ettik.

BULGULAR: Depresyon skorları hasta grupta yakınlarına göre daha yüksekti (12,5 ile 8). Hastalığı yeterince bilmeme, günlük sosyal aktivitelerde kısıtlılık, hem hasta hem yakınlarında depresyon varlığı ile ilişkiliydi. Korelasyon analizi ile hasta yakınlarında, eğitim seviyesi, iş durumu, aylık gelir depresyonla ters orantılı iken, hastanın hastalığını bilme, depresyonla ilişkiliydi. Hastalar için ise, semptom varlığı, aile ziyaretleri, depresyonu predikte eden faktörlerdi. Bununla beraber, hasta yakınları için aile ziyaretleri ve aylık gelir depresyonu predikte eden bağımsız faktörler olarak bulundu.

TARTIŞMA ve SONUÇ: Hem hasta, hem de yakınlarında kültürel farklılıklar bazında depresyonu predikte eden faktörleri tesbit etmek, tedaviye yardımcı olacağı gibi hayat kalitelerinin de artmasına yardımcı olacaktır.

Anahtar Kelimeler: depresyon, kanser hastası, bakım veren aile üyesi, Beck depresyon envanteri, depresyon skoru

ABSTRACT

INTRODUCTION: Depression has been reported as 29% in frequency among cancer patients. The presence of depression negatively effect both the patients and their family member who provide the care the patients. In the present study we evaluated the presence of depression in cancer patients receiving chemotherapy and their caregivers and the relatioship between socio-demographical factors and daily social activities with depression.

METHODS: Totally,302 cancer patients and 302 family caregiver of them were evaluated. Depression was analyzed with Beck Depression Invantery(BDI). The cut-off value for depression was 17 and the socio-demograpfical factors related with depression were analyzed.

RESULTS: Depression scores was higher in patients then their caregivers(12.5vs8). Insufficent information about disease and rare social activities were related with depression for both cancer patients and their caregivers. By correlation analysis, educational level, occupational status and income were inversely related with depression but the knowing the the diagnosis of the patients by caregiver was positively related with depression. The presence of symptom and family visit were independent predicting factor for depression of patients. On the other hand family visit and income were important independent factors for caregiver depression.

DISCUSSION AND CONCLUSION: Findings of the predicting factor of depression for both patients and their caregiver according to culturel diversity may help treatment management and improve the quality of the life.

Keywords: depression, cancer patients, family caregiver, Beck depression score, depression score.

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Introduction

Depression and anxiety are common psychiatric problemsin cancer patients (1). Patients with cancer experience a high disease load together with increased severity of disease as well as functional decline due to progression of their disease (2). In a meta-analysis included 70 studies, depression rate was reported as 16.3% with the 6.3% of them was major depression (3). For palliative care patients this rate increases up to 24.6-30% (4). Major depression rate was reported in the range of 5% to 30% among cancer patients. The diversity for several studies related with different diagnostic criteria and interview types have been used. By clinical interview, questionnaires and self-report questionnaires with variable cut-off value depression can be diagnosed. Beck Depression Inventory (BDI) is specific for depression, it is a 21-item, self-report rating inventory that measures characteristic attitudes and symptoms of depression (5)

Patients with cancer and comorbid depression have worse anxiety, worse symptom like pain, fatique, poor adherence to treatment, impaired physical, social and family functioning than other cancer patient without combined depression(1,6). Personal history of depression, being alone, low-socioeconomic status, lack of social support, type of cancer, advanced stage, uncontrolled physical symptoms, the presence of treatment toxicity and comorbiditieshave been reported as predictor factors for depression (4). To diagnose and management of depression which is linked with poor quality of life and shortened survival is important (7).

The diagnosis of cancer is recognized as chronic stressor not only for patients and also for their caregivers and effects negatively their psychological, social and economic status (8). Informal caregiver as family members provide care to cancer patients. Caregivers had been reported that higher depression score compared the age matched general population (8). Studies have shown that the rate of distress and psychiatric disorders among family caregiver were similar to those of the patients (9). Depression moods of carers of cancer patients was reported up to 70% (10). While younger age caregivers had higher depression score, relationship between gender, educational status, marital status and depression was contradictory (11). A few studies have addressed depression and the relationship between socio-demographical features of cancer patients and their family caregivers. To evaluate the factors predictors for depression of both cancer patients and their caregiver is important to allow more effective palliation and to improve survival of the patients.

Turkish family units are important in traditionally. People might feel responsible for looking after their family. The extended family included grandfather, grandson and their wives and the nuclear families included husband, wives and children are common in Turkey (12). One of the family member who lives with cancer patients takes all responsibility in diagnosis, treatment, follow-up and care of the patients. While generally family caregivers want to know diagnosis and decide treatment of the patients, they don't want patients to know all diagnosis and treatment detail sopsychological and social load of caregivers increase. Inhere we evaluated whether any the difference between depression scores of the patients and their caregivers. Furthermore we analyzed also any socio-demographic features or to know diagnosis abilty of affect the depression scores. Regular physical activity is not habit for our population. On the other hand traditionally family, friend or neighbor visits are frequent. We evaluated also frequency of the daily social activities of both patients and their caregivers and their relationship between depression scores.

Material and Methods

This is prospective cohort study of the case and performed between April 2016 September 2016. Totally 302 cancer patients who had been treated in outpatient chemotherapy unit of Haydarpasa Numune Education and Research Hospital in Istanbul and 302 caregivers of these patients were included. To be eligible for his study, patients had to have cancer and who had been treated with chemotherapy in our unit. Patients lived together with family members who weretheir primary caregiverswere included. Patients and their caregivers completed BDI quesitionnarse at the same time if they had no concurrent malignancy. Subjects need to be understand or communicate for the content of the questionnaireand had no cognitive disorders and were older than 18 years of age and they could read and understand

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Turkish.The participation was voluntary but all subjects provided informed consent for participation the study. After the questionnaires were completed, they were evaluated by one oncologist and one psychologist. Before begining the study, the permission from local ethical comittewas obtained.

Demographic datas including the age, gender, place of birth, marital status, education level, income, emplyoment status, presence of chronic or psychiatric disease were recorded for both patients and their caregivers. The cancer type, stage of the disease and treatment modalities were obtained from the patients'files. The daily social activities of subjects included visit of family members, neighbourhoud or friends, watcing television, having a picnic, going to cinema, eating out, shopping, going to holiday, walking together or shopping were queried. The number of daily activities which were performed by both patients and their caregivers were classified as none, 1-3, 4-6, 7-8 and 9-10.

Subjects were completed the Beck Depression Inventory (BDI) which is a 21-item, self-report rating inventory that measures characteristic attitudes and symptoms of depression (5). It takes approximately 10 minutes to complete, fifth – sixth grade reading level to adequately understand the questions (13). Turkish version of BDI which was pointed as reliable and valid for outpatient clinic by Hisli was used for our subjects (14). All items are scaled as 0-3. After subjects completed the questionnaire, thescore for each of the twenty-one questions by counting the number to the right of each question they marked were added. The range of the total test was 0-63. The depression was classified as normal if the total score was between 0-10, 11-16 was minimal, 17-20 was borderline, 21-30 was intermediate, 31-40 was severe and >40 was exterme depression. The depression score of 17 as a cut-off point was used to diagnose the depression. If the depression scores was between 0 and 16, it was accepted as normal, depression was diagnosed when the total score was ≥17. Internal consistency for the BDI ranges from .73 to .92 with a mean of .86. (15). The BDI demonstrates high internal consistency, with alpha coefficients of .86 and .81 for psychiatric and non-psychiatric populations respectively (15).

Statistical Analysis: Statistical analyses were performed using SPSS 17.0 (SPSS Inc., Chicago, IL, USA) software. The relationship between the presence of depression and socio-demographical factors were analyzed by the chi-squared test and Fisher's exact test.Furthermore we analyzed any relationship between depression score and socio-demographical factors and daily-social activities of all subjects by Sperman correlation test. The comparison of the depression scores of patients and their caregiver was analyzed by Mann-Whitney U-test. Factors found to be significant by chi-square were also examined with logistic regression analysis to determine predictive factors for depression.The 95% confidence (CI) was used to quantify the relationship between survival time and each independent factor. All p values were two-sided in tests and p values less than or equal to 0.05 were considered to be statistically significant.

Results

Totally 604 subjects, 302 of them cancer patients and 302 were their caregiver were included the study. The median age of the patients and caregivers were 54 and 42 years respectively. Over the 60% of the patients and 48.7% of caregivers were female. Although over 95% of all subjects were placed in Istanbul, birth place of only 21.9% of the patients and 41.7% of the caregiver was Istanbul. Aproximately one third of subjects were lived with spouse and children as nuclear family. Nearly 10% lived with extentded family and 1.7% of patients lived alone. Most of the subject graduated from primary or high school. 52% of the patients and 32% of the caregiver were unemployed. Nearly 95% of the patient knew their disease. Caregiver of patients were spouse (43.2%), children (44.9%), mother or father (3%) or sister (9%). Table 1 shows the socio-demographic features of both patients and their caregivers.

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Table 1: The socio-demographic characteristic of the patients and patient caregivers

	Patients				Patients caregiver			
	Number	**%**	**Median**	**Range**	**Number**	**%**	**Median**	**Range**
Age			54	27-84			42	16-76
Beck depression score			12.5	0-50			8	0-50
Gender								
female	188	62.3			147	48.7		
male	114	37.7			155	51.3		
Place of residence								
İstanbul	291	96.4			296	98		
out of İstanbul	11	3.6			6	2		
Birth place								
İstanbul	66	21.9			126	41.7		
out of İstanbul	236	78.1			176	58.3		
Household composition								
spouse-children	231	76.5			194	64.8		
Mother-father	5	1.7			51	16.9		
Only mother or father	7	2.3			9	3		
Extended family	31	10.3			35	11.6		
alone	5	1.7			2	0.7		
spouse	11	3.6			9	3		
children alone	12	4			2	0		
Educational level								
literate	58	19.2			13	4.3		
primary school	164	54.3			125	41.4		
high school	44	14.6			79	26.2		
associate	12	4			18	6		
university	23	7.6			54	17.9		
graduate	1	0.3			13	4.3		
Employement status								
student					20	6.6		
officer	6	2			28	9.3		
self-emplyoment	30	9.9			79	26.2		
worker	21	7			46	15.2		
housewife	146	48.3			73	24.2		
retired	86	28.5			49	16.2		
unemployed	13	4.3			7	2.3		
Income								
none	97	32.1			78	25.8		
<1000	65	21.5			47	15.6		
1000-2000	113	37.4			119	39.4		
>2000	27	8.9			58	19.2		

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Marital status				
single	10	3.3	60	19.9
married	250	82.8	226	74.8
widow	42	13.9	16	5.3
Chronic disease				
present	72	23.8	43	14.2
absent	230	76.2	259	85.8
Psychiatric disease				
present	19	6.3	12	4
absent	238	93.7	290	96
Does patient know his dissease?				
yes	286	94.7		
no	16	5.3		
Stage				
I	11	3.6		
II	53	17.5		
III	108	35.8		
IV	130	43		
Operation				
present	194	64.2		
absent	108	35.8		
Radiation				
present	74	24.5		
absent	228	75.5		
Symptom				
present	91	30.1		
absent	211	69.9		
Family history				
present	69	22.8		
absent	233	77.2		
Family caregiver				
spouse			131	43.2
mother or father			9	3
child			135	44.9
sister			27	9
Beck categorical values				
normal	130	43	178	58.9
minumum	77	25.5	68	22.5
borderline	37	12.3	29	9.6
intermediate	42	13.9	18	6
severe	11	3.6	5	1.7
extreme	5	1.7	4	1.3

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The median depression scores were 12.5(0-50) for patients and 8 (0-50) for their caregivers respectively and this value was statistically significant (p<0.001). Depression was more frequent in patients with advanced stage disease (p=0.02) and patients who didn't know their disease (p=0.02) and also performed infrequent daily social activities (p=0.005). For patients caregivers, low income (p=0.001), history of psychiatric disease (p=0.03), rare social activities (p=0.002) and sufficient knowledgeabout the disease of patients (p=0.03) were together with depression. Marital status, household composition, family history of malignancy for patients or caregiver position as family member were not found related with presence of depression. Table 2 shows the relation between depression and socio-demographical characteristics.

By using correlation analysis, stage of the cancer was positively correlated with depressionamong patients (p=0.005, r=0.110).On the other hand educational level (p=0.005, r=-0.163), occupational status (p=0.008,r= -0.153) and income (p=0.001, r= -0.185) were inversely correlated with depression among caregivers but the knowing the the diagnosis of the patients by caregiver was positively related with depression (p=0.03, r=0.121).Table 3 the results of the related factors with Beck depression scores.

The most common daily social activities of Turkish populations were visit of family, friends, neighbour, going to cinema, eating out, having a picnic, shopping, watching television, going to holiday, walking together (Table 4). The number of daily social activities of both patients and their caregiver were classified as none, 1-3, 4-6, 7-8 and 9-10 and table 5 shows this classification for both groups.

The presence of symptom (p=0.01) and family visit (p=0.005) were independent predicting factor for depression for patients. On the other hand family visit (p=0.01) and income (p=0.05) were important for caregiver depressionby logistic regression analysis.

Discussion:

Cancer is life-threatening disease so psychiatric disorders like anxiety and depression have been common among cancer patients (16). The rate of the depression in cancer patients is four times higher than general population (17). The prevelance of depression was reported as 3% to %38 in cancer patients and highest rate related with advanced stage, disability, unrelieved pain (17). One meta-analysis included 211 studies reported the depression rate in cancer patients was 8% to 24% (18). This variabilities is caused by depression was measured by different instruments in different cancer types or stages (19). BDI was assessed as screening method for depression and it was considered favourable, generalized and potantially useful across cancer types and disease stage (20). Several reviews reported that BDI has appropiate sensitivity and specificity (19,20). BDI is easy for use and quick to complete so we used this short test to determine depression score of both 302 patients and 302 their caregiver in the chemotherapy unit when they came to take chemotherapy. The median depression scores of patients were higher in patients compared than their caregivers (12.5 and 8 respectively). While 68.8% of the patients had depression, 18.6% of the healthy caregivers had intermediate or severe depression. Although traditional extended family still common in east part of Turkey, one third of our patients live in nuclear family in Istanbul so caregivers were mostly spouse (43.2%) or children (44.9%).Several factor have been reported as risk factors for depression like younger age, low socio-economical status, social isolation, past depression, advanced stage disease, toxic effect of chemotherapy regimen, presence of symptom, functional impairment (21).While in general population depression is more prevelant in women, depression rates are similar in both gender and age among cancer patients (17).Over the 60% of the our patients and 48.7% of caregiver were female and depression was not different between male or female group.

Walker et al. screened depression in 21151 cancer patients (6). Major depression was frequent in lung cancer, gynecological cancer, breast, colorectal and genitourinary cancer. Betweeen these groups younger age and low social deprivation score were associated with more depression (6). And also oropharyngeal cancer, pancreatic, breast and lung cancer were reported more associated with depression (17). Advanced stage disease, lower performance, status have been reported to be related with severity of depression (16,22). Most of diagnosis in our patients were breast (44.7%), gastrointestinal system(37.7%), lung (5.3%), gynecological system (4%),

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genitourinary system (2.4%), head and neck cancer (1.6%) and others in order of freqıuency. Although there was a no difference between cancer type and depression, advanged stage were asociated with higher depression similar the literature. Breast cancer is common in our center and the prognosis of breast cancer is relatively better than other cancer types so depression was not different according to cancer types with infrequently seen head and neck or pancreatic cancer.

Different from us, Mitchell et al. reported that depression was not different between healthy control and cancer patients (3). They didn't investigate the effect of the treatment, symptoms, work status and also they analyzed depression 2 years after from the diagnosis. We evaluated patients while taking median 4 cycle of the chemotherapy after the diagnosis so the negative effect of treatment toxicity on depression was included. Salvo et al. analyzed 1439 cancer patients and they reported that 55% of at least mild depression. They found that low performance, female gender, cancer type such as lung cancer were significantly associated with severe depression and pain was not independent factor for depression (16). Pscychological stress was reported as lower in breast cancer patients who had a job (23). Employed women had wider social enviroment so more self confidence. Socioeconomic status which was measured by annual income of family was important in determining quality of life of cancer patiens (23). In our study, 52% of the patients and 32% of the caregiver were unemployed, but neither emplyoment status nor the other social parameters like income, educational levels were related with depression score among patients. The presence of symptom and family visit were only two independent predicting factor for depression.

The diagnosis of cancer leads to serious psychiatric distress the affected person as well as their close family member (24). Primary caregivers with female gender, spousal relationship, older age, poorer health, caring advanced stage patientswerefound to be more tendency for depression (25). Because of the closest support, partners have vital role in the care of cancer patients (24). In most studies caregivers was female and they reported that higher level of stress compared the male caregivers (26). Inhere77.4% of caregivers were spouse of the patients andnearly half of them were female but no difference in respect to depression from the male caregiver were detected.Badr et al. analysed 49 patients with head and neck cancer who underwent radiotherapy and their caregivers. They found that both patients and their caregivers had similar paterns of changes in distress overtime but caregivers were more distressed than patients over the course of radiotherapy (27). It may be related head and neck radiotherapy disrupt daily activities more common than other cancer therapy which is more common in our center.

Grunfeld et al reported that cancer patients and their caregives experienced similar level of depression (28). Heckel et al. analyzed 150 caregiver of cancer patients with one third of them had depression score of 16 or above. 83% of them was partner and 39% educated from secondary school and 36% from the university (10). Caregiver depression score was not related with patients' demographical features (10). Stadfford et al also didn't find any relationship between caregivers' depression and patient depression and any clinical characteristics (29). As a family caregiver being older age and being a partner had negatively affect the quality of the life (24). Family caregivers play a vital role during treatment and follow-up time of cancer patients particularly in Turkey. Yesilbakan et al. evaluated symptom checklist of 80 cancer patients and their caregivers (30). Over 80% of the population was unemployed and 41% of them completed secondary school. Spousal relationship was common as 49% as caregiver. Among two groups depressive mood was higher among caregivers than cancer patients (30). We found that educational level, occupational status and income were inversely correlated with depression among caregivers. On the other hand marital status, household composition, caregiver position as family member were not found related with presence of depression.

Physical activity in cancer patients especially in breast cancer, has been shown to improve quality of life and reduce depression (31). Regular physical activity is not habit for our population. On the other hand traditionally family, friend or neighbor visits going to cinema, eating out, having a picnic, shopping, watching television, going to holiday, walking together are frequent. We evaluated also frequency of the daily social activities of both

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patients and their caregivers and their relationship between depression scores. For both patients and their family caregiver increasing the daily social activitie numbers were together with lower depression score.

Another issue, in our society, generally family caregivers want to know diagnosis and decide treatment of the patients, they don't want patients to know all diagnosis and treatment detail so psychological and social load of caregivers increase. Although nearly 95% of the patient knew their diseasehere, other 16 patients who didn't their diagnosis had worse depression score. In respect to family caregivers oppositely if they know their diagnosis detail, they had more depression. In all chemotherapy unit psychologist and work together multidisiplinary should be exist to explain diagnosis and oncological treatment plan, to patients and family caregiver together before starting the treatment. In addition nurses working in oncology unit should educated pscychological quidence to interwiev patients caregiver also.

This is one of the few study to compare depression score of both patients and their caregivers. We think that this study is important to mention the relationship between socio-demographical features and daily-social activities of both patients and their caregivers reflecting the West part of the Turkey.

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