

Original Article

Determining Anxiety and Depression Levels of the Relatives of Patients Undergoing the Major Orthopaedic Surgery

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Abstract

Objective: Aim of this study is determining the anxiety and depression levels of relatives of the patients undergoing major orthopaedic surgery.

Methods: Study was conducted as descriptive and cross-sectional. Population of the study consisted of relatives of the patients who underwent major orthopaedic surgery between October 2015 and December 2016 in the orthopaedics and traumatology services of a training hospital and sample of the study consisted of 60 relatives of the patients who underwent major orthopaedic surgery and met the inclusion criteria. Data of the study were collected using the form for descriptive characteristics and the Hospital Anxiety and Depression (HAD) Scale. Ethics committee approval and permission of the institution were received before starting the study.

Results: It was determined that while "anxiety" mean score of the patient relatives was 7.850 ± 4.137 , their "depression" mean score was 7.420 ± 4.454 . The anxiety rate of relatives, whose patient were hospitalized before, was significantly lower than the anxiety rate of relatives, whose patients were not hospitalized before ($p=0.021<0.05$); the anxiety rate of relatives using alcohol was significantly higher than the anxiety rate of relatives of male patients ($p=0.045<0.05$). Depression rate in relatives of patients, who did not receive sufficient information about health status of the patient, was significantly higher than depression rate of the patient relatives who received sufficient information ($p = 0.027 <0.05$).

Conclusions: It can be recommended for nurses, who were mostly in contact with the patients and their relatives, among healthcare professionals to inform the patient relatives about condition of the patients sufficiently and in a way that they can understand, having the patient relatives express their anxieties and having sufficient awareness about conditions of the patient relatives in terms of recognizing changes in their psychological situation and preventing symptoms to become chronic and cause more serious problems.

Key Words: Orthopaedic surgery, patient relatives, anxiety, depression.

Background

Disease is a multi-directional concept that negatively affects individuals and their relatives in the biological, emotional, spiritual and social aspects. As human is a biopsychosocial being, a health problem experienced in any area may also affect other areas negatively. It has been observed that a great majority (30% and 60%) of the hospitalized patients experience psychiatric problems accompanying their diseases (Hall, Rundel & Popkin, 2002; Okanlı et al., 2006).

With orthopaedic surgery, millions of patients' pain is relieved every year and their physical functions are recovered. The orthopaedic patients encounter with problems such as deformation, disability, and infection that affect their physiological, psychological, socio-cultural and spiritual situations negatively. For this reason, a holistic team approach is required in order to determine and meet the needs of the patients with an orthopaedic problem and their relatives, prevent the complications, and to minimize the unwanted conditions (Radwin and Alster, 2001; Lee, Hsu & Chang, 2007; Drozd, Jester & Santy, 2007).

In orthopaedic surgery, it has been stated that the inadequate functional recovery results are associated with the inadequacy in the anxiety, depression, and coping behaviours and in the social support systems. However, the failure of the results of various orthopaedic interventions including spinal surgery, trauma care, fracture repair, rotator cuff repair, sports-related injuries, total hip replacement, total knee replacement, and surgery for upper limb fracture negatively affects the patients emotionally. In patients with orthopaedic trauma, it has been estimated that the psychological symptoms are observed between 6.5% and 51%, however, it has been stated that for the patients undergoing orthopaedic surgery, the functional recovery, complication, death, and cost are focused, and less importance is attached on the psychological condition of the patients (Bhandari et al., 2008; Aktas, 2010; Ayers Franklin & Ring, 2013).

Orthopaedic patients stay in hospitals longer than other surgical patients and require more care. This affects the physiological, psychological, social, cultural, spiritual and economic conditions of the patient relatives negatively. In some of the relatives of the hospitalized patients, psychological symptoms or disorders develop due to the duration and prognosis of the disease.

The symptoms observed in patient relatives are depression, anxiety, physical dysfunction, and social isolation. Anxiety and depression, together with the somatic and cognitive changes, significantly affect the functional capacity of the individual (Sharma et al., 2016). The stress conditions and emotional problems of the patient relatives usually show themselves with anxiety symptoms focusing on reducing self-esteem and alleviating emotions, often associated with depression (Sanchez Lopez et al., 2015). In a previous study, anxiety and depression symptoms increased on days 7 and 14 of the patient relatives (Tok, 2008). In the literature, it has been stated that 22% of the patient relatives experience clinical depression and 75% experience symptoms of depression and anxiety (Cuijpers, 2005; Teri, 1994; Cooper et al., 2007).

The assessment of the patient relatives in terms of psychology includes not only the factors related to the health of the patients but also the occupation, health status, friends of the individuals and the other aspects of their lives. Therefore, it is quite important to prevent the development of psychological diseases and to determine the existence of mood disorders. For this reason, it is necessary to perform screening tests by considering the prevalence of the affective disorders observed in patient relatives. The scales used to determine the levels of anxiety and depression can be used to determine the specific needs and the psychosocial problems of the patient relatives and to monitor the developments in their condition, especially, in the chronic diseases (Tok, 2008; Sanchez Lopez et al., 2015).

It is known that in Europe and in the United States, more studies have been conducted on anxiety and depression levels of patient relatives compared to other countries. However, the symptoms and frequency of anxiety and depression show the differences between societies and these differences are thought to be associated with cultural, environmental or genetic factors. The anxiety and depression levels between the patient relatives, from different countries with various sociocultural backgrounds, is a controversial subject (Kose et al., 2016).

There is a limited number of studies in Turkey regarding the changes between the psychological states of the patient relatives according to the duration and course of the diseases and it has

been observed that the number of related studies is limited when the terms of "patient relatives" and "psychological states" are reviewed (Tok, 2008; Sanchez Lopez et al., 2015).

Accordingly, the aim of this study was to determine the anxiety and depression levels of the relatives of the patients undergoing major orthopaedic surgery. In this context, the following research questions were asked:

- What are the anxiety levels of the relatives of the patients undergoing major orthopaedic surgery?
- What are the depression levels of the relatives of the patients undergoing major orthopaedic surgery?
- What are the factors affecting the anxiety and depression levels of the relatives of the patients undergoing major orthopaedic surgery?

Methods

This study was designed and conducted as descriptive and cross-sectional in order to determine the anxiety and depression levels of the relatives of the patients undergoing major orthopaedic surgery.

The study was conducted in orthopaedics and traumatology service of a training and research hospital between October 2015 and December 2016. While the population of the study consisted of the relatives of the patients who underwent major orthopaedic surgery (hip, knee, spine, cancer, and trauma) in the orthopaedics and traumatology service of a training hospital between December 2015- December 2016, the sample of the study consisted of 60 relatives, who were aged 18 and over, agreed to participate in the study, and did not have communication problem, of the patients, who underwent major orthopaedic surgery in the orthopaedics and traumatology service of a training hospital and stayed for at least 7 days in the clinic.

The data of the study were collected using the form for descriptive characteristics and the Hospital Anxiety and Depression (HAD) Scale.

The Form for Descriptive Characteristics: The form for descriptive characteristics consisted of two parts including the data of the patients and the patient relatives. The first part involved 12 questions on age, gender, educational level, marital status, diagnosis, health insurance, previous hospitalization and having a medical

surgery before, medications used by the patients and their current other diseases and the second part involved 15 questions including patient relative's age, gender, educational status, occupation, marital status, employment status, income status, the status of smoking and using alcohol, antidepressant, and anxiolytic, their degree of affinity, the status of getting information on the health condition of the patient.

The Hospital Anxiety and Depression Scale:

The Hospital Anxiety and Depression Scale was developed by Zigmond and Snaith (1983) and its validity and reliability was determined. Turkish validity and reliability study of the scale was conducted by Aydemir et al., (1997) (Donmez, Dag & Kazandı, 2012). This scale includes the anxiety and depression subscales. The scale is a self-report scale and consists of a total of 14 items including 7 investigating the depression symptoms and 7 investigating the anxiety symptoms. The answers are assessed in four-point Likert and scored between 0-3. The Cronbach's alpha coefficient of the scale was found as 0.809 for the anxiety subscale and 0.804 for the depression subscale. The aim of the scale is not to make a diagnosis but to determine the risk group by scanning the anxiety and depression in a short time in the people with a physical illness. While the score of each subscale varies between 0-21, the total score varies between 0 and 42. The cut-off points of the Turkish version of HADS were determined as 10 for the anxiety subscale (HAD-A) and 7 for the depression subscale (HAD-D). In the assessment of the scale, 0-7 signify a normal problem, 8-10 signify a suspicious problem, and 11 and higher signify a clinical problem for both subscales (Donmez, Dag & Kazandı, 2012; Chan et al., 2014; Sanchez-Lopez et al., 2016).

Statistical analysis

In order to assess the results obtained from the study, SPSS 22.0 statistical packaged software was used for the statistical analyses. As well as the descriptive statistical methods (Frequency, Percentage, Mean, Standard deviation), the Kolmogorov - Smirnov distribution test was used to analyse the normal distribution during the assessment of the data of the study. According to the Kolmogorov-Smirnov test, Anxiety and Depression scores did not have a normal distribution, and, within this framework, nonparametric statistical analyses were preferred. Pearson Chi-square test and Fisher Exact test

were used to compare qualitative data. In the comparison of the quantitative data, Mann Whitney U test was used for the between-groups comparison of the parameters when there were two groups. When there were more than two groups in comparison of quantitative data, the Kruskal Wallis test was used to compare the parameters between groups and the Mann Whitney U test was used to determine the group causing the difference. The results were assessed at the confidence interval of 95% and significance level of $p < 0.05$.

Ethical Approach

Before starting the study, the ethical committee approval (numbered 1491-3115/1539 on 26th February 2015) and institutional permission were taken from Gata Haydarpara Training Hospital. Since the use of the human phenomenon in the study required the protection of individual rights, the requirement of "informed consent" was performed as an ethical principle and the written and verbal consent was obtained from patient relatives, who were willing to participate in the study and met the sample criteria.

Results

It was determined that 65% (n=39) of the patient relatives, included in the study, were female, 26.7% (n=16) were aged between 40 and 49 years, 26.7% (n=16) were 60 years and over, 66.7% (n=40) were married, 41.7% (n=25) had college degree and higher. It was observed that 30% (n=18) of them were housewives, 36% (n=60) were unemployed, 65.0% (n=39) had an equal income and expense status, 65% (n=39) were not smoker, 93.3% (n= 56) did not use alcohol, and 86.7% (n=52) did not use antidepressant. It was determined that the mothers of 38.3% (n = 23) of the patient relatives were in the hospital, 73.3% (n = 44) had a

relative staying in the hospital before, and 90% (n = 54) obtained sufficient information on the health condition of the patient.

It was determined that 35% (n=21) of the patients were 60 and below, 55% (n=33) were female, 63.3% (n=38) stayed in the hospital due to hip surgery, 98.3% (n=59) had social security, 53.3% (n=32) had a hospitalization duration of 8-14 days, 80.0% (n= 48) stayed in hospital before, 76.7% (n=46) underwent an operation before, 71.7% (n=43) used medicine regularly, and 53.3% (n=32) did not have a chronic disease (Table 1).

It was determined that while the "anxiety" mean score of the patient relatives was 7.850 ± 4.137 , their "depression" mean score was 7.420 ± 4.454 . 45 (75.0%) of the patient relatives had no anxiety < 10 , and 15 (25.0%) had anxiety > 11 . 37 (61.7%) of the patient relatives had no depression < 7 and 23 (38.3%) of them had depression > 8 (Table 2).

The depression rate of the relatives of the female patients was determined as significantly higher than the depression rate of the relatives of the male patients ($p=0.004 < 0.05$). The anxiety rate of the relatives, whose patient were hospitalized before, was significantly lower than the anxiety rates of the relatives, whose patients were not hospitalized before ($p=0.021 < 0.05$); the anxiety rate of the relatives using alcohol was significantly higher than the anxiety rate of the relatives of the male patients ($p=0.045 < 0.05$). The depression rate in the patient relatives, who did not get sufficient information about the health condition of the patient, was significantly higher than the depression rate of the patient relatives who got sufficient information ($p = 0.027 < 0.05$) (Table-3)

Table 1. The descriptive characteristics of the patient relatives and patient-related characteristics (n=60)

		n	%
Gender of the patient relative	Male	21	35.0
	Female	39	65.0
Age of the patient relative	39 and below	11	18.3
	40-49	16	26.7
	50-59	17	28.3
	60 and over	16	26.7
Marital status of the patient relative	Single	20	33.3

	Married	40	66.7
Educational status of the patient relative	Primary school	10	16.7
	Secondary School	12	20.0
	High school	13	21.7
	College And higher	25	41.7
Occupation of the patient relative	Worker	5	8.3
	Civil servant	13	21.7
	Self-employed	11	18.3
	Housewife	18	30.0
	Other	13	21.7
Employment status of the patient relative	Yes	24	40.0
	No	36	60.0
Income status of the patient relative	Income lower than expenses	13	21.7
	Income equal to expenses	39	65.0
	Income higher than expenses	8	13.3
The smoking status of the patient relative	Yes	21	35.0
	No	39	65.0
The alcohol use of the patient relative	Yes	4	6.7
	No	56	93.3
The antidepressant use of the patient relative	Yes	8	13.3
	No	52	86.7
The degree of affinity for the patient	My wife	3	5.0
	My husband	6	10.0
	My son	7	11.7
	My daughter	4	6.7
	My mother	23	38.3
	My father	8	13.3
	My sister	3	5.0
	My brother	2	3.3
	Other	4	6.7
	Friend	1	33.3
	Father-in-law	1	33.3
	Mother-in-law	1	33.3
The presence of any relative who stayed in hospital before	Yes	44	73.3
	No	16	26.7
Sufficient information about the health status of the patient	Yes	54	90.0
	No	6	10.0
Age of the patient	60 and below	21	35.0
	61-80	19	31.7
	81 and over	20	33.3
The average age of patients	62.75±23.76		
Gender of the patient	Male	27	45.0
	Female	33	55.0
The type of the operation the patient underwent	Hip surgery	38	63.3
	Knee surgery	10	16.7

	Cancer surgery	7	11.7
	Trauma	3	5.0
	Spinal surgery	2	3.3
	Total	60	100.0
Health insurance of the patient	Yes	59	98.3
	No	1	1.7
Hospitalization duration of the patient	1-7 days	9	15.0
	8-14 days	32	53.3
	16 days or more	19	31.7
The average hospitalization duration of the patient	13.28±9.81		
The previous hospitalization status of the patient	Yes	48	80.0
	No	12	20.0
The previous operations of the patient	Yes	46	76.7
	No	14	23.3
The regular medicine use by the patient	Yes	43	71.7
	No	17	28.3
Chronic disease of the patient	Yes	28	46.7
	No	32	53.3

Table 2. the anxiety and depression findings of the patient relatives for had scale

		n	%	Mean ± SD	Min-Max
Anxiety	<10	45	75.0	7.850 ± 4.137	1-18
	>11	15	25.0		
Depression	<7	37	61.7	7.420 ± 4.454	1-20
	>8	23	38.3		

Table 3. The factors affecting the anxiety and depression status of patient relatives

		<10 No Anxiety		> 11 the Presence of Anxiety		p	<7 No Depression		>8 the presence of Depression		p
		n	%	n	%		n	%	n	%	
The gender of the patient relative	Male	18	85.7%	3	14.3%	$X^2=1.978$ $p=0.136$	16	76.2%	5	23.8%	$X^2=2.883$ $p=0.076$
	Female	27	69.2%	12	30.8%		21	53.8%	18	46.2%	
The age of the patient relative	39 and below	6	54.5%	5	45.5%	$X^2=3.278$ $p=0.351$	4	36.4%	7	63.6%	$X^2=4.954$ $p=0.175$
	40-49	12	75.0%	4	25.0%		12	75.0%	4	25.0%	
	50-59	14	82.4%	3	17.6%		12	70.6%	5	29.4%	
	60 and over	13	81.2%	3	18.8%		9	56.2%	7	43.8%	
The marital status of the patient relative	Single	15	75.0%	5	25.0%	$X^2=0.000$ $p=0.617$	14	70.0%	6	30.0%	$X^2=0.881$ $p=0.257$
	Married	30	75.0%	10	25.0%		23	57.5%	17	42.5%	
The employment status of the patient	Yes	16	66.7%	8	33.3%	$X^2=1.481$ $p=0.180$	13	54.2%	11	45.8%	$X^2=0.952$ $p=0.240$
	No	29	80.6%	7	19.4%		24	66.7%	12	33.3%	

relative											
The income status of the patient relative	The income is lower than the expenses	9	69.2%	4	30.8%	$X^2=1.316$ $p=0.518$	7	53.8%	6	46.2%	$X^2=1.209$ $p=0.546$
	The income is equal to the expenses	31	79.5%	8	20.5%		26	66.7%	13	33.3%	
	The income is higher than the expenses	5	62.5%	3	37.5%		4	50.0%	4	50.0%	
The smoking status of the patient relative	Yes	15	71.4%	6	28.6%	$X^2=0.220$ $p=0.432$	12	57.1%	9	42.9%	$X^2=0.280$ $p=0.399$
	No	30	76.9%	9	23.1%		25	64.1%	14	35.9%	
The alcohol use of the patient relative	Yes	1	25.0%	3	75.0%	$X^2=5.714$ $p=0.045$	1	25.0%	3	75.0%	$X^2=2.437$ $p=0.153$
	No	44	78.6%	12	21.4%		36	64.3%	20	35.7%	
Sufficient information about the health status of the patient	Yes	42	77.8%	12	22.2%	$X^2=2.222$ $p=0.159$	36	66.7%	18	33.3%	$X^2=5.711$ $p=0.027$
	No	3	50.0%	3	50.0%		1	16.7%	5	83.3%	
The age of the patient	60 and below	16	76.2%	5	23.8%	$X^2=0.721$ $p=0.697$	16	76.2%	5	23.8%	$X^2=2.906$ $p=0.234$
	61-80	13	68.4%	6	31.6%		10	52.6%	9	47.4%	
	81 and over	16	80.0%	4	20.0%		11	55.0%	9	45.0%	
Gender of the patient	Male	25	92.6%	2	7.4%	$X^2=8.103$ $p=0.004$	19	70.4%	8	29.6%	$X^2=1.573$ $p=0.162$
	Female	20	60.6%	13	39.4%		18	54.5%	15	45.5%	
The health insurance of the patient	Yes	44	74.6%	15	25.4%	$X^2=0.339$ $p=0.750$	36	61.0%	23	39.0%	$X^2=0.632$ $p=0.617$
	No	1	100.0%	0	0.0%		1	100.0%	0	0.0%	
The surgery type of the patient	Hip Surgery	29	76.3%	9	23.7%	$X^2=0.994$ $p=0.911$	22	57.9%	16	42.1%	$X^2=3.067$ $p=0.547$
	Knee Surgery	7	70.0%	3	30.0%		7	70.0%	3	30.0%	
	Spinal surgery	2	100.0%	0	0.0%		2	100.0%	0	0.0%	
	Cancer surgery	5	71.4%	2	28.6%		5	71.4%	2	28.6%	
	Trauma	2	66.7%	1	33.3%		1	33.3%	2	66.7%	
Hospitalization duration	1-7 days	6	66.7%	3	33.3%	$X^2=0.491$ $p=0.782$	3	33.3%	6	66.7%	$X^2=3.753$ $p=0.153$
	8-14 days	24	75.0%	8	25.0%		22	68.8%	10	31.2%	
	16 days or more	15	78.9%	4	21.1%		12	63.2%	7	36.8%	
The previous hospitalization status of the patient	Yes	33	68.8%	15	31.2%	$X^2=5.000$ $p=0.021$	29	60.4%	19	39.6%	$X^2=0.159$ $p=0.480$
	No	12	100.0%	0	0.0%		8	66.7%	4	33.3%	
The previous operations that the patient undergone	Yes	33	71.7%	13	28.3%	$X^2=1.118$ $p=0.247$	27	58.7%	19	41.3%	$X^2=0.736$ $p=0.297$
	No	12	85.7%	2	14.3%		10	71.4%	4	28.6%	
The regular medicine use by the patient	Yes	32	74.4%	11	25.6%	$X^2=0.027$ $p=0.575$	27	62.8%	16	37.2%	$X^2=0.081$ $p=0.500$
	No	13	76.5%	4	23.5%		10	58.8%	7	41.2%	
Chronic disease of the patient	Yes	20	71.4%	8	28.6%	$X^2=0.357$ $p=0.382$	16	57.1%	12	42.9%	$X^2=0.455$ $p=0.341$
	No	25	78.1%	7	21.9%		21	65.6%	11	34.4%	

Discussion

In Turkey, the number of studies on anxiety and depression seen in the relatives of the patients, who undergo orthopaedic surgical intervention is limited. Therefore, in this study, we aimed to determine anxiety and depression levels and associated factors of the relatives of the patients who had major orthopedic surgery.

The orthopaedic surgery leads to mental and psychological problems as well as causing functional loss. The care burden of the patient relatives negatively affects their life and their anxiety and depression levels. In the previous studies, it was determined that there was a correlation between the care burden of the patient relatives and emotional stress (Bevans et al., 2016; Petruzzi et al., 2013). In the study conducted by Ebrahimzadeh et al. (2014) with the patients with the spinal cord injury, it was found that the depression rate of the patient relatives was significantly high.

In their study, Kose et al. (2016) determined the incidence rate of anxiety among the relatives of the intensive care patients as 35-72% and the incidence rate of depression as 10-75%. In their comprehensive study, Pochard et al. (2005) reported that the symptoms of anxiety and depression were 73.4% and 35.3%, respectively. The anxiety and depression rates in different studies conducted in the intensive care units in different countries were found 47.9-69.1% and 25-39% in France; 58-31% in England; 78-54% in the Czech Republic; and 34-71.8% and 17-53.8% in Brazil. These results indicated that the incidence of anxiety and depression was common in the intensive care patients.

In the study in which the anxiety and depression disorders were compared between Sweden and Turkey, it was observed that the patients in Turkey displayed more depressive symptoms compared to the patients in Sweden (Wade and Johnson, 2010) In the study by Kulkami et al. (2011), it was determined that anxiety, depression and post-traumatic stress in the patient relatives in America and India were commonly observed.

In the study conducted by Maruiti, Galdeano & Dias Farah (2008) with the relatives of 39 patients hospitalized in the intensive care, they accepted that the anxiety and depression occurred when the HADS score was 8 and higher. They reported the incidence of the

anxiety and depression symptoms in the patient relatives as 71.8% and 53.8%. In the study conducted by Lins-Fumis and Deheinzelin (2009) with the relatives of 300 cancer patients, they found that 71% of the patient relatives had anxiety and 50.3% had depression. In the study conducted by McAdam et al. (2010) with relatives of 74 patients receiving treatment in (intensive care unit) ICU, they found the anxiety symptoms as 79.7% and depression symptoms as 70.3% when the group, the HADS score of which was on the borderline, was also included (borderline: 8-10 points, clinic anxiety and depression: 11 points or more). In their study, Young et al. (2005) found that the anxiety scores of the relatives of the patients in the intensive care unit were higher than the patients. In this study, it was determined that the anxiety and depression rates of the patient relatives were 35.0% (HAD> 11) and 28.3% (HAD> 8).

There are many factors that affect the psychological state of the relatives of the long-term patients at the hospital, such as age, gender, the severity of the patient's illness and the relationship with the patient. In the literature, it has been reported that the most common risk factors associated with anxiety and depression symptoms among the patient relatives are being the patient's spouse, female gender, and low educational level (Gries et al., 2010; Siegel et al., 2008).

In their study, Liang et al. (2016) found that 20% of caregivers had symptoms of anxiety and 22.4% had depression symptoms. It was determined that there was a correlation between ages and anxiety-depression levels of the caregivers. The anxiety and depression levels of the elderly patient relatives were high.

In the study conducted by Rinaldi et al. (2005) with 419 elderly people with dementia and their relatives, they found that the age of the caregiver was a risk factor in terms of depression and anxiety development. On the other hand, Paparrigopoulos et al. (2006) and Maruiti, Galdeano & Dias Farah (2008) reported in the study that there was no correlation between the age of the patient relatives and the symptoms of anxiety and depression. In the study by Karaman (2011), it was also found that there was no correlation between the anxiety and depression symptoms and the age of the patient relative. Also in this study, no correlation was found

between the symptoms of anxiety and depression and the age of patient relatives ($p > 0.05$).

Anxiety disorders are the most common one among all the psychiatric disorders and result in significant functional impairments. In the literature, it has been reported that the anxiety disorders are twice as much in women compared to men (Engin, 2016). However, it is predicted that approximately 21% of women and approximately 13% of men may go into clinical depression once in their lifetime. Women experience depression, beginning almost at the age of 10 and continuing in the middle ages, compared to than men. Getting into depression due to gender difference is less significant between the ages of 44-65, but after the year of 65 more depression is observed in women compared to men (Ançel, 2016).

It has been stated in the literature that gender is related to stress response and severe anxiety and depression symptoms are observed in women compared to men (McAdam et al., 2010, Karaman 2011). In their studies Paparrigopoulos et al. (2006) and Pochard et al., (2005) found that women showed more frequent and severe emotional reactions and had higher risk of experiencing anxiety and depression symptoms compared to men. In the study conducted by Lins-Fumis and Deheinzelin (2009) with the relatives of the cancer patients, they reported that while male gender was a protective factor against depression and anxiety, women were more unsatisfied. McAdam et al. (2010) stated in their study that the high anxiety and depression levels in the patient relatives were associated with the fact that the patient relative was female.

Wartella, Auerbach & Ward (2009) and Chui and Chan (2007) determined in their studies that women displayed a higher level of stress compared to men. However, unlike the other studies, in the studies by Anderson et al. (2009) and Maruiti, Galdeano & Dias Farah (2008), gender was correlated with both anxiety and depression have not been related to. Also in this study, it was observed that there was no correlation between gender of patient relatives, and the anxiety and depression level. This may be related to the social roles, economic and social opportunities, and changes accompanying to aging, based on the gender difference.

The interaction between the patient relatives, who perform the care of patients, and the healthcare professionals and the comprehensive

information provided about patients affect the satisfaction of the patient relatives and the prevalence of the anxiety and depression levels (Lins-Fumis and Deheinzelin 2009).

Anderson et al. (2009) determined in their study that when the information provided about the patient is not understood enough, more stress is observed in the patient relatives and cause them to participate less in the decisions about the patient. Azoulay et al. (2005) found that the patient relatives who have difficulty in understanding the information provided about the patient in the ICU have experienced more post-traumatic stress. In this study, the anxiety and depression level of the patients who were not sufficiently informed about their health status of the patient.

Depression associated with physical illness affects the quality of life, prognosis of the disease, hospitalization duration, increases in hospital readmissions, disease and mortality rates negatively (Wancata et al., 2001, Buker et al. 2011). In the study of Wu et al. (2017), it has been found that there is a positive relationship between the duration of hospitalization and the level of anxiety. It has been observed that the patients with high anxiety level have more treatment needs and they are also sensitive about physical ailment. In their study Oflaz and Varol (2010) found that depression scores increased as the duration of hospitalization prolonged. In the study of Buker et al. (2011), no correlation has been determined between the duration of hospitalization and the anxiety and depression levels. In this study, no relationship has been found between the duration of hospitalization and the anxiety and depression levels of the patient relatives.

Conclusion and Recommendations

As a result of the study, it was determined that the gender of the patients, the previous hospitalization status of the patient and the alcohol use of the patient relative affected the anxiety level of the patient relatives, and the status of getting sufficient information about the health status of the patient affects the depression level of the patient relatives. In line with these results, it can be recommended for nurses, who were mostly in contact with the patients and their relatives, among healthcare professionals to inform the patient relatives about the condition of the patients sufficiently and in a way that they can understand, to have the patient relatives

express their anxieties and to have sufficient awareness about the conditions of the patient relatives in terms of recognizing the changes in their psychological situation and preventing the symptoms to become chronic and cause more serious problems

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