Anxiety and Depression in Medical Inpatients*

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ABSTRACT

Objectives: This study aimed to identify potential association between demographic factors, clinical characteristics and anxiety and depression levels of patients hospitalized in internal medicine and surgical clinics.

Method: This descriptive cross-sectional study was performed with 298 inpatients at Erzincan State Hospital's internal diseases and surgical units within March 2006 and May 2006. Inclusion criteria comprised of being at the age of 18 or over, being able to communicate and cooperate with the researchers, having been hospitalized for at least 2 nights, being conscious, and not to having any severe pain. The data were collected using descriptive questionnaire and the Hospital Anxiety and Depression Scale (HADS). The data were analyzed using the Independent Samples t-tests, analysis of variance, Kruskall Wallis and Pearson correlation tests.

Findings: According to HADS scores, it was determined that 36.6% of the patients had symptoms of anxiety, while 61.4% of the patients had symptoms of depressed, and despite the high prevalence of anxiety and depression and the only 16 (5.5%) patients were referred for psychiatric consultation. There were no significant differences in scores of anxiety and depression among different education levels, marital status, and duration of hospitalization.

Discussion: In this study, a very high number of hospitalized patients require psychiatric evaluation for anxiety and depression. Depression and anxiety are common in medical patients and are associated with diminished health status and increased health care utilization. However, many physicians pay more attention to physical problems than psychological problems. Nurses can assist patients in acquiring new methods of coping with anxiety and depression through learning.

Keywords: hospitalized patients, anxiety, depression, nursing practices

ÖZET
HASTÂNEDE YATAN TIBBÎ HASTALIĞI OLANLARDA ANKSİYETE VE DEPRESYON

Amaç: Bu çalışmanın amacı dâhili ve cerrahi kliniklerde yatan hastaların depresyon ve anksiyete düzeyleri ile sosyodemografik faktörleri ve klinik özelliklerinin ilişkisini belirlemektir.

Yöntem: Tanımlayıcı, kesitsel nitelikte olan bu çalışma, Mart 2006-Mayıs 2006 tarihleri arasında Erzincan Devlet Hastanesi dâhili ve cerrahi kliniklerde yatan, iletişim kurulabilen, 18 yaş ve üzerinde olan hastalarla yapılmıştır. Çalışmanın verileri soru formu ve Hastane Anksiyete Depresyon Ölçeği (HADÖ) ile toplanmıştır. Veriler bağımsız gruplarda t testi, varyans analizi, Kruskall Wallis ve Pearson korelasyon analizi ile değerlendirilmiştir.

Bulgular: HADÖ puanlarına göre hastaların %36.6'sında anksiyete, %61.4'ünde depresyon saptanmış ve yüksek anksiyete ve depresyon yaygınlığına rağmen hastaların yalnızca %5.5'ine psikiyatri konsültasyonu istenmiştir. Hastaların eğitim düzeyi, medeni durumu ve hastanede yatma sü-

resi ile anksiyete ve depresyon düzeyleri arasında anlamlı fark bulunmamıştır.

Tartışma ve Sonuç: Bu çalışmada anksiyete ve depresyon yönünden psikiyatrik değerlendirme gerektiren hasta sayısı fazla olmasına rağmen yeterli sayıda hasta değerlendirilememiştir. Fiziksel hastalığı olanlarda yaygın görülen anksiyete ve depresyon, sağlığı olumsuz etkilemekte ve sağlık bakım hizmetlerini kullanmayı artırmaktadır. Bununla birlikte birçok hekim psikolojik sorunlardan çok fiziksel sorunlara yoğunlaşmaktadır. Hemşireler hastaların anksiyete ve depresyonla başa çıkmada yeni yöntemler edinmesine yardım edebilir.

Anahtar Kelimeler: yatan hastalar, anksiyete, depresyon, hemşirelik girişimleri

INTRODUCTION

The presence of medical disease can lead to several psychiatric disorders (Strain et al. 1991, Sim et al. 2001, Gagnon and Patten 2002) depression and anxiety being the most common (Özmen and Aydemir 1993, Aydemir and Bayraktar 1996); in fact, these two conditions frequently present concomitantly (Türkçapar 2004). It has been reported that 3/4 of depression patients also have anxiety (Yüksel 2001). The coexistence of anxiety and depression with medical illness is a topic of considerable clinical and research interest. That anxiety and depression may complicate the treatment of medical conditions is fairly well established, but the extent of and the reasons for these complications are not well understood (DiMatteo et al. 2000). Depression and anxiety among general hospital patients could be much higher than is generally assumed, compounding the basic medical condition prognosis (Michopoulos et al. 2008). Silverstone (1996) found that although major depression is present in only 1.2 to 2.8% of the general population, it is seen in 5.1 to 5.8% of patients hospitalized for non-psychiatric disorders. Some studies postulate that depression has a prevalence of between 19% and 60% in the general hospital setting (Beausang and Syyed 1998, Soskolne et al. 1996). Studies conducted in Turkey suggest that the most common psychiatric diagnoses for hospitalized patients due to physical conditions are depressive disorder (9.6%-44.6%) and anxiety disorder (2.8%-24.4%) (Aslan et al. 2003).

According to data obtained from The Mental Health Profile of Turkey, the prevalence of 12-month depressive episode is 4% while prevalence of any anxiety disorder is 6.7% (Erol et al. 1998). Based on the results of the study by the World Health Organization (WHO) in 1997, it is estimated that depression will rank the second among factors that lead to loss of time, disability, and mortality before the year 2020. It is also estimated that, by 2020, depression will place first in developed countries and third in developing countries as a bur-

den of disease (Murray and Lopez 1997). In Turkey the frequency of depression in hospitalized or outpatient treatment groups varies between 9% and 58%, it is further estimated that overall, only half of depressed patients are diagnosed as such (Oguzhanoglu 2001).

Because of real and potential threats and changes arising from illness, nurses must develop skills that enable them to help patients recognize and manage anxiety. When planning care, the nurse must take into consideration how the family both influences and is influenced by the illness of a member. Nurses should be familiar with the numerous symptoms of anxiety and depression (Chitty, 1997). Silverstone (1996) found that nurses tend to accurately note patients who appear depressed according to DSM-IV standards.

Currently, studies on anxiety and depression of hospitalized patients are still not adequate in Turkey. This study is the first for determination anxiety and depression of inpatients who live in Erzincan. We designed a descriptive, cross-sectional study using primary nursing as our conceptual framework. The biopsychosocial approach is particularly important with medical inpatiens. Primary nursing is designed to promote the concept of having an identified nurse for every patient during the patient's stay on a particular unit (Manthey 1980). The goals of this study were: 1) to determine the prevalence of anxiety and depression in hospitalized patients 2) to identify the characteristics of the anxious and depressed patients 3) and we intend to encourage all hospital staff to develop skills of good psychological care and to be able to assess and manage their patients' psychological problems.

METHODS

This study was designed as a descriptive, cross-sectional study. We used a sampling procedure involving three step. First, we selected Erzincan (a city the in eastern Turkey) as the study site. Birth rate and average household size are above the average level for the country. The rate of literate population is low. Si-

milarly, the rate of female literacy and rate of schooling are also low (Erzincan Local Health Authority, 2009). Second, Erzincan State Hospital (A, B Block) is the only one hospital in the city and has a capacity of 350 beds. We chose all of the internal medicine and surgical units in this hospital. Finally, we interviewed and distributed the questionnaires to each resident (if he or she was willing to participate in it).

Subjects

Three hundred thirty seven patients were selected from 10 units of the internal medicine (n= 5) and surgical units (n=5) between March 2006 and May 2006. The study sample consisted of 298 conscious patients, 18 years old or over who were communicative and able to participate fully in the study. Participants stated they did not have severe pain during their hospitalization and were hospitalized for at least two nights.

Instruments

The Hospital Anxiety and Depression Scale (HADS), developed by Zigmond and Snaith (1983) was adapted to Turkish by Aydemir et al. (1997). The role of the scale is dimensional rather than categorical; it is best used not to make diagnoses of psychiatric disorders, but for identifying general hospital patients who need further psychiatric evaluation and assistance. The scale consists of 14 items. Seven of them evaluate depression symptoms while the others examine anxiety symptoms. Responses are evaluated according to a 4-point Likert scoring system and are rated between 0 and 3. Following ROC analysis, cut-off points (threshold points) for the Turkish version of the HADS anxiety subscale is 10 while for the depression subscale, the cut-off is 7. A score greater than 10 indicates probable anxiety, a score greater than 7 indicates probable depression. The minimum and maximum scores the patients can get from the two subscales are 0 and 21, respectively.

The scale was translated into various languages with resulting diverse sub-scale cut-off points which are associated with intercultural multi-dimensional differences. In the Turkish validity study of the scale, sensitivity and specificity values for cut-off points were found different compared to those for the original which probably suggests that variables for the sample such as cultural structure, sociodemographic features, psychiatric history, and nature of physical conditions may play a role. The HAD scale is considered as an expeditious and easy screening tool in consultation-liaison practice (Aydemir et al.1997).

Descriptive questionnaire: The demographic data collection was obtained with a questionnaire designed by the researchers. Characteristic of the sample included age, gender, educational status, marriage, income, unit in which they were hospitalized, previous hospitalization, duration of hospitalization.

Application

Ethical approval was obtained from the participating institution (Erzincan State Hospital) before commencing the study. A cover letter that explained the purpose of this study was attached to each questionnaire; the participants were told that they could withdraw from the study at any time. The patients gave informed verbal consent before participating in the study and patient confidentiality was maintained at all times.

Questionnaires were completed by study researchers via face-to-face interview with study subjects. A total of 337 patients agreed to participate; 39 respondents withdrew for various reasons. In all, 298 patients who were accord with criteria, agreed to participate. The interview typically was completed within 15-20 minutes.

Statistical Analysis

The data were analyzed by using SPSS software (version 11) for Windows. Sociodemographic data of patients were evaluated by descriptive statistics. The Independent Samples t-tests, analysis of variance (one-way ANOVA) and Kruskall Wallis analysis tests were utilized to compare means data between patient's sociodemographic and clinical characteristics and mean scores of anxiety and depression. Pearson correlation test was utilized to compare means between monthly income and scores of anxiety and depression. The level of significance for all of the statistical tests was set at .05.

FINDINGS
Anxiety and Depression of Medical Inpatients

The average HAD Scale anxiety subscore was 8.74±4.07 while the average depression score was 8.89±3.33 for all study participants. A score of 7 was taken as the cut-off (threshold points) for depression. More than half (61.4%) of the patients had a score of 7 or more for depression. For anxiety, 109 (36.6%) patients had a score of 10 or more than the cut-off score. Thus, 36.6% of the patients were anxiety, while 61.4% of the patients were depressed (Table 1).

General Data

There were 298 patients in this study 137 (54%) of

Table 1: Average scores for HAD-A and HAD-S (n=298)

Non-anxious (0-10 points)		Anxious Mean (SD) (11-21 points)		
< 11		11 or >11		8.74 (4.07)
n	%	n	%	
189	63.4			
109	36.6			
Non- depressed (0-7 points)		Depressed (8-21 points)		
< 11		11 or >11		8.89 (3.33)
n	%			
n	%			
115	38.6			
183	61.4			

them from surgical clinics and 161 (46%) from internal medicine. Among study subjects, 34.9% were over the age of sixty-five, 59.7% were female, a majority (80.9%) was literate or primary school graduates and 84.9% were married. Among patients who have a history of previous hospitalization in 220 (73.8%), duration of hospitalization in 22 (7.4%) inpatients was long (11 days and over), in 170 (57%) short (2-5 days). The demographic distribution of respondents is displayed in Table 1, 2.

Association of Several Variables and Anxiety/Depression

Depression and anxiety scores of the patients who were over 65 years old were statistically significantly higher than for younger patients (p<0.05, p<0.001). Depression scores increased as the education level of subjects decreased, however this increase was not statistically significant. Additionally, the depression and anxiety scores of divorced/widowed patients were higher than others, but again not at a statistically significant level. Income levels of the patients' negatively significant effect on the depression levels. In other words, although monthly income levels go down, depression symptoms increase (p<0.01) (Table 2). Findings also revealed that anxiety and depression scores of the patients who were hospitalized in the surgical unit were significantly higher than those in the internal medicine unit (p<0.001). Anxiety and depression levels of patients previously hospitalized study subjects were higher than those who were never hospitalized and there was also a statistically significant relationship between depression and previous hospitalization (p<0.05). There was however no statistically significant relationship between the duration of hospitalization and levels of depression or anxiety (p>0.05) (Table 3).

DISCUSSION

Anxiety disorder and depression frequently occur in the physically ill (Poole and Morgan 2006). It is widely held that despite relatively high frequency and negative effects, there are serious deficiencies in the diagnosis and treatment of psychiatric disorders in hospitalized patients.

In this study it was determined that 36.6% of the patients had symptoms of anxiety, while 61.4% of the patients had symptoms of depression. The incidence of anxiety and depression significantly increased among medical and surgical patients. This finding is similar to those of previous studies (Azad et al. 2008, Zhang et al. 2008, Cleland et al. 2007, Huffman et al. 2006). Botega et al. (1995) estimated the prevalence of depression to be 28.2%, anxiety 26.9% amongst 78 consecutive admissions to a general medical ward in a Brazilian university hospital. On the other hand, Clarke et al. (1991) examined 209 medical and surgical inpatients in an Australian general hospital and found the prevalence of psychiatric morbidity to be 30%. The prevalence of depression in medical and surgical inpatients in Greece, using the Beck Depression Inventory, was found to be 29% (Lykouras et al. 1989). Marchesi et al. (2004) found the prevalence of depressive disorders to be 21% in medical department patients in Italy. Nair et al. (1997) estimated the prevalence of depressive disorder to be 33% in a South African general hospital. Beausang and Syyed (1998) found the prevalence of depression to be 19%, anxiety 23% in a Scottish

Table 2: Comparison of HAD subscale averages by demographic characteristics (n=298)

Descriptive Features	n	%	HADS-A	Significance	HADS-D	Significance
Age					**Mean (SD)**	
19-39y	101	33.9	7.96±4.02	F=3.069	7.80 (3.21)	F=5.182
40-64y	93	31.2	8.93±4.46	p<0.05	8.70 (3.19)	p<0.001
65y and over	104	34.9	9.33±3.66		10.13 (3.17)	
Gender						
Female	178	59.7	9.32±3.89	t=3.046	8.89 (3.21)	t=0.004
Male	120	40.3	7.88±4.19	p<0.01	8.89 (3.51)	p>0.05
Educational status						
Literate or primary school graduate	241	80.9	8.91±4.01	KW=2.601	9.06 (3.32)	KW =3.732
High school (secondary) graduate	44	14.8	7.95±4.46	p>0.05	8.32 (3.40)	p>0.05
Post-secondary graduate	13	4.4	8.23±3.79		7.77 (2.89)	
Marital status						
Married	253	84.9	8.80±4.04	KW=0.336	8.89 (3.33)	KW=4.228
Single	30	10.1	8.30±4.71	p>0.05	8.27 (3.48)	p>0.05
Other	15	5.0	8.60±3.42		10.20 (2.68)	
Monthly income	298			r= . 025 p>0.05		r= -.156 p<0.01

HADS-A, Hospital Anxiety Depression Scale-Anxiety; F, One-way ANOVA; t, Independent Samples t-Test; KW, Kruskall Wallis; r, Pearson Correlation.

District General Hospital medical department patient. Crespo, Gil & Porras Chavarino (2001) estimated the prevalence of depressive disorder to be 18.9% in 13 Spanish public hospitals medical services.

Additionally, it is striking that the rate of anxiety (36.6%) and depression (61.4%) among these in medical and surgical inpatients in our study was much higher than those of similar populations of anxiety/depression in Western countries: 26% among general medicine wards (Kathol & Wenzel 1992), 28% among general medical inpatients (Creed et al. 2002) and 36% among medical and surgical patients (Walker et al. 1987). The higher prevalence of anxiety and depressive symptoms in the study might be a result of the Turkish economic status and the low educational level of patients. Firstly, Turkey is a developing country and the income per capita is low (about 8.000 dollars every year). Secondly, 80.9% of our participants were literate or primary school graduate. Low educational level might limit their awareness or ability to search for related resources to cope with their depression.

The average HAD anxiety subscale score was 8.74±4.07 while the average depression subscale score was 8.89±3.33. When these scores were evaluated as under or over threshold, 36.6% of the study participants were over the threshold in the anxiety subscale while 61.4% were over the threshold in the depression subscale. In a study carried out in China, average HAD-A score was 6.16 while the average HAD-D score was 6.43. (Wang et al. 2006). In Norway, average HAD-A score was 4.06 while the average HAD-D score was 3.87 (Mykletun et al. 2001) and in Netherlands, average HAD-A score was 12.03 while the average HAD-D score was 9.24 (Kuijpers et al. 2003). These high rates stress the importance of screening and treatment of depression and anxiety in medical and surgical patients to maintain health and functional status, prevent unnecessary hospitalizations, admissions.

The depression and anxiety scores of patients who were over 65 years old were significantly higher than those of younger patients, a result similar to those reported by Walker et al. (1987), Abiodun and Ogunremi (1990). Previous studies also show that aging increases the risk of depression and also that anxiety and depression symptoms are frequently found together (Zung et al. 1990, Fulop & Strain, 1991).

In the current study, the frequency of anxiety in females was significantly higher than that of males, a re-

Table 3: Comparison of HAD subscale scores considering several variables (n=298)

Type of hospital unit in which patient was housed	n	%	HAD-A Mean (SD)	Significance	HAD-D Mean (SD)	Significance
Surgical	137	54	9.48 (4.11)	t=2.945	10.06 (3.44)	t=5.890
Internal medicine	161	46	8.11 (3.95)	p<0.01	7.90 (2.88)	p<0.001
Previous hospitalization						
Yes	220	73.8	8.93 (4.10)	t=1.380	9.18 (3.31)	t=2.544
No	78	26.2	8.19 (3.96)	p>0.05	8.08 (3.27)	p<0.05
Duration of hospitalization						
2-5 days	170	57.0	9.05 (4.05)	KW=2.286	9.26 (3.41)	KW=2.286
6-10 days	106	35.6	8.24 (4.14)	p>0.05	8.38 (3.10)	p>0.05
11 days and over	22	7.4	8.73 (3.83)		8.55 (3.51)	

sult that similar to that reported by Grau Martin et al. (2003). Creed et al. (2002), Hansen et al. (2001), Abiodun and Ogunremi (1990) found that among hospitalized patients, psychiatric disorders are more frequent in females, these results similar to our finding. Soskolne et al. (1996), Crespo et al. (2001) found depressive symptoms were higher in female patients in their studies. In a study by Sim et al. (2001) among medical intensive care unit patients, female gender was found to be correlated with psychiatric morbidity but it did not achieve statistical significance. Clarke et al. (1991) in their study of medical and surgical inpatients also did not find significant gender differences in estimated prevalence of psychiatric morbidity based on GHQ or anxiety scores.

We also found that depression scores increased as educational status decreased, however this increase was not statistically significant, similar to the results of Soskolne et al. (1996). Our results indicate that income has a negatively significant effect on the depression levels in correlation analysis. In other words, although income levels go down, depression symptoms increase, as did the results of Fu et al. (2006), Creed et al. (2002), and Walker et al. (1987). Depression and anxiety scores of divorced/widowed subjects were higher, but not at a statistically significant rate, similar to findings of Soskolne et al. (1996). It has been reported that being widow/widower adversely affect depression (Katon & Schulberg 1992).

Our results show that the anxiety and depression scores of the patients who were hospitalized in the surgical unit were significantly higher than those hospitalized in the internal medicine unit, a result similar to those of Keller et al. (2008), Nair et al. (1997). Any surgical intervention, regardless of being major or mi-

nor, emergent or unplanned, affects patients both psychologically and physiologically, thus increasing risk of occurrence of stress reactions (Erdil and Elbas Ozhan 2001). As a result of developments in surgical interventions and post-operational care, surgery is no longer a last ditch solution and it is routinely in practice now. However, it is considered as a threatening experience for the patient both physiologically and psychologically. Generally, the most specific reaction an individual responds to a disease is anxiety and fear. These reactions were found influential on patients' recovery and on their behaviors. Studies tend to show that patients who experience less pain due to an undergone operation are those who were less anxious (Carr, Thomas and Wilson–Barnet 2005).

Anxiety and depression levels of patients who have a history of previous hospitalization were high and there was significant relation between depression and previous hospitalization. Thus, it may be possible to conclude that previous hospitalization negatively affects patient risk for depression. Anxiety and depression scores for patients with shorter length of hospitalization were higher, however, no significant relation was detected between the duration of hospitalization and the levels of depression and anxiety, similar to results of Soskolne et al. (1996), Sim et al. (2001). High anxiety and depression scores for patients with shorter length of hospitalization might be associated with uncertainty of the diagnosis, not being attuned to hospital environment or the disease itself, acute surgical procedures, or the fear of uncertainty.

In this study despite the high prevalence of anxiety and depression and the only 16 (5.5%) patients were referred for psychiatric consultation. A study carried

out in Turkey revealed that 30-60% of patients with any physical conditions showed emotional or psychic disorders which required support for mental health; however, psychiatric consultation is requested for only 1-5% of inpatients (Hocaoğlu et al. 2001). Although there exist nursing interventions for treatment of depression that are within the scope of nursing care, 47.5% of nurses in the study of Kelleci and Doğan (2001) were not aware of their patients' depressive condition and 90% were not able to help the depressive patients citing reasons such as excessive workload, lack of training in nursing interventions for depression, or overcrowded wards.

In a study by Koening (2007) it was detected that many older depressed patients in medical settings are not treated or referred. Common reasons for not treating these patients were perceived resistance to treatment (62.3%), lack of time (61.1%), uncertainty of depression diagnosis (56.2%), belief that patients couldn't afford treatment (50.5%), and concern about medication/disease interactions (58.8%). One-third (33.5%) emphasized that they were unsure about treatment effectiveness and one-third (34.4%) that they were poorly prepared to treat depression in older patients. Additionally, psychiatric consultation rates found in most recently presented studies in Germany and Austria range from 2.66% to 3.30%, and remain low when compared to the reported prevalence figures of psychiatric disorders and the demonstrated necessity for specific therapeutic interventions among general hospital inpatients (Rothenhäusler 2006).

Finally, many Turkish physicians are unfamiliar with anxiety and depressive symptoms and treatments, in particular that the severity of medical problems can lead physicians to underestimate the presence of these symptoms in patients. This could result in patients who showed anxiety and depressive symptoms requiring psychiatric intervention but were not referred to the appropriate services.

CONCLUSION

We have found that anxiety and depression is a significant problem in medical inpatients. Studies demonstrate that psychosocial interventions, when performed at appropriate times and utilizing appropriate techniques, can effect improvement in the psychological health of such patients and thereby possibly decrease the duration of hospitalization and need for the health care services (Fulop and Strain 1991). The goal of primary nursing is to deliver consistent, comprehensive care by identifying one nurse who is respon-

sible, has the authority, and is accountable for the patient's nursing care outcomes for the time the patients is on that unit (Chitty 1997). The biopsychosocial approach is particularly relevant here. As with any patient with depression, treatment should always involve supportive and problem-solving strategies, education, and support for family members and opportunities to discuss social difficulties. For hospital in-patients, regular physiotherapy and occupational therapy are essential to help patients to cope with boredom, pain and isolation on the ward (Kim et al. 2000).

The limitation of the study include the sample size may not be sufficiently large size because of there is only one hospital in the city. Despite the limitation of our study, these data do suggest especially for patients in surgical clinics, that they should be allowed to express their feelings about the operation they will undergo, they should be well informed, and psychiatric disorders should be prevented or early diagnosis and treatment should be provided through consolidation of psychiatric consultation service in hospitals.

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