

✧ RESEARCH PAPER ✧

Anxiety and depression levels of inpatients in the city centre of Kirşehir in Turkey

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The aim of this study was to determine the anxiety and depression levels of inpatients. A cross-sectional study was conducted in Kirşehir in the middle part of Turkey with a sample of 433 inpatients. As the data-gathering tools, a questionnaire form and Hospital Anxiety and Depression Scale (HADS) were used. Statistical analyses were performed using Kruskal–Wallis Variance analysis and Mann–Whitney *U*-test. The mean HADS-depression scores of patients were compared according to the clinics they were in, and the difference was found to be significant for HADS-depression ($P < 0.01$) scores. The mean HADS-anxiety score of participants was 9.07, and the mean HADS-depression scores was 8.88. Among the participants in this study, 44.3% had an anxiety disorder (HADS-anxiety score of ≥ 10) whereas the 73.7% showed depression (HADS-depression score of ≥ 7). Results indicate that support, counselling, and routine screening for anxiety and depression should be provided to inpatients.

Key words: anxiety, depression, inpatients, nursing.

INTRODUCTION

Anxiety and depression are common among medical and surgical inpatients. It is therefore important for health-care professionals involved in inpatient cure and care programmes to consider screening patients for elevated levels of anxiety and depression and to provide appropriate counselling or treatment where necessary.^{1,2} Nurses spend more time with hospitalized patients than

do the members of any other discipline, and therefore have a significant impact upon patients' anxiety and depression status during their hospital experience. During hospitalization, patients undergo a variety of stressful experiences. In addition to the stress of physical illness, hospitalized patients often lose work, independence, body image and social identity. Patients might also face invasive testing and the possibility of an uncertain diagnosis, an incurable disease or even death.³ Bio-medical factors such as medical condition, behaviour of ward staff and unfriendly ward conditions could also influence their anxiety and depression level during their hospital stay.

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Epidemiological studies using standardized instruments for diagnosis have shown that the prevalence of mental disorders in general hospital inpatients ranges from 41.3% to 46.5%.⁴ A few studies have shown that patients frequently experience high levels of distress while in the hospital.^{5–9} Many epidemiological studies have reported a high prevalence of anxiety disorders among inpatients.^{10–13} Several reports indicate an increased prevalence of depressive illness in general hospital inpatients.^{14–18} Many of these clinical investigations did not consider comorbid conditions, although considerable research in the past decade has documented that depressive disorders, as well as anxiety and somatoform disorders, are highly comorbid.¹⁹

Primary care health professionals need proper instruments for screening emotional disorders. Several diagnostic tools have been established to diagnose depressive and anxiety disorders, but not all of them are appropriate for use in a primary care setting.²⁰ The Hospital Anxiety and Depression Scale (HADS) has been used as a screening tool for the assessment of anxiety and depression in a wide variety of clinical groups.⁹ This test is a portable, easy-to-use measure of a person's current anxiety and depression state. According to Heermann²¹ and Bjelland *et al.*,²² the HADS questionnaire has been translated into many languages, and for many of these translations, validation studies have confirmed the internationally applicable nature of this questionnaire. The purpose of HADS is to provide clinicians with an acceptable, reliable, valid, easy-to-use and practical tool to identify and quantify depression and anxiety in hospitalized adults.²³ HADS has been used in the general population,^{24–26} in general hospital patients,^{20,27,28} in cancer care settings,^{29–31} in geriatric patients,^{13,32} in the department of chest diseases³³ and even in HIV positive patients.³⁴ A few studies have shown that patients are frequently under strong distress in the preoperative and postoperative periods.^{35–38}

The purpose of this study was to determine the anxiety and depression levels of inpatients in the city centre of Kırşehir. Using a descriptive design, the following three research questions were posed: (i) What is the prevalence of anxiety and depression in inpatients? (ii) Is there a relationship between the inpatients diagnosed with anxiety and depression and demographic variables? (iii) Are there any differences in the prevalence of inpatients staying in medical and surgical clinics?

METHODS

Participants

The study was conducted in inpatient medical and surgical clinics at a state hospital in Kırşehir, a city in the central region of Turkey. The study was comprised of 439 patients, who were undergoing treatment in internal medicine, chest diseases, neurology, cardiology, physical therapy and rehabilitation, infection disease, general surgery, brain surgery, eye and ear, nose and throat, orthopaedics, and urology clinics. Of the 439 participants who agreed to participate, six did not complete the entire assessment and were excluded. A total of 433 participants completed the study. The inclusion criteria were: being conscious, alert, able to communicate verbally, capable of answering questionnaires and agreeing verbally to participate in the study.

Sociodemographic variables of the participants are given in Table 1. Of the total sample, 52.9% were male, 42% were aged 56–74 years, 75.3% were married and 76.4% had at most a primary school or below education graduate. The economical status of participants was predominantly 'income < expenditure' (51.5%) according to the self-report of participants. A majority of participants were living in city central (49.7%) and were housewives (43.2%).

Materials and procedure

A questionnaire form and HADS were used for gathering data. The questionnaire included seven sociodemographic questions, including gender, age, marital status, educational level, economical status, residential area and profession, and five questions related to having treatment in clinics, hospital experience, length of hospital stay, mobility (independent or dependent on someone else) and paid companion status. Participants were asked about their economical status, which was categorized as income < expenditure, income = expenditure and income > expenditure; these data were self-reported. Individuals were also asked about their educational level, which was categorized as primary school or below, secondary and high school, and university or above, according to Turkey's educational levels. The questionnaire was developed by the researchers. The questionnaire only required a few minutes to complete.

The HADS was developed by Zigmond and Snaith.²³ Aydemir conducted work on its validity and reliability in Turkey.³⁹ The HADS is a 14-question self-report questionnaire used for measuring symptoms associated with

Table 1 Sociodemographic variables and the Hospital Anxiety and Depression Scale (HADS) scores of inpatients

Variables	N (%)	Mean HADS scores	
		Anxiety X ± SD	Depression X ± SD
Gender			
Female	204 (47.1)	10.57 ± 4.77	9.96 ± 4.14
Male	229 (52.9)	7.72 ± 4.53	7.91 ± 4.13
		<i>U</i> = 15 264.000	<i>U</i> = 16 477.000
		<i>P</i> < 0.001	<i>P</i> < 0.001
Age (years)			
18–36	54 (12.5)	7.57 ± 4.56	6.94 ± 4.13
37–55	95 (21.9)	8.67 ± 4.56	8.25 ± 3.47
56–74	182 (42.0)	8.83 ± 4.73	8.68 ± 4.08
75–93	102 (23.6)	10.65 ± 5.12	10.84 ± 4.57
		<i>KW</i> = 15.584	<i>KW</i> = 32.371
		<i>P</i> < 0.001	<i>P</i> < 0.001
Marital status			
Married	326 (75.3)	8.84 ± 4.67	8.66 ± 4.02
Single	34 (7.9)	6.32 ± 4.16	6.26 ± 3.64
Widowed or divorced	73 (16.8)	11.34 ± 5.11	11.08 ± 4.61
		<i>U</i> = 3756.500	<i>U</i> = 3640.000
		<i>P</i> < 0.010	<i>P</i> < 0.001
Educational level			
Primary school or below	331 (76.4)	9.58 ± 4.83	9.41 ± 4.23
Secondary and high school	82 (19.0)	7.37 ± 4.72	7.29 ± 4.07
University or above	20 (4.6)	7.50 ± 4.04	6.65 ± 2.94
		<i>KW</i> = 17.722	<i>KW</i> = 23.426
		<i>P</i> < 0.001	<i>P</i> < 0.001
Economical status			
Income < expenditure	223 (51.5)	9.68 ± 4.81	9.52 ± 4.16
Income = expenditure	180 (41.6)	8.31 ± 4.75	7.98 ± 4.22
Income > expenditure	30 (6.9)	9.03 ± 5.28	9.43 ± 4.29
		<i>KW</i> = 8.130	<i>KW</i> = 12.912
		<i>P</i> < 0.050	<i>P</i> < 0.010
Residential area			
City central	215 (49.7)	8.33 ± 4.71	8.36 ± 3.96
Town	99 (22.9)	9.78 ± 4.60	9.14 ± 4.08
Village	97 (22.4)	9.89 ± 5.09	9.79 ± 4.76
External city Kırşehir	22 (5.1)	9.45 ± 5.41	8.77 ± 4.89
		<i>KW</i> = 10.595	<i>KW</i> = 6.839
		<i>P</i> < 0.010	<i>P</i> < 0.050
Profession			
Housewife	187 (43.2)	10.77 ± 4.83	10.10 ± 4.17
Employee	37 (8.5)	7.16 ± 4.23	7.08 ± 3.20
Officer	25 (5.8)	7.28 ± 4.01	7.24 ± 3.60
Farmer	62 (14.3)	7.82 ± 4.26	8.01 ± 4.31
Retired	72 (16.6)	8.13 ± 5.06	8.90 ± 4.62
Unemployed	17 (3.9)	8.52 ± 4.92	7.82 ± 3.48
Craftsman	33 (7.6)	7.57 ± 3.96	7.36 ± 3.72
		<i>KW</i> = 44.024	<i>KW</i> = 38.091
		<i>P</i> < 0.001	<i>P</i> < 0.001

anxiety and depression. The HADS consists of two subscales: anxiety (HADS-A) and depression (HADS-D), and it is designed to measure levels of either anxiety or depression independently from each other. Each subscale consists of seven items, and the range of scores on each item is 0–3. The possible scores for both the anxiety and depression subscales range from 0 to 21.²³ Cut-off points on each of the subscales of 7/8 for possible and 10/11 for probable diagnosis of anxiety and depression have been recommended.³⁹ The time needed to answer the HADS was \approx 3–5 min. In this study, Cronbach's alpha of the anxiety subscale was 0.80 and the depression subscale was 0.80.

Data analysis

The data were analysed using the Statistical Package for Social Sciences (SPSS) version 11.0 for Windows (SPSS, Chicago, IL, USA). Descriptive data on frequency, percentage, mean and standard deviations were used for the sociodemographic characteristics and the HADS questionnaire scores. Kruskal–Wallis Variance analysis and Mann–Whitney *U*-test were used to determine which of the sociodemographic variables were related to the HADS scores. A result was considered statistically significant if $P < 0.05$. Cronbach's alpha coefficients for the HADS subscales have provided an estimate of internal consistency reliability of the instruments.

Ethical considerations

Because the hospital director's approval is adequate to perform descriptive studies in the hospital, this study was approved by the director of the hospital. The participants were informed about the aim and method of the study; they were told that their participation was voluntary, and that they had the right to withdraw at any point. Participants were told that all information would be kept strictly confidential. Participants completed the questionnaire and HADS. Completed instruments were coded and sealed in an envelope to keep confidentiality.

RESULTS

A statistically significant difference was found between HADS scores and the gender ($P < 0.001$) of inpatients. Women were more anxious and depressive than men. There was a significant difference between HADS-A scores and gender, age, educational level, profession ($P < 0.001$), marital status ($P < 0.01$), residential area and economical status ($P < 0.05$). A statistically signifi-

cant difference was found between depression subscale and gender, age, marital status, educational level, profession ($P < 0.001$), economical status ($P < 0.01$) and residential area ($P < 0.05$). It was found that the individuals between the ages of 75 and 93 were more anxious and depressive than the other groups. Widowed and divorced individuals were more anxious and depressive than married individuals. Patients with only primary school education or less were more anxious and depressive than the others. It was determined that the patients with less income, and those who lived in a village and had housewives were more anxious and depressive than the others (Table 1).

When the mean HADS scores of patients in Table 2 were compared according to the clinics they were in, the difference was found to be significant for HADS-D ($P < 0.01$) scores. The anxiety and depression scores of the patients in internal medicine branches were higher than the patients in surgery branches. The highest mean HADS score was found in the hospital experience present group (HADS-A $P < 0.001$, HADS-D $P < 0.01$). The length of stay in hospital and the presence of a paid companion between HADS scores had no statistical difference ($P > 0.05$). It was found that mobility-dependent patients were more anxious and depressive than semidependent and independent individuals (Table 2).

The mean HADS-A score of study participants was 9.07 ± 4.85 , whereas the mean HADS-D score was 8.88 ± 4.25 . Among the participants in this study, 44.3% had an anxiety disorder (HADS-A score of ≥ 10), whereas 73.7% showed depression (HADS-D score of ≥ 7).

DISCUSSION

In this study, the internal consistency measured by the Cronbach's alpha of HADS-A and HADS-D was found to be satisfactory. The Cronbach's alpha values are similar to those described in a review of international studies by Bjelland *et al.* from 0.76 to 0.93 for anxiety and 0.67 to 0.90 for depression.²² Our results fulfilled the recommendation that Cronbach's alpha should be at least 0.60 for a self-report instrument to be reliable.⁴⁰

Another similarity of our study was comparable with previous studies;^{41–45} there was an association between the HADS score and sociodemographic variables. Soskolne *et al.* reported a multifactorial analysis of covariance that showed that higher scores of depression were significantly ($P < 0.01$) associated with being a female.⁴⁵

Table 2 Variables related to disease and the Hospital Anxiety and Depression Scale (HADS) scores of inpatients

Variables	N (%)	Mean HADS scores	
		Anxiety X ± SD	Depression X ± SD
Clinics			
Surgery branches	201 (46.4)	8.75 ± 5.02	8.31 ± 4.12
Medical branches	232 (53.6)	9.34 ± 4.70	9.37 ± 4.31
		<i>U</i> = 21 313.000	<i>U</i> = 19 533.000
		<i>P</i> > 0.050	<i>P</i> < 0.010
Hospital experience			
Present	336 (77.6)	9.50 ± 4.91	9.20 ± 4.21
Absent	97 (22.4)	7.56 ± 4.34	7.76 ± 4.23
		<i>U</i> = 12 672.000	<i>U</i> = 13 475.000
		<i>P</i> < 0.001	<i>P</i> < 0.010
Length of stay in hospital (days)			
1–10	305 (70.4)	8.75 ± 4.81	8.62 ± 4.04
11–20	64 (14.8)	9.71 ± 4.65	10.00 ± 4.72
21–30	38 (8.8)	10.39 ± 5.45	9.13 ± 4.67
≥ 31	26 (6.0)	9.26 ± 4.72	8.80 ± 4.67
		<i>KW</i> = 4.994	<i>KW</i> = 4.495
		<i>P</i> > 0.050	<i>P</i> > 0.050
Mobility dependence			
Dependent	43 (9.9)	12.20 ± 6.08	12.09 ± 5.14
Semidependent	85 (19.6)	9.35 ± 4.43	9.69 ± 4.09
Independent	305 (70.4)	8.55 ± 4.61	8.20 ± 3.91
		<i>KW</i> = 15.253	<i>KW</i> = 27.171
		<i>P</i> < 0.001	<i>P</i> < 0.001
Paid companion			
Permanently present	208 (48.0)	9.35 ± 5.36	9.17 ± 4.52
Sometimes present	78 (18.0)	8.85 ± 4.64	8.60 ± 4.14
Absent	147 (33.9)	8.78 ± 4.16	8.61 ± 3.91
		<i>KW</i> = 0.413	<i>KW</i> = 0.841
		<i>P</i> > 0.050	<i>P</i> > 0.050

According to a study by Dowson *et al.*,⁴³ women had significantly higher HADS-A scores compared with men ($P < 0.005$). Depression was detected more often in women and being female was associated with depressive status ($P = 0.010$) and age was also associated with being depressed ($P = 0.037$).⁴² In this study, increasing age was associated with increased anxiety and depression. Many epidemiological studies have reported a high prevalence of anxiety disorders among older adults in

the community (18.6% for any anxiety disorder, 7.3% for generalized anxiety disorder).^{46,47} However, Shuldhham *et al.* found that anxiety levels were not affected by the age or sex of the respondent or the length of stay.¹¹ Zhang *et al.* also found that there were no significant differences in the incidence of depression among people of different gender, age, educational levels and marital status.¹⁸ The presence of depressive disorders was more often seen in women, patients unable to work

and patients with a low quality of life.⁴¹ Anxiety was detected in 39.8% of women and 21.5% of men ($P = 0.003$); 31.8% of women and 16.3% of men had depression ($P = 0.006$). Depressive patients were older, and had a lower educational level.⁴³ In this study, patients who were primary school educated or uneducated were more anxious and depressive than the others. Alexopoulos also found that low educational level was related to depression.⁴⁸ The reason for this might be the fact that the individuals with low educational level are less capable of coping with anxiety and depression. A higher prevalence of depression was found in patients in medical wards, female patients, unemployed patients and separated/divorced patients.⁴⁹

The highest mean HADS score was found for individuals living in villages and using the services of paid companions. To our knowledge, there is no literature on these issues. The increased HADS score might be the result of the fact that village life is tiring and difficult. Having a paid companion present might make patients feel at ease. Similarly, this finding is parallel with another study that showed that the difference between depressive symptoms and patient's length of stay before evaluation was not statistically significant.⁴⁵

In a study with musculoskeletal patients, Pallant and Bailey found that 38.2% had anxiety and 30.1% had depression. Bryant *et al.* found that 60% of the older had anxiety symptoms and 48% of the participants had depression.⁵¹ In a study with neurological patients from four cities in China, Fu *et al.* found that the prevalence of depression was 50.8% and the prevalence of anxiety symptoms was 73.1%.⁵² Thus, the 44.3% prevalence of anxiety disorder and 73.7% prevalence of depression reported in this study are in good agreement with the results of previous studies.

There are several limitations of this study. A convenience sample was recruited in one city in Turkey, which limits the generalizability of the results. Sample groups should include psychiatry patients, but there were only a few patients (two to three) in each of the psychiatry clinics of the hospital where the study took place. The anxiety and depression statuses of these patients could be compared with the patients of medical and surgery clinics. Despite these limitations, this study contributes to the literature on anxiety and depression levels of inpatients. This research alerts researchers and health-care providers alike to the varying manifestations of anxiety and depression in inpatients.

Conclusions

Consequently, this study clearly shows that inpatients have a high prevalence of anxiety and depression. This finding might indicate the need for an early and specialized approach to treat these disorders. Prevention strategies are very important to help patients in medical and surgical clinics to reduce their anxiety and depression levels through psychological nursing after an evaluation of their mental status. The HADS still serves as a useful screening purpose because it contains two subscales of anxiety and depression. Additional research should focus on using HADS in different diseases such as coronary heart, renal failure and chronic obstructive pulmonary disease. Further studies need to be carried out to investigate the aetiologies of anxiety and depression of inpatients.

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