In the name of God

The Prevalence of Anxiety and Depression in Adult Hospitalized Patients in Internal and Surgical Wards of Shiraz Hospitals-1387(2008).

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Abstract:

Background and Objectives: The objective of this study was to find out the prevalence of anxiety and depression in adult hospitalized patients in internal and surgical wards of Shiraz University Hospitals in year 2008.

Materials and Methods: The study was designed as a cross sectional study. A validated measurement tool was used in this study was the Hospital Anxiety and Depression Scale (HADS) (the questionnaire of case ness). Data collection was carried out in two major university hospitals and two private hospitals in Shiraz. Statistical analysis included the Student's t test, and chi-square test and logistic regression analysis.

Results: Thirty (4.3%) patients were normal within anxiety and depression, 216 (30.9%) were borderline cases of anxiety, 454 (64.9%) were probable cases of anxiety, 373 (53.4%) were borderline cases of depression and 296 (42.3%) were probable cases of depression. There was significant association between normal, borderline and probable groups of depression according to times of admissions and also between normal, borderline and probable groups of anxiety and depression according to duration of hospitalization and ward of admission. Most of borderline and probable cases of anxiety were admitted in internal ward. Most of normal and probable cases of depression were admitted in internal ward too.

Discussion and conclusion: Prevalence of anxiety and depression in hospitalized medical patients is grate. The high levels of anxiety and depression detected in this sample suggests that screening for psychological co-morbidity is important in rehabilitation settings and should be included in the clinical interview carried out by the nurse at the duration of admission to the ward. Accurate diagnosis of co-morbid depressive and anxiety disorders in patients who admitted in medical care services is essential in understanding the cause and in optimizing the management of somatic symptom burden.

Keywords: Anxiety, Depression, Prevalence, Hospitalized patients, HADS questionnaire

Introduction:

Admission in hospital results in different psychiatric reactions such as anxiety and depression. The WHO (2005) emphasizes that depression, which is the fourth most common illness, can lead to physical, emotional, social and economic problems.[1] Depression causes disability of functional impairment, decreased quality of life, and has a negative effect on the body's recovery from illness, increases the rate of suicide, increases use of health care services and expenses [2-4], and can result in early death and disturbance in the general state of wellness.[2,3] The mixed occurrence of depression and anxiety among patients with major depressive disorder is well established.[5] Depressed patients with anxiety appear to have a poorer prognosis than those with depressive symptoms only [6], and for diagnostic and treatment purposes it is important to distinguish between the two states.[7]

Multiple community-based and primary care studies have shown that respondents with DSM-IV (Diagnostic Interview Schedule) anxiety and depressive disorders report significantly higher numbers of medically unexplained physical symptoms compared to those without psychiatric disorders.[8,9]

Depression occurs concomitantly with a number of different disease states such as pancreatic and bronchogenic carcinoma, hypothyroidism, Cushing's syndrome, and cerebrovascular disease. When the mood state is felt to be etiologically related to the medical condition, the diagnosis of major depression should not be given.

At least three-fourths of patients with primary depression complain of feeling anxious, worried, or fearful. Extreme anxiety may occur in agitated depression in the form of anguished facial expressions; lip biting; picking at fingers, nails, or clothing; handwringing; constant pacing; and inability to sit quietly. Conversely, primary anxiety can be depressing in its own right. If anxiety persists, particularly if it interferes with functioning, secondary depression is the rule rather than the exception. Some patients have both primary anxiety and primary depressive disorders. Although most patients with anxiety or depression fall clearly into the respective DSM-IV categories, differential diagnosis of anxiety and depression can be challenging and require several interviews, further evaluation, and trials of treatment.[10,11]

In the National Institute of Mental Health Epidemiologic Catchment Area (NIMH-ECA) study, anxiety disorders were more prevalent over the preceding 6 months than any other mental disorder (8.3% of the populations surveyed in their homes).[10]

A study showed the prevalence of anxiety and depression in hospitalized medical patients is high, occurs mainly in women, and no relation to illness severity is observed, anxiety and depression are associated with both illness perception of greater severity and less improvement.[11]

Also other studies showed prevalence of clinical significant symptoms of depression and anxiety amounting to around 50% in patients with chronic obstructive pulmonary disease (COPD) [12] and depression in hospitalized patients with

congestive heart failure (CHF) was high.[13] In a study was done by HADS questionnaire in musculoskeletal patients showed that the high levels of anxiety and depression detected in this sample suggests that screening for psychological co-morbidity is important in musculoskeletal rehabilitation settings.[14] In a study was done in patients with cardiovascular diseases in Iran showed 72% of patients had depression symptoms and 90% of them had anxiety symptoms.[15] In a study was done in hospitalized patients in internal and surgical wards in Iran anxiety was detected in 50.4% of patients and depression in 53.6% of them.[16]

The main objectives of this study was to determine the prevalence of anxiety and depression in adult hospitalized patients in internal and surgical wards of Shiraz hospitals using HADS questionnaire. Although there are some studies about prevalence of anxiety and depression in hospitalized patients in Iran, but in our study HADS questionnaire is used for data collection that as a screening instrument measures psychological morbidity and determines caseness. Likewise, such study that rates prevalence of anxiety and depression in medical wards has not been done yet in Shiraz hospitals.

The specific objectives of this study was to determine prevalence of anxiety and depression in adult hospitalized patients in internal and surgical wards of Shiraz hospitals according to sex, age, educational level, marital status, duration of hospitalization, kind and duration of diseases or symptoms, number of hospital admissions, ward (internal or surgical), and governmental or non-governmental hospitals. This study helps physicians and hospital managers in decreasing anxiety and depression in hospitalized patients.

Materials and Methods:

The study was designed as a cross sectional study. To attain a study power of 0.80 with the level of significance at 0.05, 700 subjects (350 males and 350 females) were considered to be adequate to test the associations between anxiety and depression to test a maximum of ten independent variables in a multiple regression analysis .The patients with cognitive impairment, patients who were admitted in pediatric surgery ward, patients who were admitted in emergency rooms, internal and surgical triages, patients with the age under 18 years old, patients with decreased levels of consciousness and patients with psychological and mental disabilities were all excluded from the study.

A validated measurement tool was used in this study to collect data: the Hospital Anxiety and Depression Scale (HADS). The HADS is a self-report questionnaire that rates the severity of seven symptoms of anxiety and seven symptoms of depression over the previous week.[17] Each symptom is scored from 0–3, that 0 indicating no such symptom and 3 indicating the greatest possible severity of the symptom. The possible scores of the anxiety or depression subscales can range from 0– 21. Subjects who rate more than 10 on the anxiety or depression subscale are considered to be probable cases of anxiety or depression (caseness); ratings that fall between 8– 10 are considered to be possible cases (borderline); and ratings less than 8 are

considered to be normal cases.[18] The HADS has been well validated by research studies.[19] In a study, translated form to Persian was evaluated according to reliability and validity.[20]

Data collection was carried out from March 2008– March 2009 in internal and surgical wards of two major university hospitals (Saadi and Namazi Hospitals) and two private hospitals (Dena and Ordibehesht Hospitals) in Shiraz. Internal wards were consisted of haematology, nephrology, neurology, gastrointestinal, cardiology, pulmonology and endocrinology. Patients were categorized to before operation and after operation in surgery group.

To ensure consistency in the data collection process, the principal researcher collected all of the data (face to face) one day per week. The principal researcher interviewed the participants individually at their bedside. Each participant was first asked to rest in bed in the most comfortable position. Afterwards, they were instructed to complete the HADS. The principal researcher read out the questions and answers to illiterate or visually impaired participants. The total time for the data collection process was, on average 19 minutes.

SPSS software version 15 was used for all statistical computations. Statistical analysis included the Student's t test, and chi-square test and logistic regression analysis. P-values 0<.05 were considered statistically significant.

Results:

Hospital anxiety and depression scale was assessed in 700 consecutive patients with mean age of 42.6 years old (SD=17.145). Demographic data of the patients is illustrated in table 1.

Table1.Demograghic pattern of patients

	Number of patients	**percentage**
Sex		
Male	344	49.1%
Female	356	50.9%
Age		
<25	142	20.3%
25-35	160	22.9%
35-50	166	23.7%
>50	232	33.1%
Level of Education		
Illiterate	112	16%
Diploma	396	56.6%
Bachelors'	172	24.6%
Masters' or above	18	2.6%
Marital Status		
Married	532	76.0%
Single	168	24.0%
Kind of Hospital		
University	516	73.7%
Private	184	26.3%

30 (4.3%) patients were normal within anxiety and depression, 216 (30.9%) were borderline cases of anxiety, 454 (64.9%) were probable cases of anxiety, 373 (53.4%) were borderline cases of depression and 296 (42.3%) were probable cases of depression. Mean age of patients was 42.6 years old (SD:17.145).

In anxiety group, there was not significant association between normal, borderline and probable groups according to age (p-value of 0.73), but in depression group, there was significant association between these three groups according to age (p-value of 0.03) (Tab.2).
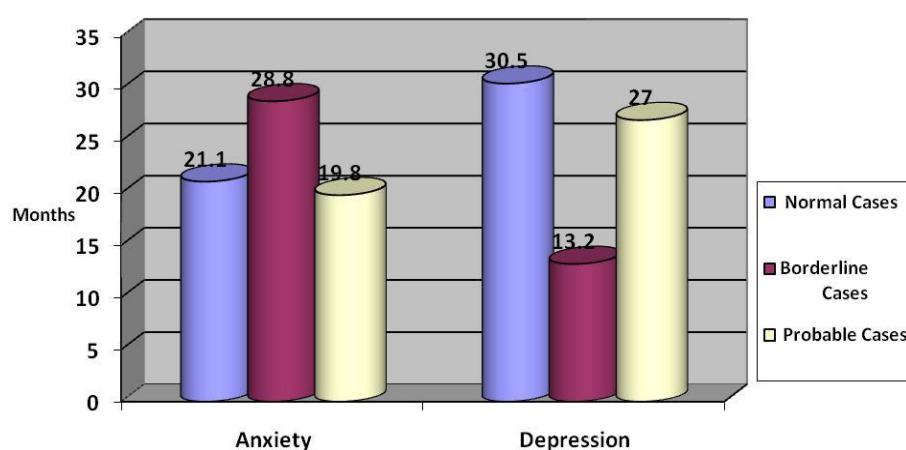
Table 2. Number and percentage of patients According to Age in Normal, Borderline and Probable Cases of Anxiety and Depression

Age groups				
Anxiety	<25	25-35	35-50	>50
Normal	8 (5.6%)	6 (3.8%)	4 (2.4%)	12 (5.2%)
Borderline	40 (28.2%)	44 (27.5%)	58 (34.9%)	74 (31.9%)
Probable	94 (66.2%)	110 (68.8%)	104 (62.7%)	146 (62.9%)
Depression				
Normal	8 (5.6%)	6 (3.8%)	6 (3.6%)	10 (4.3%)
Borderline	76 (53.5%)	94 (58.8%)	98 (59%)	106 (45.7%)
Probable	58 (40.8%)	60 (37.5%)	62 (37.3%)	116 (50%)
Total	142 (100%)	160 (100%)	166 (100%)	232 (100%)

Probable cases of depression had higher mean age rather than normal and borderline cases of depression. There was not significant association between anxiety and depression group according to mean age (p-value of 0.674) (Fig.1).

Figure 1 .Mean ages of Patients

The most common age of cases free of anxiety was <25 years old, in borderline and probable cases of anxiety was > 50

years old. The most common age of cases free of depression, borderline and probable cases of depression was > 50

years old, in borderline and probable cases of anxiety was > 50 years old (Tab.2).

There was not significant association between normal, borderline and probable groups in anxiety and depression according to sex (p-value of 0.621 and 0.514) (Tab.3).

Table 3 .Number and percentage of patients According to Sex in Normal, Borderline and Probable Cases of Anxiety and Depression

Anxiety	Sex	
	Female	Male
Normal	12 (3.4%)	18 (5.2%)
Borderline	112 (31.5%)	104 (30.2%)
Probable	232 (65.2%)	222 (64.5%)
Depression		
Normal	14 (3.9%)	16 (4.7%)
Borderline	182 (51.1%)	192 (55.8%)
Probable	160 (44.9%)	136 (39.5%)
Total	356 (100%)	344 (100%)

There was not significant association between normal, borderline and probable groups in anxiety and depression according to marital status (p-value of 0.134 and 0.0954) (Tab.4).

There was not significant association between normal, borderline and probable groups in anxiety and depression according to educational classes (p-value of 0.64 and 0.82).

There was not significant association between normal, borderline and proba- ble groups in anxiety and depres-

sion according to kindof hospital (p-value of 0.246 and 0.194).

Table 4 .Number and percentage of patients According to Marital status in Normal ,Border-line and Probable Cases of Anxiety and Depression

Marital Status		
Anxiety	Married	Single
Normal	22 (4.1%)	8 (4.8%)
Borderline	178 (33.5%)	38 (22.6%)
Probable	332 (62.4%)	122 (72.6%)
Depression		
Normal	26 (4.9%)	4 (2.4%)
Borderline	276 (51.9%)	98 (58.3%)
Probable	230 (43.2%)	66 (39.3%)
Tota	532 (100%)	168 (100%)

There was significant association between normal, borderline and proba-ble groups according to times of admissions in depression (p-value of 0.001), but there was not significant association between these groups according to times of admissions in anxiety (p-value of 0.16).

There was significant association between normal, borderline and proba-ble groups in anxiety and depression according to duration of hospitaliza-tion (p-value of 0.006 and 0.001).

Mean duration of disease in normal cas-es free of anxiety, borderline cases of anxiety and probable cases of an-xiety were 21.1 +/- 32.2, 28.8 +/- 55.6 and 19.8 +/- 39.7 months, re-trospectively (Fig.2).

Figure 2 .Mean duration of disease in Normal, Borderline and Probable Cases of Anxiety and Depression
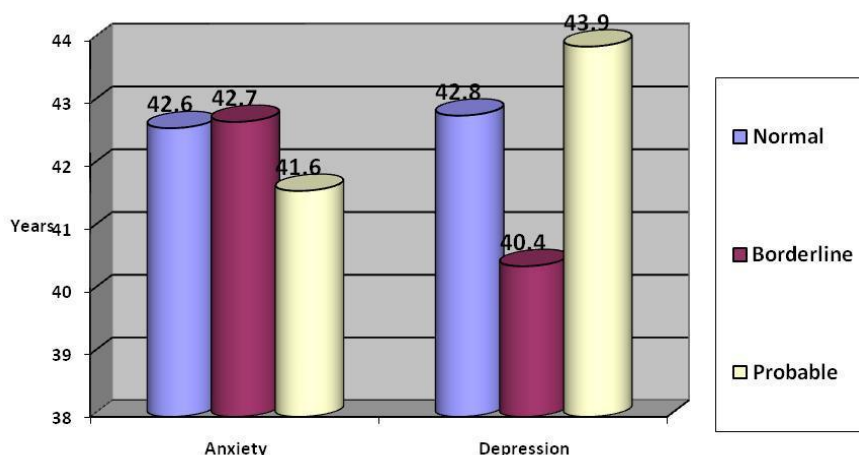
There was not significant association between these three groups in anxiety according to duration of disease (p-value of 0.60).

Mean duration of disease in normal cases free of depression, borderline cases of depression and probable cases of depression were 30.5 +/- 64.3, 13.2 +/-24.9 and 27.0 +/- 49.3 months, retrospectively (Fig.2). There was significant association between borderline and probable groups in depression according to duration of disease (p-value of 0.001).

In borderline and probable cases of anxiety, most of the patients admitted in internal ward. In normal and probable cases of depression, most of the patients admitted in internal ward. There was significant association between these three groups according to ward of admission in anxiety and depression (p-value of 0.0325 and 0.046) (Tab.5).

The most common age in patients who were admitted in internal wards and were normal, borderline and probable cases of anxiety was > 50 years old. Males were higher than females in these three

groups. There was not significant association between these three groups according to age (p-value of 0.245), duration of hospitalization (p-value of 0.231) and times of hospital admissions (p-value of 0.458).

The most common age in patients who were admitted in internal wards and were normal and borderline cases of depression was < 25 years old and in probable cases of anxiety was > 50 years old. Males were higher than females in these three groups. There was significant association between these three groups according to age (p-value of 0.036). There was significant association between these three groups according to duration of hospitalization (p-value of 0.019), but there was not significant association between these three groups according to times of hospital admissions (p-value of 0.06).

The most common age in patients who were admitted in surgery wards and were normal was < 25 years old and in borderline and probable cases of anxiety was > 50 years old. Males were lower than

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females in borderline and probable cases. There was not significant association between these three groups according to age (p-value of 0.424), and times of hospital admissions (p-value of 0.144); but there was significant association between these three groups according to duration of hospitalization (p-value of 0.00).

The most common age in patients who were admitted in surgery wards and were normal and probable cases of depression was < 25 years old and in borderline cases of depression was 35-50 years old. Males were lower than females in normal, borderline and probable cases. There was significant association between these three groups according to age (p-value of 0.046), but there was not significant association between these three groups according to duration of hospitalization (p-value of 0.068) and times of admissions (p-value of 0.337).

The most common educational level in normal, borderline and probable cases of anxiety and depression was diploma.

In the patients who were admitted in university hospitals and were normal, borderline and probable cases of anxiety, there was not significant association between these three groups according to age (p-value of 0.434), duration of hospitalization (p-value of 0.186) and times of admissions (p-value of 0.172).

In the patients who were admitted in private hospitals and were normal, borderline and probable cases of anxiety, there was significant association between these three groups according to age (p-value of 0.003) and duration of hospitalization (p-value of 0.00), but there was not significant association between these three

groups according to times of admissions (p-value of 0.192).

In the patients who were admitted in university hospitals and were normal, borderline and probable cases of depression, there was significant association between these three groups according to age (p-value of 0.032), duration of hospitalization (p-value of 0.002) and times of admission (p-value of 0.018).

In the patients who were admitted in private hospitals and were normal, borderline and probable cases of depression, there was not significant association between these three groups according to age (p-value of 0.47) and duration of hospitalization (p-value of 0.256), but there was significant association between these three groups according to times of admission (p-value of 0.046).

Discussion & Conclusion:

In our study, the prevalence of anxiety (64.9%) and depression (42.3%) in hospitalized patients is much more than a study that showed probable cases on the HADS as 38.2% in anxiety subscale and 30.1% in depression subscale [14], The difference may be due to this fact that its target group was musculoskeletal patient. Also another study, that estimated major depression occurs in 10%-14% of medical inpatients.[21]

In this study, there was significant association between depression and age (p-value of 0.03) but there was not significant association between anxiety and age. It is comparable to a study that showed depressive patients were older, had a lower educational level and concluded that the prevalence of anxiety and

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depression in hospitalized medical patients is high.[22]

In our series of patients, of the borderline and probable cases of anxiety, 34.3% and 32.2% were above 50 years old, and of the borderline and probable cases of depression, 28.3% and 33.1% were above 50 years old. The most common age of borderline and probable cases of anxiety and depression was > 50 years old. It means that anxiety and depression mostly occur in elderly medical inpatients. It is similar to a study that found 64% of the elderly patients had depressive symptoms.[23]

In our study most of the patients (normal, borderline and probable cases of anxiety and depression) admitted in internal ward. There was significant association between these three groups according to ward of admission in anxiety and depression (p-value of 0.0325 and 0.046).Also in a study, very high anxiety levels were discovered in cardiovascular, general surgery, infectious and neuro-vascular patients, whereas depression levels were higher among cardiovascular and chronic patients.[24]

As well as admission in hospital is stressful itself, some other different factors help to pave the way for anxiety and depression such as kind of disease, hospital environment, patient's concern about not being examined by the main physician, presence of many medical students, residents and attending in teaching rounds, white coat fear, patient's concern about being away from their family and missing their job.

The high level of prevalence of anxiety and depression detected in our study in comparison to other studies, can be explained by some factors more common in our hospital and educational system. In our system, patients are not oriented enough about their type of disease, the progression, prognosis and complications of their disease. They are not explained enough about the procedures and different approach to treatment. Also repeated physical examinations by medical students and nurses can be added. On the other hand, this high level of anxiety and depression can be contributed partly to economical and social pressures in our society.

Prevalence of anxiety and depression in hospitalized medical patients is high. The high level of anxiety and depression suggests that screening for psychological co-morbidity is important in rehabilitation settings and should be included in the clinical interview carried out by the nurse at the moment of admission in the ward.

Accurate diagnosis of co-morbid depressive and anxiety disorders in patients who admitted in medical care services is essential in understanding the cause and in optimizing the management of somatic symptom burden.

According to the results of this study the authors'| recommendations are as below:

1-Explanation about the identity of the disease, how disease progresses, how the prognosis is, the available and effective treatments and giving reassurance to the patients that everything and everyone works in the direction of their health, by the physician at first visit or by brochures about their disease, can reduce their confusion and disorientation and therefore anxiety and depression.

2-The medic team is better to choose conference room or library for medical

discussion about patient's disease instead of patient's bedroom which will make it more convenience for both patients and physicians.

3-If hospital managers can provide patients with more facilities to spend more times with their families, it can help to reduce their anxiety and also depression.

4-Since HADS questionnaire is a simple one, and does not need a specialist to fill in, it can be completed by a trained nurse for each patient at the time of admission and according to the scores, the border line and probable cases of anxiety and depression will refer to psychologists and psychiatrics for any necessary treatments. If it is practical, the use of health care service and expenses, and also the load of patients in hospitals will diminish and it will be a suitable solution to improve the prognosis and decrement in duration of admission.

Acknowledgment:

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