Original Article: Prevalence of Anxiety and Depression among doctors working in a private hospital in Pakistan. ASEAN Journal of Psyhiatry, Vol. 13(1): January – June 2012

ORIGINAL ARTICLE

PREVALENCE OF ANXIETY AND DEPRESSION AMONG DOCTORS WORKING IN A PRIVATE HOSPITAL IN PAKISTAN

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Abstract

Objectives: **Anxiety and depression among doctors may negatively affect quality of patient care, patient safety, and professionalism. Despite the potentially serious personal and professional consequences of depression, there are very limited researches done on depression among Pakistani doctors. Therefore this study was aimed to determine the prevalence of anxiety and depression among doctors in a private teaching hospital in Pakistan.** ***Method:*** **This was a cross-sectional survey conducted in a tertiary care teaching hospital in Pakistan. The Self-Reporting Questionnaire for Anxiety and Depression (SRQ 20) Scale was administered to a sample of 300 medical doctors. Chi-square test and multiple regressions were used for data analysis.** ***Results:*** **Anxiety and Depression among doctors was measured to be 27.3 % (95% CI: 22.3, 32.4) in our study.** ***Conclusion:*** **More than one quarter of our doctors are suffering from anxiety and depression but this subject is fairly neglected in Pakistan and more studies should be conducted to collect more validated information on this matter.** ***ASEAN Journal of Psychiatry, Vol.13(1): January – June 2012: XX XX.***

Key Words: Anxiety, Depression, Doctors, Pakistan

Introduction

Medical doctors have an important role to play in promoting public wellbeing, providing health care for ailing population and advancement of medical science [1]. According to the constitutional principle of World Health Organization (WHO), health is universally recognized as a fundamental right of every human being without discrepancy of race, religion, political belief, financial or social status [2]. As Human beings, doctors are not protected to the occurrence and consequences of psychological illnesses [3].

Although the actual incidence of anxiety and depression in medical doctors is unknown, different studies on medical students in Saudi Arabia and Pakistan reported 47% to 73% prevalence of anxiety and depression [6-8]. The world's overall mean point prevalence is 5-10% [4] and in Pakistan it is 33.62% [5]. A study among a family medicine faculty in Orlando reported the prevalence of depression to be 7% for mild and 5% for moderate to severe scoring [9]. A Pakistan Khuwaja study reported 39 % prevalence of anxiety and depression only among general practitioners [10]. People with major depression may experience such extreme emotional pain that they consider or attempt suicide. At least 15 percent of seriously depressed people commit suicide [11]. In a meta analysis of 25 studies from 1960 to 2003, rates of male and female physician suicide were 1.4 times and 2.3 times respectively higher than for the general population [12].

Psychologists agree that stressful experiences can trigger anxiety and depression among medical doctors. They worry about not being

able to shoulder their responsibilities towards family and friends, and are fearful of being a burden for others [13].

Anxiety and depression in doctors not only affect their own personal and family lives, but also may have serious consequences on the wellbeing of the community in general [13]. Medical errors have established increased interest since 1999, when the Institute of Medicine reported that up to 100, 000 patients in United States die each year because of preventable unpleasant measures and the stress of medical resident training, including lack of sleep and leisure time, are among the most commonly cited reasons for such errors [14, 15]. Residents who are depressed are about six times more likely to make medication errors than those who are not depressed [15]. Despite the potentially serious personal and professional consequences of anxiety & depression, there are very limited researches done on depression among Pakistani doctors. Limited local research highlights that anxiety and depression is common in Pakistani medical students [7, 8] and general practitioners [9] and there has not been any local study done to determine anxiety and depression in all medical professionals at any one time. This is important because then all confounders can be same for all the study population. If the prevalence of anxiety & depression are high enough, preventive measures including regular screening process for detecting depression and proactive programs to address risk factors might be of value.

Methods

A cross sectional survey was conducted at the Aga Khan University Hospital (AKUH) in Karachi, Pakistan from August 2005 till October 2005. A total of 300 medical doctors were required with an anticipated prevalence of anxiety and depression of 50% precision of 6% and level of significance of 5% after adjustment of non response rate of 15%. The total population of registered medical doctors was registered with Pakistan Medical and Dental council (PMDC) [16] in 2005 was 115989. Subjects met inclusion criteria if they had been employed at the hospital for at least 6 months and registered with PMDC. Those who were not willing to give signed consent for participation prior to survey were excluded from the study. A non-probable purposive sampling was done. All medical doctors who were fulfilled the inclusive and exclusive criteria were approached in clinics, operation room, emergency room, intensive care unit, laboratory, radiology and seminar halls. An anonymous two-page survey to maintain the confidentiality was distributed. Surveys consisted of some independent variables such as age, gender, marital status, educational status and current working level. A 20 item of Self Reporting Questionnaire for Anxiety and Depression (SRQ 20) in English version was used [17] to detect anxiety and depression. The score of 8 out of 20 was considered positive for anxiety and depression. The sensitivity of SRQ at the threshold of this score was 72.2% and specificity was 89.3% [17]. The survey forms were returned on the same day.

Data was analyzed on Statistical Package for the Social Sciences (SPSS) version 16. Prevalence of anxiety and depression along with 95% confidence interval was calculated. Pearson's chi-square test was used to observe the association between anxiety & depression status and other demographic variables. Crude odds ratio and their 95% confidence interval (95% CI) were computed through logistic regression model developed for each independent variable. Variables with a significant P value 0.25 in univariate analysis were considered for inclusion in the multivariable model to get more numbers of variables [18]. As a further step, we also determined the goodness-of-fit of the model to measure how well it described our response variable (adequacy of knowledge) by using Hosmer-Lemeshow test [18]. To keep the subject's identification confidential and to get honest information, the survey forms were kept anonymous. All ethical considerations including informed consent were ensured. . All efforts were made in this study to achieve the ethical considerations in accordance with the 'Ethical principles for medical research involving human subjects' of Helsinki Declaration [19].

Results

Demographic Characteristics of Study Population

All of the medical doctors who were approached agreed to be recruited in the study. Most of the sample consists of working residents and then the consultant followed by interns, senior medical officers and medical officers. Other demographics are shown in Table 1.

Table 1. Demographics Data: Distribution of working title of medical doctors by Position, Age and Gender

Working Title	Mean Age in years (SD)	Male (number)	Female (number)	Marital Status (number)			Total, N (%)
				Single	Married	Other*	
Intern	25.3±2.25	19	35	45	7	2	54 (18%)
Resident	29.8±3.6	59	59	53	62	3	118 (39.3%)
Medical Officer	33.5±4.6	15	16	7	20	4	31 (10.3%)
Senior Medical Officer	38.4±5.5	20	14	5	26	3	34 (11.3%)
Consultant	41.6±5.2	32	31	4	54	5	63 (21%)
Total	32.6±6.9	145	155	114	169	17	300

*Other: engaged, separated or divorced; SD: Standard Deviation

Distribution of anxiety and depression among study population

Out of 300 doctors who were contacted the prevalence of anxiety and depression was found to be 27.3% (82) with 95% CI of 22.3 to 32.4. Among the anxious & depressed, 39.0% (32/82) had thoughts of ending their lives. An association between anxiety and depression status and rank of the medical practitioners was found (p-value<0.001). It was highest in interns (OR 4.80; CI=2.13, 10.83) followed by residents, consultants, senior medical officers and then the medical officers. There were more Female doctors suffering from anxiety and depression compared to their male colleagues (OR 2.08; CI=1.23-3.51. Similarly, young doctors are more anxious & depressed as compared to their senior colleagues (OR 1.87; CI=1.02-3.42) (Table 2).

Table 2. The distribution of Crude Odds Ratio (95% CI) for anxiety and depression by demographic factors of study population

Variables	All participants n	Anxiety & Depression present n (%)	Crude OR (95% CI)	p-value
Age				0.042
34 years and less	179	55(75.3)	1.87(1.02-3.42)	
35 years and more	94	18(24.7)	1.00	
Gender				0.006
Female	155	53(34.2)	2.08(1.23-3.51)	
Male	145	29(20.0)	1.00	
Marital status				0.080
Married	169	38 (22.5)	0.60(0.35-1.03)	
Others*	17	7 (41.2)	1.46(0.51-4.13)	
Single	114	37 (32.5)	1.00	
Working level				<0.001
Intern	54	30 (55.6)	4.80(2.13-10.83)	
Resident	118	26 (22.0)	1.08(0.51-2.30)	
Medical Officer	31	6 (19.4)	0.92(0.31-2.71)	
Senior Medical Officer	34	7 (20.6)	0.99(0.35-2.79)	
Consultant	63	13 (20.6)	1.00	

*Others: engaged, separated or divorced; OR = Odds Ratio

The following variables were subjected to the multiple regression analysis: 'gender' and 'working levels'. The significant ($p < 0.05$) independent predictors for anxiety and depression among study population were female gender (OR 1.865; CI=1.079, 3.224) and doctors doing internship (OR 4.504; CI=1.982, 10.234).

Table 3. The distribution of Adjusted Odds Ratio (95% CI) for anxiety and depression by demographic factors of study population

Variables	Adjusted OR	95% CI	*p*-value
Gender			0.026
Male			
Female	1.86	1.079, 3.224	
Working level			<0.001
Intern	4.504	1.98, 10.23	
Resident	1.083	0.51, 2.31	
Medical Officer	0.91	0.31, 2.70	
Senior Medical Officer	1.05	0.37, 2.97	
Consultant			

Discussion

This study is the first one encountered on anxiety and depression among all the working levels of doctors in a teaching hospital in Pakistan with a good response rate. In this study the overall prevalence of anxiety and depression among medical doctors was 27.3 %, this is comparable to the Pakistan's overall prevalence of anxiety and depression among general population (34%). This prevalence differs for both genders and ranges from 29% to 66% for females and 10% to 33% for males [5].

The prevalence of anxiety and depression is higher in our study among medical doctors than from other various international studies [9, 20-21]. One important reason for this high prevalence could be due to the fact that we determine both anxiety and depression while other studies measures only depression. Another possible reason could be that we collected the data in August until October when the season was changing. Various studies have shown the effect of fall and winter seasons in causing depression as compared to summer and spring season [22].

Khuwaja et al reported a higher prevalence (39 %) of anxiety and depression among family practitioners. Exploration of the reason for these differences is limited by different screening intervals and survey instruments and may be family physicians are more stressed out and depressed than other specialties [10].
The prevalence of anxiety and depression was found to be significantly higher among interns and residents as compared to the medical officers, senior medical officers and consultants. This high prevalence could be due to the reason that we collected data during August, September and October that is the most stressful period for trainees due to examination for evaluations and promotion into the following year while there are no examinations for medical officers or consultants and therefore they show less anxiety and depression. One important reason for higher anxiety and depression among interns and residents could be due to their long working hours and night shifts as they stay in hospital more than medical officers and consultants [10]. Their long hours in hospital and their strenuous ongoing medical training, result them to exercise less, sleep less, and spend less time in activities outside the hospital and thus causes health problems as shown by the study conducted in Ohio among physicians and medical trainees [23]. This study shows that female doctors were suffering from anxiety and depression at significantly higher rates than male doctors that is normally observed in the general population [4] in consistent with other studies [10, 24]. They probably have contributing factors such as maintaining multiple responsibilities at one point as home-makers, professionals, wives, and mothers may explicate the higher rate of depression in females.

There was no significant association between marital status and anxiety & depression as in other studies among doctors [24]. In this study found 10.7 % doctors had thoughts of ending their lives. This was almost equivalent to suicide among depressed general population [11]. This finding is significant and also consistent with existing data that a mentally disturbed doctor is more likely to cause significant medical errors and can harm the patient also [13-15].

Strengths and limitations:
This survey is the first of its kind as there are few researches that have been done regarding the assessment of anxiety and depression among all levels of working doctors at one point with a hundred percent response rates from 300 respondents.

At the same time, we recognize that our study had a few limitations. Our sample was not distributed equally among different levels of working doctors such as we had more residents and interns than consultants and medical officers. The outcome of the study may not be a representative of other hospitals, since the study was done only in one institution. This was a cross-sectional study, therefore to recognize causal associations among examined factors are not possible. The assessment of depressive symptoms was based on self-report. Therefore there are some potential for reporting bias because of respondents' interpretation of the questions or because of recall bias or concerns about the

stigma attached. Underreporting is also possible. Some causal issues were not evaluated, for example, it is possible that any current significant life events like death in immediate family members or sitting for examinations in near future could possibly result in anxiety and depression. The survey was done in the fall season only and hence cannot comment on seasonal depressive effects as anxiety and depression may occur at different times a year.

Conclusion:: The significant amount of anxiety and depression found among doctors in this study should prompt further work. Studies using more powerful designs would help to identify factors causing anxiety and depression, which result in attrition among doctors.

Conflict of interest: The authors declare that they have no conflicts of interest.

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Received: 20 June 2011 Accepted: 16 December 2011