

Research Article

Prevalence of Depression among Postgraduate Residents and Its Associated Factors in Madinah, Saudi Arabia

Alrehaili MA¹, Aloufi R² and Khan A^{3*}¹Academy of Family Medicine, Ministry of Health, Madinah, Saudi Arabia²Family Medicine Consultant, Academy of Family Medicine, Ministry of Health, KSA³Department of Pediatrics, Rehman Medical Institute, Peshawar, Pakistan***Corresponding author:** Adnan Khan, Department of Pediatrics, Rehman Medical Institute, Phase V, Hayatabad, Peshawar, Pakistan**Received:** February 21, 2022; **Accepted:** March 04, 2022; **Published:** March 11, 2022**Abstract**

Background: Numerous studies have established that psychological disorders among residents are a widespread occurrence around the world. Because physicians play a critical role in maintaining a healthy society, their health and well-being are paramount. The purpose of this study was to determine the prevalence of depression among residents.

Methods: The study was conducted in Al-Madinah Almunawarah, the capital of Al-Madinah province, from July to December 2020. The sample and initial data were collected all medical resident in all department. Data were recorded & analyzed in SPSS version 26.

Results: In this study 270 participants were included, with 151(55.9%) men rest were female. The majority of participants 242(89.6%) were between the ages of 25-30 years. The majority of participants 153(56.7%) were single, while 111(41.1%) were married; also, 6(2.2%) were divorced. Depression was detected in 15.18% of our research participants. According to Beck's Depression Inventory, the majority of participants in our research had a score of 1-10, 229(84.8%), followed by a score of 11-16, 17(6.3%), and a score of 21-30, 14(5.2%). When a comparison analysis was performed, the age group and shift per month were shown to be statistically significant $P < 0.001$.

Conclusion: This study revealed that, one in every seven residents suffers from depression Residents may benefit from a postgraduate student counseling facility to assist them in coping with depression, anxiety, and stress-related problems.

Keywords: Depression; Anxiety; Medical resident

Introduction

Depression is one of the common medical conditions. It one of the leading causes of disability more than 300 million people is affected worldwide. Across Asia lifetime rate of developing depression ranges from 1.1% to 19.9% with a median of 3.7% [1,2].

Depression can lead to a great deal of emotional distress and bad influence on social life, home life, and work. High rate of suicides among physicians have been linked to both depression and substance disorders [3].

Many Studies have point out that resident physicians experience higher rates of depression than the general population [4]. Beyond the effects of depression on individuals, poor-quality patient care and increased medical errors all can be linked to resident depression. Specialty, postgraduate year, sex, and other characteristics all are conflicting findings that can affect resident depression [5].

Prevalence of depression among residents' physicians was 28%. Systematic review included studies between 1963 and 2015, involving 17,560 physicians. A cross-sectional study in 2009 stated a prevalence of 12% among physicians. The lifetime prevalence of depression is 19% for female physicians and 12% for male physicians. The suicide rates were investigated by a systematic review of 14 studies from 1963 to 1991, which reported higher rates of suicide among physicians

compared to the general population [6].

Physicians are more susceptible to mental disorders such as anxiety, depression, and occupational burnout, most likely due to their exposure to high levels of work stress. Adverse mental health among physicians can restrain their professional performance and affect the quality of the provided healthcare. All these issues will have a major impact on the healthcare provided and overall health care system. Therefore, recently the importance of physicians' psychological well-being has increased, justifying further research about the factors influence the mental health of physicians [7].

Many of postgraduate resident in different residency programs have stressful and busy lives as well as very long working hours. There are few studies have investigated the prevalence of depression and its associated risk factors especially in Saudi Arabia. Thus this study was designed to determine the prevalence of depression among postgraduate residents and its associated risk factors in Madinah city, Saudi Arabia.

Material and Methods

This was descriptive cross-sectional Study done in AL-Madina, also known as Al-Madina Al-Munawarah, from July 2020 to December 2020. Madinah is a city in the Kingdom of Saudi Arabia's al Hejaz area. It is located 250 kilometers (160 miles) east of the Red Sea

in the country's northwestern region. It has an area of 151,990 square kilometers (58,680 square miles) and has a population of 2,132,679. Our study included all residents enrolled in all residency programs in Almadinah city. Those who did not consent to the research were excluded. A total of 350 questionnaires were distributed, and 270 individuals responded to our study, resulting in a response rate of 77.14%.

A self-administered questionnaire based on Beck's Depression Inventory was developed. It is divided into two sections:

1) Sociodemographic characteristics, such as (age, nationality, gender, marital status, number of children, specialty and if it was the first choice, level of residency, if the resident have on-call duties and how many are they per month, if the resident have to work on shifts and how many are they per month, and history of smoking).

2) Beck's Depression Inventory (BDI), a 21-item self-report rating instrument that assesses depressive-like attitudes and symptoms. It should take no more than ten minutes to finish. The maximum potential score for the entire exam is sixty-three, and because the lowest possible score for each question is zero, the maximum possible score for the entire test is zero. Then, using the table below, we can assess depression:

- 1-10: These swings in and out of consciousness are considered normal.
- 11-16: Mild mood disturbance.
- 17-20: Clinical depression on the verge of remission.
- 21-30: Suffering from moderate depression.
- Over 40: Severe depression.

Madinah's regional research and ethics committee provided ethical approval. Confidentiality of data was maintained throughout the project.

Data were analyzed using the Statistical Package for the Social Sciences version 26 (SPSS Incl., Chicago, IL). Qualitative variables were presented as frequency and percent. Quantitative variables were tested for normality distribution and were presented as mean and standard deviation. The Chi-square test was used for group comparison. This study considered variables statistically significant at $p < 0.05$.

Results

There were 270 participants in this study, including 151 men (55.9%) and 119 females (44.1%). The majority of participants were between the ages of 25-30 years 242(89.6%), while the remainder 28(10.4%) were between the ages of 31-35 years. The vast majority of research participants 269(99.6%) were Saudi nationals, with only one being a non-Saudi national. The majority of participants in this study 153(56.7%) were single, while 111(41.1%) were married; nevertheless, 6(2.2%) were divorced. Table 1 shows all demographic data.

The majority of participants in this research, 201(74.44%), were non-smokers, while just 69(18.64%) were smokers. The majority of participants 98(36.29%) were in family medicine, followed by pediatrics 54(20%) and internal medicine 55(20.37%). The remaining participants are depicted in Figure 1.

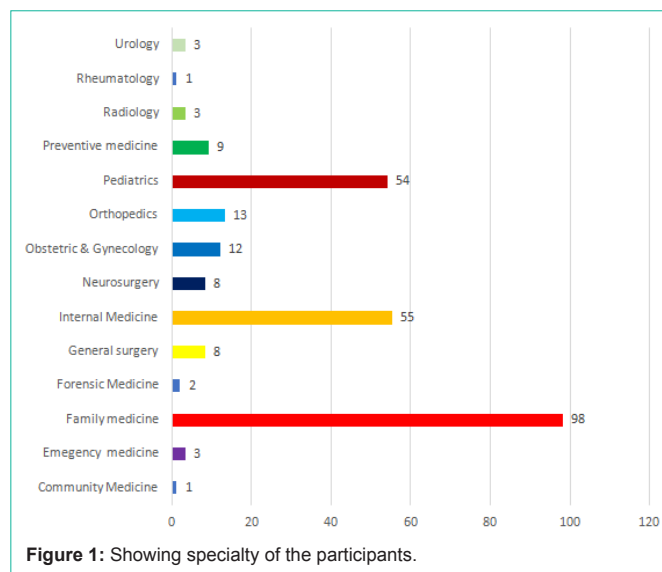


Table 1: Showing demographic data of the participants: n=270.

Variable	Frequency	Percentage
Gender		
Male	151	55.90%
Female	119	44.10%
Age group		
25-30 years	242	89.60%
31-35 years	28	10.40%
Nationality		
Saudi	269	99.60%
Non-Saudi	1	0.40%
Marital status		
Single	153	56.70%
Married	111	41.10%
Divorced	6	2.20%

Table 2: Showing BDI scoring of the participants.

BDI score system	Frequency	Percentage
1-10: These ups and downs are considered normal	229	84.80%
11-16: Mild mood disturbance	17	6.30%
17-20: Borderline clinical depression.	6	2.20%
21-30: Moderate depression	14	5.20%
31-40: Severe depression	4	1.50%

88 participants believe they have on-call duties, whereas the remaining participants did not have on-call duties throughout residency. In terms of weekend duties, the majority 114(42.22%) work twice a month on weekends, while 56(20.74%) work once a month on weekends. 19(7.03%) work three weekends in a month and 7(2.59%) work on all four weekends.

Depression was identified in 15.18

% of our research participants according to Beck's Depression Inventory. The majority of participants 229(84.8%) were in the

Table 3: Showing comparative analysis of BDI score with the demographic data of the participants.

Variable	1-10 These ups and downs are considered normal	11-16: Mild mood disturbance	17-20: Borderline clinical depression	21-30: Moderate depression	31-40: Severe depression	P value
Age group						
25-30	213	12	5	9	3	0.00
31-35	16	5	1	5	1	
Nationality						
Saudi	228	17	6	14	4	0.996
Non-Saudi	1	0	0	0	0	
Gender						
Male	135	8	1	6	1	0.105
Female	94	9	5	8	3	
Marital Status						
Married	90	10	4	6	1	0.043
Single	135	6	2	8	2	
Divorced	4	1	0	0	1	
Smoking						
Smoker	58	4	1	4	2	0.83
Non smoker	171	13	5	10	2	
Specialty						
Community medicine	0	0	0	1	0	0.005
Emergency medicine	2	1	0	0	0	
Family medicine	80	9	2	6	1	
Forensic Medicine	2	0	0	0	0	
General surgery	6	0	1	0	1	
Medicine	49	3	1	1	1	
Neurosurgery	6	1	1	0	0	
Obstetrics & Gynecology	8	1	0	3	0	
Orthopedics	13	0	0	0	0	
Pediatrics	50	0	1	2	1	
Preventive medicine	6	2	0	1	0	
Radiology	3	0	0	0	0	
Rheumatology	1	0	0	0	0	
Urology	3	0	0	0	0	
Level of residency						
R1	50	4	0	1	1	0.878
R2	48	5	1	4	0	
R3	49	4	1	2	1	
R4	79	4	4	6	2	
R5	2	0	0	1	0	
R6	1	0	0	0	0	
Oncall duties						
Yes	152	13	4	10	3	0.916
No	77	4	2	4	1	

Shifts per month						
>22	0	0	0	2	0	0.00
12-15	49	3	0	2	0	
16-19	11	1	0	2	0	
20-22	6	1	1	2	1	
Weekend per month						
1	50	2	1	3	0	0.047
2	96	6	3	7	2	
3	12	3	0	2	2	
4	5	2	0	0	0	
None	66	4	2	2	0	

score 1-10 range, followed by score 11-16 in 17(6.3%) and 21-30 in 14(5.2%). The remainder is detailed in Table 2.

Discussion

Studies have demonstrated that psychiatric disorder among residents is a common phenomenon all over the world. As physician's role is important in having a healthy society, their health and well-being is of the foremost importance. The current study was conducted to assess the extent of depression among the residents. This study contributes to the literature on the prevalence of depressive symptoms and its associated factors among post graduate residents in Saudi Arabia. Nearly 15.18% had depression in our study. Same finding were reported in studies conducted among Saudi adolescent and adults [8,9]. Additionally, several studies in other countries in the Middle East showed a high prevalence of depression in adolescents. An Iranian study using the Center for Epidemiologic Studies Depression Scale reported a prevalence of severe depression among 52.6% of female adolescents [10] and in a Qatari study using Beck's Depression Inventory - II tool, depression was found in 34% of adolescents [11]. A study among Pakistani postgraduate medical trainees revealed that about 60% had depression and about 34% were moderate to markedly depressed, which is quite higher than the results of the present study [12]. This variation can be explained by different study set up, different instrument, and different culture. A study in India among four medical colleges and associated hospitals of Delhi found the overall prevalence of stress to be 32.8% in resident doctors [13]. Of them, 17.7% had mild stress, 12.2% moderate stress, and 2.9% severe stress. However, a study in Bangladesh found the prevalence of depression to be about 40% among postgraduate medical students among three postgraduate medical teaching institutes in Dhaka [14]. Increased age, low income, marital status, living away from family, smoking, long working hours, and inadequate time for study appeared as important risk factors. A study from Turkey revealed a nearly similar depression rate to that of the present study among 156 resident physicians, where rate of probable depression was 16%.

Yousuf et al. [12] in their study found that age, religion, ethnicity, marital status, living status, specialty, lack of colleague's and supervisor's support, enough time for academics, and smoking were important risk factors for depression. In an Indian study, religion, family history of chronic illness, history of parental loss, and unsuccessful love affairs appeared as important risk factors

for depression among under-graduate medical students whereas substance abuse, family history of depression, and anxiety and recent loss of a relative were important risk factors in Pakistan. The current study revealed that depression among female was significantly higher than among male students and this was consistent with the results of other reported studies [15]. Studies conducted in other different countries demonstrated that depression is an important health problem among physicians and medical faculty students [16].

Conclusion

This study revealed that one in every seven residents has been suffering from one of the three disorders (depression, anxiety, and stress related disorders). A postgraduate student counseling center may be useful to residents to help them to cope with depression, anxiety, and stress related disorders. A large-scale multicenter study is recommended to validate the findings of the present study.

References

1. Sheet WDFJWHO: World Health Organization Media Centre. 2016.
2. Chiu E. Epidemiology of depression in the Asia Pacific region. *Australasian Psychiatry*. 2004; 12: S4-S10.
3. Hampton T. Experts address risk of physician suicide. *JAMA*. 2005; 294: 1189-1191.
4. Levis B, Azar M, Thombs BD. Resident Physicians with Depression or Depressive Symptoms. *JAMA*. 2016; 315: 2347.
5. Mata DA, Ramos MA, Bansal N, et al. Prevalence of Depression and Depressive Symptoms Among Resident Physicians: A Systematic Review and Meta-analysis. *JAMA*. 2015; 314: 2373-2383.
6. Alharbi H, Almalki A, Alabdan F, et al. Depression among medical students in Saudi medical colleges: a cross-sectional study. *Adv Med Educ Pract*. 2018; 9: 887-891.
7. Gong Y, Han T, Chen W, et al. Prevalence of anxiety and depressive symptoms and related risk factors among physicians in China: a cross-sectional study. *PLoS One*. 2014; 9: e103242.
8. Desouky Del S, Abdellatif Ibrahim R, Salah Omar M. Prevalence and comorbidity of depression, anxiety and obsessive compulsive disorders among Saudi secondary school girls, Taif Area, KSA. *Arch Iran Med*. 2015; 18: 234-238.
9. Raheel H. Depression and Associated Factors among Adolescent Females in Riyadh, Kingdom of Saudi Arabia, A Cross-sectional Study. *Int J Prev Med*. 2015; 6: 90.
10. Moeini B, Bashirian S, Soltanian AR, et al. Prevalence of depression and its associated sociodemographic factors among Iranian female adolescents in

- secondary schools. *BMC Psychol.* 2019; 7: 25.
11. Moeini B, Bashirian S, Soltanian AR, et al. Prevalence of depression and its associated sociodemographic factors among Iranian female adolescents in secondary schools. *BMC Psychology.* 2019; 7: 25.
 12. Yousuf A, Ishaque S, Qidwai W. Depression and its associated risk factors in medical and surgical post graduate trainees at a teaching hospital: a cross sectional survey from a developing country. *J Pak Med Assoc.* 2011; 61: 968-973.
 13. Saini NK, Agrawal S, Bhasin SK, et al. Prevalence of stress among resident doctors working in Medical Colleges of Delhi. *Indian J Public Health.* 2010; 54: 219-223.
 14. Zaman S, Rahim M, Khan A, et al. Prevalence of depression among post-graduate medical trainees: a multi-centre survey. 2014; 4: 18-21.
 15. Ngasa SN, Sama CB, Dzekem BS, et al. Prevalence and factors associated with depression among medical students in Cameroon: a cross-sectional study. *BMC Psychiatry.* 2017; 17: 216.
 16. Firth-Cozens J. Interventions to improve physicians' well-being and patient care. *Soc Sci Med.* 2001; 52: 215-222.