



Prevalence of depression among primary health care physicians in primary health care clinics in King Abdul-Aziz Medical City, Riyadh

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Introduction

Depression is a mental disorder characterized by loss of interest and pleasure, decreased energy, guiltiness or low self-esteem, disturbed sleep and/or appetite, and poor concentration^[1]. Depression is a common medical condition affecting more than 264 million people worldwide and is considered one of the leading causes of disability^[2]. As per the literature, the lifetime rate of developing depression across the Asia Pacific region ranges from 1.1% to 19.9%^[3]. Belonging to a special occupation population, physicians undertake the responsibility of healing the wounded, rescuing the dying, and facing suffering, illness, and death daily. Therefore, physicians are at risk of suffering from mental illness^[4]. The prevalence rates of depressive symptoms among healthcare providers are comparable to those of the general population. In a systematic review including studies from 15 countries (seven European, four Asian, and four Middle East countries) the estimated overall pooled depressive symptoms prevalence was 28.8% among residents physicians, ranging from 20.9 to 43.2% according to the tool used^[5]. Physicians suffering from mental illness not only experience a decrease in their quality of life but

also increase the probability of committing medical mistakes and threatening the safety of treated patients^[6]. Hence, how to decrease depression symptoms among doctors is important not only for physicians themselves but also for the health status of the general population. Mental health issues of physicians are mostly over-looked not only by the public but even by the physicians themselves. This might be due to the fact that physicians are overconfident and think they can protect themselves well, so they are often reluctant to seek help^[7,8]. Even though appreciable work has been carried out in developed countries to evaluate the psychological status of physicians, yet developing countries considerably lag^[9]. Over the years, a body of evidence had illustrated the factors associated with depressive symptoms among health care professionals. It was reported that demographic factors including age were described as independent predictors of vulnerability to general physicians^[10,11]. High job demands, as well as occupational stress^[12-14], were among the suggested factors that are positively related to depressive symptoms, while social support was negatively related to depressive symptoms^[14,15].

Data regarding depressive symptoms among primary care physicians in Saudi Arabia are scarce. Maghrabi, M et al estimated the prevalence of depression among physicians in Jeddah city hospitals and primary health care centers at 74.7%^[16]. A prevalence which is far higher compared to the estimated one among adult visiting a primary health care center in Saudi Arabia at 49.9%^[17]. Therefore, proper studies regarding depression, particularly among primary care physicians, are crucial. This study was anticipated to reveal yielding results in analyzing the prevalence of depression among primary care physicians serving in primary care health centers at King Abdul-Aziz Medical City, Riyadh, Saudi Arabia, with considerable analysis of contributory factors, to preliminarily explore the mental health status of primary-care physicians in Saudi Arabia.

Methods

This was an observational cross-sectional survey study that had been conducted among primary health care physicians at four primary health care centers at King Abdul-Aziz Medical City, Riyadh, Saudi Arabia, during the period between 1/10/2018 to 1/10/2019. These four primary care centers were Health Care Specialty Center (HCSC), King Abdul-Aziz City Housing (Iskan Yarmouk), National Guard Comprehensive Specialized Clinic (NGCSC), and Dirab clinic. All primary care physicians in the above-mentioned primary health care clinics in King Abdul-Aziz were asked to participate in the current study.

Data collection for the current study was through a self-administered questionnaire that was distributed to the primary care physicians by the study author. A copy of the informed consent form was also given together with the questionnaires. Participants were informed that their data will be kept confidential and will be used for research purposes only. Primary care physicians who did not complete the questionnaire or did not sign the informed consent forms were excluded from data analyses.

The current study instrument consisted of two main sections, the first section was concerned with the participants' socio-demographic characteristics, and the second section was the patient's health questioner (PHQ-9)^[18]. The PHQ-9 is used to screen for, monitor, diagnose, and measure the severity of depressive symptoms. PHQ-9 is a self-administered instrument consists of nine items (from 1 to 9), each is based on a four-point Likert scale that scores for the presence of depression symptoms from zero to three as following: "not at all", "several days", "more than half the days", and "nearly every day" from 0 to 3, respectively. The questionnaire items assess the interest in doing things, feeling down or depressed, sleeping difficulty, energy levels, eating habits, self-perception, ability to concentrate, speed of functioning, and thoughts of suicide. The result interprets accordingly, 0-4 minimal, 5-9 mild, 10- 14 moderate, 15-19 moderately severe, and 20-27 severe. Participants were diagnosed with depression if their responses to the depressive symptoms criteria were met and existing for the past two weeks.

Statistical Analysis

Data were analyzed by using Statistical Package for Social Studies (SPSS 22; IBM Corp., New York, NY, USA). Continuous variables were expressed as mean \pm standard deviation and categorical variables were expressed as percentages. The t-test and one-way ANOVA were used for continuous variables. Univariate and multivariate were used to assess the risk factors for depression. A p-value <0.05 was considered statistically significant.

Results

We set out this cross-sectional survey study to assess the prevalence of depression among primary health care physicians in primary health care clinics in King Abdul-Aziz Medical City, Riyadh. The baseline characteristics of the study participants are shown in table (1). The total number of the current study participants was 75 primary care physicians with a mean (\pm SD) age of

51.31 (± 46.5). More than half (54.7%) of them were males, the majority were non-Saudi (87.7%), and married (93.1%). General practitioners represented the largest proportion of the sample at 71.2%, and most of the participants were working only one shift at 73%. The results showed that more than half of the participated physicians have no exercise or recreational activity at 58.7% and 78.4%, respectively. The mean duration of work since the graduation of the participants was 18.72 (± 8.01) years, while the mean duration of working in Primary Health Care Centers (PHCC) was 12.92 (± 6.71) years. The average number of patients seen by each physician in the current study was 30.03 (± 7.0), while the mean number of physicians in each center was 11.68 (± 11.6).

The prevalence of depression and its severity among the participated primary health care physicians is shown in table (1). The overall prevalence of depression was 29.33%. Almost half (16%) of those depressed physicians have mild depression, while 10.67% have moderate, 1.33% have moderately severe, and 1.33% have severe depression.

The total mean score of the PHQ-9 questionnaire was 3.87 (± 4.59), which is in the range of minimal depression. The highest mean score was for the point "feeling tired or having little energy" at 0.77. On the other hand, the lowest mean score was for the point "thought that you would be better off dead or hurting yourself in some way" at 0.15, as shown in table (3).

The mean and standard deviation for the total score of PHQ-9 by characteristics of the participant are shown in table (4). The female gender showed a non-statistically significant higher mean score at 4.22 (± 4.47) compared to males at 3.44 (± 4.7) with a P-value of 0.469. The mean score of the Saudi physicians was almost double that of the non-Saudi at 6.78 (7.6) vs. 3.30 (3.7), respectively, with a P-value of 0.215. Similarly, two-shift workers showed a non-statistically, significantly higher mean score compared to one-shift worker at 4.40 (± 5.71), and 3.69 (± 4.20), respectively. In contrast, there was a

statistically significant (P 0.003) difference in the mean PHQ-9 score by current job practice, where the consultants showed the highest mean score at 6.20 (± 8.56) followed by GP at 4.17 (± 4.04). A borderline significant (P 0.050) difference was shown according to the physical activity status, where physicians who reported practicing physical activity showed a lower total mean score compared to those who were not, at 2.25 (± 4.7) and 4.33 (± 4.5), respectively.

Univariate logistic regression for the associated factors of depression among primary care physicians in primary health care clinics is shown in table (5). The results revealed that there were significant (P<0.05) associations between depression and marital status, age, and duration of work since graduation. Single physicians have more than a ninefold increased risk of depression compared to married ones with OR= 9.56 (95% CI 1.75 — 52.14). Contrarily, there was no significant association between depression and every gender, nationality, current job practice, working time, exercise and recreational activity, income, and duration of working in PHCC.

When a multivariate regression analysis was done, none of the above-mentioned risk factors that showed significant association in the univariate regression (marital status, age, and duration of work since graduation) remained significant since all the P values were > 0.05. The data is shown in table (6)

Discussion

The current study explored the prevalence and level of depressive symptoms among primary care physicians in Saudi Arabia and its associated factors. Our findings revealed that 29.3% of the participants had depressive symptoms. The prevalence was higher than that found in general populations in Asia^[3], within the range of the estimated global prevalence among physicians at 20.9 to 43.2%^[5], and far lower than a previous local similar study at 74.7%^[16], a study from Baghdad at 70.25%^[19], and the estimated prevalence among healthcare workers in China at

65.3%^[20]. Additionally, the estimated prevalence in our study was almost similar to that of a previous similar Tunisian study at 30.5%^[21], and a local study in Makkah-Al-Mukarramah among Primary Health Care Physicians at 28.9 %^[22].

For the severity of depression, the current study results were more or less in line with the Rafah, E. A., and Al Amir, A. M. study in Makkah-Al-Mukarramah, where the greatest proportion of the participated physicians with depressive symptoms showed mild depression, however, our study showed that equal percentage of those participants have moderately severe and severe forms of depression at 1.33% for each compared to none of the previous study^[22]. In Egypt, the estimated prevalence of depressive symptoms among healthcare providers was 71.4%, among them, 5.1% showed severe depressive symptoms, which is significantly higher compared to ours^[23].

In regards to the factors associated with depressive symptoms, age, gender, social environment, and occupational stress were reported. Previous studies from Turkey^[9] and Japan^[24] showed that female gender, as well as young physicians, were at the risk of symptoms, whereas studies from America^[25] showed that there was no difference for age and gender. Our results showed that only marital status, age, and duration of work since graduation was significantly associated with depressive symptoms in the unadjusted regression analysis only. The current study results were consistent with a previously published similar study from China where there was no significant difference between the males and females^[26]. In Tunisia, higher scores in the anxiety-depression scale were significantly associated with older age, female gender, and the heavy work burden^[21].

The current study showed that physical health and lifestyles are among the risk factors for depressive symptoms among primary care physicians. The positive association between physical health and psychological well-being is well documented^[27, 28], and was also reported in a similar Chinese study^[29]. Physical exercise serves to restore

personal stamina and is effective at relieving stress. Additionally, there is evidence that regular exercise can improve working shifts tolerance and recommending moderate physical exercise at least three to four hours before sleep^[30-32]. Unfortunately, most of the participating physicians in the current study have no exercise or recreational activity. Therefore, based on our results, we suggest that hospitals provide more support in establishing exercise facilities for healthcare personnel and encourage them to get involved in exercise activities.

Considering the estimated prevalence of depressive symptoms among primary care physicians in Saudi Arabia, efforts that aim at improving the mental health of those physicians should be encouraged. Any strategy should target the individual level to amend the identified and possibly actionable factors. Additionally, primary care physicians, particularly those with a personal history of depression, should first become aware of their mental health issues and seek help. Even though we didn't investigate whether the participating physicians sought or had psychological counseling, but we believe that most did not. Moreover, at the individual level, more generally accepted risk factors including age, gender, marital status, lifestyle as well as workload require more personal attention and lifestyle education^[33].

Limitations

The current study has its limitations and its results must be interpreted with caution. The study was conducted in the PHCs of King Abdulaziz Medical City in Riyadh, and thus the status of primary-care physicians throughout the kingdom is extrapolated from the conclusion of this study. Comparing our results with those from other countries should be interpreted cautiously as the used scales might differ. Further, prospective studies are recommended for the inference of causal relationships. Future larger sample size studies representing primary-care physicians in

the kingdom for clarifying the problem are required.

Conclusion

We investigated depression symptoms among primary-care physicians in Saudi Arabia and their associated factors. The result shows that primary-care physicians had a high risk for depression disorders that were mostly with the globally reported one but lower than previous local studies. Age, marital status had a higher risk for depression in the univariate analysis only. Additionally, the lifestyle (physical activity) of the physicians was shown to affect the risk of depressive symptoms. Attention should be paid to the mental health of primary-care physicians. In the future, large-scale studies covering all the kingdom regions will provide more information on mental health among primary-care physicians.

References

- Marcus M, Yasamy MT, van Ommeren M, Chisholm D, Saxena S, others. Depression: a global public health concern. WHO Department of Mental Health and Substance Abuse 2012;1:6–8.
- Depression. (n.d.). Retrieved May 7, 2020, from <https://www.who.int/news-room/fact-sheets/detail/depression>
- Chiu E, Hickie I. Epidemiology of depression in the Asia Pacific region. *Australas Psychiatry*. 2004;12
- Brooks SK, Gerada C, Chalder T. Review of literature on the mental health of doctors: Are specialist services needed? *Journal of Mental Health* 2011;20:146–156.
- Mata DA, Ramos MA, Bansal N, Khan R, Guille C, di Angelantonio E, Sen S. Prevalence of depression and depressive symptoms among resident physicians: a systematic review and meta-analysis. *JAMA* 2015; 314:2373–2383.
- Brown SD, Goske MJ, Johnson CM. Beyond substance abuse: stress, burnout, and depression as causes of physician impairment and disruptive behavior. *Journal of the American College of Radiology* 2009;6:479–485.
- Davidson SK, Schattner PL (2003) Doctors' health-seeking behavior: a questionnaire survey. *Med J Aust* 179:302–305
- Rosvold EO, Bjertness E (2002) Illness behavior among Norwegian physicians. *Scand J Public Health* 30:125–132
- Erdur B, Ergin A, Turkcuier I, Parlak I, Ergin N, Boz B. A study of depression and anxiety among doctors working in emergency units in Denizli, Turkey. *Emerg Med J*. 2006;23(10):759–763.
- Barnes-Farrell JL, Rumery SM, Swody CA (2002) How do concepts of age relate to work and off-the-job stresses and strains? A Welsh study of health care workers in five nations. *Exp Aging Res* 28:87–98
- Sobreques J, Cebria J, Segura J, Rodriguez C, Garcia M, Juncosa S (2003) Job satisfaction and burnout in general practitioners. *Aten Primaria* 31:227–233
- Li J, Yang W, Cho SI (2006) Gender differences in job strain, work-reward imbalance, and health functioning among Chinese physicians. *Soc Sci Med* 62:1066–1077
- Yu SF, Yao SQ, Ding H, Ma LQ, Yang Y, Wang ZH (2006) Relationship between depression symptoms and stress in occupational populations. *Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi* 24:129–133
- Ross R, Zeller R, Srisaeng P, Yimmee S, Somchid S, Sawatphanit W (2005) Depression, stress, emotional support, and self-esteem among baccalaureate nursing students in Thailand. *Int J Nurs Educ Scholarsh* 2:Article 25
- Park SG, Min KB, Chang SJ, Kim HC, Min JY (2009) Job stress and depressive

- symptoms among Korean employees: the effects of culture on work. *Int Arch Occup Environ Health* 82:397–405
16. Maghrabi, M., Kafi, H., Jan, A., & Al-Raddadi, R. (2020). The prevalence of burnout syndrome and depression concerning workability among physicians, Jeddah, Saudi Arabia. *Journal of Preventive Medicine and Holistic Health*, 5(2), 99–105. <https://doi.org/10.18231/j.jpmmh.2019.019>
17. Al-Qadhi W, Ur Rahman S, Ferwana MS, Abdulmajeed IA. Adult depression screening in Saudi primary care: prevalence, instrument, and cost. *BMC Psychiatry*. 2014;14:190. doi:10.1186/1471-244X-14-190. PubMed PMID: 24992932; PubMed Central PMCID: PMC4227058.
18. Kroenke K, Spitzer RL, Williams JBW. The PHQ-9. *J Gen Intern Med*. 2001 Sep; 16(9):606–13.
19. Alkhazrajy, L. (2014). PREVALENCE OF DEPRESSIVE SYMPTOMS AMONG PRIMARY HEALTH CARE PROVIDERS IN BAGHDAD. 2, 1–20.
20. Wang, J.-N., Sun, W., Chi, T.-S., Wu, H., & Wang, L. (2010). Prevalence and associated factors of depressive symptoms among Chinese doctors: A cross-sectional survey. *International Archives of Occupational and Environmental Health*, 83(8), 905–911. <https://doi.org/10.1007/s00420-010-0508-4>
21. Marzouk, M., Ouanes-Besbes, L., Ouanes, I., Hammouda, Z., Dachraoui, F., & Abroug, F. (2018). Prevalence of anxiety and depressive symptoms among medical residents in Tunisia: A cross-sectional survey. *BMJ Open*, 8(7), e020655. <https://doi.org/10.1136/bmjopen-2017-020655>
22. Rafah, E. A., & Alamir, A. M. (n.d.). Depression among primary health care physicians in Makkah Al- Mukarramah. 1, 18.
23. El-Hamrawya. (n.d.). Prevalence of depressive symptoms among healthcare providers in Shibin El-Kom city in Menoufia governorate. Retrieved May 10, 2020, from <http://www.mmj.eg.net/article.asp?issn=1110-2098;year=2018;volume=31;issue=2;spage=708;epage=715;aui=El-Hamrawya>
24. Hayasaka Y, Nakamura K, Yamamoto M, Sasaki S. Work environment and mental health status assessed by the general health questionnaire in female Japanese doctors. *Industrial Health* 2007;45:781-786.
25. Schwenk TL, Gorenflo DW, Leja LM. A survey on the impact of being depressed on the professional status and mental health care of physicians. *Journal of Clinical Psychiatry* 2008;69:617-620.
26. Shen, L.-L., Lao, L.-M., Jiang, S.-F., Yang, H., Ren, L.-M., Ying, D. G.-C., & Zhu, S.-Z. (2012). A survey of anxiety and depression symptoms among primary-care physicians in China. *International Journal of Psychiatry in Medicine*, 44(3), 257–270. <https://doi.org/10.2190/PM.44.3.f>
27. Osborn DP, Fletcher AE, Smeeth L, Stirling S, Bulpitt CJ, et al. (2003) Factors associated with depression in a representative sample of 14 217 people aged 75 and over in the United Kingdom: results from the MRC trial of assessment and management of older people in the community. *Int J Geriatr Psychiatry* 18:623–630.
28. Averina M, Nilssen O, Brenn T, Brox J, Arkhipovsky VL, et al. (2005) Social and lifestyle determinants of depression, anxiety, sleeping disorders, and self-evaluated quality of life in Russia—a population-based study in Arkhangelsk.

- SocPsychiatry Psychiatr Epidemiol 40: 511–518.
29. Gong, Y., Han, T., Chen, W., Dib, H. H., Yang, G., Zhuang, R., Chen, Y., Tong, X., Yin, X., & Lu, Z. (2014). Prevalence of anxiety and depressive symptoms and related risk factors among physicians in China: a cross-sectional study. *PloS one*, 9(7), e103242. <https://doi.org/10.1371/journal.pone.0103242>
30. Costa G (2003) Factors influencing the health of workers and tolerance to shift work. *Theoretical Issues in Ergonomics Science* 4: 263–288.
31. Harma M (1996) Ageing, physical fitness, and shiftwork intolerance. *Appl Ergon* 27: 25–29.
32. Ahmed-Little Y (2007) Implications of shift work for junior doctors. *BMJ* 334:777–778.
33. Joules N, Williams DM, Thompson AW. Depression in Resident Physicians: A Systematic Review. *Open Journal of Depression* 2014;03:89–100.