

## PREVALENCE OF DEPRESSION AMONG POST-GRADUATE MEDICAL TRAINEES IN SELECTED INSTITUTIONS IN EASTERN NIGERIA: A MULTI-CENTRE STUDY

Chinedu C Okoli<sup>1</sup>, Imoh Ibiok<sup>2</sup>, Maduka D Ughasoro<sup>3</sup>, Chinemelum D Emegoakor<sup>3</sup>, Stanley N C Anyanwu<sup>3</sup>

<sup>1</sup>Department of Surgery, Nnamdi Azikiwe University Teaching Hospital, Nnewi, Nigeria.

<sup>2</sup>Urology Unit, Department of Surgery, University of Uyo Teaching Hospital, Uyo.

<sup>3</sup>Department of Paediatrics, University of Nigeria Enugu Campus, Enugu, Nigeria.

### ABSTRACT

**Background:** Doctors in training are at high risk for depression, and this could lead to poor-quality of patient care and increased medical errors.

**Objectives:** The study assessed the prevalence of depression among resident doctors in selected institutions in Eastern Nigeria.

**Materials and Methods:** A cross sectional study was conducted at three tertiary hospitals from December 2017 and March 2018. Resident doctors were recruited for self-assessment using Beck Depression Inventory<sup>®</sup>-II. Data were collated and analysed using SPSS version 21, statistical significance was inferred at P value = 0 . 0 5 .

**Results:** Among the 170 resident doctors studied, the age range was 26-53 years, and the mean age was 33.89 (SD = 4.71) with 127 (74.7%) males and 43 females (25.3%). Ninety-five (55.9%) were junior residents while 75 were senior residents (44.1%). Eight four (49.4%) residents had attempted the membership certification examination with first attempt success rate of 39(46.4%). The overall prevalence of depression was in the study was 17 (10.0%). The prevalence increased to 17.3% and 17.86% in senior residents and residents who have attempted the first post-graduate membership examinations respectively. Depression was more in residents who attempted the membership exam ( $p=0.001$ ) and in senior residents ( $p =0.005$ )

**Conclusion:** Our study found that trainee doctors who had attempted the membership exam and senior residents were more likely to be diagnosed of depression. Thus, there is a need for relevant stakeholders to review the support network for doctors in training.

**KEY WORDS:** Resident doctor, Nigeria, Depression.

NigerJmed 2019; 393-402  
© 2019. Nigerian Journal of Medicine

### INTRODUCTION

It is well documented that doctors in postgraduate medical training are faced with high-level stress and some experience depressive symptoms<sup>1-3</sup>. These conditions are exacerbated by the challenges of working in poor quality overburdened health care systems, high expectation of proficient clinicians and educators, peer pressure from colleagues and extended family pressures during the training programs<sup>4-5</sup>. Many studies in the

western population have identified work-related stress as a factor in poor job performance, low job satisfaction, personal health problems and depression<sup>5-7</sup>. Reports of depression among resident doctors in literature ranged from 16.0% -31.2% with the majority of the involved individuals not seeking medical help<sup>8-10</sup>. In developing countries like Nigeria, besides the need to study and work at the same time, resident doctors are faced with additional challenges including low health sector budget, uncertain permanent job after residency, low income, disparities in health care distribution and fear of losing training posts and failure of progression because of failing the certification examinations. Issa et al.<sup>11</sup> in

Correspondence to: Chinedu C. Okoli  
Department of Surgery,  
Nnamdi Azikiwe University Teaching Hospital, Nnewi, Nigeria.  
Email: eduokoli@yahoo.com

Ilorin, Nigeria in their study, reported that 94.5% of the residents perceived residency training period as stressful, while Ogunnubiet al<sup>5</sup> reported that all the interviewed residents in their study stated that residency training was stressful with the majority of the residents (89.6%) dissatisfied with the training. The job satisfaction level is an important factor influencer of the health of workers<sup>6</sup>.

With the rising global and local demands for specialized medical services, postgraduate residents play a crucial role in the medical care delivery of the multispecialty hospitals attached to the University medical colleges.

In Nigeria, residents are frequently assigned duties exceeding 24 hours at a time with some resident doctors being on call for more than a week at a stretch. In addition to infrequent salaries, and workplace bullying from patients, patient relatives as well as from senior colleagues, they are under a great level of stress due to sleep deprivation, anxiety, fatigue, irritability, and uncertainty regarding their future<sup>12</sup>. Also, these residents are expected to prepare, sit and pass examinations before they can progress in their career within a specified period otherwise, they risk losing their positions. In contrast, in developed countries like the United States, resident work hours must not be beyond a 30-hour limit on continuous shifts<sup>13</sup>. In Europe, the European Working Time Directive (EWTD), states that the maximum work per week of 48 hours with a minimum rest period of 11 consecutive hours per 24-hour duty<sup>14</sup>.

Considering the burden of depression in studies among resident doctors in the west, it is pertinent to assess the prevalence of depression among resident doctors in a developing country like Nigeria and no study has examined the impact of the membership examinations among the

residents. Postgraduate medical training is supervised by the West African College of Surgeons and Physicians, and the National Postgraduate Medical College of Nigeria. To be admitted into the postgraduate medical training, prospective Medical doctors sit for the entrance exam to become junior residents. To become a Senior resident, each resident must pass the membership exam of his/her respective Speciality of either the West African and national postgraduate medical college examinations. A similar study on the subject found the level of depression among resident doctors to be 17.1%<sup>8</sup> in contrast with 1.3% among non-training medical doctors, thus there is a need to determine the prevalence of this condition in a multi-institutional based study and impact of the certificate examination among these residents. With this in mind, this study aims to define the magnitude of the problem in order to encourage the development of an action plan for these doctors. The objectives included to determine the prevalence of undiagnosed depression and the effects of level of training (junior and senior residents), marital status, and sex on depression in 3 tertiary medical institutions including Nnamdi Azikiwe University Teaching Hospital (NAUTH) Nnewi, Enugu State University Teaching Hospital (ESUTH) Enugu, and University of Uyo Teaching Hospital Uyo.

## **Methods**

### ***Study design***

A cross-sectional, observational study was conducted among resident medical doctors working at three tertiary institutions in south-east Nigeria (Nnamdi Azikiwe University Teaching Hospital (NAUTH) Nnewi, and Enugu State University Teaching Hospital (ESUTH) Enugu) and South-South Nigeria (University of Uyo Teaching Hospital Uyo) during the monthly meetings of the residents doctors in their

respective institutions from December 2017 and March 2018.

### Study population

This was a multi-institution-based study consisting of all consenting resident medical doctors working in the above 3 institutions. The residents were selected by the purposive method of sampling. Inclusion criteria comprised: all the consenting residents who were employed by the above-mentioned hospitals during the period of the study for a minimum of 3 months or longer

Three hundred residents were approached for recruitment but only 170 questionnaires were finally analysed as shown in Fig 1.

### Study instrument

Data was collected in the form of a structured self-administered questionnaire. The questionnaire consisted of two parts. Part A included socio-demographic data including age, sex, and marital Part B included other factors like duration of residency, level of training, number of attempts of the membership examination of either postgraduate colleges (West African or National Postgraduate Medical examination). Part C of the questionnaire consisted of Beck's Depression Inventory (BDI). The Beck Depression Inventory-II is a well-established a 21-item self-reporting questionnaire that has been widely used for evaluating the severity of depression in normal and psychiatric populations<sup>15</sup>. Developed by Beck et al in 1961, it was based on the theory of negative cognitive distortions as central to depression<sup>16</sup>. It was revised in 1978 and 1996 and was called the BDI-IA and BDI-II respectively<sup>17</sup>. The BDI-II questionnaire has been translated into several languages<sup>17</sup>. It is easy to complete, relatively short compared to interview-based assessments<sup>18</sup>.

The mean correlation coefficients of clinical ratings of depression and the BDI for non-psychiatric populations is 0.60<sup>16</sup>. The construct validity is high for the medical symptoms measured by the questionnaire for college students ( $\alpha = 0.93$ )<sup>15</sup> whilst high concurrent validities have been demonstrated between the BDI questionnaire and other measures of depression such as the Minnesota Multiphasic Personality Inventory-D,  $r = 0.77$ <sup>16</sup>. Also, the criterion validity of the BDI-II is positively correlated with the Hamilton Depression Rating Scale ( $r = 0.71$ ) with a high 1-week test-retest reliability  $r = 0.93$  (suggesting robustness against daily variations in the mood) and internal consistency of  $\alpha = 0.91$ <sup>15</sup>.

### Collection of data

The interview was by self-administered questionnaire. Participation was voluntary, anonymous and informed consent was signed by all the participants. All the participants in the study were verbally instructed on how to fill the questionnaire and were informed where to drop the questionnaire after completion. They were also instructed not to add their name or department to ensure anonymity. The dilemma of maintaining anonymity and confidentiality versus the need for beneficence was addressed by supplying participants with written instructions of where to seek help for symptoms of depression and/or burnout. There were no adverse events and no conflicts of interest in this study. This study adhered to the tenets of the declaration of Helsinki for medical research in humans<sup>19</sup>.

### Data analysis

Each of the item in the 21-item questionnaire is graded from 0 (symptom absent) to 3 (severe symptoms). Anxiety symptoms are not assessed but effective, cognitive, somatic and vegetative symptoms are

covered, reflecting the DSM-IV criteria for major depression.

The questionnaire is commonly self-administered and takes 5–10min. The least score is 0 and the maximum score is 63. On two items (16 and 18) there are seven options to indicate either an increase or decrease of appetite and sleep. Cut-off score guidelines for the BDI-II are given with the recommendation that thresholds be adjusted based on the characteristics of the sample, and the purpose for use of the BDI-II. The total score of 0–13 is considered minimal range, 14–19 is mild, 20–28 is moderate, and 29–63 is severe<sup>18</sup>. The higher scores show greater symptom severity. Depending on their nature, description of the parameters of interest was performed using descriptive statistics: frequency, percentage, means (average), median, standard deviation (CI) and range. The SPSS (IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp.) and the Microsoft Excel (11. Corporation Microsoft, Redmond, WA, USA), were used for statistical analysis. Continuous variables were expressed as mean  $\pm$  standard deviation (SD), while categorical variables were shown as frequencies and percentages. The proportion of participants with depression were compared among both sex, married and single participants, and junior and senior residents, and residents less than 12 months in the training and those who have had more than two attempts in the membership exam and less. Statistical significance was inferred at a p-value less than 0.5.

## Results

A total of one hundred and seventy questionnaires from resident doctors were assessed. Seventy-two residents (42.4%) were from UUTH, Fifteen (8.8%) were from ESUTH while eighty-three residents

(48.8%) were from NAUTH. The response rate in our study was 56.67%.

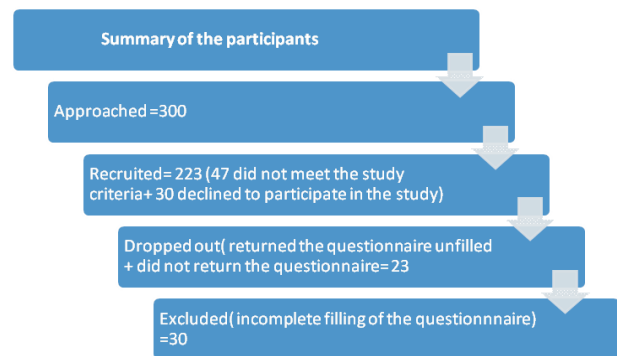


Fig 1-Summary of the participants

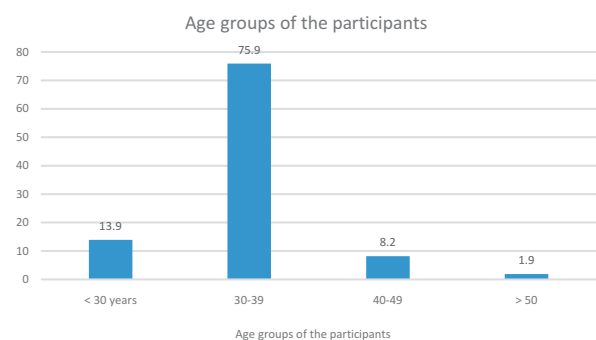


Fig 2- Age distribution of the participants

The age range of the resident doctors was 26-53 years, and the mean age was 33.89 (SD = 4.71). Majority of the resident doctors, (75.9%) were aged between 30-39 years. The resident doctors were made of 127 (74.7%) males and 43 (25.3%). One hundred and three (60.6%) resident doctors were married, while 67 (39.4%) were single of which 2(1.2%) of them were divorced. Also, 65.7% had spent more than 12 months in the postgraduate training while only 35.3 % had spent less than one year in the training. Eighty-four (49.4%) of the participants had attempted the postgraduate examination at least once. Among the 170 resident doctors studied, 17 (10.0%) had a diagnosis of depression. One hundred fifty-three residents (90.0%) were in the minimal range, while 6 residents (5%) had severe depression. See details in Fig 4. The prevalence increased to 17.3% and 17.86% in senior residents and residents who have attempted the first post-graduate membership examinations respectively. Eight four (49.4%) residents had attempted the membership certification exam with thirty-nine residents passing at first attempt (46.4% success

rate) while forty-five residents had attempted the examination more than once (29.41%). See Table 1 shows the relationship between depression and sociodemographic

characteristics of the participants.  
Table 1- Relationship between socio demographics with depression

Parameters		Depression (n=17)	No Depression (n=153)	X <sup>2</sup> /T*	P value
		34.53±4.52	35.64±4.37	0.878*	0.383
Marital status	Married	7(41.18)	96(62.76)	2.981	0.084
	Not married	10(58.82)	57(37.25)		
Sex	Male	13(76.47)	114(74.51)	0.031	0.860
	female	4(23.53)	39(25.49)		
Year of training	First year	1(5.88)	56(36.60)	6.557#	0.01
	More than first year	16(94.12)	97(63.40)		
Level of training	Senior residents	13(76.47)	62(40.52)	8.019	0.005
	Junior residents	4(23.53)	91(59.48)		
Postgraduate exam attempt	No	2(11.76)	84(54.90)	11.390	0.001
	Yes	15(88.24)	69(45.10)		
Number of attempts	No attempt	2(11.76)	84(54.90)	12.702**	0.002
	One attempt with success	7(41.18)	32(20.92)		
	More than one attempt	8(47.06)	37(24.18)		
Irregular salary payment	Yes	1(5.88)	32(20.91)	2.210#	0.200
	No	16(94.12)	121(79.08)		

\* t test

\*\* Likelihood Ratio

# Fisher Exact test

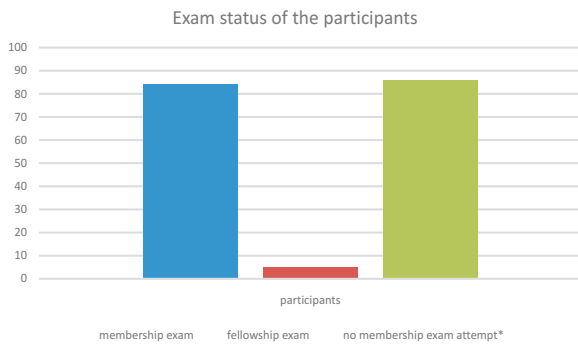


Fig 3- Exam status of the participants (\*All the participants have attempted and passed the primary examination)

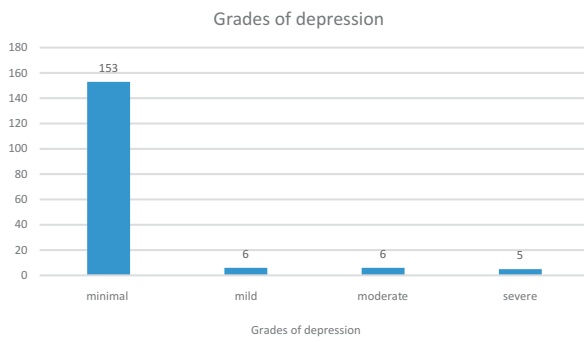


Fig 4- Grades of depression

The impact of year of training ( $p=0.001$ ), level of training ( $p=0.005$ ), postgraduate examination attempt ( $p=0.001$ ), and number of attempts ( $p=0.002$ ), on depression scores were significant while, there was no significant impact of marital status ( $p=0.0084$ ), irregular salary payment ( $p=0.200$ ), and sex ( $p=0.0860$ ). None of the residents with depression is on any form of medication or had received any form of treatment, while actively carrying out their clinical and research activities.

## Discussion

In interpreting the results of our study, it is important to note that the depression was assessed through self-report inventory that measures depressive symptoms, rather than gold-standard diagnostic clinical interviews for major depressive disorder. Our study showed that depression among residents in Nigerian postgraduate medical training is largely undiagnosed and was highest among trainee doctors who have spent more than 12 months in the training.

The overall prevalence of depression among resident doctors in our study was 10.0%. This increased to 17.3% and 17.86% in senior residents and residents who have attempted the first post-graduate medical examinations respectively. This compares with a previous study conducted in another teaching hospital in South-eastern Nigeria who reported a prevalence of 17.3% among trainee doctors were depressed<sup>8</sup>. In Istanbul, Demir et al<sup>10</sup> reported the prevalence of probable depression among residents in a training hospital in Istanbul to be 16.0%, while Goebert et al<sup>21</sup> reported a wide range of depression rate ranging from 2.0% to 35.0% with highest rates among residents, while medical students had much lower prevalence rate. A multi-centre study conducted in Bangladesh posited that depression was present in 21 (39.6%) of the interviewed respondents. Among them, 17 (80.9%) had mild depression and 4 (19.1%) had moderate depression<sup>22</sup>.

Our study showed that prevalence of depression increased with more years in training. We also found that residents who had attempted the membership examination were more likely to be depressed independent of the exam outcome when compared with trainees who were yet to attempt the exam. In addition, our study showed that trainees who had more than one attempts in the exam were more likely to be depressed. These findings are not consistent with the results of other studies.<sup>11,23</sup> Success in the membership examination not only guarantees progression in the residency training but also ensures job retention. The effects of the examination on the trainees may explain why more experienced residents were more likely to be depressed. Though not studied, is our thought that the postgraduate medical examinations are quite demanding with many residents expressing dissatisfaction during the course of their

training<sup>5</sup>. Hence it is essential to identify the factors that negatively impact on trainee mental health with the development of more effective interventions for the reduction of depression.

In our study, socio-demographic variables like sex and age did not have a significant correlation with depression. These findings are in keeping with studies by Yousuf et al<sup>3</sup> and Aguocha et al<sup>8</sup>. Also, our study showed that marital status was not associated with depression. This finding was in keeping with several other studies in the literature<sup>24-26</sup>. Though a study in Iran as well as Center et al<sup>27</sup> and Guile et al<sup>28</sup> posited that married female residents were more likely to be depressed<sup>9</sup>. The finding in our study may be accounted for by the relatively smaller sample size of women who were in training.

Some authors have explored the effects of monthly income on depression. The reports in the literature have been mixed. While some authors showed no significant association between depression and monthly income<sup>24,26</sup>, El-Hamrawya et al<sup>29</sup> reported that doctors that have inadequate income with small loans are more likely to have depression compared with those having enough income and savings. Our study showed that irregular enumeration was not significantly associated with depression.

The response rate in our study was 56.67%. This was unsurprising because of the nature of the intrinsic nature of the self-administered study. To maintain the confidentiality of the participants, a self-administered questionnaire was chosen rather than the gold-standard diagnostic clinical interviews hence some of the questionnaires were either incomplete or unfilled. Though the response rate in our study was not impressive, it was similar to 51.0% and 47.78% response rates reported

by Ruitenburg et al<sup>30</sup> and Atif et al<sup>31</sup> in Netherland and Pakistan respectively. One of the key limitations of self-administered questionnaires is incomplete information. Despite this intrinsic shortcoming of self-administered questionnaires, there is evidence that among medical trainees the absence of anonymity in formal diagnostic evaluations may compromise the accuracy of sensitive personal information such as depressive symptoms<sup>32</sup>. Hence one can argue that it is the most desirable method to assess such a sensitive subject in this population. It is our thoughts that this study may not be the exact estimate of the prevalence of depression among the residents because of the non - responders. However, because of the variation on several factors in this non-responding population it is impossible to predict in which direction this bias would go.

#### **Limitation of study**

Generalization of the study finding is limited by the low response rate, thus selection bias was inevitable. In addition, there is a high probability of interview bias as at least some of the trainees may not be willing to reveal their actual mental health state. Finally, because it was a cross-sectional study, we could not establish causality between depressive symptoms and related risk factors.

#### **CONCLUSION**

Our study confirms that presence of undiagnosed depression among resident doctors and that the prevalence of depression is higher in more experienced residents. Furthermore, residents who had attempted the postgraduate exams were more likely to be depressed when compared with those who have not. Thus, it pertinent, to provide support for these group of trainees to help them succeed.

### Implications for further research

This study gave an insight into the possible struggles of residents. Future studies should be aimed to investigate the deficiencies in the existing support network for doctors in training in other to find ways of improving them.

### References

1. Whitley TW, Allison Jr EJ, Gallery ME, Heyworth J, Cockington RA, Gaudry P, Revicki DA. Work-related stress and depression among physicians pursuing postgraduate training in emergency medicine: an international study. *Annals of emergency medicine*. 1991 Sep 1;20(9):992-6.
2. Firth-Cozens J. A perspective on stress and depression. *Understanding doctors' performance*. 2006:22-5.
3. 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. *Journal of Pakistan Medical Association*. 2011;61(10):968.
4. Cohen JS, Patten S. Well-being in residency training: a survey examining resident physician satisfaction both within and outside of residency training and mental health in Alberta. *BMC medical education*. 2005 Dec;5(1):21.
5. Ogunnubi OP, Ojo TM, Oyelohunnu MA, Olagunju AT, Tshuma N. Stress and training satisfaction among resident doctors in Nigeria: Any justification for a change in training policy?. *Journal of Clinical Sciences*. 2018 Jan 1;15(1):32.
6. Faragher EB, Cass M, Cooper CL. The relationship between job satisfaction and health: a meta-analysis. *Occupational and environmental medicine*. 2005 Feb 1;62(2):105-12.
7. Martins OF, Tukur D, Danburam A, Salwau FK. Job satisfaction among doctors and nurses: a case study of federal medical centre Yola, Nigeria. *International Journal Of Community Medicine And Public Health*. 2017 Jan 5;3(6):1640-7.
8. Aguocha GU, Onyeama GM, Bakare MO, Igwe MN. Prevalence of depression among resident doctors in a teaching hospital, South East Nigeria. *International Journal of Clinical Psychiatry*. 2015;3(1):1-5.
9. Sadeghi AE, Navidi M, Sadeghi M. Depression among resident doctors in Tehran, Iran. *Iranian Journal of Psychiatry*. 2007 Jan 1;2(2):50-2.
10. Demir F, Ay P, Erbas M, Ozdii M, Yasar E. The prevalence of depression and its associated factors among resident doctors working in a training hospital in Istanbul. *Turk Psikiyatri Dergisi*. 2007 Mar 1;18(1):31.
11. Issa BA, Yussuf AD, Olanrewaju GT, Oyewole AO. Stress in residency training as perceived by resident doctors in a Nigerian university teaching hospital. *European Journal of Scientific Research*. 2009;30(2):253-9.
12. Levey RE. Sources of stress for residents and recommendations for programs to assist them. *Academic Medicine*. 2001 Feb 1;76(2):142-50.
13. Philibert I, Friedmann P, Williams WT. New requirements for resident duty hours. *Jama*. 2002 Sep 4;288(9):1112-4.
14. Temple J. Resident duty hours around the globe: where are we now?. *BMC medical education*. 2014 Dec;14(1):S8.
15. Beck AT, Steer RA. *Manual for the*



- Beck Anxiety Inventory. Behaviour research and therapy. 1990.
16. Beck AT, Steer RA, Carbin MG. Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical psychology review*. 1988 Jan 1;8(1):77-100.
  17. Jackson-Koku G. Beck depression inventory. *Occup Med (Chic Ill)*. 2016;66(2):174-5
  18. Beck AT, Steer RA, Brown GK. Beck depression inventory-II. *San Antonio*. 1996;78(2):490-8.
  19. General Assembly of the World Medical Association. World Medical Association Declaration of Helsinki: ethical principles for medical research involving human subjects. *The Journal of the American College of Dentists*. 2014;81(3):14.
  20. Rao K, Sharma KS, Kumar SU, Bhat KV, Babu SG. The trailing trials of humiliation: Legal, social, and medical perspectives of women facing domestic violence in India. *Indian Journal of Social Psychiatry*. 2017 Jul 1;33(3):274.
  21. Goebert D, Thompson D, Takeshita J, Beach C, Bryson P, Ephgrave K, Kent A, Kunkel M, Schechter J, Tate J. Depressive symptoms in medical students and residents: a multischool study. *Academic Medicine*. 2009 Feb 1;84(2):236-41.
  22. Zaman S, Rahim M, Khan A, Habib S, Rahman M, Ahsan M, Afroz F, Afroze S, Haque H, Ahmed J, Ahmed AK. Prevalence of Depression Among Post-Graduate Medical Trainees: A Multi-Centre Survey. *BIRDEM medical Journal*. 2014 Apr 9;4(1):18-21.
  23. Reuben DB. Depressive symptoms in medical house officers: effects of level of training and work rotation. *Archives of Internal Medicine*. 1985 Feb 1;145(2):286-8.
  24. Alkhazrajy LA, Sabah S, Hassan SM. Prevalence of depressive symptoms among primary health care providers in Baghdad. *Int J Health Psychol Res*. 2014;2:1-20.
  25. Becker JL, Milad MP, Klock SC. Burnout, depression, and career satisfaction: cross-sectional study of obstetrics and gynecology residents. *American Journal of Obstetrics and Gynecology*. 2006 Nov 1;195(5):1444-9.
  26. Hainer BL, Palesch Y. Symptoms of depression in residents: a South Carolina family practice research consortium study. *Academic medicine: journal of the Association of American Medical Colleges*. 1998 Dec;73(12):1305-10.
  27. Davis M, Detre T, Ford DE, Hansbrough W, Hendin H, Laszlo J, Litts DA, Mann J, Mansky PA, Michels R, Miles SH. Confronting depression and suicide in physicians: a consensus statement. *JAMA*. 2003 Jun 18;289(23):3161-6.
  28. Guille C, Frank E, Zhao Z, Kalmbach DA, Nietert PJ, Mata DA, Sen S. Work-family conflict and the sex difference in depression among training physicians. *JAMA internal medicine*. 2017 Dec 1;177(12):1766-72.
  29. El-Hamrawya LG, Hegazy NN, El-Halawany SM. Prevalence of depressive symptoms among healthcare providers in Shibin El-Kom city in Menoufia governorate. *Menoufia Medical Journal*. 2018 Apr 1;31(2):708.
  30. Ruitenburg MM, Frings-Dresen MH, Sluiter JK. The prevalence of common mental disorders among hospital physicians and their association with self-reported work ability: a cross-sectional study. *BMC*

- health services research. 2012 Dec;12(1):292.
31. Atif K, Khan HU, Ullah MZ, Shah FS, Latif A. Prevalence of anxiety and depression among doctors; the unscreened and undiagnosed clientele in Lahore, Pakistan. Pakistan journal of medical sciences. 2016 Mar;32(2):294.
32. Myers M. On the importance of anonymity in surveying medical student depression. Academic psychiatry: the journal of the American Association of Directors of Psychiatric Residency Training and the Association for Academic Psychiatry. 2003;27(1):19.