Original Article

OPEN ACCESS

COVID-19 pandemic: Psychological impact on postgraduate gynae residents in Pakistan

Rashida Sultana[1], Nudrat Sohail[2], Rizwana Naz[3]

[1]Associate Professor, Department of Obstetrics & Gynaecology, Sharif Medical & Dental College, Lahore
[2]Head of Obstetrics & Gynae Department, Gujranwala Medical College, Gujranwala
[3]Senior Registrar Gynae Unit I, Sandeman Provincial Hospital, Quetta

Author`s Contribution

[1,2]Drafting the work or revising it critically for important intellectual content, [2]Final approval of the version to be published [3]Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work.

Funding Source: None
Conflict of Interest: None

Received: Sept 18, 2020
Accepted: Oct 22, 2020

Address of Correspondent
Dr. Rashida Sultana
Associate Professor, Department of Obstetrics & Gynaecology, Sharif Medical & Dental College, Lahore
drrashidasultana@gmail.com

ABSTRACT

Objectives: To determine the frequency, and severity of depression, anxiety, and stress among postgraduate gynae residents during COVID-19 pandemic and its associated factors.

Methodology: It was a web based cross sectional survey conducted from July 2020 to August 2020. A structured google proforma comprised of a brief introduction of the study followed by the consent of participants, characteristics of study participants, and depression, anxiety, stress scale (DASS-21) was used. All the postgraduate gynae trainees working in different tertiary care hospitals of the country who submitted their response were included. Data was analyzed using SPSS 23.

Results: Total numbers of respondents were 268. Their mean age was 29.10±2.62 years. Most of them were female trainees i.e., 264(98.5%) while 4 (01.5%) were male. Hundred thirteen (42.2%) were unmarried, 152(56.7%) were married and 03(01.1) were divorced. Most of the respondents were fourth year trainees i.e., 98(36.6%), followed by 2nd year, first year, and 3rd year 76(28.3, 49(18.3), 45(16.8) respectively. Out of 268, the study participants or their family members who got infected with COVID-19 were 132 (49.3%). Mean DASS score for depression, anxiety, and stress were, 6.17±3.30, 5.80±3.40, and 7.34±3.12 respectively. The frequency of the study participants who have depression, anxiety and stress during COVID-19 pandemic were 177 (66.8%), 198 (71.6%), and 150 (56%) respectively.

Conclusion: Significant number of post-graduate gynae trainees have varying degree of depression, anxiety, and stress ranging from mild, moderate, severe and very severe according to DASS-21 scale.

Keywords: COVID-19, Pandemic, Post graduate, Psychological impact, trainee doctors, gynae residents.

Cite this article as: *Sultana R, Sohail N, Naz R. COVID-19 pandemic: Psychological impact on postgraduate gynae residents in Pakistan. Ann Pak Inst Med Sci.2020; 16(3):113-117.*

Introduction

COVID-19 disease first identified in Wuhan city of China in December 2019. It was declared as "Pandemic" on 11th March 2020 by the World Health organization.[1] This infectious disease has spread in 213 countries of the world.[2] Pakistan was targeted by this pandemic on 26th February 2020. Number of confirmed cases of COVID-19 in Pakistan are increasing day by day.[3] It is affecting the community as a whole including health care workers endangering their physical, and mental health.[4] Postgraduate trainee doctors all over the world are front line warriors to combat the COVID-19 Pandemic. In Pakistan, despite limited resources, doctors are struggling to save the lives of humanity.

Post-graduate trainee doctors have a significantly high prevalence of anxiety, and depression during the training period even under usual circumstances.[4,5] Literature search in local context reveals background risk of early burn out in 14% of resident's doctors while 12.5% had advanced burnout.[5] COVID-19 pandemic is affecting not only physical health but also have detrimental psychological effects. Future uncertainty throughout the world led to many psychological problems like stress, anxiety, depression, insomnia, denial, anger, fear, and frustration. Survey research conducted in Pakistan on postgraduate trainee doctors revealed that frequency of depressive symptoms, generalized anxiety disorder and acute stress disorder were 26.4%, 22.6%, and 4.4% respectively.[6] Staff working in otolaryngology units are considered at high risk during COVID-19 pandemic. Burnout was reported in 21% of otolaryngology resident doctors, and attending physicians working in different hospital of United States during COVID-19 pandemic.[7]

So this study aims to determine the psychological impact in terms of depression, anxiety, and stress among post graduate gynae residents working in different tertiary care hospitals in Pakistan, and its association with their marital status, year of training, and whether they or their family member got infected with COVID disease. This is study would address the most vulnerable part of the health care community.

Methodology

This is a web based cross-sectional survey. Ethical approval was obtained from institutional ethical review committee; letter no. SMDC/SMRC/119-20. Postgraduate gynae trainees working in different hospitals across all four provinces of Pakistan were invited through social media of gynae residents to participate in this web based survey on 27th July 2020. A structured online proforma was designed to address the postgraduate gynae residents with a brief overview of research being conducted followed by consent section in the form of "Yes" or "No" to ensure their voluntary participation. Only those participants who gave consent to participate in the research got access to the google proforma that was comprised of two sections. First section included demographic characteristics of the study participants like age, marital status, gender, year of training, got COVID-19 infection her-self/himself or any family member is affected. In the second section study participants were asked to mark their response against the twenty one items of the Depression, Anxiety, Stress Scale (DASS-21) to the extent these items apply to them on four-point scale such that never, sometimes, often, and always.

All the post graduate gynae residents working in tertiary care hospitals who submitted online response were included in the study while those who did not give consent were excluded. Using an assumed proportion of 0.20, acceptable difference of 0.05 and confidence level of 95%, calculated sample size is 249.[8] Non-probability convenience sampling technique was used. Data was collected from 27th July 2020 till 7th August 2020. Response acceptance was closed on completion of sample size.

The shorter version of the depression, anxiety, and stress scale that is comprised of 21 items known as DASS-21 was used in this survey. It is designed to measure the three related negative emotional states i.e. depression, anxiety, and stress, and is based on a dimensional rather than a categorical conception of psychological disorder. Each item has four responses categorized as (0=never, 1= sometimes, 2=often, 3= always). The mean of each response were calculated in three dimensions. Scores on DASS-21 were multiplied by 2 to get the final score. Depression, anxiety and stress level of study participants was determined according to pre-defined cut-off scores i.e. depression ≥10, anxiety ≥8, and stress ≥15normal. DASS-21 is taken from official DASS website where it is freely available for public use.[9,10] DASS-21 is a reliable scale with Cronbach's alpha values of 0.81, 0.89 and 0.78 for the subscales of depression, anxiety and stress respectively.[11]

Data sheets were transferred and analyzed in SPSS 23. Mean and the standard deviation was calculated for quantitative variables such that age, and overall DASS scale items. The obtained DASS-21 scores were categorized into normal, mild, moderate, severe and very severe according to the pre-determined cut-offs. The association of psychological impact (in terms of depression, anxiety, and stress) with gender, marital status, year of training, gender, and study participant herself or her family member affected by COVID-19 using independent sample t-test and one way ANNOVA.

Results

Two hundred and seventy participants responded to the survey questionnaire; out of which 268 (99.25%) gave

consent and submitted their response while two (0.08%) did not give consent. Mean age of study participants was 29.10±2.62 years. Most of them were female trainees i.e., 264(98.5%) while 4 (01.5%) were male. Hundred thirteen (42.2%) were unmarried, 152(56.7%) were married and 03(01.1) were divorced. Most of the respondents were fourth year trainees i.e., 98(36.6%), followed by 2nd year, first year, and 3rd year i.e., 76(28.3, 49(18.3), 45(16.8) respectively. Out of 268, the study participants or their family members who got infected with COVID-19 were 132 (49.3%) as shown in table II. Mean DASS score for depression, anxiety and stress was, 6.17±3.30, 5.80±3.40, and 7.34±3.12 respectively. The frequency of depression, anxiety and stress among post graduate Gynae-residents is shown in Table I.

Association of depression, anxiety and stress was analyzed with gender, marital status, year of training and COVID-positive status of study participants or their family members as detailed in Table II. Results revealed that the study participants or whose relatives were COVID-19 positive show significant association (0.02) only with stress domain as shown in table II. However, the psychological impact in terms of depression, anxiety and stress does not show any significant association with gender, marital status, and year of training.

Table I: Frequency of depression, anxiety and stress among post graduate Gynae-residents

	Depression N (%)	Anxiety N (%)	Stress N (%)
Normal	89 (33.2)	76(28.4)	118 (44.0)
Mild	68(25.4)	33(12.3)	72(26.9)
Moderate	79(29.5)	66(24.6)	67(25.0)
Severe	25(9.3)	56(20.9)	10(3.7)
Very severe	07(2.6)	37(13.8)	01(0.4)

Discussion

COVID-19 Pandemic has not only affected the general community but also the front line health care providers. It has affected their physical, and mental health. Many young doctors lost their life while fighting COVID-19 battle and many got infected with this virus. It has ill effects on mental health of front line warriors.[8]

In the current study mean DASS score for domains of depression, anxiety and stress among postgraduate gynae trainees is 6.17±3.30, 5.80±3.40, and 7.34±3.12 respectively. A study was conducted in Karachi, Pakistan to assess the mental health of health care professionals working with COVID patients. It revealed a higher mean score of depression, anxiety and stress i.e., 18.2, 19.01 and 20.12 respectively.[8] A study was conducted in China to determine the psychological impact of COVID-19 pandemic; results revealed lower DASS-21 mean scores as compare to the published literature.[12] Although the current study was conducted in the declining phase of the first outbreak in Pakistan still it has a significant impact on their mental health as regards depression, anxiety and stress.

In this study, significant number of post graduate trainee doctors working in different tertiary care hospitals of the country showed depression, anxiety, and stress of varying degree ranging from mild, moderate, severe and very severe according to DASS-21 score. The frequency of the study participants who have depression, anxiety and stress during COVID-19 pandemic were 177

Table II: Association of Depression, Anxiety and Stress with study variables

		N (%)	Depression	P-Value	Anxiety	P-value	Stress	P value
Gender	Female	264(98.5)	12.3	0.13	11.5	0.23	14.6	0.43
	Male	4 (01.5)	14.4		16.4		17.5	
Marital status	Unmarried	113(42.2)	12.3	0.98	10.8	0.14	14.6	0.62
	Married	152(56.7)	12.3		12.0		14.6	
	Divorce	03(01.1)	11.8		17.1		18.1	
Year of training	1st year	49(18.3)	12.1	0.80	11.6	0.72	14.8	0.48
	2nd year	76(28.3)	12.9		11.0		14.5	
	3rd year	45(16.8)	12.4		11.1		14.9	
	4th year	98(36.6)	11.9		12.1		14.1	
COVID infection	Yes	132 (49.3)	12.7	0.18	11.6	0.34	14.7	0.02
	No	136(50.7)	11.9		11.5		14.5	

(66.8%), 198 (71.6%), and 150 (56%) respectively. A study conducted in Karachi by Sandesh et al revealed considerably higher ill-effect on the mental health of health care professionals working with COVID patients.[8] This may be because it was conducted in the peak of the outbreak in Pakistan. Similarly, a study conducted in Turkey revealed that 64.7%, 51.6%, and 41.2% of the physicians had depression, anxiety and stress-related symptoms respectively during early phase of the outbreak in Turkey.[13] Study conducted by Lai J et al on Chinese health care workers revealed that a considerably high number experience symptoms of depression and anxiety i.e. 50.4% and 44.6% respectively.[14]

The current study does not reveal significant association among DASS-21 scores (in terms of depression, anxiety and stress) and gender, marital status, year of training. However, the level of stress was significantly higher in study participants who got COVID infection themselves or their family members were infected with it. A study conducted on physician trainees reveal that female trainees have higher stress while unmarried physician trainees were more likely to experience depression and anxiety.[15] However year of training did not show any significant association in this study.

Study conducted by Kannampllil TG showed that physician trainees who were exposed to COVID patients had higher prevalence of stress, burnout, and anxiety than the other group of trainees who were not exposed i.e. 29.4% vs 18.9%, 46.3% vs 33.7%, 21.6% vs 14.9%.[15] A study conducted in Pakistan revealed that doctors working in " anesthesia and critical care units" have high frequency of severe burnout i.e. 36% followed by the doctors working in 'obstetrics and gynae department" under usual circumstances[16] and they become more vulnerable in such pandemics.

Literature reveals high psychological morbidity of COVID-19 pandemic on health care workers all over the world. Underlying stressors must be addressed. Stress coping strategies, and workshops must be arranged ensuring easy accessibility.[17] We must motivate them to adopt and avail different strategies to cope with stress because it has been observed that most of the health care professionals were aware of the availability of institutional wellness programs and COVID emergency resources but only 4-5% utilized the services.[17] So provision of a supportive working environment and enhancing motivation to adopt healthily, stress relieving activities is crucial during this pandemic for maximum productivity. Moreover initiation of large scale mental health support programs for healthcare staff eliminating the mental health stigma are essential.[18, 19] Practical implementations of interventions must be ensured for better outcome.[20]

Conclusion

Considerable number of post graduate gynae trainees working in different tertiary care hospitals have varying degree of depression, anxiety and stress due to COVID-19 pandemic.

Strengths: A large sample size including trainees from single specialty who are at the forefront during the COVID-19 battle.

Weaknesses: It is cross-sectional survey research to determine the psychological impact of COVID-19 pandemic; in-depth research is recommended to address the aspect of mental health of health care professionals.

Acknowledgment: We acknowledge Dr. Sofia Manzoor- SGRH, Lahore, Dr. Saima Saeed Usmani-LGH Lahore, Dr. Hadia Manzoor Hayatabad Medical Complex Peshawar, Dr. Rabail JPMC Sindh, Dr. Nagina Zeeshan-PAEC General Hospital Islamabad for their contribution in data collection.

References

1. Elsevier. "Novel Coronavirus Information Center". Elsevier Connect. Archived from the original on 30 January 2020. Retrieved 15 March 2020. Available at: https://www.elsevier.com/connect
2. Naming the coronavirus disease (COVID-19) and the virus that causes it". WHO. Int. Retrieved 4 April 2020. Available at: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/naming-the-coronavirus-disease-(covid-2019)-and-the-virus-that-causes-it
3. COVID-19 situation. COVID-19 Health Advisory platform by Ministry of National Health. GOP. Retrieved on 7th October 2020. Available at: https://covid.gov.pk/
4. Atif K, Khan HU, Zia-Ullah M, Shah FS, Latif A. Prevalence of anxiety and depression among doctors; the unscreened and undiagnosed clientele in Lahore, Pakistan. Pak J Med Sci. 2016; 32 (2):294-298.
5. Naeem A, Shaikh AA, Hassan SU, Abid H, Tahir A. Frequency of Workplace Burnout among Postgraduate Trainees in a Teaching Hospital in Mirpur. Cureus.2019; 11(2): e4016.Available at: https://www.cureus.com/articles/17513-frequency-of-

workplace-burnout-among-postgraduate-trainees-in-a-teaching-hospital-in-mirpur

6. Imran N, Masood HM, Ayub M, Gondal KM. Psychological impact f COVID-19 pandemic on postgraduate trainees: a crosee-sectional survey. Postgrad Med J.2020. e138364.
7. Civantos AM, Byrnes Y, Chang C, Prasad A, Chorath K, Poonia Sk, et al. Mental health among otolaryngology resident and attending physicians during the COVID-19 pandemic: National study. Head & Neck.2020; 42 (7):26292.
8. Sandesh R, Shahid W, Dev K, Mandhan N, Shankar P, Shaikh A. Impact of COVID-19 on the Mental Health of Healthcare Professionals in Pakistan. Cureus. 2020; 12(7): e8974. DOI 10.7759/cureus.8974 Available at: https://www.cureus.com/articles/35257-impact-of-covid-19-on-the-mental-health-of-healthcare-professionals-in-pakistan
9. Lovibond SH. Lovibond PF. Manual for the Depression Anxiety Stress Scales. 2nd ed. Sydney: Psychology Foundation of Australia; 1995.
10. Depression Anxiety Stress Scale (DASS). Psychology Foundation of Australia. Available at: <http://www2.psy.unsw.edu.au/dass/>
11. Coker AO, Coker OO, Sanni D. Psychometric properties of the 21-item Depression Anxiety Stress Scale (DASS-21).AFRREV 2018; 12(2):135-42.
12. Tan BYQ, Chew NWS, Lee GHK, Jing M, GOH Y, Yeo LLL et al. Psychological Impact of COVID-19 Pandemic on Health care workers in Singapore. Annals of Internal Medicine. 2020. DOI: 10.7326/m20-1083.
13. Elbay RY, Kurtulmus A, Arpacioglu S, Karadere E. Depression, anxiety, stress levels of physicians and associated factors in Covid-19 pandemic. Psychiatry research 290. 2020.113130.
14. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N et al. Factors associated with mental health outcomes among health care workers exposed to corona virus disease 2019. JAMA. Netw. Open. 2020; 3 (3):e203976-e.
15. Kannampllil TG, Goss CW, Evanof BA, Strickland JR, McAlister RP, Duncan J. Exposure to COVID-19 patients increases physician trainee stress and burnout. PLoS ONE. 2020.15(8):e0237301.
16. Mazhar SB, Gilani S, Khan S. High burnout among doctors working in a tertiary care hospital; a wakeup call. JPMA J Pak Med Assoc.2019; 69 (3):349-54.
17. World Health Organization. Doing What Matters in Times of Stress: an illustrated guide. WHO 2020. Available at: https://www.who.int/publications-detail-redirect/9789240003927
18. Galbraith N, Boyda D, McFeeters D, Hassan T. The mental health of doctors during COVID-19 pandemic.BJ Physician Bulletin.2020. DOI: 10.1192/bjp.2020.44
19. Braquehais MD, Vargas-Caceres S, Gomez-Duran E, Nieva S, Casas M, Bruguera E. The impact of the COVID-19 pandemic on the mental health of healthcare professionals. QJM.2020; 113 (9):613-17.
20. Duan L, Zhu G. Psychological interventions for the people affected by COVID-19 epidemic. The Lancet Psychiatary.2020; 7(4):300-2.