

Research Article

Generalized Anxiety Disorder among Paediatricians During the COVID-19 Pandemic

Shaffaq Aziz,¹ Sadia Shabir,² Misbah Noor,³ Asvar Sama,⁴ Samia Aslam,⁵ Muhammad Haroon Hamid⁶

^{1-4,6}Department of Pediatric Medicine, KEMU/ Mayo Hospital, Lahore; ⁵Department of Pediatric Medicine, Jinnah Hospital, Lahore

Abstract

Background: COVID-19 pandemic has put healthcare professionals at risk of developing mental health issues. Primarily, because of their increased chances of being affected and fulfilling their job commitments despite insufficient knowledge about the new disease and its management. Hence, it is essential to assess the burden of such mental health issues amongst healthcare providers.

Objective: To determine the frequency and severity of generalized anxiety disorder among paediatricians during the COVID-19 pandemic.

Methods: Cross-sectional observational study conducted in Department of Paediatrics (unit 1), King Edward Medical University/ Mayo Hospital Lahore, duration of 03 months. After IRB approval, an online survey form was developed based on GAD-7 Scale as an assessment tool for assessing anxiety among paediatricians. A survey form was dispersed using social media to paediatricians of different ages and working statuses. The responses were recorded and assessed using SPSS. Quantitative variables (age, GAD-score) were summarised as mean and standard deviation. Qualitative variables (gender, place of work, individual GAD- component score) were summarised as frequency and percentages.

Results: A total of 147 responses were received, out of which 13 were excluded. The remaining 134 were analysed through SPSS 26. Out of these, 106 (79.1%) turned out to be suffering from new-onset anxiety. Amongst these 106 paediatricians, 69 (65.1%) were females, and 37(35.9%) were males (p-value 0.013). The severity of anxiety was mild, moderate and severe in 62 (46.3%), 37 (27.6%) and 7 (5.2%) of paediatricians, respectively.

Conclusion: More than three-fourths of paediatricians had higher GAD 7 scores during the COVID-19 pandemic suggesting generalized anxiety disorder.

Corresponding Author | Dr. Shaffaq Aziz, Senior Registrar, Pediatric Medicine, Mayo Hospital, Lahore

Email: shaffaq_a@hotmail.com

Keywords | COVID-19, GAD-7, healthcare workers, paediatricians, mental health, pandemic, anxiety disorder

Introduction

A new strain of coronavirus named as 2019-NCOV/ COVID-19 appeared in Wuhan, China, at the end

of 2019. Health professionals worldwide are highly vulnerable to acquiring and transmitting COVID-19.¹ Increased work stress of health professionals can lead to weakened immune systems, and management of patients intimately can result in exposure to a higher viral load. Despite delivering selfless service on behalf of their communities, health professionals face many social stigmas during this outbreak.² Physicians faced



Production and Hosting by KEMU

<https://doi.org/10.21649/akemu.v30i1.4674>
2079-7192/© 2024 The Author(s). Published by Annals of KEMU on behalf of King Edward Medical University Lahore, Pakistan.
This is an open access article under the CC BY4.0 license
<http://creativecommons.org/licenses/by/4.0/>

death during plague outbreaks in medieval Europe, during a yellow fever outbreak in Philadelphia in 1793, during the Ebola epidemic in 2014, and now as well when COVID-19 affects countries around the globe.^{3,4}

Anxiety is an emotion we all experience in a situation that is threatening or difficult. The anxiety abates when you get used to the situation, when the situation changes, or if you just leave. It is generally expected from physicians to quietly endure physical or emotional suffering.⁵ However, the COVID-19 pandemic inflicted a substantial mental toll on health professionals, especially in frontline health professionals and nursing staff.⁶ Paediatricians will be dealing with the short-term effects of the COVID-19 pandemic and the long-term indirect impact it will incur on children even after the pandemic is over. The prevalence of anxiety was found to be 14.0% in pediatric medical staff in Jiangsu province of China during an outbreak of COVID-19.⁷ Hence, it seemed essential to determine the mental wellbeing of paediatricians in Pakistan also. According to a study conducted in Pakistan, paediatric residents experienced substantial physical, emotional and social stress during COVID-19.⁸ Another Pakistani study was able to prove that greater exhaustion, greater family strain, and reduced feelings of protection impacted on levels of anxiety among physicians.⁹ Similarly an elaborate study conducted in a large tertiary care center in Lahore, Pakistan concluded that, high psychological distress was experienced by HCWs caring for COVID-19 patients.¹⁰ Paediatricians will be dealing with the short-term effects of the COVID-19 pandemic and the long-term indirect impact it will incur on children even after the pandemic is over. Therefore, this study was planned to determine the frequency and severity of generalized anxiety disorder among paediatricians during the COVID-19 pandemic and also no local study was available in which paediatricians only were taken into consideration. This study was carried out despite the fact that many studies were already being published while we were collecting the data. One, only paediatricians were included in the study as although children were not among the most effected population during the pandemic but paediatricians will be dealing with the long term effects of this pandemic on the paediatric population in terms of missed vaccinations, missed school days, behavioural problems while away from school and peers, and emerging issues like MIS-C.

Methods

Institutional Review Board of King Edward Medical University approved the study (IRB no. 380/RC/KEMU dated: 16/06/2020). This cross-sectional, observational study was conducted by the Department of Paediatrics, King Edward Medical University / Mayo Hospital Lahore from June 2020 to August 2020. The sample size was not predetermined. Due to lockdown and social distancing, the paediatricians were approached through an online survey form generated by incorporating the Generalized Anxiety Score (GAD 7). The GAD-7 score was calculated by assigning scores on a 4-point Likert scale: 0 (not at all), 1 (several days), 2 (more than half the days), and 3 (nearly every day), and adding together the scores for the seven questions. Scores of 5, 10, and 15 were taken as the cut-off points for mild, moderate and severe anxiety respectively. Using the threshold score of 10, the GAD-7 has a sensitivity of 89% and a specificity of 82% for GAD.¹¹ A few more questions were asked from the participants regarding their work performance along with the GAD 7 scale during the initial stages of the pandemic. Paediatricians from both private and public institutions were approached. Demographic variables included age, gender, place of work, and designation was recorded. Responders who already suffered GAD before the onset of the COVID-19 pandemic as per their provided information were excluded.

Data was analyzed through SPSS 26.0. Quantitative variables (age, GAD-score) were summarised as mean and standard deviation. Qualitative variables (gender, place of work, individual GAD- component score) were summarised as frequency and percentages. Data was stratified based on age, gender, and seniority. Chi-square test was applied and a p-value of < 0.05 was considered statistically significant.

Results

A total of 147 responses were obtained during the study period. Thirteen paediatricians were excluded because of generalised anxiety disorder even before the pandemic. Hence, 134 participants were included in the final data analysis. Fifty-four (40.3%) respondents were males while 80 (59.7%) were females. Out of the total of 134 respondents, 106 (79.1%) were found to have Generalized Anxiety Disorder; 69 (69.1%) females and 37 (30.9%) males (p-value 0.013). Of 106 respon-

dents who turned out to be suffering from GAD, 62 (46.3%) had mild while 37 (27.6%) and 7 (5.2%) had moderate and severe anxiety disorder, respectively.

The difference between the male and female responses pertaining to the individual statements used in GAD scoring is given in Table. About, 58 (72.5%) females paediatricians reported feeling nervous or on edge compared to 27 (50%) of males (p value= 0.008). Seventy-two (90%) females were unable to stop or control worrying, while only 26 (66.7%) males reported this problem (p-value 0.001). Moreover, 75 (93.8%) females said that were fearful that something awful might happen to them as compared to 42 (77.8%) of their male colleagues (p-value 0.006).

The work performance was affected in 43 (32.6%) males and 57 (43.2%) females (p-value 0.388) while training was affected in 46 (34.8%) males and 62 (47%) females (p-value 0.404). However, 54 (40.9%) females reported that COVID-19 had affected their general aptitude at work as compared to 49 (37.1 %) males (p-value 0.001).

All the respondents were stratified into two age categories of less than 30 years and more than 30 years.

There was no statistical difference in Generalized anxiety

disorder between the two age groups - 65 (32.6%) and 45 (32.6%) in less than 30-years of age and more than 30-years of age, respectively (p-value 0.323). There was no statistical difference in work performance, training, and general aptitude between the two age groups, as shown in the Table 1.

Discussion

In our study, most responding paediatricians, 80 (59.7%) were younger than 30 years of age, similar to that by Arshad et al having 66.4% of respondents less than 30 years of age and 77.7% of them being postgraduate trainees. They demonstrated that among doctors suffering GAD, 27.8% and 23.9% had mild and moderate symptoms while 9.7% suffered severe anxiety and also found 67.9% of female doctors to suffer anxiety as compared to 56.3% males (p-value 0.014).¹²

According to our results, 106 (79.1%) paediatricians showed generalized anxiety disorder, similar to the results by Hassan et al who found 63.6% of health care workers suffering varying degrees of GAD. They also exhibited that only 3.3% of doctors suffered severe anxiety symptoms while 45.7% and 14.6% had mild and moderate anxiety, respectively.¹³ Our study results showed 46.3% and 27.6% paediatricians suffering mild

Table 1: Distribution of GAD Variable Responses According to Age and Gender

GAD- Variable	Response	Male	Female	P-value	Less than 30 years	More than 30 years	P-Value
Feeling nervous, anxious or on edge	YES	27 (50%)	58 (72.5%)	0.008	51(38.1%)	34(25.4%)	0.926
Not being able to stop or control worrying	YES	36 (66.7%)	72 (90%)	0.001	66(49.2%)	42(31.3%)	0.498
Worrying too much about different things	YES	44 (81.5%)	71 (88.8%)	0.237	70(52.6%)	44(38%)	0.249
Trouble relaxing	YES	37 (68.5%)	62 (77.5%)	0.246	63(47)	36(26.9%)	0.118
Being so restless that it is difficult to sit still	YES	22 (40.7%)	32 (40.0%)	0.932	37(27.6%)	17(12.7%)	0.087
Becoming easily annoyed or irritable	YES	18 (33.5%)	28 (35.0%)	0.842	23(17.2%)	23(17.2%)	0.098
Feeling afraid as if something awful will happen	YES	42 (77.8%)	75 (93.8%)	0.006	72(57.7%)		0.006
Generalized anxiety disorder	YES	37(68.5%)	69 (86.3%)	0.013	65(32.6%)	45(32.6%)	0.323
		Mild 19(35.2%)	Mild 43(53.8%)		Mild 31(50.0%)	Mild 31(50.0%)	
		Moderate 16(29.6%)	Moderate 21(26.3%)	0.051	Moderate 26(70.3%)	Moderate 11(29.7%)	0.202
	Severe 2(3.7%)	Severe 5(6.3%)		Severe4(57.1%)	Severe 3(42.9%)		
Effect on work performance	YES	43 (32.6%)	57 (43.2%)	0.388	64(64%)	36(36%)	0.085
Effect on training	YES	46 (34.8%)	62 (47%)	0.404	67(62%)	41(38%)	0.277
Effect on general aptitude	Yes	49 (37.1%)	54 (40.9%)	0.001	65(63.1%)	38(36.9%)	0.209

to moderate anxiety while 5.2% have severe anxiety symptoms as per GAD-7 score. While Al Ateeq et al found 51.4% of healthcare workers, including administrators, nursing staff, physicians and pharmacists, suffering from anxiety.¹⁴ Ma Y et al reported 24% of healthcare providers suffering from anxiety out of a small sample size of only 34. The reason for a relatively small proportion of them suffering GAD may be that all of them sought psychological help via online consultation at the start of the pandemic by themselves.¹⁵ Hassan et al and Al Ateeq et al also concluded that female health professionals were more predisposed towards developing anxiety and depression symptoms and with increased severity.^{13,14} In our study 69 (65.1%) of GAD suffering paediatricians were females.

While Sandesh et al found that 85.7% of healthcare workers working in COVID-19 isolation wards suffered moderate to severe anxiety, a possible reason for such a high percentage may be fear and apprehension due to direct exposure to COVID-19 infected patients.¹⁶

Almater et al also found anxiety levels to be high among female ophthalmologists.¹⁷ Filho et al demonstrated a positive relationship between female medical students and higher GAD-7 scores with a p-value of 0.015.¹⁸

Moreover, Al Ateeq et al found an age group of 30-39 years to be more prone to anxiety and depression.¹⁴ Malik et al found females, postgraduate residents and HCW with less than five years of clinical experience had significantly higher fears regarding COVID-19, contrarily age group of above 30 years was more at risk of workplace phobia than their younger counterparts which may adversely affect their work performance.¹⁹ While Arshad et al didn't find any difference of anxiety symptoms among different age groups, results similar to our study.¹² Abdelghani et al reported that 28% and 29% of physicians suffered moderate to severe anxiety and depression respectively, females being in a higher proportion. Fear of COVID-19 infection was negatively correlated with personal accomplishment and all quality of life domains.²⁰

Amin et al established that 43% of Pakistani frontline physicians suffered anxiety and depression during the COVID-19 pandemic and emphasized the need to address the mental health of caregivers and evaluate the productivity of interventions to the psychological

wellbeing of physicians.²¹ Failure to identify symptoms of anxiety may lead to serious psychological and behavioural consequences.²² This is of utmost importance to screen paediatricians for mental health issues as they are caregivers of children and adolescents who themselves are a vulnerable subgroup regarding mental health issues.²³ It is imperative to improve governmental and social support for physicians to reduce anxiety, workload and family strain in order to improve their perception of protection and ultimately patient safety.²⁴

King Edward Medical University and affiliated hospitals administration took some considerable measures to help doctors, nurses and allied professionals during the pandemic situation. However it is pertinent to mention that significant work is still needed to be done on the child and adolescent mental health. The importance of mental wellbeing became a subject of vital importance during the COVID-19 pandemic and somewhat helped in minimizing the stigma attached with seeking help and treatment for mental health. Although, it will take much effort and time to prioritize mental wellbeing in a less developed country like Pakistan.

This study was conducted in the first wave when there was a shortage of personal protective equipment, very limited knowledge about the new disease and its management, and no vaccine was licensed. But it's a way forward to a new study in the second wave to find any difference from the previous one, especially with new vaccines being approved.

Conclusion

More than three-fourths of paediatricians were found to have new-onset anxiety disorder during the COVID-19 pandemic, but with varying severity regarding the gender and the age group.

Ethical Approval: The Institutional review board approved the study vide letter No. 380/RC/KEMU.

Conflict of Interest: The authors declare no conflict of interest.

Funding Source: None

Authors' Contribution:

SA: conceived the idea, defended the ethical approval, data acquisition and interpretation, manuscript writing and final approval of the draft

SS: Data interpretation, proof reading and approval

of final draft

MN: Data collection and initial draft of manuscript

AS: Critically review for important intellectual contents

SA: Data interpretation, proof reading and approval of final draft

MHH: Supervised all steps and critical review of the article

References

- Chang D, Xu H, Rebaza A, Sharma L, Dela Cruz CS. Protecting healthcare workers from subclinical coronavirus infection. *Lancet Respir Med* 2020; 8(3): e13-e13.
- Rose C. Am I part of the cure of am I part of the disease? Keeping Corona virus out when a doctor comes home. *N Engl J Med*. 2020;382(18):1684-1685.
- David S. Jones. History in a crises---Lessons for COVID-19. *N Engl J Med* 2020; 382(1):1681-1683.
- Erdem H, Lucey D. Healthcare worker infections and deaths due to COVID 19: A survey from 37 nations and a call for WHO to post national data on their website. *International journal of infectious disease*. 2021; 102(1): 239-241
- Baker K, Sen S. Healing Medicine's future: Prioritizing physician trainee mental health. *AMA J Ethics*. 2016; 18(6):604-61
- Santabárbara J, Bueno-Notivol J et al. Prevalence of anxiety in health care professionals during the COVID-19 pandemic: A rapid systematic review (on published articles in Medline) with meta-analysis. *Progress in Neuro-Psychopharmacology and Biological Psychiatry* 2021;107(1).110244.
- Cheng FF, Zhan SH, Xie AW, et al. Anxiety in Chinese pediatric medical staff during the outbreak of Coronavirus Disease 2019: a cross-sectional study. *Transl Pediatr*. 2020;9(3):231-236.
- K; SSF. An overview of the COVID-19 complications in paediatric population: A pandemic dilemma [Internet]. U.S. National Library of Medicine; [cited 2020 Jul 30]. Available from: <https://pubmed.ncbi.nlm.nih.gov/34115913/>
- Mahmood, Q.K., Jafree, S.R., Jalil, A. et al. Anxiety amongst physicians during COVID-19: cross-sectional study in Pakistan. *BMC Public Health* 2021; 20(1): 101-34.
- Imran N, Hashmi AM, Haider II, Naqi SA, Asif A, Gondal KM. The toll it takes: mental health burden and associated factors during COVID-19 outbreak among healthcare workers in Lahore, Pakistan. *Annals of King Edward Medical University*. 2020;26(2):317-23.
- Jhonson S, Ulvenes P, Octedalen T. Psychometric Properties of the General Anxiety Disorder 7-Item (GAD-7) Scale in a Heterogeneous Psychiatric Sample. *Front Psychol*. 2019; 10(1): 1713.
- Arshad AR, Islam F. COVID-19 and anxiety among Doctors: Pakistani Perspective. *J Coll Physicians Surg Pak*. 2020;30(supp2):S106-S109.
- Hassan SR, Hamid Z, Jawaaid MT, Ali RK. Anxiety among Doctors during COVID-19 Pandemic in Secondary and Tertiary care Hospital. *Pak J Med Sci*. 2020; 36(6):1360-1365.
- AlAteeq DA, Aljhani S, Althiyabi I, Majzoub S. Mental Health among Healthcare Providers during Corona Virus Disease (COVID-19) Outbreak in Saudi Arabia. *Journal of Infection and Public Health*. 2020; 13(10): 1432-1437. doi:<https://doi.org/10.1016/j.jiph.2020.08.01>
- Ma Y, Rosenbeck R, He H. Psychological stress among healthcare professionals during COVID-19 novel coronavirus disease outbreak. Cases from online consulting customers. *J Intensive Crit Care Nurs*. 2020; 14(1): 102-05.
- Sandesh R, Shahid W, Dev K, Mandhan N, Shankar P, Shakh A et al. Impact of COVID-19 on the Mental Health of Healthcare Professionals in Pakistan. *Cureus* 2020; 12(7): e8974.
- Almater A, Tobaigy M, Younis A, Alaqeel M, Abouammoh M. Effect of 2019 coronavirus pandemic on ophthalmologists practicing in Saudi Arabia: A psychological health assessment. *Middle East Afr J Ophthalmol*. 2020;27(1):79-85
- Sartorão Filho CI, de Las Villas Rodrigues WC, de Castro RB, Marçal AA, Pavelqueires S, Takano L, de Oliveira WL, Sartorão Neto CI. Impact Of covid-19 pandemic on mental health of medical students: a cross-sectional study using GAD-7 and PHQ-9 questionnaires. *MedRxiv*. 2020:20(1):06.
- Malik S, Ullah I, Irfan M et al. Fear of COVID-19 and workplace phobia among Pakistani doctors: A survey study. *BMC Public Health* 2021;833(21):110-115.
- Abdelghani M, El-Gohary HM, Fouad E. Addressing the relationship between perceived fear of COVID-19 virus infection and emergence of burnout symptoms in a sample of Egyptian physicians during COVID-19 pandemic: a cross-sectional study. *Middle East Curr Psychiatry* 2020;27(1):165-172. Doi: <https://doi.org/10.1186/s43045-020-00079-0>

21. Amin F, Sharif S, Saeed R et al. COVID-19 pandemic-knowledge, perception, anxiety and depression among frontline doctors of Pakistan. *BMC Psychiatry* 2020; 29(1):152-157.
 22. Tanios CY, Abou-Saleh MT, Karam AN, Salamoun MM, Mneimneh ZN, Karam EG. The Epidemiology of anxiety disorders in the Arab world: A review. *T Anxiety Disord.* 2009; 23(1):409-419. doi: 10.1016/j.janxdis.2008.10.009
 23. de Miranda DM, Athanasio BdaS, Oliveria ACS, Simoes-e-Silva AC. How is COVID-19 pandemic impacting mental health of children and adolescents? *Int J Disaster Risk Reduct.* 2020;51(1):101845. doi: 10.1016/j.ijdrr.2020.101845
 24. Mahmood QK, Jafree SR, Jalil A. Anxiety amongst physicians during COVID-19: cross-sectional study in Pakistan. *BMC Public Health* 2021; 26(1):65-72.
-