Original Article

Burnout amongst Doctors of Obstetrics & Gynaecology Department at RMU and Allied Hospitals during COVID–19 Pandemic - Cross Sectional Survey

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[1] Conception of study
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Abstract

Objectives: To determine the frequency of burnout amongst doctors of the department of Obstetrics & Gynecology in Rawalpindi Medical University (RMU) & Allied hospitals, Rawalpindi by using CBI and some specific questions to assess the impact of COVID-19 on their personal and professional lives.

Study Design: Cross-sectional survey

Study Duration: From April 2020 – May 2021.

Study Setting: Obstetrics & Gynae department, RMU and allied hospitals i.e., Holy Family Hospital (HFH), Benazir Bhutto Hospital (BBH), and District Headquarter Hospital (DHQ).

Study Population: Doctors of 4 units of the department of obstetrics and gynecology, RMU & allied hospitals.

Sampling technique: Non-probability convenient sampling

Results: Results showed inadequate provision of PPE & Covid testing, fear of transmission of infection to family and friends, effect on the care of elderly at home and relationship with a partner, and increased mood irritability. Personal burnout was 54, work-related burnout was 49.6, and patient-related burnout was 37.

Conclusion: There is significant family and personal burnout but still patient burnout is not present, showing high professionalism in our doctors.

Keywords: Burnout, Covid-19, pandemic, gynaecology, and obstetrics, physicians.

Introduction

Burnout is defined by Schaufeli and Greenglass as a state of physical and mental exhaustion that results from long-term involvement in work situations that are emotionally demanding. Copenhagen burnout inventory (CBI), a validated tool to measure burnout, utilizes fatigue and exhaustion as its core elements. An additional key feature of CBI is the attribution of these elements to a specific domain in a person's life, like work and to be more specific; work with the patients.[1]

The practice of medicine requires higher-order human character attributes. In addition to long duty hours, they have to work vigilantly at odd times under immense pressure. These factors adversely affect their personal and professional lives. Studies show that compared with the general population and other professions, physicians experience a higher degree of burnout.[2] Various chronic illnesses in a large number of physicians may be related to sleep deprivation or the posture adapted by them during long hours of duty.[3]

In obstetrics and gynaecology, emergency patients require a prompt response. The operative interventions required during these life-threatening situations are quite complex, demanding the involvement of both junior and senior faculty members when compared to other surgical specialties. Thus, doctors in this specialty have a higher degree of baseline burnout.[4] Long working shifts, lengthy processes of labor, and emergency surgical interventions may be the cause of sleep deprivation among these doctors.[4]

SARS-CoV-2 was declared a global pandemic by the World Health Organization on 11th March, 2020[5], due to unexpectedly rapid worldwide spread. The healthcare workers (HCWs) including doctors, nurses, and paramedics, had to face the dual challenge of treating the rapidly increasing number of COVID-19 patients and adapting their medical practices to protect themselves and their families from acquiring the infection. These cumulative stressors resulted in mental health implications with higher rates of anxiety, depression, insomnia, and distress affecting their personal and professional life.[6] These problems are primarily influenced by an individual's bio-psychological behavior, social and environmental factors such as the risk of transmission of infection.[7]

At the beginning of the pandemic, HCW's had limited access to personal protective equipment (PPE) and felt unprepared to deal with this serious situation due to the unpredictable clinical behavior of this infection. At the same time, they were exposed to a rapidly increasing number of new cases with variable presentations. In addition to physical exhaustion, at times they faced breathing difficulties after wearing PPE for long hours.[8]

A survey conducted in China during this pandemic revealed that the prevalence of psychological problems in physicians, resident doctors, nurses, technicians, and public health professionals was 60.35%, 50.82%, 62.02%, 57.54%, and 62.40% respectively.[9] While all HCWs were serving as frontline warriors in the wake of the pandemic, the doctors of Obstetrics & Gynecology in tertiary care hospitals who were already working in a field of high stress[10], had to face the added burden of COVID-19 pandemic, which resulted in a multifold increase in their burnout.

By quantifying the stress impact of SARS, Chua et al, found that the psychological effects (positive and negative) on health care workers significantly increased (89-94%) as compared with control respondents.[11]

We have already passed through the 1st and 2nd wave of pandemics and are now going through the 3rd peak of COVID-19, due to the longevity of the pandemic. As it is unpredictable when life returns to normal, clinicians will have to maintain high alert for an extended period of time, therefore it is high time to assess the burnout of doctors in high-stress services. In Pakistan, so far, limited studies have been conducted to assess the gravity of this alarming situation.[12] This study is aimed to elicit the experiences of doctors of the department of Obstetrics & Gynecology in Rawalpindi Medical University (RMU) & Allied hospitals, who have faced the challenge of three waves of pandemic through April 2020 to April 2021. This would help to generate evidence about the gravity of the situation and provide a basis for implementing appropriate preventive measures to save the souls of those who are saving the lives of others.

Objective:

To determine the frequency of burnout amongst doctors of the department of Obstetrics & Gynecology in Rawalpindi Medical University (RMU) & Allied hospitals, Rawalpindi by using CBI and some specific questions to assess the impact of COVID 19 on their personal and professional lives.

Materials and Methods

Study Design: Cross-sectional survey.
Study Duration: From April 2020 – May 2021.

Study Setting: Obstetrics & Gynae department, RMU and allied hospitals i.e., Holy Family Hospital (HFH), Benazir Bhutto Hospital (BBH), and District Headquarter Hospital (DHQ).

Study Population: Doctors of 4 units of the department of obstetrics and gynecology, RMU & allied hospitals.

Sampling technique: Non-probability convenient sampling.

Outcome variables: personal, work-related, and patient-related burnout.

Confounding variables: Age, Marital status, Designation.

Data collection tool: Structured questionnaire mainly based on CBI, responded on 5 points Likert scale was used to collect data. We also included demographic details, place of work, designation, years of residency, access to PPE & covid testing, the approximate number of covid patients attended, and some questions about those family life aspects which were likely to be influenced by COVID 19, and contribute to the doctor's burnout. Informed consent was added to the beginning of the proforma to ensure that only willing doctors would fill it. The questionnaire in total had 40 questions; 8 for personal information including place of work & designation, 2 for a number of patients attended, 2 about PPE provision, 2 for Covid testing, 1 for fear of acquiring infection, 7 for Family burnout, 5 for personal burnout, 7 for work-related burnout and 6 questions for patient-related burnout.[7] (Data collection tool is attached). All items had five response categories on the Likert scale, from "always" =100 to "never" = 0. The higher score suggested a higher level of burnout except for one question "Do you have enough energy for family and friends during leisure time? for which scoring was reversed. We averaged the scores as the total score and defined burnout as CBI score >50. As the CBI score increases, the severity of burnout increases.

Data Collection Procedure: After ethical approval from hospital ERB, we administered the survey form to the doctors of the Obstetrics & Gynae department of RMU & allied hospitals through Google form shared on WhatsApp.

Statistical Analysis: Data was obtained from Google sheet.

The data was statistically analyzed on IBM SPSS 28. Quantitative variables were presented as mean and standard deviation. Mean scores (mean ± SD) in personal, work-related, and patient-related (pandemic related) domains were calculated using a 0 to 100-point scale. Respondents with a mean score of >50 were classified as experiencing burnout. The responses (n,%) and average scores were also calculated separately for each question. The mean burnout score was compared using ANOVA in each domain. Qualitative variables were presented as frequency and percentage. The frequency of burnout in the study population was calculated. An Independent T-test was used to compare different quantitative variables. A Chi-square test was performed to compare qualitative variables. P-value ≤ 0.05 was taken as significant.

Results

Characteristic of Doctors:

The total number of doctors in the Gynae department is 160 and 140 survey forms were received, so the response rate was 87.5%. Respondents were predominantly female (97.2%) with an average age of 32.82±SD 7.41 Range 23-59 years. Amongst participants 54.50% were postgraduate trainees, 27% were senior registrars, 10 % were consultants, 8.5% were house officers and 69% of our participants were married and during this tedious time, 18% were pregnant as well. 82% of doctors were concerned about acquiring Covid-19 while at work in a hospital.

Regarding family life, 92% (responded as always / most of the time) were afraid of transmission of infection to family, kids, and friends. An intimate relationship with a spouse was affected to some extent in 57% but was not affected in 43% who responded as never, but the care of the elderly at home was affected in 81.6% of participants.

Most of the respondents had easy access to PPE kits in BBH and HFH who answered as always and most of the time, (32% & 36% respectively), but the same was not the case in DHQ (10%). Likewise, easy access to Covid-19 testing was available in HFH, BBH to 67% & 30% of doctors respectively but 17% only in DHQ hospital.

Rates of Burnout:

Mean CBI subscale scores for this sample were **54.39** for personal burnout, **49.69** for work-related burnout, and **37.29** for patient-related burnout. Physical and emotional exhaustion was significantly associated with personal burnout (P-value=0.001). The difference between the mean score of personal and work-related burnout was significant (Table 1, 2).

The prevalence of personal (54.39) and work-related (49.69) burnout was more significant. (Table 1, 2, 3). Few respondents (37.29) experienced patient-related burnout.

Table 1: Personal Burnout and distribution of responses (n=140)

Question	Always	Most of the time	Sometimes	Seldom	Never	Mean Score	Std. Deviation
How often do you feel tired?	13 (9.3%)	45 (32.1%)	64 (45.7%)	12 (8.6%)	6 (4.3%)	58.39	22.96
How often are you physically exhausted?	12 (8.6%)	50 (35.7)	68 (48.6%)	6 (4.3%)	4 (2.9%)	60.71	20.59
How often are you emotionally exhausted?	12 (8.6%)	64 (45.7%)	49 (35%)	11 (7.9%)	4 (2.9%)	62.32	21.73
How often do you think: ''I can't take it anymore''?	6 (4.3%)	28 (20%)	52 (37.1%)	26 (18.6%)	28 (20%)	42.50	28.24
How often do you feel weak and susceptible to illness?	5 (3.6%)	29 (20.7%)	67 (47.9%)	28 (20%)	11 (7.9%)	48.04	23.24
				Avg. Score		**54.39**	

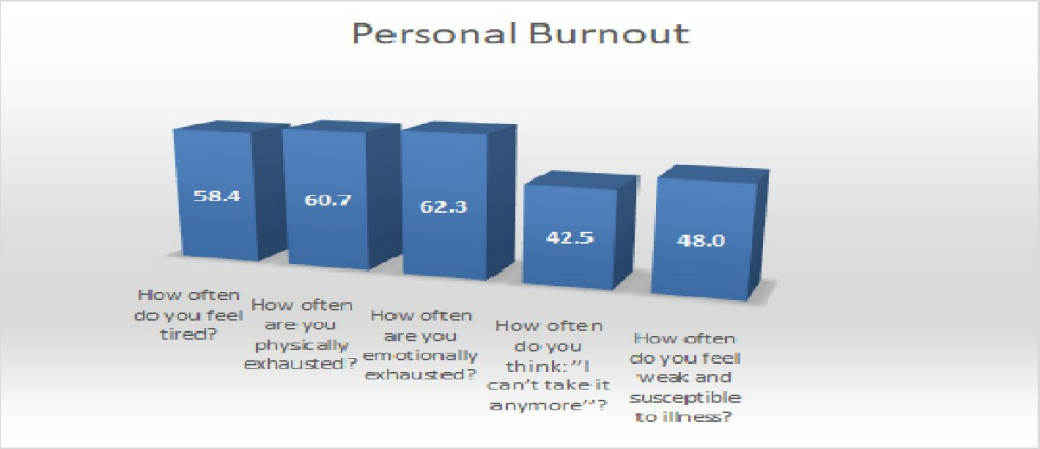

Figure 1

Table 2: Work-related Burnout and distribution of responses (n=140)

	Always	Most of the time	Sometimes	Seldom	Never	Mean Score	Std. Deviation
Do you feel worn out at the end of the working day?	19(13.6%)	50(35.7%)	48(34.3%)	17(12.1)	6(4.3%)	60.54	25.28
Are you exhausted in the morning at the thought of another day at work?	9(6.4%)	32(22.9%)	40(28.6)	38(27.1%)	21(15%)	44.64	28.73
Do you feel that every working hour is tiring for you?	8(5.7%)	23(16.4%)	48(34.3%)	31(22.1)	30(21.4%)	40.71	28.97
Do you have enough energy for family and friends during leisure time?	7(5%)	39(27.9%)	45(32.1%)	36(25.7%)	13(9.3%)	48.39	26.35
Is your work emotionally exhausting?	25(17.9%)	44(31.4%)	44(31.4%)	15(10.7%)	12(8.6%)	59.82	28.87
Does your work frustrate you?	11(7.9%)	28(20%)	50 (35.7%)	22 (15.7)	29 (20.7%)	44.64	30.25
Do you feel burnt out because of your work?	14(10%)	35(25%)	44 (31.4%)	26 (18.6%)	21 (15%)	49.11	30.05
				Avg. Score		**49.69**	

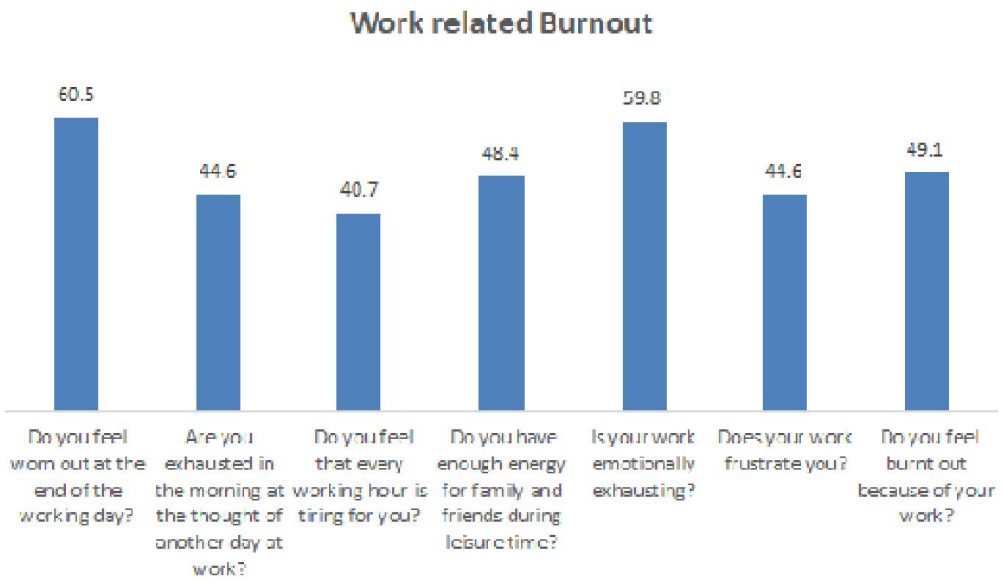

Figure 2

Table 3: Patient-Related Burnout and distribution of response (n=140)

	Always	Most of the time	Sometimes	Seldom	Never	Mean Score	Std. Deviation
Do you find it hard to work with patients?	3 (2.1%)	17 (12.1%)	48 (34.3)	37 (26.4)	35 (25)	35.00	26.451
Does it drain your energy to work with patients?	3 (2.1)	25(17.9)	51 (36.4)	33 (23.6)	28 (20)	39.64	26.652
Do you find it frustrating to work with patients?	3 (2.1)	13 (9.3)	46 (32.9)	28 (20)	50 (35.7)	30.54	27.496
Do you feel that you give more than you get back when you work with patients?	19 (13.6)	44 (31.4)	39 (27.9)	19 (13.6)	19 (13.6)	54.46	30.768
Are you tired of working with patients?	2 (1.4)	10 (7.1)	40 (28.6)	31 (22.1)	57 (40.7)	26.61	26.350
Do you sometimes wonder how long you will be able to continue working with patients?	7 (5)	16 (11.4)	53 (37.9)	28 (20)	36 (25.7)	37.50	28.528

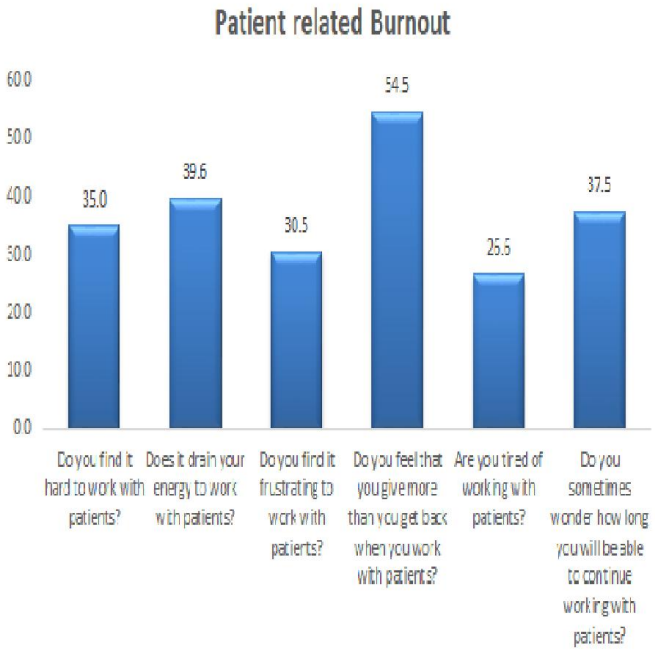

Figure 3

Regarding the age group of 23-35 years, the prevalence of personal burnout was (57.23) P-value=0.001, work-related was (53.47) P-value=0.02 and patient-related burnout was (39.32) P-value=0.001.

The prevalence of work-related and patient-related burnout in the age group 36-40 years was significant. In the case of the age group 41-60 years, work-related and patient-related burnout was similar to the age group of 36-40.

While comparing married with unmarried doctors, the personal and work-related burnout in both married and unmarried was significant. However, the patient-related burnout was more significant with a P-value of 0.001 in married as compared to unmarried P value (0.04). Confounding Variables like Age, Marital Status, and Designation were compared with Burnout distribution (Personal, Work-related, and Patient-related).

Table 4: Burnout Distribution with Age, Marital Status and Designation

Confounding Variables	No of respondents	Personal Burnout	Work related Burn out	Patient related Burn out
Age				
23 - 35 years	103	57.23	53.47	39.32
36-40	19	47.78	40.6	31.48
41-60	18	45.6	38.7	32.4
Marital Status				
Married	96	53.23	46.3	35.3
un-married	44	56.9	52.7	41.6
Designation				
Specialists	51	46.7	40.6	30.6
PGR	88	59.03	55.3	41.3

Regarding the impact of the number of patients attended on the burnout of doctors, with exposure to ≦ 40 patients, the personal, work-related, and patient-related burn out was 54.2, 44.9, and 36.4 respectively, whereas exposure to ＞40 patients led to personal, work-related and patient-related burn out of 51.5, 60.9 and 59.9 respectively. Personal burnout of both groups was comparable, but in the second group, all personal, work-related, and patient-related burnout were significant

Discussion

This is the first study on burnout among doctors in Rawalpindi based on CBI, conducted during the ongoing pandemic. There are multiple tools available in the literature to access burnout for example MBI and Oldenburg Burnout Inventory (OLBI). We chose not to opt for these inventories as these were not showing a relationship with burnout and the questions posed were not acceptable. The questions phrased in MBI, e.g. are in a negative manner and address the emotional aspect of exhaustion at the most.[13]

We selected CBI for our study because it is simpler to use, reliable and comprehensive. Its psychometric properties are an excellent tool to measure burnout in healthcare workers which is similar to a study conducted in India during the pandemic.[14]

In our study, the response rate of the respondents was 87.5%. This is consistent with a study conducted in China by Zhang et al.[15] effective response rate in

Chinese study was 86.77%. This indicates that the problem of burnout is very near to the heart of doctors who serve day and night for the cure of ailments of humanity but are neglected themselves.

The average personal burnout score of all respondents was high which was 54, irrespective of their designation, place of work, marital status, age, it may be due to their workplace (tertiary care hospital and obstetrics & gynecology department), fear of a new highly contagious disease for which no definitive treatment was available, moreover there were reports of infection being transmitted to doctors and their families and even mortalities were also reported among HCW,s especially doctors. The same was the case in Toronto during the SARS epidemic, where HCWs that treated SARS patients had significantly higher levels of burnout than those that did not.[16]

The average score of work-related burnout was 49.69%, which is near 50 this is because the major chunk of the study population (54.5%) was postgraduate residents who are young, 73.57% between 23-35 years of age, married (69%), and even 18% were pregnant. They were front-line warriors and the main workforce during the pandemic. They usually face sleep deprivation due to long working hours, lack of appreciation of their work, emotional drain as they work with sick and dying patients, conflicts with their co-workers. Training usually coincides with major events in their lives and additionally, they also have the responsibility of their kids and old parents at home. Our results are in accordance with a study conducted by Shanafelt.[17]

Regarding patient-related burnout, the average score of our study population was 37, which depicts that although the doctors were physically and emotionally exhausted, they love to work with patients even during the pandemic shows their commitment towards their profession which is commendable. A study in Singapore also highlighted this spirit of doctors.[18]

When we compare the respondents of different age groups with personal, work-related, and patient-related burnouts during the pandemic, all show statistically significant p-value, which indicates doctors although frontline warriors are human beings having emotions and feelings, also feel weak and susceptible to the illness.[19] Same finding is evident from a study by Kumar et al in India. Doctors also need initiatives that promote a safe working environment, teamwork, psychological support through appreciation of their work, better financial reward, social support by the community and the government. Effective communication and cognitive behavior therapy may help to build resilience. All these factors are identified as a protective measure against adverse mental health outcomes.[20]

In our study, we encountered that burnout was in direct proportion to the number of patients attended. Personal burnout was 54.2 when the number of patients seen was less than 40. It increased in all three domains of burnout when the number of patients seen was more than 40. The burnout was maximum in doctors who saw >60 patients. Wearing PPE for long hours, sometimes to see their colleagues admitted in covid ward, fear of taking the disease to their loved ones are the obvious factors increasing their burnout.[21]

But all the doctors were so committed to their profession that only 4% thought to quit their job. 100% of doctors were concerned about the risk of transmission of infection to their families, but only 2% of the doctors were asked by their families to quit their jobs.[22] This professionalism is worth appreciation.

Conclusion

There is significant family and personal burnout but still, patient burnout is not present, showing high professionalism in our doctors.

Limitations of Study: In the study, the sample size was small. Few participants were reluctant to respond. Some participants were not well conversant with a Google form.

Recommendations: More studies by including doctors from other specialties and other hospitals should be conducted.

Preventive measures should be implemented to decrease the burnout of healthcare workers. Previous research has suggested that burnout leads to depression.[23]

Benefits may be seen from interventions to address burnout. At the individual level, evidence-based interventions include mindfulness, appreciation of work, and self-awareness exercises. At the government level reduction in the working hours of doctors in gynecology, financial incentives may improve organizational communication, streamline workflows, and can reduce burnout rates.[24,25]

If only one word used to beat burnout is that would be a balance –"the balance between giving and getting, the balance between stress and calm, the balance between work and home.[26]

References

1. Kristensen TS, Borritz M, Villadsen E, Christensen KB et al. The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. Work Stress. 2005;19(3):192–207. DOI:10.1080/02678370500297720
2. Shanafelt TD, Boone S, Tan L, Dyrbye LN, Sotile W, Satele D, et al. Burnout and satisfaction with work-life balance among US physicians relative to the general US population. Arch Intern Med. 2012; 172(18):1377–85. DOI:10.1001/archinternmed.2012.3199
3. Iorga M, Socolov V, Muraru D, Dirtu C, Soponaru C, Ilea C, et al. Factors influencing burnout syndrome in obstetrics and gynecology physicians. Biomed Res Int. 2017;2017:9318534. DOI: 10.1155/2017/9318534
4. Dyrbye LN, Clinic M, Shanafelt TD, Sinsky CA, Cipriano PF, Bhatt J, et al. Burnout among health care professionals: A call to explore and address this underrecognized threat to safe, high-quality care. NAM perspect [Internet]. 2017;7(7). DOI: 10.31478/201707b
5. Liu Q, Luo D, Haase JE, Guo Q, Wang XQ, Liu S, et al. The experiences of health-care providers during the COVID-19 crisis in China: a qualitative study. Lancet Glob Health. 2020;8(6):e790–8. DOI: 10.1016/S2214-109X(20)30204-7
6. Chua SE, Cheung V, Cheung C, McAlonan GM, Wong JWS, Cheung EPT, et al. Psychological effects of the SARS outbreak in Hong Kong on high-risk health care workers. Can J Psychiatry. 2004;49(6):391–3. DOI: 10.1177/070674370404900609
7. Que J, Shi L, Deng J, Liu J, Zhang L, Wu S, et al. Psychological impact of the COVID-19 pandemic on healthcare workers: a cross-sectional study in China. Gen Psychiatr. 2020;33(3):e100259-e. DOI: 10.1136/gpsych-2020-100259
8. Tariq A, Mahmood T, Shahid A, Maqbool N, Anwar R, Afsheen A. COVID-19 – A perspective of health care workers at Tertiary Care Hospital in Karachi – A Clinical Survey. prof med j. 2021;28(02):131–5.
9. RASHID N, ASHRAF A, AYUB R, BASHIR A, ALI M, FATIMA N. Perception, Challenges, and Consequences of Covid-19 Pandemic on doctors working in Government and Private Hospitals of Lahore. P J M H S. 2020 ; 14(4) :1069-72.
10. Hamed AS, As AT, Abdullah AN. Burnout, Perceived Stress and Coping Styles among Nurses at a Tertiary Care Hospital in Muscat= و ،إدراكالكرب و ،الاحتراقالنفسي أسلوبالتعاملبينالممرضينبمستشفىالرعايةالطبيةالثالثةف يمسقطبسلطنةعمان. The Arab J Psychiatry. 2016;27(2):117-126. DOI: 10.12816/0029091
11. Potts JR 3rd. Residency and fellowship program accreditation: Effects of the novel Coronavirus (COVID-19) pandemic. J Am Coll Surg. 2020;230(6):1094–7. DOI: 10.1016/j.jamcollsurg.2020.03.026
12. Abid K, Bari YA, Younas M, Tahir Javaid S, Imran A. Progress of COVID-19 epidemic in Pakistan. Asia Pac J Public Health. 2020;32(4):154–6. DOI: 10.1177/1010539520927259.
13. Prins JT, Gazendam SM, Tubben BJ, Heijden FMMA, Wiel HBM, Weebers JEHM. Burnout in medical residents: a review. Med Educ. 2007;41(8):788–800. DOI: 10.1111/j.1365-2923.2007.02797.x
14. Khasne RW, Dhakulkar BS, Mahajan HC, Kulkarni AP. Burnout among Healthcare Workers during COVID-19 pandemic in India: Results of a questionnaire-based survey. Indian J Crit Care Med. 2020;24(8):664–71. DOI: 10.5005/jp-journals-10071-23518A.
15. Wang J, Xie F, Yin D, Shi Y, Zhang M, Yin H, Li F, Yang L, Cao D, Sun T. A cross-sectional study of job burnout, psychological attachment, and the career calling of Chinese doctors. BMC health services research. 2020 Dec;20(1):1-1. DOI: 10.1186/s12913-020-4996-y
16. Maunder RG, Lancee WJ, Balderson KE, Bennett JP, Borgundvaag B, Evans S, et al. Long-term psychological and occupational effects of providing hospital healthcare during SARS outbreak. Emerg Infect Dis. 2006;12(12):1924–32. DOI: 10.3201/eid1212.060584
17. Shanafelt TD, Bradley KA, Wipf JE, Back AL. Burnout and self-reported patient care in an internal medicine residency program. Ann Intern Med. 2002 Mar 05;136(5):358-67. DOI: 10.7326/0003-4819-136-5- 200203050 -00008
18. Can W, Learn W, Koh D. Risk perception and impact of Severe Acute Respiratory Syndrome (SARS) on work and personal Lives of healthcare workers in Singapore. What can we learn? Med Care. 2005;43(7): 676-82. DOI: 10.1097/01.mlr.0000167181.36730.cc.
19. Kumar J, Katto MS, Siddiqui AA, Sahito B, Ahmed B, Jamil M, et al. Predictive factors associated with fear faced by healthcare workers during COVID-19 pandemic: A questionnaire-based study. Cureus. 2020;12(8):e9741. DOI: 10.7759/cureus.9741
20. De Kock JH, Latham HA, Leslie SJ, et al. A rapid review of the impact of COVID-19 on the mental health of healthcare workers: implications for supporting psychological well-being. BMC Public Health. 2021: 104 doi:10.1186/s12889-020-10070-3
21. Chong MY, Wang WC, Hsieh WC, Lee CY, Chiu NM, Yeh WC, Huang OL, Wen JK, Chen CL. Psychological impact of severe acute respiratory syndrome on health workers in a tertiary hospital. Br J Psychiatry. 2004;185:127-33. DOI: 10.1192/bjp.185.2.127.
22. Can W, Learn W, Koh D. Risk perception and impact of Severe Acute Respiratory Syndrome (SARS) on work and personal Lives of healthcare workers in Singapore. What can we learn? Med Care. 2005;43(7): 676-82. DOI: 10.1097/01.mlr.0000167181.36730.cc.
23. Fahrenkopf AM, Sectish TC, Barger LK, Sharek PJ, Lewin D, Chiang VW, et al. Rates of medication errors among depressed and burnt out residents: prospective cohort study. BMJ. 2008;336(7642):488–91. DOI: 10.1136/ bmj.39469.763218.
24. Denning M, Goh ET, Tan B, Kanneganti A, Almonte M, Scott A, et al. Determinants of burnout and other aspects of psychological well-being in healthcare workers during the Covid-19 pandemic: A multinational cross-sectional study. PLoS One. 2021;16(4):e0238666. DOI: 10.1371/journal.pone.0238666
25. Delbaere K, Close JCT, Brodaty H, Sachdev P, Lord SR. Determinants of disparities between perceived and physiological risk of falling among elderly people: cohort study. BMJ. 2010;341. DOI: 10.1136/bmj
26. Maslach C. Burned-out. Can J Psychiatr Nurs. 1979 Nov-Dec;20(6):5-9. [PubMed]