ORIGINAL ARTICLE

Burnout among Clinical and Non-clinical Academics during the Implementation of Remote Teaching and Learning due to COVID-19 Pandemic

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ABSTRACT

Introduction: The extent of burnout among clinical and non-clinical academics during the COVID-19 pandemic is not well gauged and necessitates further attention. This study was designed to determine the prevalence of burnout among academics in the International Islamic University Malaysia (IIUM), Kuantan campus, and the associated sociodemographic and occupational-related factors. **Methods:** We conducted a cross-sectional study between March and May 2021 using questionnaires adapted from Copenhagen Burnout Inventory and General Stressor Questionnaire at the IIUM, Kuantan campus. **Results:** 57 clinical and 93 non-clinical academics responded to the survey. The prevalence of significant burnout was 49%. Compared to non-clinical academics, clinical academics had a significantly higher proportion of burnout with a p-value of <0.001, particularly in work-related, student-related, and superior-related burnout domains, with a p-value of 0.004, <0.001, and 0.006, respectively. Factors significantly associated with burnout among our cohort were clinical work, chronic illness, and gender, each with an odds ratio of 2.72 (95% CI = 1.01,7.34), 2.81 (95% CI = 1.14, 6.92), and 4.86 (95% CI = 2.15, 10.9). **Conclusion:** Burnout was highly prevalent among academics in the IIUM Kuantan campus, particularly among clinical academics during the COVID-19 pandemic and the implementation of remote teaching and learning policy.
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Keywords: Academic burnout, Clinical teaching, COVID-19, Medical education, Emergency remote teaching and learning (ERTL)

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INTRODUCTION

Burnout is a state of mental, emotional, and physical exhaustion resulting from prolonged and persistent exposure to excessively challenging work-related events (1,2). Burnout leads to loss of creativity, reduced motivation and commitment to work, physical and emotional illness, improper attitudes toward oneself and clients, and a general feeling of worn out (1). As employees experience increasing levels of burnout, they may unknowingly enact harm on themselves, co-workers, clients, and the organization (1). A burned-out worker is more likely to be absent from work, less productive, and leave the organization (1,3). Burnout has further been connected to mental and physical health problems, including emotional lability, cognitive rigidity, depression, anxiety, fatigue, insomnia, decreased self-esteem, and deteriorating social and family interactions (1).

Academics faced various stressors that can predispose them to burnout. These include demanding workload, relatively unreasonable salary, lack of social recognition, extensive teaching demand from large class size and student misbehavior, and conflicts at the workplace (2-5). During the COVID-19 pandemic, teaching and learning activities had transformed from physical contact

into more virtual and remote (6). This new pedagogy requires rapid adaptation and acquisition of new skills and demands much creativity and commitment from fellow academics. These additional factors will further increase the risk of burnout (7). For instance, in an online survey involving 1,122 respondents from colleges and universities across the US, 55% of academic staff seriously consider changing careers and leaving higher education or retiring early due to various reasons, including burnout and stress COVID-19 pandemic (7).

Another subgroup of academics that are heavily affected during this volatile, uncertain, complex, and ambiguous (VUCA) period are clinical academics. Clinical academics have always struggled to juggle their time for multiple job-related commitments, from patientcare and clinical work to conducting research and teaching (2,8). Clinical academics leaving universities remains worrying since the past two decades. For instance, in 2004, 38 clinical academics resigned in one of Malaysia's top public universities in six months. The numbers continue persistently (9). This brain drain has caused significant loss to the universities. The challenge in delivering clinical services, conducting research, and teaching medical students during the COVID-19 pandemic will further aggravate the problem of burnout (10).

The extent of burnout among clinical and non-clinical academics during the COVID-19 pandemic is not well gauged and requires further attention. This information will allow decision-makers to devise policies to help clinical and non-clinical academics cope with the stress of delivering services during the COVID-19 pandemic and prevent further losses from the universities' valuable assets. This study aims to determine the prevalence of burnout among clinical and non-clinical academics working in IIUM, Kuantan campus and determine the associated sociodemographic and occupational-related factors.

MATERIALS AND METHODS

The research was a prospective cross-sectional study conducted among academic staff of IIUM Kuantan Campus. The campus is in the capital city of Pahang, the largest state in Malaysia peninsular. There are six colleges onsite: Kulliyyah of Medicine, Kulliyyah of Dentistry, Kulliyyah of Pharmacy, Kulliyyah of Nursing, Kulliyyah of Sciences, and Kulliyyah of Allied Health Science. Clinical academics from the campus provide clinical services at Sultan Ahmad Shah Medical Centre (SASMEC). SASMEC is a teaching hospital run by IIUM, and most of the clinicians are academics of Kulliyyah of Medicine and Kulliyyah of Dentistry. SASMEC is located 1.7 km away from the campus and can be accessed by the main road. The clinical academics involved in this study come from various specialities.

Measuring burnout levels and identifying contributing stressors were performed using English-language questionnaires adapted from the Copenhagen Burnout Inventory (CBI) and the General Stressor Questionnaire (GSQ).

The CBI is a self-rated inventory that measures the degree of burnout perceived by the respondents and how much their works and interpersonal relationship contributing to the burnout (11,12). The validated version used to measure burnout among academics comprises three main domains, which are personal burnout (PB), work-related burnout (WB), and client-related (CB), with a total of 18 Likert-scale questions (4,12). The scale's reliability is acceptable, with composite reliability of between 0.91 and 0.94 and Cronbach's α of 0.91 and 0.95 (4). The scores of 50-74 indicate moderate burnout, high burnout 75-99 and severe burnout is considered when the score is 100 (13). Any score that corresponded to moderate or worse than moderate burnout is considered significant burnout (14). For this study, we divided the client-related domain into two separate domains, student-related and superior-related.

The GSQ was developed and validated by Yusoff et al. to assess the source of stress among house officers (15). It consisted of 28 items distributed into seven domains: family, poor relationship with superior, bureaucratic constraints, work-family conflicts, poor relationship with colleagues, performance pressure, and poor job prospect. The reliability of this questionnaire was 0.94, while Cronbach's alpha values in between 0.66 and 0.80 (15).

The adapted questionnaire was divided into three sections, sociodemographic, stressors and burnout. The sociodemographic section consisted of seven items which included age, gender, duration in the year of working experience as an academics, designation, provision of regular clinical service in the hospital, any chronic medical illness, and any psychiatric illness. The stressors section consisted of 24 questions to assess the level of stress perceived by the respondents concerning the poor relationship with the superiors and colleagues, bureaucratic constraints, work-family conflicts, performance pressure, and poor job prospects. The last section consisted of 17 items with 5-points Likert scales. The burnout section consists of 25 questions with 5 points Likert-scales graded from always to never. The complete questionnaire is presented in the supplement section. The hard copy questionnaires were distributed by hand, and the online version was distributed via institutional emails. To increase the respondents' participation, gentle reminders throughout email were sent every week. Respondents were given free time to complete the questionnaire.

This study received ethical approval from IIUM Research Ethics Committee (IREC) on 23rd March 2021 (IREC Ref.

ID.: IREC 2021-148). Data were collected from March 2021 to May 2021. Universal sampling was used, and the recruitment process stopped after the last respondent thoroughly answered the questionnaire. The inclusion criteria are all consented IIUM Kuantan academics, who have been involved in the emergency remote teaching and learning (ERTL) for more than six months duration in IIUM Kuantan, while those who were still trainee academics and known to have psychiatric illness throughout the study period were excluded. The sample size was calculated using a single proportion formula. In the previous study, the prevalence of burnout among academics was 58%. There were a total of 210 academics working in the IIUM Kuantan campus. With an estimated 10% drop-out, the final sample size to be achieved was 150 (16).

Data analysis was done using IBM SPSS Statistics for Windows, Version 26.0 (Armonk, NY: IBM Corp). Categorical data were presented using numbers and percentages, while continuous data were presented using mean and standard deviation (SD) or with median and interquartile range (IQR) depending on the distribution. A chi-square test was used to find an association between two categorical data and an independent t-test to compare the mean values of two independent data groups. Sociodemographic, pedagogy-related and stressors factors significantly contributing to burnout were identified using simple binary logistic regression. Factors with a P value of less than 0.25 were chosen to undergo multiple binary logistic regression. Factors with a P value of equal or less than 0.05 on automatic forward and backward likelihood (LR) methods were included in the logistic model to predict the development of burnout among academics. The presence of multicollinearity and interaction between the factors were examined using enter method. We used the Hosmer-Lemeshow test, classification table and area under Receiver Operating Characteristics (ROC) to assess the model fit of the preliminary final model.

RESULT

A total of 150 academics participated in this study consisted of 57 clinical and 93 non-clinical academics with the mean age of 41.2 years old (SD=7.39). More than 50% of the respondents were less than forty years old. Females made up 84 (56%) of the respondents and only 28 (18.7%) of all respondents had chronic illnesses. A hundred and twenty-three (83%) of the respondents are married, and among them, 108 (87.1%) are living together with their spouse. Out of the 57 clinical academics, 39 of them (68.4%) do regular on-calls, with the majority (79.5%) doing three days or fewer on-calls per month. Most clinical academics (38 respondents) have been serving the university for more than eleven years. The demographics background of the respondents is presented in Table I.

Table I: Sociodemographics of the academics who participated in the study (n=150)

Sociodemographic Characteristics	Mean (SD)	n (%)
Age (years)	41.2 (7.39)	
30-39		76 (50.7)
40-49		48 (32.0)
50 and older		26 (17.3)
Gender		
Male		66 (44.0)
Female		84 (56.0)
Marital status		
Single		23 (15.3)
Married		124 (82.7)
Divorce		3 (2.0)
If married (n=124), spouse stays together		
Yes		108 (87.1)
No		16 (12.9)
Academic post		
University lecturer/ Assistant Professor		116 (77.3)
Associate Professor Professor		29 (19.3) 5 (3.3)
Underlying chronic illness		
Yes		28 (18.7)
No		122 (81.3)
Academics involve in clinical works		
Clinical academics		57 (38.0)
Non-clinical academics		93 (62.0)
Clinical academics (n=57)		
Years of service as a clinical academic		
1 to 5 years		5 (8.7)
6 to 10 years		14 (24.6)
More than 10 years		38 (66.7)
On-call among clinical academics		
Yes		39 (68.4)
No		18 (31.6)
No of on-call days per month (n=39)		
1 to 3 days		31 (79.5)
3 to 6 days		3 (7.7)
More than 6 days		5 (12.8)

SD = standard deviation

Overall, half of the academics reported significant burnout with the mean burnout score of 49.09 (SD=20.13). However, the proportion of academics who reported significant burnout in specific burnout categories varies. For instance, 91 of 150 (60.7%) academics reported personal burnout, and at least half of them reported significant work and superior-related burnouts (79 (52.7%) and 80 (53.3%), respectively). Significant burnout in the student-related domain was reported by 63 (42%) respondents. Clinical academics had significantly higher proportion of burnouts, particularly in work-related (p=0.004), student-related (p<0.0001), and superior-related domains (p=0.006) compared to non-clinical academics. Clinical academics also scored significantly higher mean burnout score

with mean difference (95% CI) of 0.355 (-0.615, -0.095) and a p-value of 0.008, particularly in the domains of student and superior-related burnout, each with mean difference (95% CI) and p-value of -0.986 (-1.33, -0.641) and <0.0001, and -0.500 (-0.875, -0.125) and 0.006, respectively. Table II presents the proportion of clinical, non-clinical and overall academics with significant burnout.

Table II: Comparison of burnout level among clinical (n=57) and non-clinical (n=93) academics

Burnout domain	Burnout, n (%)			
	No burnout	Burnout	X^2 (df)	*P*-value
Personal burnout			1.86 (1)	0.173
Non-clinical	41 (44.1)	52 (55.9)		
Clinical	19 (33.3)	38 (66.7)		
Overall	59 (39.3)	91 (60.7)		
Work-related burnout			8.15 (1)	0.004
Non-clinical	53 (57.0)	40 (43.0)		
Clinical	18 (31.6)	39 (68.4)		
Overall	71 (47.3)	79 (52.7)		
Student-related burnout			23.16 (1)	<0.0001
Non-clinical	68 (73.1)	25 (26.9)		
Clinical	19 (33.3)	38 (66.7)		
Overall	87 (58.0)	63 (42.0)		
Superior-related burnout			7.45 (1)	0.006
Non-clinical	52 (55.9)	41 (44.1)		
Clinical	18 (31.6)	39 (68.4)		
Overall	70 (46.7)	80 (53.3)		
Overall burnout score			12.78 (1)	<0.0001
Non-clinical	58 (62.4)	35 (37.6)		
Clinical	18 (31.6)	39 (68.4)		
Overall	76 (50.7)	74 (49.3)		

df = degrees of freedom

Univariate analysis with simple logistic regression showed that age, gender, clinical service, chronic illnesses, stress with ERTL, poor relationship with superior and colleague, work-family conflicts, bureaucratic constrain, poor job prospects, and performance pressure had a significant association with overall burnout. Multiple logistic regression analysis showed that when adjusted to underlying chronic illnesses, clinical services, stress due to poor job prospects, and stress from ERTL, only chronic illness, clinical services, and female gender significantly contributed to the overall burnout among academics IIUM Kuantan Campus. Table III summarized the univariable and multivariable analyses of the factors mentioned. The logistic regression model was statistically significant, $\chi^2(4) = 35.51$, p<0.0001. The model explained 25.6% (Nagelkerke R^2) of the variance in burnout and correctly classified 68.9% of cases. Academics engaged in clinical work were 2.72 times more likely to burnout (95% CI=1.01,7.34 and p=0.048) than non-clinical academics. The presence of chronic illnesses and female gender increased the odd of burnout among the academics by 2.81 times and 4.86 times (95% CI=1.14, 6.92 and p=0.025) and (95% CI=2.15, 10.9 and p<0.001) respectively compared to those without underlying chronic illness and male academics.

Table III: Factors associated with overall burnout among the academics in IIUM Kuantan Campus

Variables	Overall burnout, n (%)		Simple logistic regression		Multiple logistic regression	
	Yes	No	Crude OR (95% CI)	*P*	Adjusted OR (95% CI)	*P*
*Gender						
Female	36 (42.9)	48 (57.1)	0.553 (0.288, 1.060)	0.075	4.86 (2.150, 10.90)	<0.001
Male	38 (57.6)	28 (42.4)	1		1	
*Clinical services						
Yes	39 (68.4)	18 (31.6)	3.500 (1.740, 7.050)	<0.001	2.72 (1.010, 7.340)	0.048
No	35 (37.6)	58 (62.4)	1		1	
*Chronic illness						
Yes	18 (64.3)	10 (35.7)	2.120 (0.906, 4.970)	0.083	2.81 (1.140, 6.920)	0.025
No	35 (37.6)	58 (62.4)	1		1	
Stress ERTL						
Yes	40 (63.5)	23 (36.5)	2.580 (1.320, 5.040)	0.005		
No	35 (40.2)	52 (59.8)	1			
Relationship with superior						
Yes	32 (58.2)	23 (41.8)	1.560 (0.797, 3.060)	0.194		
No	44 (46.3)	51 (53.7)	1			
Bureaucratic constraints						
Yes	35 (61.4)	22 (38.6)	1.960 (0.998, 3.850)	0.051		
No	41 (44.1)	52 (55.9)	1			

CONTINUE

Table III: Factors associated with overall burnout among the academics in IIUM Kuantan Campus

Variables	Overall burnout, n (%)		Simple logistic regression		Multiple logistic regression	
	Yes	No	Crude OR (95% CI)	*P*	Adjusted OR (95% CI)	*P*
Work-family conflicts						
Yes	41 (62.1)	25 (37.9)	2.410 (1.250, 4.670)	0.009		
No	34 (40.5)	50 (59.5)	1			
Poor relationship with colleagues						
Yes	36 (57.1)	27 (42.9)	1.640 (0.853, 3.156)	0.138		
No	39 (44.8)	48 (55.2)	1			
Performance pressure						
Yes	51 (55.4)	41 (44.6)	1.760 (0.906, 3.430)	0.095		
No	24 (41.4)	34 (58.6)	1			
Poor job prospect						
Yes	44 (41.9)	61 (58.1)	3.492 (1.640, 7.420)	0.001		
No	32 (71.1)	13 (28.9)	1			
Age (years)						
30-39	39 (51.3)	37 (48.7)	1.840 (0.728, 4.640)	0.197		
40-49	20 (41.7)	28 (58.3)	0.661 (0.316, 1.380)	0.271		
≥50	17 (65.4)	9 (34.6)	1			
Academic post						
Asst. Prof.	57 (49.1)	59 (50.9)	3.110 (0.314, 30.770)	0.332		
Assoc. Prof.	15 (51.7)	14 (48.3)	1.110 (0.491, 2.510)	0.803		
Prof.	4 (80.0)	1 (20.0)	1			

ERTL = emergency remote teaching and learning; Asst. Prof. = Assistant Professor/ University Lecturer; Assoc. Prof. = Associate Professor; Prof. = Professor
*Variables entered into the final model
Constant = -1.43, no multicollinearity, no interaction. Cox & Snell $R^2 = 0.192$, Nagelkerke $R^2 = 0.256$
Hosmer-Lemeshow Test, $P = 0.762$. Overall Percentage 68.9% correctly classified. $X^2(df) = 35.51(4)$, $p<0.0001$

DISCUSSION

This study aimed to measure the level of burnout among academics while engaging in remote teaching and learning programs during the COVID-19 pandemic. It also compared the degree of burnout between clinical academics and non-clinical academics in IIUM Kuantan Campus. By using the CBI, the study objectively measured the level of burnout among respondents on four different domains: personal (PB), work-related (WB), student-related (StB) and superior-related (SB). The PB domain reflects the impact of burnout on the respondents' physical, emotional, and psychological health while the WB measures the extent of burnout in relation to the respondents' jobs. On the other hand, the StB and SB assessed how much the respondents perceived that their relationship with the superiors and students contributed to the burnout they experience.

More than half of the respondents had a significant level of burnout in the domains of PB, WB and SB. This finding is similar to the finding of other previous studies. For instance, Mohamed et al. found that academics had significantly higher burnout levels than non-academics who work in the university in personal, work-related, and client-related. They found that a high degree of burnout leads to significant psychological distress and job dissatisfaction (14). The domain of PB in the CBI assesses the manifestation of burnout in an individual, such as emotional and physical fatigue and weakness, independent from the nature of their jobs and the interpersonal factors (17). As our cohort consisted of academics from different backgrounds such as clinical, laboratory scientists and pure academics, the sources of PB varies. It could arise from underlying burnout-prone personalities, extended clinical working hours, or domestic conflicts at home (18). During the COVID-19 pandemic, academics struggle to perform their official works and achieving institutional and personal key-performing indices (KPI), such as conducting "onsite" research activities and teaching students due to the implementation of various infective-control measures (19). More than a third of researchers from the developing countries reported that the pandemic affected their working practices (20). These factors may have increased work-related burnout.

The comparison of burnout level between clinical and non-clinical academics was performed. Significantly more clinical academics reported at least moderate burnout compared to non-clinical academics in WB, StB and SB domains. These findings were similar to a previous study comparing clinical to non-clinical academics (18). In the study, clinical academics reported significantly higher burnout, particularly interaction with university administrators and students (18). Previous surveys demonstrated that clinicians perceived administrative work as the least meaningful aspect of their work (21). Henny et al. reported that

higher burnout was observed in clinical academics even years before the occurrence of the pandemic (22). As the complexity of medical care increases during the pandemic, so do administrative work such as meetings, paperwork, and report-writings. The increase in the time spent on administrative works leads to burnout (23). Students can be a source of stress to academics, as demonstrated in recent systematic reviews that looked at sources of burnout among academics (2,3). Delivering medical education and clinical teaching during the COVID-19 pandemic imposed significant challenges to clinical academics and required additional skills, effort, and commitments (24).

The current study analysed demographic factors associated with significant burnout among academics and found three highly associated factors: clinical works, female gender, and presence of chronic illness. The result showed that academics involved in clinical work had 2.7 times the odds of developing burnout compared to non-clinical academics. This finding was similar to few other studies elsewhere (22,25,26). For example, Messias et al. found that after adjusting for age and gender, clinical academics had 1.6 times higher burnout odds than other non-clinical scientists (25). During the COVID-19 pandemic, clinical academics had more demanding jobs than before. They need to do more on-calls and comply with the standard operating procedures during the ward rounds, surgeries, and clinics. Managing patients becomes more complex and challenging. These additional works lead to burnout and stress among them. In an online survey in Italy, they reported alarming psychological distress among Italian doctors. Ninety-three per cent of those who worked in the most affected regions experienced significant psychological distress, while another 60% reported poor well-being. The finding was worse for junior female hospital workers (27).

Besides the presence of chronic illness, being female was also significantly associated with burnout among our cohort. This association had been demonstrated in previous studies. For instance, Henny et al. found that female academics had four times the odds of burnout compared to their male counterpart, while Nassar et al. found that being female was significantly associated with depersonalization and burnout (18,22,28). During the first COVID-19 outbreak in Italy, female clinicians were severely affected by the critical situation and had suffered a high level of psychological distress (27). Women scholars were also equally affected during the current pandemic, evidenced by the reduction in the rate of publications authored by female academics (29,30). There was a significant reduction in the volume of publications authored by female academics by more than 15% during the COVID-19 outbreak (29). Female academics had a higher risk of burnout due to frequent conflicts with superiors and greater family responsibilities than male academics (18). As academics spend more time at home with their children and other households due to working-from-home policies, they must juggle academic and domestic responsibilities more often (30,31). On the contrary, Shams and El-Masry reported that female anaesthesiologists working in an Egyptian University Hospital had lower burnout and stress rates compared to the opposite gender. They concluded that the higher number (73.5%) of male participants in the study influenced the outcome (2).

Burnout is a multifaceted phenomenon inherent in the academia long before the pandemic (9,32). The recent pandemic exacerbated the existing problems and solutions needed to manage the potential burnouts. A researcher suggested there are three main sources of burnout including organizational, individual, and transactional factors, with the latter referring to the interaction between the first two (33). Organizational leadership has a profound influence on the well-being of clinical academics (34,35). Appropriate workplace resources contribute to lower psychological burnout among successful junior clinical academics (34). While many perceived working from home during the pandemic leads to the acceptance of flexible working hours, the global transition to digital learning required innovations and more preparation time than usual (32). Having the presence of role models with exemplary work-life balance can contribute to a supportive organizational climate. A good organizational climate reduces the level of depression, anxiety, and burnouts, hence, positive employee mental health outcomes (34,36). On the other end, most of the academic institutions define mentoring relationship as attainment of research grants and perceived excellence in work only. It is important to reward and recognize mentorship activities in a more integrated approach (34). Burnouts should not be regarded as failures (32). Clinical academics should be encouraged to express their worries, afflictions, and challenges. Institutions should provide effective recovery periods to promote detachment from stress and avoid the 'pile-up effect', a vicious cycle of increasing workload and inability to recover (37).

LIMITATION

The cross-sectional design does not allow the establishment of causality effects. The study was conducted among academics from a single university and natural sciences faculties, thus hindering the generalization of the results. Larger sample size needs to be used, and more universities and academics from various backgrounds such as languages, religious studies, and social sciences should be involved. However, as this study involved clinical academics from different specialties, the results represent the whole clinical academics fraternity. Additionally, to confirm further the direct influence of specific factors such as disease pandemics and ERTL on the degree of burnout, studies with different approaches, tools, and designs are needed.

CONCLUSION

Burnout is highly prevalent among clinical and non-clinical academics. However, it is higher among clinical academics. Sociodemographic factors that may predispose academics to burnout include female gender, chronic illness, and clinical works. The result further explains burnout among academics engaged in remote teaching and learning during the COVID-19 pandemic. Large scale studies with more representative sample are required considering the limitations encountered in this study.

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REFERENCES

1. Teoh KB, Kee DMH. Psychosocial safety climate and burnout among academicians: the mediating role of work engagement. Int J Soc Syst Sci. 2020; 12(1): 1-14. doi:10.1504/IJSSS.2020.10028744.
2. Shams T, El-Masry R. Job stress and burnout among academic career anaesthesiologists at an Egyptian University Hospital. Sultan Qaboos Univ Med J. 2013; 13(2): 287-295. doi:10.12816/0003236.
3. Khan A, Din SU, Anwar M. Sources and adverse effects of burnout among academic staff: A systematic review. City Uni Res J. 2019; 9(2): 350-363. Available from: http://cusitjournals.com/index.php/CURJ/article/view/199.
4. Rocha FLR, de Jesus LC, Marziale MHP, Henriques SH, Maroco J, Campos JADB. Burnout syndrome in university professors and academic staff members: psychometric properties of the Copenhagen Burnout Inventory-Brazilian version. Psicol Refl Crит. 2020; 33:11. doi:10.1186/s41155-020-00151-y.
5. Mohammed SS, Celik S, Budur T. Burnout determinants and consequences among university lecturers. Rev Amazon Investig. 2020; 9(27): 13-24. doi:10.34069/AI/2020.27.03.2.
6. Whittlesey A. Communication during a pandemic [Internet]; 2020 [cited 2021 June 13]. Available from: http://www.raps.org/news-and-articles/news-articles/2020/4/communication-during-a-pandemic
7. Tugend A. On the verge of burnout: Covid-19's impact on faculty well-being and career plans [Internet]; 2020 [cited 2020 July 7]. Available from: https://connect.chronicle.com/rs/931-EKA-218/images/Covid%26FacultyCareerPaths_Fidelity_ResearchBrief_v3%20%281%29.pdf.
8. Pololi LH, Krupat E, Civian JT, Ash AS, Brennan RT. Why are a quarter of faculty considering leaving academic medicine? A study of their perceptions of institutional culture and intentions to leave at 26 representative US medical schools. Acad Med. 2012; 87(7): 859-869. doi:10.1097/ACM.0b013e3182582b18.
9. Chin C. Overworked and underpaid USM specialists leaving for greener pastures [Internet]; 2014 [cited 2020 June 21]. Available from: https://www.thestar.com.my/News/Nation/2014/05/18/Exodus-of-medical-lecturers-Overworked-and-underpaid-USM-specialists-leaving-for-greener-pastures.
10. Balon R, Morreale MK. The precipitous decline of academic medicine in the United States. Ann Clin Psychiatry. 2020; 32(4): 225-227. doi:10.12788/acp.0006.
11. Kristensen TS, Borritz M, Villadsen E, Christensen KB. The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. Work Stress. 2005; 19(3): 192-207. doi:10.1080/02678370500297720.
12. Andrew Chin RW, Chua YY, Chu MN, Mahadi NF, Wong MS, Yusoff MSB, et al. Investigating validity evidence of the Malay translation of the Copenhagen Burnout Inventory. J Taibah Univ Med Sc. 2018; 13(1): 1-9. doi:10.1080/02678370500297720.
13. Fenwick J, Lubomski A, Creedy DK, Sidebotham M. Personal, professional and workplace factors that contribute to burnout in Australian midwives. J Adv Nurs. 2018; 74: 852-863. doi:10.1111/jan.13491.
14. Mohamed S, Nikmat A, Hashim NA, Shuib N, Raduan, NJN. Burnout and its relationship to psychological distress and job satisfaction among academicians and non-academicians in Malaysia. Int J High Educ. 2021; 10(1): 85-92. Available from: https://eric.ed.gov/?id=EJ1286038.
15. Yusoff MSB, Esa AR. The reliability and validity of the General Stressor Questionnaire (GSQ) among house officers. Int Medical J. 2011; 18(3): 179-182. doi:10.1111/jan.13491. Available from: https://www.researchgate.net/publication/215632302_The_Reliability_and_Validity_of_the_General_Stressor_Questionnaire_GSQ_among_House_Officers.
16. Amir K. Prevalence of burnout among university academic staff in Uganda; does gender matter? Clinical Psychiatry 2020; 6(2): 68. Available from: https://www.primescholars.com/articles/

prevalence-of-burnout-among-university-academic-staff-in-uganda-does-gender-matter-104751.html.
17. Sestili C, Scalingi S, Cianfanelli S, Mannocci A, Del Cimmuto AD, De Sio S, et al. Reliability and use of Copenhagen Burnout Inventory in Italian sample of university professors. Int J Environ Res Public Health. 2018; 15(8):1708. doi:10.3390/ijerph15081708.
18. Nassar AK, Reid S, Kahnamoui K, Tuma F, Waheed A, McConnell M. Burnout among academic clinicians as it correlates with workload and demographic variables. Behav Sci (Basel). 2020; 10(6): 94. doi:10.3390/bs10060094.
19. Wigginton NS, Cunningham RM, Katz RH, Lidstrom ME, Moler KA, Wirtz D, et al. Moving academic research forward during COVID-19. Science. 2020; 368(6496): 1190-1192. doi:10.1126/science.abc5599.
20. Rijs C, Fenter F. The academic response to COVID-19. Front Public Health. 2020; 8: 621563. doi:10.3389/fpubh.2020.621563.
21. Shanafelt TD, West CP, Sloan JA, Novotny PJ, Poland GA, Menaker R, et al. Career fit and burnout among academic faculty. Arch Intern Med. 2009; 169(10): 990-995. doi:10.1001/archinternmed.2009.70.
22. Henny J, Anita AR, Hayati KS, Rampal L. Prevalence of burnout and its associated factors among faculty academicians. Malaysian J Med Health Sci. 2014; 10(1): 51-59. Available from: https://medic.upm.edu.my/dokumen/FKUSK1_MJMHS_2014V10N1_Artkl_8%5b1%5d.pdf
23. Rao SK, Kimball AB, Lehrhoff SR, Hidrue MK, Colton DG, Ferris TG, et al. The impact of administrative burden on academic physicians: results of a hospital-wide physician survey. Acad Med. 2017; 92(2): 237-243. doi:10.1097/ACM.0000000000001461.
24. Rose S. Medical student education in the time of COVID-19. JAMA. 2020; 323(21): 2131-2132. doi:10.1001/jama.2020.5227.
25. Messias E, Gathright MM, Freeman ES, Flynn V, Atkinson T, Thrush CR, et al. Differences in burnout prevalence between clinical professionals and biomedical scientists in an academic medical centre: a cross-sectional survey. BMJ Open. 2019; 9(2): e023506. doi:10.1136/bmjopen-2018-023506.
26. Huda BZ, Rusli BN, Naing L, Tengku MA, Winn T, Rampal KG. A study of job strain and dissatisfaction among lecturers in the School of Medical Sciences Universiti Sains Malaysia. Southeast Asian J Trop Med Public Health. 2004; 35(1): 210-218. Available from: https://pubmed.ncbi.nlm.nih.gov/15272771/
27. De Sio S, Buomprisco G, La Torre G, Lapteva E, Perri R, Greco E, et al. The impact of COVID-19 on doctors' well-being: results of a web survey during the lockdown in Italy. Eur Rev Med Pharmacol Sci. 2020; 24(14): 7869-7879. doi:10.26355/eurrev_202007_22292.
28. Demirel EE, Erdirenɜelebi M. The relationship of burnout with workaholism mediated by work-family life conflict: a study on female academicians. J Lang Linguist Stud. 2019; 15(4): 1300-1316. Available from: https://www.jlls.org/index.php/jlls/article/view/1461.
29. Gabster BP, van Daalen K, Dhatt R, Barry M. Challenges for the female academic during the COVID-19 pandemic. Lancet. 2020; 395(10242): 1968-1970. doi:10.1016/S0140-6736(20)31412-4.
30. Aczel B, Kovacs M, van der Lippe T, Szaszi B. Researchers working from home: benefits and challenges. PLoS One. 2021; 16(3): e0249127. doi:10.1371/journal.pone.0249127.
31. Stadnyk T, Black K. Lost ground: Female academics face an uphill battle in post-pandemic world. Hydrol Process. 2020; 34(15): 3400-3402. doi:10.1002/hyp.13803.
32. Gewin V. Pandemic burnout is rampant in academia. Nature. 2021; 591(7850): 489-491. doi:10.1038/d41586-021-00663-2.
33. Chang ML. An appraisal perspective of teacher burnout: examining the emotional work of teachers. Educ Psychol Rev. 2009; 21(3): 193-218. doi:10.1007/s10648-009-9106-y.
34. Perumalswami CR, Takenoshita S, Tanabe A, Kanda R, Hiraike H, Okinaga H, et al. Workplace resources, mentorship, and burnout in early career physician-scientists: a cross sectional study in Japan. BMC Med Educ. 2020; 20(1): 178. doi:10.1186/s12909-020-02072-x.
35. Shanafelt TD, Gorringe G, Menaker R, Storz KA, Reeves D, Buskirk SJ, et al. Impact of organizational leadership on physician burnout and satisfaction. Mayo Clin Proc. 2015; 90(4): 432-440. doi:10.1016/j.mayocp.2015.01.012.
36. Bronkhorst B, Tummers L, Steijn B, Vijverberg D. Organizational climate and employee mental health outcomes: a systematic review of studies in health care organizations. Health Care Manage Rev. 2015; 40(3): 254-271. doi:10.1097/HMR.0000000000000026.
37. Kannampallil TG, Goss CW, Evanoff BA, Strickland JR, McAlister RP, Duncan J. Exposure to COVID-19 patients increases physician trainee stress and burnout. PloS One. 2020; 15(8): e0237301. doi:10.1371/journal.pone.0237301