

Burnout prevalence and degree among undergraduate medical students in Indonesia during 1 month of the COVID-19 pandemic: A cross-sectional descriptive survey

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Abstract

Background: Medical students are under high pressure to perform academically and also face the impact of the COVID-19 pandemic, putting them at risk of developing burnout.

Aims: This study aims to evaluate the prevalence and degree of burnout among medical students in Indonesia during 1 month of the COVID-19 pandemic.

Methods: From April to May 2021, we conducted an online survey of Indonesian medical students to assess burnout (using Maslach Burnout Inventory-Student Survey, MBI-SS).

Results: A total of 1,947 students from 27 universities participated in the study. About 35.5% had burnout, 41.7% with a moderate to high level of emotional exhaustion, 45% had moderate to high level of depersonalization and 66.7% had a low level of personal accomplishment.

Conclusion: A total of 35.5% of medical students in our sample experienced burnout. We suggest further research to explore and identify factors related to these findings and the need for potential interventions at global and national level to enhance the well-being of medical students.

Keywords

Medical students, mental health, burnout, wellbeing, COVID-19

Introduction

Medical students' mental health is increasingly becoming a global concern as they will be the workforce and leaders of the future healthcare system (Molodynski et al., 2019). Current studies show that high levels of stress, anxiety and depression experienced by medical students lead to more problematic mental health and may affect professionalism and, ultimately, patient care (Pokhrel et al., 2020; Turana et al., 2022). A large study involving more than three thousand medical students in 12 countries reported burnout prevalence exceeding 75% (Molodynski et al., 2021). The stress experienced by this group of students is reported to be higher than students of other academic majors (Dunn et al., 2008; Martin et al., 2020; Simpson et al., 2019). As known consequence of burnout in medical students, is that

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they can become less engaged and losing some of their initial commitment to studying medicine (IsHak et al., 2009).

Burnout is defined as a syndrome resulting from chronic workplace stress characterized by three dimensions of symptoms: Emotional and physical exhaustion ('spent'), cynicism ('detached') and lack of achievements or reduced professional efficacy (Brotheridge & Grandey, 2002; World Health Organization [WHO], 2019). It is not considered a medical condition nor a psychiatric diagnosis but an 'occupational phenomenon' (American Psychiatric Association, 2013; WHO, 2018). The causes of burnout in medical students are multifactorial. Pacheco et al. (2017) described relevant factors such as the highly stressful environment, competitiveness, excessive workload, sleep deprivation, peer pressure and many other personal, curricular, institutional and affective factors.

Indonesia has about 86 medical schools across the archipelago and had an estimated 62,500 medical students in 2021 (Indonesian Medical Council, 2018; Turana et al., 2022). There has been minimal attention to the wellbeing of medical students in this education system. However, several authors of this study were involved in a large survey in 2020 that reported that 93% to 95% of 1,729 Indonesian medical student respondents experienced symptoms of burnout such as disengagement and exhaustion (Lili et al., 2021). The study already showed a high level of burnout among students prior to COVID-19 and subsequent quarantine. It has been shown that young people, medical students included, are among the most impacted population in terms of mental health aspects such as depression and anxiety during the Pandemic (Izaias et al., 2020; WHO, 2022). Concerning burnout, a comparative study involving 154 participants found that though there is no difference between pre- and during COVID-19 levels, the cynicism level increased (Zis et al., 2021). The current survey was a follow-up study to measure burnout among medical students, during 1-month of the COVID-19 pandemic in Indonesia.

Materials and methods

Study sampling and procedure

This multicentre, descriptive quantitative cross-sectional study was conducted from the 13th of April to the 9th of May 2021 during Indonesia's COVID-19 pandemic. The ethical approval was obtained from the ethics committee of Pelita Harapan University. The Asian Medical Students Association (AMSA) disseminated a link to the study through its representative branches in medical schools across 32 provinces in Indonesia. Undergraduate medical students were invited to complete an online survey using the Google Form platform, which automatically collect the required answer. No personal information was obtained to ensure students' confidentiality. All active medical students were invited to participate, apart from those with a history of psychological conditions, to avoid biased results.

Assessment tools

The survey included basic demographic information of the medical school location, including gender (male or female), age, province, study year and state of living (alone, with family or with non-family). An Indonesian version of a validated modelled questionnaire Maslach Burnout Inventory-Student Survey (MBI-SS), with Cronbach's $\alpha = .913$, was used to assess burnout in this study (Arlinkasari & Akmal, 2017; Zain, 2020). The MBI questionnaire is divided into 7 Likert Scale questions related to emotional exhaustion (MBI-EE), 8 Likert Scale questions related to depersonalization (MBI-DP) and 8 Likert Scale questions related to personal accomplishment (MBI-PA); where a score of 0=never, 1=1 to 3 times/year, 2=once/month, 3=2 to 4 times/month, 4=once/week, 5=2 to 4 times/week and 6=every day. This study followed Maslach's classification by using cut-off scores for the means based on data from a normative sample of 1,104 health professionals in the United States, as shown in Table 1 (Thorsen et al., 2011; Maslach et al., 1997). As a result, respondents are classified as high, moderate or low burnout cases on the respective subscales. The MBI yields three non-cumulative scores. We analysed results in line with previous studies (Balch et al., 2011; Shanafelt et al., 2014) and convention (Dyrbye et al., 2009) by considering participants with high scores on the depersonalization and/or emotional exhaustion subscales as having burnout. Data was compiled using *Google Sheets*, while data analysis was done using *Statistical Package for the Social Sciences (SPSS) 25.0*.

Results

From a total of 10,000 active Indonesian undergraduate medical students who were invited to participate in this study, 1,947 medical students filled the questionnaire, from 27 universities across the archipelago, with a median age of 19 years old. There were more female participants at 1,467 (75.3%) overall. Burnout was found amongst 35% of the total study participants. Most participants were in their first (44.2%) or second-year (34.3%) undergraduate medical study. Most participants (90.6%) lived with their parents (Table 2). Based on the geographical location, the highest number of participants came from Jakarta Capital City Region, with 297 participants (15.3%).

About 41.7% of participants identified themselves as experiencing moderate to high emotional exhaustion (EE) levels. As many as 45% of participants reported moderate to high levels of depersonalization (DP). Lastly, on the personal accomplishment (PA) subscale, 66.7% of participants reported low PA. Overall, 692 (35.5%) of the participants identified as experiencing a high level of EE and/or high level of DP, which we consider to fall into the burnout category (Table 3).

Table 1. MBI subscale cut-off scores and categories.

Subscale	Category	Cut-off scores
EE (score 0–54)	High	≥27
	Moderate	19–26
	Low	0–18
DP (score 0–30)	High	≥10
	Moderate	6–9
	Low	0–5
PA (score 0–48)	High	0–33
	Moderate	34–39
	Low	≥40

Note. EE = emotional exhaustion; DP = depersonalization; PA = reduced personal accomplishment.

Table 2. Socio-demographic characteristics.

Variables	N (%)
Gender	
Male	480 (24.7)
Female	1,467 (75.3)
Age	
Median	19
Minimum	14
Maximum	23
Study year	
First-year	860 (44.2)
Second-year	668 (34.3)
Third-year	415 (21.3)
Fourth-year	4 (0.2)
Currently living with	
Family	1,764 (90.6)
Others (non-family)	37 (1.9)
Alone	146 (7.5)
Demographic location of the medical schools	
Sumatra Island	249 (12.7)
Java Island	
Banten	96 (4.9)
Jakarta Capital Special Region	297 (15.2)
West Java	280 (14.3)
Central Java	101 (5.1)
Yogyakarta Special Region	33 (1.6)
East Java	285 (14.6)
Kalimantan (Borneo)	131 (6.7)
Sulawesi Island	395 (20.3)
Papua Island	19 (0.97)
Others	61 (3.1)

Note. (n = 1,947).

Discussion

This is the largest study to describe burnout among medical students in Indonesia. The higher participation of the female respondent in this study is consistent with our previous study (Lili et al., 2021), which might reflect

Table 3. Prevalence of burnout among Indonesian medical students.

	N
MBI-EE (emotional exhaustion)	
N	1,947
Median	18.0
Range	(0.0–54.0)
Categorization	
Low EE	980 (50.3%)
Moderate EE	360 (18.5%)
High EE	607 (31.2%)
MBI-DP (depersonalization)	
N	1,947
Median	3.0 (3.0)
Range	(0.0–30.0)
Categorization	
Low DP	1,071 (55%)
Moderate DP	279 (14.3%)
High DP	597 (30.7%)
MBI-PA (personal accomplishment)	
N	1,947
Median	29.0
Range	(0.0–48.0)
Categorization	
Low PA	1,299 (66.7%)
Moderate PA	389 (19.9%)
High PA	259 (13.3%)
Burnout (high EE and/or high DP)	
Yes	692 (35.5%)
No	1,255 (64.5%)

the higher proportion of female students in Indonesia and other countries (AAMC, 2019; Ministry of Research, Technology, and the Higher Education Republic of Indonesia, 2019). There is also a possibility that female medical students are more likely to participate in such online surveys (Smith, 2008).

We found a moderately high level of burnout among the participants. Our study is in line with a number of studies in other countries that utilized the MBI to measure burnout. A meta-analysis of 24 studies in 16 countries, which involved 17,431 medical students, (Frajerman et al., 2019) estimated burnout prevalence among medical students at 44.2%. The studies involved in the analysis used the MBI and Copenhagen Burnout Inventory (CBI). A more recent study involving 250 medical students in Austria, which used MBI, found a close result of 47.8% (Thun-Hohenstein et al., 2021).

However, we found that the current survey's result is relatively lower than our previous surveys in Indonesia and international settings (Lili et al., 2021; Molodynski et al., 2021) that utilize Oldenberg Burnout Inventory (OLBI) as the measurement tool. The difference in the instrument used might explain this difference. Despite

evidence showing a high convergence validity between OLBI and MBI in the English version, it might differ when applied to the Indonesian version, requiring further study (Qiao & Schaufeli, 2011).

Another factor that might influence burnout prevalence in our study is the COVID-19 pandemic which disrupted the usual medical education process (Turana et al., 2022). Our survey was conducted from April to May 2021, after the first wave and precisely prior to the second wave of COVID-19 Delta variant spread in Indonesia – during this period most learnings shifted online. A comparative study between pre- and during-COVID burnout levels among medical students by Zis et al. (2021) showed that burnout was decreased at some point of undergraduate study due to less time and intensity spent on education than the usual process. Other factors that contribute to a lower level of burnout could also be that most of the participants in our survey are from the first and second year of study, while fourth year students (before clerkship) were underrepresented. However, other studies have reported that other symptoms such as depression and anxiety have increased among medical students during the pandemic due to multiple factors such as social isolation and uncertainties about the future (Agiananda & Lukman, 2021; Izaia et al., 2020; Turana et al., 2022). The shift to online learning has been reported to be associated with loneliness among students (Mustika et al., 2021). There is also concern that the online mode will be suboptimal for teaching clinical skills taught via patient contact and simulation models; thus, the student might be more anxious due to the loss of these professional identity development opportunities (Sani et al., 2020). These aspects are not included in our study measurement and might impact students' wellbeing, and stakeholders need to continue to monitor and appraise this.

The strength of our study lies in the fact that this was multi-institutional. Our study has some limitations. The response rate is 19.47%, thus, it is difficult to generalize our findings to the larger population of Indonesian medical students. As we used a convenience sampling approach, it is possible that those who were suffering from a higher level of burnout were more likely to respond. There is also a possibility of selection bias in this study that the survey only captures those who are more socially engaged by joining the medical students' association. Moreover, our participants are mainly from the earlier years of undergraduate medical education.

Our findings support previous work demonstrating a worrying level of burnout among medical students, both globally and in Indonesia. We suggest further research to identify specific factors contributing to burnout and develop appropriate interventions at the personal, community and organizational levels. A qualitative approach will also help us measure the right thing concerning the burnout phenomenon. It is essential to remind curriculum developers that medical students are generally a high-risk

population for developing burnout and other mental disorders and have less flexibility in scheduling than their counterparts from other academic majors (Molodynski et al., 2019, 2021).

Conclusion

Indonesian medical students reported a moderate level of burnout (using MBI-SS). Further studies are needed to understand better the factors contributing to burnout, including those related to the COVID-19 Pandemic impact. There is a need for improvement in the medical education system to increase attention towards medical students' psychological wellbeing, such as improving conditions for learners, facilitating access to psychological help services and building capacity to regulate emotions and develop resilience.


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