RESEARCH ARTICLE

Burnout Incidence during Online Lectures in Medical Students in Udayana University during the Covid-19 Pandemic

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Abstract

Introduction: Corona virus disease 2019 (COVID-19) is an infectious disease that caused by SARS-CoV-2 with new cases and mortality rates that are increasing recently. Due to inadequate of health facilities in Indonesia and the absence of a COVID-19 vaccine, some actions are required to reduce the spread of the virus, such as physical distancing. In educational aspect, conventional learning systems are replaced by online learning system. This kind of system may cause burnout in medical students. The aim of the study was to describe the burnout incidence during online lectures in medical students in Udayana University during the Covid-19 pandemic. Materials and Methods: A cross sectional study with 175 medical students in Udayana University class of 2018 and 2019 was conducted in this study. The data were collected via goggle form which includes informed consent and questionnaire which contains burnout scale. Univariate and bivariate analysis through chi-square test was conducted in this study. Results: According to univariate analysis, there was 75.4% students were experienced moderate burnout, 4.9% students were experienced high burnout, and 9.7% were experienced low burnout. Based on chi-square results ($p<0.05$). There was no significant relationship between burnout incidence and age ($p=0.813$), sex ($p=0.813$), and students' generations ($p=0.761$). Conclusions: Most of the students had experienced moderate burnout. Therefore, a new learning method that does not increase students' burden during online lectures is recommended in this study and further research is required to find the potential factors that affect burnout syndrome.

Keywords: *Physical distancing, Online lectures, Burnout, Medical students.*

Introduction

Corona virus disease 2019 (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus and first appeared in Wuhan, China. The World Health Organization (WHO) has announced the development of COVID-19 from epidemic to pandemic on March 11, 2020, and COVID-19 has become a major problem in more than 200 countries, with cases and death rates that continue to increase [1, 2].

Indonesia is one of the countries who have been heavily impacted by this pandemic. On July 20, 2020, positive cases of COVID-19 in Indonesia reached 88,214 with a death rate of 4,239 cases [3]. Indonesia is also among the lowest in Asia for the availability of health facilities such as emergency beds, as well as a shortage of ventilators in remote areas and protective equipment for health workers [4]. Due to the lack of availability of health facilities and the absence of a vaccine or medicine for COVID-19, steps are needed to reduce the spread of COVID-19. Many countries have implemented steps to break the chain of transmission of COVID-19, such as physical distancing [2, 5].Physical distancing is done by securing the physical distance between people at least one meter and reducing contact with surfaces that are likely to be contaminated, as well as maintaining social relations in the family and community virtually [2, 5].

The determination of policies in each country for this physical distancing also varies. The Indonesian government established a Large-Scale Social Restriction (PSBB) policy several

months ago and has now established the New Normal rule for cities and provinces with green zones.

In making this policy, of course, takes into account the social and economic conditions of Indonesia. This New Normal rule consists of the obligation to wear a mask while traveling, diligently wash hands with hand sanitizer or soap, get adequate rest, and implement physical distancing in everyday life [6]. Physical distancing is implemented by avoiding crowds and maintaining distance, and stopping activities which has the potential to cause mass crowds, one of which is conventional learning which gathers many students in one room. During this pandemic, learning must be carried out by minimizing physical contact between students and other students, or between students and lecturers.

One alternative form of learning that can be done is online learning which has been regulated in the Circular of the Minister of Education and Culture of the Republic of Indonesia Number 4 of 2020 concerning the implementation of educational policies in the emergency period of the spread of COVID-19 [7].Changing learning patterns to be online is certainly a problem for students, not only a matter of technology use skills, but also an increased study load.

This problem arises because students and lecturers are not familiar with online learning. Implementation of online lectures cannot be done simply by changing the face-to-face delivery of material to online. Adaptation is needed regarding the material, as well as a lecture system, group discussions and assessments [8].Online lectures have a significant impact on medical students and can affect their future careers.

Changing classes directly to online in medical education has resulted in the implementation of several learning methods such as small group discussions where students can discuss with each other in solving a case and clinical skills labs to train students' clinical skills are less effective. The assessment or examination system also needs to be changed if it is carried out online so as not to harm students and to provide objective results [9]. Even though the implementation of the online medical course system has been adjusted so that it can run well, it requires adaptation by

students to acquire the same skills as during direct lectures [10]. Burnout syndrome is a state of mental and physical exhaustion that is often associated with the caregiver profession, such as doctors.

Burnout syndrome is characterized by fatigue, increased anger, a tendency to feel frustrated and suspicious of coworkers, reduced motivation at work, and a depressed appearance. There are three main characteristics of burnout, namely emotional exhaustion, depersonalization or having negative and cynical feelings towards others, and low self-esteem or a tendency to give negative self-evaluation, especially with regard to work. This mental state often occurs in someone who is too dedicated to their work to not pay attention to their own needs [11, 12]. Several studies have shown that burnout is also common in medical students, with a prevalence of 49% in America and 28-61% in Australia.

Medical students can experience burnout due to high levels of stress and poor coping or adaptation strategies. Stressful medical studies, academic and non-academic, contribute to poor mental health in medical students; especially burnout [13].The new learning system in the form of online lectures during the COVID-19 pandemic can result in burnout in medical students. The study du Plessis (2019) emphasized that students who undertake distance learning tend to experience stress and pressure [14].

With a new and stressful lecture system such as assignments that exceed student capacity, it is imperative for medical students to have good coping or adaptation strategies. If the adaptation strategy is poor and the student's stress level increases, of course it can lead to burnout. Therefore, it is necessary to conduct research to determine the picture of burnout syndrome during online lectures in medical students during the COVID-19 pandemic.

Methods

This research is a descriptive quantitative research with cross-sectional type (cross-sectional) which is carried out in the Undergraduate Program of Medicine and Doctor's Profession, Faculty of Medicine, Udayana University. This study has been approved for the ethics approval from the ethics committee of Faculty of Medicine, Udayana University.

This research was conducted in 3 months, starting from June to August 2020.The population in this study were all students of the Undergraduate Medical and Professional Doctor Study Program, Faculty of Medicine, Udayana University, batch 2018 and 2019 with a total population of 490 people (244 in 2018 and 246 in 2019). The sample in this study is part of the population taken by total sampling, namely the sampling technique by taking all members of the population as samples or respondents. The sample size in this study uses the Arikunto formula (2006), which is as follows [15]:

n = N x 10%

n = 490 x 10%

n = 49

So, the minimum sample size in this study is at least 49 people.

The inclusion criteria used in this study were (1) Students of the Undergraduate Medical and Professional Doctor Study Program, Faculty of Medicine, Udayana University batch 2018 and 2019, and (2) Students who were willing to become respondents through informed concent. Meanwhile, the exclusion criteria in this study were students who filled out the questionnaire incompletely and students who were not willing to become respondents through informed concent. Data

collection was carried out online through the technique of providing a goggle form link to respondents using social media online and whatsapp. The Google form contains an informed consent form. The questionnaire used in this study was a burnout scale as used in previous research by Kurniati (2012) [16]. The data from this study will be analyzed univariately and bivariately using SPSS ver. 25.

The analysis was carried out univariately to see the frequency distribution of the burnout incident description variable. Bivariate analysis was carried out through the chi square test to determine the relationship between the incidence of burnout and the variables of age, gender, and student cohort. A P value <0.05 indicates a statistically significant relationship.

Results

This study used a cross-sectional study design with the number of samples obtained during the study period, namely 175 people with subject characteristics that can be seen in table 1. The average age of the sample was 19.36 years with the lowest age being 17 years and the highest age being 22 years. A total of 98 samples aged ≤ 19 and the rest> 19 years. The majority of the samples (64.0%) were female, while 36.0% of the samples were male. Based on student cohort, 99 samples are class 2018 and 76 samples are 2019 class.

Table 1: Sample Characteristics

Characteristics	Sample (N = 175)	
	N	%
Age (Year)		
≤ 19	98	56.0
> 19	77	44.0
Mean ± SD	19.36 ± 0.811	
Median	19.00	
Minimum	17	
Maximum	22	
Gender		
Male	63	36.0
Female	112	64.0
Class		
2018	99	56.6
2019	76	43.4

The incidence of burnout in 175 samples of students of the Undergraduate Medicine and

Medical Profession Study Program, Faculty of Medicine, Udayana University can be seen

in table 2. In this study, burnout was categorized into three, namely low, medium, and high. Most of the sample (75.4%) experienced moderate burnout, as much as 14.9% was in the high category, and 9.7% experienced burnout in the low category (Table 2).

Table 2: the incidence of Burnout

Category	Burnout	
	N	%
Low	17	9.7
Medium	132	75.4
High	26	14.9

Bivariate Analysis

Based on the bivariate analysis using the chi square test as shown in table 3, it was found that there were insignificant results (p> 0.05) on the relationship between the burnout category and age, gender, and sample generation. The results of the analysis showed that there was a difference in the proportion of burnout between the ≤ 19 years and> 19 years age group with a value of p = 0.813. Thus, there was no significant relationship between burnout incidence categories and age. In addition, the results of the chi square analysis showed a difference in the proportion of the burnout category between the male and female groups with a p = 0.813. In other words, there was no significant relationship between burnout category and gender. The results of the chi square analysis also showed a difference in the proportion of the burnout category between the 2018 and 2019 class groups with a p = 0.761 (Table 3). Thus, there was no significant relationship between the burnout incidence category and the student cohort.

Table 3: Burnout incidence based on sample characteristics

Characteristics	Burn out Categories			P
	Mild N (%)	Moderate N (%)	Severe N (%)	
Age (year)				
≤ 19	9 (9.2%)	73 (74.5%)	16 (16.3%)	0.813
> 19	8 (10.4%)	59 (76.6%)	10 (13.0%)	
Gender				
Male	5 (7.9%)	49 (77.8%)	9 (14.3%)	0.813
Female	12 (10.7%)	83 (74.1%)	17 (15.2%)	
Class				
2018	10 (10.1%)	76 (76.8%)	13 (13.1%)	0.761
2019	7 (9.2%)	56 (73.7%)	13 (17.1%)	

Discussions

Burnout is a condition caused by various factors where the individual will experience symptoms of emotional exhaustion, depersonalization, and decreased achievement. In this study, there were four levels of burnout, namely the first level being the low category, the second and third level being the medium category, and the fourth level being the high category [16]. In this study, it was found that most of the sample students of the Undergraduate Medicine and Medical Professional Study Program, Faculty of Medicine, Udayana University (75.4%) experienced moderate burnout. The medium category includes feelings of disappointment with the work that has been done and isolation from the environment. This is supported by several studies, such as research by Alimah (2016) which states that the majority of students experience moderate burnout due to several factors, one of which is work overload and many assignments that exceed the ability of students [17]. According to Leiter and Maslach in Nursalam (2009), burnout can also be caused by breakdown in community

factors. Breakdown in community is a condition when someone will do their job optimally if they are comfortable in their environment, and will feel frustrated and disrespected if they are not comfortable. Students who do not go to college according to their interests and overseas students will experience a breakdown in the community and tend to experience moderate burnout.

This is because the chosen study program is not according to interest can cause a lack of interest in the lecture environment they live in, while migrating causes students to adapt to various changes in daily life and if they cannot adapt, it will have an impact on emotional instability, anxiety, and complaints about the problems experienced [17,18].

The study by Arlinkasari and Akmal (2017) also found that the proportion of student subjects for the burnout category was mostly in the medium category, with the proportion of self-efficacy which was in the high category. Self-efficacy is a student's belief in the ability to carry out a task or job [19].

Based on the research of Christyanti, Dewi, and Wiwik (2010), the cause of the majority of burnout students not in the high category is because many students are good at managing time, managing work overloads, and adjusting, so that the tendency for stress becomes low and can minimize the level of burnout experienced [20].In addition, according to Rahmati (2015), self-efficacy affects students in setting goals and adapting themselves so that they are calmer when facing difficulties.

On the other hand, students with low self-efficacy will be more susceptible to stress and have problem solving abilities not good. This shows that self-efficacy can also reduce burnout in students [21]. Different research results were found in Kurniati's (2012) study which states that all respondents who are students (80 people) experience high category burnout [16].

The high category is at level four which is separation and loss of motivation. The cause is the high level of student stress where students experience constant stress and compensation for stress becomes ineffective because it lasts too long, so stress causes burnout symptoms [16]. In this study, there was no significant relationship between age

and burnout. This is also supported by several other studies such as in Swasti (2017), Coetzee (2019), and Dewi (2012), all of which do not show a significant correlation between age and the incidence of burnout [22, 23, 24].

The insignificant relationship in this study can occur through several possibilities, such as the age distribution of respondents in the previous study is uneven and the responsibilities of each individual are not only determined by age but by the person's competence. According to Decy and Ryan in Swasti (2017), burnout can be caused by a person's failure to meet basic psychological needs, one of which is competence. Competence is a component that is owned by a person regardless of age [22].

However, different research results were found in several previous studies such as Sari (2015), Rožman (2019), and Chakraborty (2012) which stated that age has a significant relationship with the incidence of burnout [25, 26, 27]. The results of the above studies are also known to be contradictory with Maslach's theory which explains that age has a correlation with the incidence of burnout. Younger people are more likely to have burnout than older people. This happens because younger people generally have a lower level of reduce personal accomplishment than older people [24, 28].

In addition, younger people tend to have more idealistic thoughts so that the targets to be achieved are less realistic and conditions who are less psychologically and emotionally stable when compared to older people [23]. Younger people generally have minimal work experience so that they are less prepared to carry out work responsibilities as well as other factors such as being less able to adapt when compared to older people [29].

Another theory that supports this condition occurs is that older people generally have more experience and certain abilities so that they are wiser in dealing with stressors at work. In addition, older people have a higher position with certain characteristics, such as more flexible work schedules, better work control, and support from a good work environment, which can reduce stress or exposure in that person [26].This study shows that the gender of the respondents has an insignificant relationship between the incidences of burnout.

Research conducted by Palupi and Findyartini (2019), Manuella G et al (2017) and Sari (2015) also showed the same thing, namely that there was no significant relationship between gender and the incidence of burnout (p> 0.05) [25, 30, 31].

The absence of a correlation between sex and the incidence of burnout could be due to a lack of even distribution or distribution of respondents by sex. The data distribution of this study shows that the number of female respondents is more than male respondents. This is supported because the number of the study population is more female than male. However, the results of this study tend to show that the incidence of burnout is more dominant in women than in men [25, 30, 31].

The increasing incidence of burnout with a certain age peak in women is almost the same for several reasons that have been mentioned. Productive women are burdened with work, conflicts in the family that can trigger stress compared to men. Furthermore, the condition of women who are getting older tends to lose their ability to deal with work and family conflicts as well as physiological problems in the form of menopause which are a risk of depressive symptoms [32].The results of this study also show that there is no significant relationship between the incidence of burnout with the two generations, namely 2018 and 2019.

Research conducted by Alimah et al. (2016) also shows that there is no significant relationship between the batch or level of respondents with the incidence of burnout. This situation is supported by several factors such as the facilities and infrastructure used in the lecture environment, online learning methods, and the same block system between the two generations [17].

However, it is known that the 2018 class is more likely to experience moderate type burnout compared to the 2019 class. This may be due to the more specific courses studied by the 2018 class compared to 2019. In addition, the tight online lecture schedule may affect this judging from the specifics of the courses given. The incidence of burnout that occurs can also be influenced by other factors such as quality of sleep and level of physical activity [33]. The high incidence of burnout in class 2018 is not only due to lecture routines but also due to organizational activities which are mostly carried out in the second year [34].

Conclusion

Most of the students of the Undergraduate Medicine and Doctor Profession Study Program, Faculty of Medicine, Udayana University for the 2018-2019 period experienced moderate category burnout. The existence of this burnout incident shows the need for a teaching method that does not impose the workload of medical students during online lectures. Further research is needed to determine other factors that influence the incidence of burnout.

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