

Factors Contribute to Job Stress among Indonesian Lecturers Working from Home During Pandemic

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ABSTRACT

Introduction: Amidst the COVID-19 pandemic, nearly all non-critical sectors require their workers to work remotely, including lecturers. All teaching and learning activities are carried out online. During this period, the problem of psychosocial disorders is of particular concern. Therefore, a study is deemed necessary to analyze what factors contribute to job stress in lecturers working from home during the pandemic. **Methods:** A cross-sectional study was conducted with a total of 111 respondents. This study was conducted through an online survey. The population of this study was lecturers. All data were collected in 2021. Variables in this study were sex, age, working time per day, break time per day, sleep time per day, workout time per week, circadian rhythm, insomnia and work stress. **Results:** The results of this study indicate that there is no relationship between sex and job stress also a very weak relationship strength between age, sleep time per day, workout time per week, circadian rhythm, insomnia and job stress. Furthermore, there is a strong, unidirectional relationship between working time and job stress level and a weak relationship between break time per day and job stress level. **Conclusion:** The conclusion is that all variables except sex have a relationship with job stress but with varying degrees. Further research on this study in different population and different methods is suggested.

Keywords: job stress, lecturer, work from home

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INTRODUCTION

Coronavirus disease-2019 (COVID-19) started to spread all over the world in early 2020 after being first detected in Wuhan, Hubei Province, China, in December 2019 (Bappenas, 2021). The first case of COVID-19 in Indonesia was confirmed on March 2, 2020, and since then the number of confirmed cases continues to increase to date (Bappenas, 2021). Based on the analysis of Indonesia COVID-19 data published by the National Task Force for COVID-19 Handling 2021 updated per January 3, 2021,

shows an increase in cases of 7.3% from 48,435 cases to 51,986 cases. Cumulatively and nationally, as of September 3, 2021, 4,116,890 confirmed cases were recorded (Ministry of Health of the Republic of Indonesia, 2021). Several days after the declaration of COVID-19 as a pandemic by the World Health Organization (WHO), many workers were forced to carry out work activities from home. This routine shift inevitably gives rise to some new health problems for workers, including exposure to psychological and ergonomic hazards. These exposures to hazard may become uncontrollable due to the lack of management that oversees the routines, attitudes and work systems of workers when working from home where all work-related matters run according to self-awareness of each

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worker, coupled with limited infrastructure, resource or setup.

Nearly all non-critical sectors require their workers to work remotely, including lecturers. As workers in education, all learning and teaching activities are carried out from home. Because of working from home, workers, or lecturers in this case, do not have definitive working hours as a result of, among others, hampered communication leading to overtime, and interruptions from internal domestic activities. Unchanged or unadjusted workload given by the workplace, hampered communication caused by unstable internet network as well as instruction from the government to stay at home put workers under a lot of pressure and cause drastic change in work patterns. If prior to the pandemic workers could go on vacation for a while to refresh their minds, they do not have comparable media to which they can channel their fatigue and jadedness (Tang *et al.*, 2020). During the pandemic, the problem of psychosocial disorders is of particular concern that must be considered by all sectors or employers. This pertains to workers' complaints about their health, both psychologically and physiologically. Workers who suffer from work stress can experience fatigue and even depression (Mücke *et al.*, 2018).

Problems that start from unchecked mental or mental burdens can cause immediate effects such as job stress, depression, feelings of restlessness and difficulty sleeping (Pinho *et al.*, 2021). Furthermore, it can cause mental health disorders that can potentially result in decreased work productivity (Page and Sheppard, 2016). Job stress is a health problem caused by a discrepancy between the workload and the ability of workers to cope with stress in doing work. Job stress is a manifestation of feelings when workers feel pressured at work. It can also be defined as a condition when workers feel tension at work causing physical and psychological asynchrony (Vanchapo, 2019). Therefore, a study is deemed necessary to analyze what factors contribute to job stress in lecturers working from home during the COVID-19 pandemic.

METHOD

Population, Setting, and Sampling

This study was an observational study with a cross-sectional design. It was conducted through an online survey. The population of this study was lecturers in Indonesia. The data in this study were collected between September and October 2021.

The sampling technique used in this research was non-probability sampling in the form of accidental sampling. The inclusion criteria for subject in this study were: Indonesian citizens; lecturers at the time of the study; during the COVID-19 pandemic; and who have carried out work from home (WFH) activities. Subjects who became respondents were those who willingly filled out a questionnaire that had been distributed online. The number of respondents of this research was 111 lecturers from different cities in Indonesia.

Ethical Clearance

This research had been declared ethical by the Health Research Ethics Committee of the Faculty of Public Health, Universitas Airlangga. This decision was based on a statement of ethics No: 31/EA/KEPK/2021.

Variables, Data Entry and Statistical Analysis

The primary data in this research were obtained by filling out online questionnaires containing sex, age, working time per day, break time per day, sleep time per day, workout time per week, circadian rhythm, insomnia and job stress variables. All the variables using questionnaire. Data analysis in this study used Chi-Square and Spearman. Only sex variables used Chi-Square and other variables used Spearman test. Participation in this research took about 20 minutes to fill out the questionnaire. The questionnaire was prepared by the research team and had been tested for validity and reliability with valid and reliable results.

RESULTS

The Relationship Between Sex and Job Stress

In Table 1, the result of the Chi-Square test shows a coefficient correlation value of -0.005. It indicates that there is no relationship between sex and job stress level in the respondents.

The Relationship Between Age and Job Stress

In Table 1, the result of the Spearman correlation test shows a coefficient correlation value of 0.033. It indicates a very weak relationship strength between age and job stress level in the respondents. In addition, a positive correlation coefficient shows that the higher the age, the higher the level of work stress.

The Relationship Between Working Time/Day and Job Stress

In Table 1, the result of the Spearman correlation test shows a coefficient correlation value of 0.851. It indicates a very strong relationship strength between the respondent's daily working time and job stress level in the respondents. In addition, positive correlation coefficient shows that the higher the respondent's daily working time, the higher the level of work stress.

The Relationship Between Break Time/Day and Job Stress

In Table 1, the result of the Spearman correlation test shows a coefficient correlation value of 0.127. It indicates a very weak relationship strength between break time/ day and job stress level in the respondents. In addition, the positive correlation coefficient shows that the longer the break time/day, the higher the level of work stress.

The Relationship Between Sleep Time/Day and Job Stress

In Table 1, the result of the Spearman correlation test shows a coefficient correlation value of -0.053. It indicates a very weak relationship strength between sleep time/day and job stress level in the respondents. In addition, the negative correlation coefficient shows that the shorter the sleep time/day, the higher the level of work stress.

The Relationship Between Workout Time/Week and Job Stress

In Table 1, the result of the Spearman correlation test shows a coefficient correlation value of -0.115. It indicates a very weak relationship strength between Workout time/ week and job stress level in the respondents. In addition, the negative correlation coefficient shows that the more infrequent the workout time/week, the higher the level of work stress.

Table 1. Analysis Between Individual Characteristics and Job Stress in Lecturers Working From Home in 2021

Variables	Job Stress								Correlation	
	Normal		Mild		Moderate		Severe			
	n	%	n	%	n	%	n	%		
Sex	Male	23	20.7	4	3.6	14	12.6	0	0.0	-0.005
	Female	40	36.0	9	8.1	18	16.2	3	2.7	
Age	26-35	44	39.6	9	8.1	18	16.2	3	2.7	0.033
	36-45	10	9.0	4	3.6	12	10.8	0	0.0	
	46-55	7	6.3	0	0.0	2	1.8	0	0.0	
	56-65	2	1.8	0	0.0	0	0.0	0	0.0	
Working Time per Day	<8 hours	17	15.3	0	0.0	0	0.0	0	0.0	0.851
	8 hours	45	40.5	4	3.6	1	0.9	0	0.0	
	>8 hours	1	0.9	9	8.1	31	27.9	3	2.8	
Break Time per Day	<1 hour	1	0.9	0	0.0	0	0.0	0	0.0	0.127
	1 hour	44	39.5	10	9.0	18	16.2	2	1.9	
	>1 hour	18	16.2	3	2.7	14	12.6	1	0.9	
Sleep Time per Day	<7 hours	36	32.4	9	8.1	21	18.9	1	0.9	-0.053
	≥7 hours	27	24.3	4	3.6	11	9.9	2	1.9	
Workout Time per Week	0 time	0	0.0	1	0.9	0	0.0	0	0.0	-0.115
	<3 times	45	40.5	10	9.0	25	22.5	3	2.8	
	≥3 times	18	16.2	2	1.8	7	6.3	0	0.0	
Circadian Rhythm	Indicated	12	10.8	6	5.4	10	9.0	1	0.9	-0.155
	Not Indicated	51	45.9	7	6.3	22	19.8	2	1.9	
Insomnia	Indicated	28	25.2	6	5.4	12	10.8	2	1.8	0.027
	Not Indicated	35	31.5	7	6.3	20	18.0	1	0.9	

The Relationship Between Circadian Rhythm and Job Stress

In Table 1, the majority of respondents had no indication of circadian rhythm disturbances with a proportion of 73.9% of the total respondents. The result of the Spearman correlation test shows a coefficient correlation value of -0.155. It indicates a very weak relationship strength between circadian rhythm indication and job stress level in the respondents.

The Relationship Between Insomnia and Job Stress

In Table 1, the result of the Spearman correlation test shows a coefficient correlation value of 0.027. It indicates a very weak relationship strength between insomnia indication and job stress level in the respondents.

DISCUSSION

The Relationship Between Sex and Job Stress

The results in this study show that there is no relationship between sex and job stress level in the respondents. According to Robbins (2003), men and women approach and solve problems differently. Thus, men and women have different susceptibility to job stress. Female workers are more prone to stress than their male counterparts (Habibi and Jefri, 2018).

In a study of inpatient nurses, there is a relationship between sex and job stress level (Awalia, Medyati and Giay, 2021). In another study conducted by Pardamean and Lazuardi (2019), sex was correlated with stress in XI-grade science major students of SMA X Tangerang (p -value=0.002). Thus, it can be concluded that there is a relationship between sex and job stress.

In other research on lecturers, this research is in line with research on lecturers at the University of MH Thamrin Jakarta with the results of a significant relationship between sex and stress events where female respondents have a tendency of 0.2 times greater to experience stress compared to male respondents (Pratama, Hastono and Endarti, 2021). Women have a high responsibility for the role at home, both in housework and as mothers for their children and in general women have physical strength 2/3 of the physical abilities or muscle strength of men but in certain cases women are more

thorough than men (Pertwi, Denny and Widjasena, 2017). Therefore, sex has a relationship with work stress.

The Relationship Between Age and Job Stress

The results in this study show that there is a very weak relationship between age and job stress level in the respondents. In addition, the positive correlation coefficient shows that the higher the age, the higher the level of job stress.

In a study conducted on inpatient nurses, corresponding results were obtained where no relationship was found between age and job stress level. This might be attributable to the fact that the age of the majority of respondents who were fairly young is actually more susceptible to job stress. Age factor is principally difficult to analyze in detail since there other contributing individual factors (Awalia, Medyati and Giay, 2021).

Age may influence a worker's job stress level where the older the worker, the lower the susceptibility to stress for the reason that older workers have more mature mental health. Akbar and Akhter (2011) stated that younger workers can be more prone to stress compared to their older counterparts. The results of other studies conducted on permanent lecturers showed that between age and job stress, the value of $p = 0.001$ ($p < 0.05$), meaning that there is a statistically significant relationship between age and job stress in permanent lecturers of STIKES Y Bengkulu (Aprianti and Surono, 2018).

The workforce, including lecturers, will be increasingly able to show mental maturity, wisdom, be able to think rationally, be more able to control, and be tolerant of views and behaviors that differ from them so that they will tend to be more able to manage the work stress experienced. Teaching is a traumatic and stressful job which must be accompanied by efforts to do something constructive in order to overcome these stressful conditions (Pertwi, Denny and Widjasena, 2017).

The Relationship Between Working Time/Day and Job Stress

This study shows there is a very strong and unidirectional relationship between working time per day and job stress level in the respondents. Long working hours may increase workers' physical and mental workload. This will result in fatigue and induce job stress.

The study by Tulhusnah and Puryantoro (2018) showed that working time has a significant effect on worker's job stress in an Office in Kapongan Sub-District, Situbondo Regency with a significance value of $0.000 < 0.05$. Other results also demonstrate a relationship between working time and job stress with a weak relationship strength and positive relationship direction (Lukas, South and Wowor, 2018).

The Relationship Between Break Time/Day and Job Stress

The results in this study show that there is a very weak relationship between break time/day and job stress level in the respondents. In addition, the positive correlation coefficient shows that the longer the break time/day, the higher the level of job stress.

Break time is valuable for workers because during the time workers can take a short break to relieve fatigue due to workload. Untreated worker fatigue can trigger work stress. In the study by Rudyarti (2020), there was found a significant relationship between the fatigue felt by workers due to the lack of break time. Another study also demonstrated a relationship between work fatigue and job stress in ER and ICU nurses of Regional Public Hospital Datoe Binangkring, Bolaan Mongondoow Regency with a p value = 0.722 (Rembang, Wongkar and Josephus, 2013). For jobs that require meticulousness and precision, work fatigue can result in decreased work performance. Work fatigue has been shown to contribute more than 60% in workplace accidents (Maurits, 2010). This is in contrast with the results of present study.

The Relationship Between Sleep Time/Day and Job Stress

The results in this study show that there is a very weak relationship between sleep time/day and job stress level in the respondents. In addition, the negative correlation coefficient shows that the shorter the sleep time/day, the higher the level of job stress.

Adequate length of sleep as well as sleep quality are needed for workers to carry out their tasks effectively. In the study of nurses in one of public health centers in Malang Regency, contrasting results were observed where sleep quality is related to job stress level in nurses. Nurses with poor sleep quality tend to have moderate job stress (Susanti,

Kusuma and Rosdiana, 2017). Another study found a relationship between stress level and sleep quality of final-year students, and the statistic test obtained a p -value = 0.000 (< 0.05) (Sulana, Sekeon and Manjtoro, 2020). The study from Muttaqin, Denny and Sulistiawati (2021) also demonstrated a significant relationship between stress level and student sleep quality.

The Relationship Between Workout Time/Week and Job Stress

The results in this study show that there is a very weak relationship between workout time/day and job stress levels in the respondents. In addition, the negative correlation coefficient shows that the more infrequent the workout time/week, the higher the level of job stress.

Workout or exercise is known to reduce work-related anxiety, stress and depression. A study of working mothers shows contrasting results where exercise habits affect work stress levels. The intervention in the form of physical exercise has been shown to reduce work stress levels in working mothers from moderate to low levels (Handayani and Ratnasari, 2019). The results of another study show that exercise habits have a significant effect on stress levels and there is a strong relationship between the two (p value < 0.05). This shows that good workout or exercise habits has an effect on stress levels of the students of Poltekkes Kemenkes Jakarta III (Andalasari and Berbudi 2018).

Other studies have reported that higher levels of sports and physical activity participation are associated with lower rates of depression, as well as better self-perception. Both are particularly beneficial for teenage girls. Teenage girls are considered more susceptible to depression than teenage boys at the same age (Nguyen-Michel *et al.*, 2006).

The Relationship Between Circadian Rhythm and Job Stress

The results in this study show that there is a very weak relationship between circadian rhythm indications and job stress levels in the respondents. Other studies show opposite results where a significant relationship was found between circadian rhythm and stress.

A person with disrupted circadian rhythm is more susceptible to stress (Poluakan, Manampiring and Fatimawali, 2020). The results show that from the Spearman correlation coefficient test, a

significant relationship was found between circadian rhythm and stress, with a significant value (2-tailed) of 0.000 with a moderate relationship strength and positive direction (Poluakan, Manampiring and Fatimawali, 2020). Circadian rhythm is related to the internal body process that regulates the sleep-wake cycle every 24 hours. A person who has erratic sleep and wake times has a poor circadian rhythm. This condition can trigger work stress.

The impact of stress on circadian rhythms has been the subject of numerous animal research. Stress at the start of the light phase produces a phase advance shift in the mRNA expression rhythms of multiple core clock genes in peripheral organs in mice, according to research by Tahara *et al.* (2015) using a social defeat. Based on Bartlang *et al.* (2014), stress had a phase delay or even a loss of synchrony in mice when it was applied at different times of the day, showing that it depends on the time of day when it affects peripheral clocks. The authors refer to the sub-acute stress paradigm as having social defeat on three consecutive days. It is interesting to note that the effects diminished or became undetectable following repeated exposure to the stressor over a period of weeks, suggesting habituation effects. No alterations were observed in the SCN pacemaker in this investigation, which is consistent with the absence of GR expression in this tissue. The effects of repeated social rejection over 19 days, either in the early light or early dark phase, were examined using a more chronic strategy (Bartlang *et al.*, 2014). In a two-week study, Razzoli *et al.* (2014) compared acute social defeat stress with chronic stress (given during the early light phase). Here, both a single and repeated stress phase advanced the adrenal gland's internal clock, and long-term exposure to the stressor phase also changed the pituitary's internal clock.

The Relationship Between Insomnia and Job Stress

The results of this study demonstrate a very weak relationship strength between insomnia indication and job stress levels in the respondents. Insomnia is a condition when someone has a difficulty to sleep. It can be caused by various factors. Insomnia in workers may be influenced by changing shift times. Workers who work night shifts are likely to be more susceptible to insomnia (Rifa'i and Martiana, 2014). Insomnia means poor sleep quality, which can cause job stress in workers

(Susanti, Kusuma and Rosdiana, 2017). The study by Windarwati (2013) showed that there is a significant relationship between job stress and complaints of sleeplessness ($r= 0.692$; $p<0.05$). This shows there is a strong and positive relationship between job stress and complaints of sleeplessness, that is, the higher the job stress, the higher the complaints of sleeplessness in nurses.

Further research on this study in different population and different methods is suggested. In different professions maybe there is something different with the lecturers.

CONCLUSION

The conclusion of this study demonstrate that there is no relationship between sex and job stress also a very weak relationship strength between age, sleep time per day, workout time per week, circadian rhythm, insomnia and job stress. Furthermore, there is a very strong, undirectional relationship between working time and job stress level and a weak relationship between break time per day and job stress level.

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CONFLICT OF INTEREST

All authors declare that they had no conflict of interest.

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