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Case Study

Risk Assessment during Covid-19 and Learning from Home: Evidence from University Students in Indonesia

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A B S T R A C T

COVID-19 pandemic has become an international concern. Policies to prevent the spread of disease, such as learning from home, are applied to university students. The present study examines the risk assessment in relation to physical, mental, and psychosocial condition of Indonesian students toward COVID-19 and learning from home. This study involves 838 Indonesian students. A questionnaire consisting of demographic data and constructs from a comprehensive literature study regarding COVID-19 related issues and learning from home issues was developed. Most Indonesian student respondents have a good knowledge of COVID-19 and have received accurate information from the government. The anxiety level during COVID-19 is mild. In relation to physical condition, most students reported musculoskeletal symptoms in the neck, shoulder, and back areas. The respondents conduct preventive behavior against COVID-19 spread, with lack of physical exercise. In relation to mental and psychosocial condition, respondents report moderate mental workload and proper social support from lecturers and friends. In conclusion, most Indonesian university students have a good knowledge and proper attitudes toward COVID-19 and learning from home, which are important in combating and passing through the pandemic.

INTRODUCTION

The new coronavirus disease (COVID-19) pandemic has become an international concern because the World Health Organization (WHO) stated that the disease is spreading to almost all countries around the world. Each government is acting to the COVID-19 outbreak under control [1] because the pandemic is generating problems in the population. There are not only problems in relation to the effort to prevent and cure the disease but also problems related to economic and public behavior changes as well as the implication of the changes. Government policies such as social distancing, self-isolation, and travel restriction had caused many people lost their jobs. This condition affects various industrial sectors, ranging from agriculture, petroleum & oil, manufacturing, finance, tourism, real estate & housing, sport, food, education, and healthcare [2]. In agriculture, the sudden closure of hotel and restaurants resulting in demand falls of agricultural commodities. This outbreak also dropped the demand for oil, manufacturing product, and tourism, postponed some world sporting events, and reduced home views which leads to decreased sales [2].

The most directly affected and suffering members of society are the patients and medical workers such as nurses and doctors. There are many efforts to reduce the severity and number of COVID-19 patients through medical cures and treatment. During this pandemic, healthcare industry was facing many problems such as high health cost, shortage of protective equipment, ICU beds and ventilator. The safety of medical workers is also a major concern. Many doctors and nurses died during the Pandemic. Data from the Indonesian doctor association states that from March to December 2020, 342 medical personnel died from COVID 19 [3]. The healthcare industry and researchers were working hard to quickly find a vaccine that can reduce the number of people infected with COVID. Meanwhile, the design of personal protective equipment for those medical workers was also proposed.

It should be noted, however, that in managing such threats and preventing the spread of the pandemic, the government makes decisions that impact society indirectly, that is nonpatients and nonmedical workers, due to the high numbers of these members of society [4]. In addition, the nonmedical society is crucial in supporting the medical or health care practice such as engaging patients and families to follow the recommended practices. Society is also experiencing changes in the way they conduct their daily activities and jobs.

All governments determine policies to combat the spread of COVID-19. This disease has a very fast transmission so that it requires precise and fast action to handle. Public interest and attention to COVID-19 and the willingness to take precautionary actions, both from direct and indirect COVID-19 effects, are the

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focus of the government to enhance the public's sensitivity to COVID-19. Valid information from the government, therefore, has a vital role in overcoming this pandemic condition. During pandemic, exaggerated pandemic data and information about nonevidence based measures emerges in the community [5]. This invalid information can lead to inappropriate action. . In addition, informing the public about the importance of protecting themselves with enough precautionary measures and finally controlling the spread of COVID-19 globally is also important [6]. Personal hygiene behavior should be implemented regularly to halt the number of infections. The entire community is encouraged to comply with the health protocol, wear a mask, diligently washing hands, and keeping a safe distance from others. This way, the transmission of COVID 19 can be suppressed.

For the nonmedical society, lockdown or quarantine is a policy applied by several governments, as well as the social or physical distancing policy. "Stay at home so you will be safe" is a common jargon easily found everywhere in every country to prevent the spread of COVID-19 [7]. The number of employees shifting to work from home increases during pandemic [8]. This change occurs mainly in highly educated, high-income and white-collar workers. People are forced to do telecommuting work, which is defined as a flexible work arrangement under which an employee performs the duties and responsibilities other than from the location which the employee would otherwise work. The community should implement social distancing as well as stay-at-home policies or telecommuting because there are some asymptomatic COVID-19 patients, who are called carriers.

Social distancing and telecommuting work are also applied in the university environment to continue the education process. Monitoring actions taken by UNESCO on educational activities showed that as March, over 166 countries implemented nationwide closures, impacting over 87% of world's student. [9]. Campus is closed to prevent spread of the virus within institution and prevent transmission to people at high risk. Because the campus has been in lockdown for some time, lecturers give classes by telecommuting methods through internet connection and media. The term "learning from home" has become very familiar in this case. COVID-19 coupled with the learning-from-home period undoubtedly affects how university students live as the classes are moved online, and how examinations are conducted remains uncertain. The education system was facing challenges such as pandemic related anxiety, racial, economic, and resource difference issue that might affect student performance [10]. Besides that, not all instructor ready to adapt to new condition and deliver high quality instruction remotely [11]. Teachers and lecturers are faced with difficulties in applying different pedagogies so that online learning can still provide maximum results. The change from offline to online learning requires a lot of adaptation from the students. A study by Hens et al. [10] shows that school closure changes several behaviors. A body of literature exists on the closure of educational institutions to reduce the spread of infectious disease in the community by breaking important chains of transmission.

In a review, Sahu [13] stated that COVID-19 has raised urgent questions about well-being and community preparedness that would be critical to control any impending spread of COVID-19. In addition, the WHO highlighted the importance of support for physical, mental, and psychosocial well-being during the COVID-19 outbreak. Online survey by Pigaiani et al [14] investigated about shifting in lifestyle behavior and coping strategies among Italian adolescent. The study showed that a change of subjective wellbeing and symptom of anxiety were frequently reported. Study in UK stated that during the first of lockdown in UK, suicidal ideation was increased [15]. Although positive well-being was known to be increased, partial analysis of young women respondent showed that there was a worse mental health outcome.

Working and studying remotely can present unique ergonomic challenges as there are several barriers to achieving the neutral postures [16]. Some universities propose a guide to telecommuting work due to COVID disease [16],[17]. The documents contain about how to design work area, lighting, and chair selection [16][17]. It also suggests the best practice in using laptop and what to do during a break [9]. The guidelines are of utmost importance because learning from home is vulnerable to injury due to possible non-natural positions during the learning process. The position might lead to musculoskeletal symptoms or disease which in the end affect learning performance.

Anxiety during disease is also influenced by the information given by the government or authorities. The absent of government or authorities information, lead public's desire to participate in disseminating information to a rapidly spreading misinformation trough social media and other communication channels [20]. People are competing in winning the race of the sharing novel details for COVID-19 and gaining fame over social media, leading to a massive infodemic that may increase the risk of severe public health consequences [20]. Indonesian Ministry of Communication and Information stated that start for January 2020 until June 2020 there are at least 850 hoaxes spread in the community [21]. Larson [18] even said that misinformation and negative emotions, as well as stress as a result of the misinformation, is worse than the disease itself. Dissatisfied with the information received about health crisis is one of the factors that risk mental health (Rodriguez-Rey, 2020).

More importantly, in relation to COVID-19, some researchers have highlighted the impact of the COVID-19 outbreak on psychological health [19, 20]. Mild to severe levels of anxiety, depressive symptoms, and stress are mostly reported during Pandemic [19]. Women, young, and those who that lost their job during the health crisis showed the strongest negative psychological symptoms. Not only causing anxiety, the current situation impacts humans and causing insomnia, panic behavior, fear, and hopeless [20].

In relation to mental well-being, COVID-19 might raise mental issues among university students as well. Based on previous worldwide diseases (i.e., SARS), a study by Quah and Hin-Peng [22] found a high anxiety level among Hong Kong society. High anxiety level was also found in Italian adolescent [14] related to school policies, anxiety level was increased due to the fear of negative educational outcome. In general, a new disease increases anxiety levels higher than a more familiar disease (e.g., [23],[24],[25],[26]). In addition, related to the recent COVID-19, the WHO has stated the importance of considering mental health problems in combating the disease for all society [1].

The psychosocial issue is another important issue that has been highlighted by the WHO [1]. Woodward [27] defined psychosocial as an approach that looks at individuals from the

combined influence that psychological factors and the surrounding social environment has on their physical and mental wellness. Learning from home that prevents students meeting their friends and colleagues might raise psychosocial problems. During this period, students must live with uncertainty and try to maintain social connectedness while physical contact with others is limited and prohibited. The social conditions where more and more people are infected, quarantined, and died due to COVID 19 also creates a sense of empathy and being vulnerable [28]. Knowing people who had been isolated was associated with higher levels of anxiety, depression, and PTSD in students [28].

Indonesia is one country suffering from COVID-19. The number of infected people, as well as the number of deaths, has been increasing rapidly. The Indonesian government has taken actions to stop the wide spread of the virus. Because a lockdown is not an option due to economic and cultural barrier reasons, social and physical distancing is considered as the primary action to combat the spread of the virus. The government institutions, offices, as well as schools, have taken a break for an indefinite time. Uncontrolled transmission leads to a huge number of deaths. The increasing number of mortality cases in Indonesia should be an alarming sign for the government. Therefore, the closure of schools, in particular universities, is implemented and the learning process conducted in terms of learning from home.

The present study examines the risk assessment in relation to physical, mental, and psychosocial condition of Indonesian students toward COVID-19 and learning from home. Understanding COVID-19-related issues and well-being among Indonesian students during online learning will be valuable for Indonesia as well as other countries to develop strategies to prevent the spread of COVID-19 and increase the well-being of university students.

This paper is arranged of several parts. The first section contains the background of the research which explains the urgency of conducting this research. Next, the research method describes the respondents involved and the questionnaire used. The results of the study are described in the results and discussion section, and closed by drawing conclusions.

METHOD

The study was approved by the ethical committee of Institut Teknologi Bandung with approval number ITB/EC/02/04/2020.

Respondents

Eight hundred and thirty-eight Indonesian students living in Bandung and Jakarta (mean age = 20.6 years, SD = 1.4 years, 353 male, 485 female) were involved voluntarily in this study. The respondents were instructed to fill in an online questionnaire, which needed 10 minutes on average to complete. The sample of respondents was decided by convenience sampling. Bandung and Jakarta were chosen as representatives of big cities in Indonesia. These cities were chosen as representatives of the "red zone" area in Indonesia which shows a high number of COVID-19 cases as well as a significant increase in number. In these big cities, all of the universities are closed during COVID disease and instructing their students to conduct online learning from home for an indefinite time. In addition, the internet connection, which is the main requirement for the learning-from-home process, is good.

Table 1 The Items of Questionnaire Based on A Literature Study

Construct	References
Knowledge about COVID-19	[30]
Preventive behavior of COVID-19	[30]
Perceived crisis management by government	[4]
Anxiety	[31],[32]
Guideline of learning from home	[15]
Musculoskeletal symptoms	[33]
Physical exercise	[34]
Psychosocial aspects	[35],[36]

Questionnaire

A questionnaire was developed consisting of demographic data of the respondents, including age, gender, and city. Beside the demographic data, questions relate to risk assessment during learning from home are presented and items adopted from a comprehensive literature study as can be seen in Table 1. The literature study was conducted using google search engine with several keywords relates to the topic. Constructs were selected based on the need and suitability with learning from home environment in Indonesia Items of the constructs are available from the previous study, therefore, all items of the questionnaire are adopted from the previous literature. All items are presented in the Indonesian language following a back-translation procedure [29] . Two bilingual translated the original English items into Indonesian. The best Indonesian version is discussed by the researchers. The decided Indonesian version was back translated by third bilingual who never seen the Original English version. Last, the back translated and original English version was compared to ensure the content and the context were similar. The complete items of the questionnaire can be seen in Appendix.

Data Analysis

All data are presented with descriptive statistics for each construct and item. The descriptive data also include the response and percentage of each response.

RESULT AND DISCUSSION

The responses of the respondents to the items of the questionnaire regarding COVID-19-related issues, as a response of construct presented in Table 1 and operationalization of construct presented in Appendix, can be seen in Table 2 and Table3.

The data analysis are conducted based on highest percentage of responses. Regarding response to COVID-19, most Indonesian student respondents have a good knowledge of COVID-19. The Indonesian students also received accurate information from the government. The anxiety level during COVID-19 is mild. Most Indonesian students also conduct preventive behavior against COVID-19 spread.

In relation to learning from home, the result shows that the common position of Indonesian students during learning from home in the COVID era is using a laptop in a desk, floor/lap, and laying on the bed, which is related to musculoskeletal symptoms (MSS) in the neck, shoulder, and back areas [37.38.39]. Regarding psychosocial conditions, most student respondents state proper social support from the lecturer and friends,

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Table 2 Responses of COVID-19-related Issues

COVID-19 related issue	**Description**	**Percentage**
Knowledge about COVID-19	0 of 3 correct answer	0.2%
	1 of 3 correct answer	3.1%
	2 of 3 correct answer	32.8%
	3 of 3 correct answer	63.8%
Perceived of the COVID-19 information by the government	Accurate	7.3%
	Clear	47.1%
	Timeless	13.2%
	Trustworthy	29.7%
Anxiety level regarding COVID-19	None (sum of the respond < 5)	29.7%
	Mild (5 ≤ sum of the respond < 10)	42.4%
	Moderate (5 ≤ sum of the respond < 10)	24.2%
	Severe (sum of the respond > 10)	3.7%
Preventive behavior in relation to COVID-19	Close mouth when cough	93.3%
	Wash hands frequently	63.8%
	Not touch the mouth, eyes, and nose with dirty hands	91.8%
	Not spit on the ground	90.9%
	Avoid public places	79.6%
	Open the window frequently for ventilation	50.8%
	Keep the room and household clean using disinfectant	90.2%
	Wear a mask when going out	81.7%
	Health monitoring	59.2%
	Social/physical distance	92.5%

Table 3 Responses of Learning from Home-related Issues

Learning from home-related issue	**Description**				**Number**
Learning-from-home duration per day (on average)	Mean = 6.3 hours, SD = 3.7 hours				
Learning aspects	Learning position				
	Using a desktop				4.5%
	Using a laptop with a sitting position at the desk				61.7%
	Using a laptop with a sitting position on the floor/laptop on lap				19.2%
	Using a laptop with the position of laying on the bed				14.6%
	Every 30 minutes take a (micro) break for at least 10 seconds				49.2%
	Stay hydrated				66.2%
	Every 20 minutes of screen time, look away for ≥20 seconds at something ≥20 feet away				5.4%
Physical exercise per week	<75 minutes				83.9%
	≥75 minutes				16.1%
Musculoskeletal symptoms (MSS)	Using desktop	Using laptop			
		On desk	On the floor/on lap	Laying on bed	
Neck	44.7%	52.8%	54.7%	56.6%	
Shoulder	55.3%	42.0%	45.3%	40.2%	
Elbow	13.2%	19.1%	17.4%	13.9%	
Upper back	36.8%	45.1%	52.8%	42.6%	
Lower back	57.9%	46.2%	50.9%	39.3%	
Hip	21.1%	25.0%	23.6%	23.0%	
Knee	18.4%	16.6%	20.5%	15.6%	
Psychosocial aspects	Social support from lecturer and friends				
	- Never				6.6%
	- Sometimes				31.5%
	- Often				49.4%
	- Always				12.5%

Table 3 (Continued)

Learning from home-related issue	Description	Number
Psychosocial aspects (cont.)	Learning demand	
	- Strongly inappropriate	8.4%
	- Inappropriate	32.3%
	- Neutral	38.0%
	- Appropriate	14.0%
	- Strongly appropriate	7.3%
	Learning control	
	- Strongly inappropriate	6.6%
	- Inappropriate	32.9%
	- Neutral	37.2%
	- Appropriate	16.2%
	- Strongly appropriate	7.1%

however, the demand and control during learning from home needs further improvement.

Proper knowledge of COVID-19 among university students is as expected because university students have access to information from a lot of sources such as online information from the government. The proper knowledge is extremely important because [40],[41],[42] found that the impact of school closure on the transmission dynamics during different pandemics than COVID-19 (i.e., flu H1N1 and influenza), is influenced by knowledge. The result of this present study shows the hope that transmission of COVID-19 also is eliminated in the university.

In general, this present study shows that the respondents implemented good health behavior in relation to COVID-19 prevention. This fact might be due to proper knowledge of COVID-19 as well. Unfortunately, the fact is not supported by proper physical exercise as suggested by the WHO [34], which is 75 minutes a week. Awareness about the need for physical exercise is needed in this case to support combating the COVID-19 outbreak. There is no doubt that proper knowledge, coupled with good healthy behavior might help respondents to minimize their possible COVID-19 infection, as suggested by the WHO [34]. However, this possibility must be tested medically to ensure the result.

The good perceived quality of information by the government is important as expected. The good quality of information will enhance public awareness, which is very crucial in developing strategies in combating such pandemics (e.g., [5],[43]). Proper information coupled with proper knowledge might reduce the COVID-19 outbreak. As stated by [44], community mitigation to prevent local transmission must be carefully considered and applied where and when possible, in particular in relation to uncertainties regarding the possibility of widespread community transmission of COVID-19.

In relation to anxiety and information from the government and authorities, the Indonesian student respondents showed a moderate level of anxiety. This condition may relate to the clarity of information about the pandemic as well as the trustworthiness. This information is of utmost importance in particular in designing the information channel that is effective about the pandemic in the present as well as in the possible pandemic future.

In relation to learning-from-home activity, this present study shows that the average duration of learning from home of Indonesian student respondents is 6 hours a day. This means that the learning duration is not different from normal classical learning when the university is not locked down. This finding is answering the worry of irregular work hours by telecommuting people because the schedule of the learning-from-home class is similar to classical learning.

Most of the respondents use a laptop on a desk without applying the recommended position. The moderate number of laying on the bed position during learning from home as well as putting the laptop on the floor or lap is a novel finding that has not been observed before. The condition is most likely due to the absence of a formal requirement to sit in a formal chair and desk as in the university environment. The limitations of the conditions for each student at home may also limit the possibility for student to be facilitated with the right design of tables and chairs when studying. In addition, the Indonesian culture, which relies on the position of sitting on the floor on various occasions and laying on the bed during watching television and spending leisure time might explain the result.

The fact of high self-reported MSS in the neck, shoulder, and back areas is not surprising considering the common position of learning from home. The use of a laptop on a desk without applying the recommended position causes MSS in the neck and shoulders. Laying on the bed required the respondents to lean the neck and the weight of the body on the elbow so that most MSS is reported in the neck and back. In contrast, the position of the laptop on the lap results in MSS in the neck. This result should be considered with extra caution because prolonged prevalence of MSS in the neck and back will result not only in disorder or pain but also cause work absenteeism, disabilities, and sleep disturbance [45]. Study by Joseph et al [46] stated that social isolation might have a role in the increase of musculoskeletal pain. The restriction on social interaction an outdoor activity would affect an individual's pain threshold. The lack of physical activities found in this present study was also led to worse musculoskeletal pain. the survey that had been conducted on the two Spanish universities [47] was also emphasized that the lack of physical activity was a factor affecting the high level of musculoskeletal complaints.

In relation to psychosocial conditions, most Indonesian student respondents reported proper support from lecturers and friends

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during learning from home. The reason for this is that most university lecturers use synchronous methods (defined as a method that involves online studies with the aid of chat rooms, in which online communication helps learners stay in touch with their teacher and fellow students [48]). Synchronous learning allow learners to receive real-time attention from the instructor and share different perspective that contributed to increase the satisfaction of the course [49]. However, the task demand and control during learning need more attention. This is in line with Offir et al. [48], who stated that synchronous delivery did not allow self-paced learning and has a rigid schedule. In addition, [50] shows that online learning results in a higher learning load than classical learning. In online learning, assignments are often used as an alternative to encourage the student-centered learning. Online learning in all courses without any coordination between instructors, may result in an accumulation of student homework which increase student load.

In general, reported problems with learning from home are related to difficulty in concentrating and lots of distractions. One might argue that the conditions are due to internet connection restrictions. However, the respondents in this present study live in large cities (i.e., Bandung and Jakarta) which have a high-speed internet connection; therefore, this is not the cause of the problems. One possible explanation of the distractions that affect the ability to concentrate is the home situation. Additional interviews with several respondents revealed the possibility that interruption by younger siblings and other family members, as well as environmental noise, are the cause of the distractions.

This present study has several limitations worth noting. First, the respondents are limited to students of Indonesian universities in Bandung and Jakarta. Expanding the respondents to other big cities and covering medium as well as small cities will enrich the analysis. Second, the method of the survey is an online survey using a questionnaire. Although the authors ensure that all respondents fill in the data according to their real condition, bias might happen. Third, random sampling is applied in selecting respondents. Considering possible differences in the different characteristics of the respondents, further research covering a different population of students might enrich the analysis. Further study about the prolonged effect to learning performance should also be conducted to build the right strategy in dealing with this pandemic.

CONCLUSION

From this study, an overview of the issues related to COVID 19 and the condition of leaning from home among Indonesian students was obtained. Despite its limitations, this present study is the first study observing the well-being of university students during COVID-19 and the learning-from-home period. As stated by Morse [51], "Sophisticated surveillance with clinical, diagnostic and epidemiological components on an international scale will be required to make a plausible prediction about future epidemics and to take corrective action before a disaster actually occurs □" Therefore, further study in observing the well-being of university students in other countries will enrich the analysis as well. Studies in other than student respondents are also important to get more insight into the community. In addition, the result of this present study can be used as a basis for identifying and mitigating problems, and learning from failures and successes to improve both the current and future pandemic conditions.

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APPENDICE

Questionnaire of Risk Assessment Toward COVID-19 and Learning from Home

Construct	Items
Knowledge about COVID-19	1. Are these statements true? (True/False) a. COVID-19 virus main transmission is through the air. b. Exposure to the COVID-19 virus will spread rapidly with more severe symptoms in the elderly and those who have congenital diseases. c. COVID-19 main symptoms are fever, dry cough, and fatigue.
Preventive behavior of COVID-19	2. Within the last 1 month, did you apply these preventive actions? (Never/Sometimes/Often/Always) a. Covered mouth and nose with a tissue when coughing or sneezing. b. Washed hands frequently. c. Did not touch mouth, eyes, and nose with dirty hands. d. Did not spit on the ground. e. Avoid public places. f. Opened the window frequently for ventilation. g. Cleaned home and utensils using disinfectant. h. Wore a mask when going out. i. Ate nutritious food and got enough rest. j. Self-health monitoring. k. Social/physical distancing.

Questionnaire (continued)

Construct	Items
Perceived crisis management by government	3. Opinion about the information given by government authorities regarding COVID-19. - Accurate - Clear - Timely - Trustworthy 4. Opinion regarding government's policy to apply massive social distancing. - Agree - Disagree - Do not know
Perceived likelihood of contracting COVID-19	5. Based on your perception, how likely are you contracting COVID-19? - Very likely - Likely - Unlikely - Very Unlikely - Do not know
Anxiety (General Anxiety Disorder/GAD)	6. Within the past 1 month, how often do you feel each of these statements? (Never/Sometimes/Often/Always) a. Feeling nervous, anxious, or on edge. b. Not being able to stop or control worrying. c. Worrying too much about different things. d. Trouble relaxing. e. Being so restless that it's hard to sit still. f. Becoming easily annoyed or irritable. g. Feeling afraid as if something awful might happen.
Ergonomics of learning from home	7. Learning position. - Using a desktop on the desk. - Using a laptop on the desk. - Using a laptop while lying. - Using a laptop on the floor or lap. 8. If the answer to the first question is "using a desktop on the desk", which principles below were applied? - Raise the top of your monitor to eye level or below. - Screen distance should be an arm's length away. - Rest elbows on armrests. - Maintain neutral wrists and forearms parallel to ground. - Leave empty space between thighs and desk surface to allow movement. - Use padding to rest the back. 9. If the answer to the first question is "using a desktop on the desk", which principles below were applied? - Raise the monitor to eye level. - Use separate mouse. - Use separate keyboard. - Use padding to rest the back. 10. Apply micro break every 30 minutes, for at least 10 seconds. - Yes - No 11. Drink frequently to stay Hydrated. - Yes - No 12. Apply 20:20:20 rules (Every 20 minutes of screen time, look away for ≥ 20 second at something ≥ 20 feet away). - Yes - No
Musculoskeletal symptoms	13. Within the last 1 month, do you feel any problems in these parts of the body? (Yes/No) a. Neck b. Shoulders (Left/Right/Both)

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Questionnaire (continued)

Construct	Items
Musculoskeletal symptoms (cont.)	c. Elbows (Left/Right/Both) d. Upper back e. Lower back f. Hip or thighs g. Knees
Psychosocial aspects - Job/Social support	12. While doing online learning, how often did each of these happen? (Never/Sometimes/Often/Always) a. I can ask my friends for help if necessary. b. I feel appreciated by my friends. c. I can ask my lecturers for help if necessary. d. I feel appreciated by my lecturers.
- Job demand - Job control	15. How appropriate are these statements based on your experiences? (1 = Strongly inappropriate, 5 = Strongly appropriate) a. I use all of my skills and abilities while learning from home. b. I feel my academic performance is maintained while learning from home. c. I feel happy while learning from home. d. I feel comfortable even though I learn from home.
Complaints regarding online learning	16. Which complaints have you experienced during online learning? a. Irregular learning hours. b. More tiring. c. Difficulty in concentrating. d. Lots of distractions. e. Disruption or difficulty accessing the internet. f. Changes in social life. g. Other complaints, please specify.
Exercise routine	17. During the past 1 month, how much time have you spent exercising or doing physical activities in a week? − Less than 30 minutes. − 30-75 minutes. − 75-150 minutes. − More than 150 minutes.