

ORIGINAL ARTICLE

Barriers and Motivators of Adherence Among University Students to Social Distancing Recommendations During Covid-19

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ABSTRACT

Introduction: Young adults have been identified to potentially have a low compliance rate with public health measures aimed at curbing the spread of the coronavirus disease 2019 (COVID-19). It is thus, critical to recognize barriers and motivators of social distancing adherence among this population to inform of ongoing and future public health initiatives. Therefore, this study aims to determine the level of the mental health status, barriers and motivators of adherence to social distancing measuring among university students. **Methods:** A cross-sectional, online survey-based research was conducted. A total of 142 undergraduate students completed the questionnaire. A questionnaire was taken from the Wisconsin residents' beliefs, attitudes, feelings, and self-reported behaviors related to social distancing and COVID-19. Data were statistically analyzed using the Statistical Package for Social Sciences. **Results:** Of the 142 respondents, 22.5% reported moderate stress, 33% reported severe anxiety, and 46.5% reported moderate symptoms of depression. There was significant effect on attitudes and belief towards the barriers in compliance towards social distance among the university difference. In contrast, no significance was shown in possible reinforcement in keeping the social distancing among the students. **Conclusion:** The attitude and belief factors should be considered when healthcare policies are designed to uphold social distancing, especially among young adults. *Malaysian Journal of Medicine and Health Sciences* (2022) 18(8):125-131. doi:10.47836/mjmhs18.8.18

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INTRODUCTION

A novel Betacoronavirus was briefly labelled as the 2019 novel coronavirus (2019-nCoV) and subsequently officially renamed by the International Committee on Virus Taxonomy (ICTV) as the extreme acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (1). The pathogenic coronavirus comes from mammals and birds and causes a minor upper respiratory tract infection in humans. Occasionally, the virus spreads to a wider human population and can cause a more extreme respiratory disorder (2). Fever, cold, cough, bone pain and breathing difficulties are the most common signs of this viral infection and eventually progresses to pneumonia (3).

Due to the recent outbreak of the novel coronavirus,

COVID-19, several measures have been vastly introduced. These measures include social distancing (physical distancing), self-isolation, 14-day quarantine and lockdowns. Countries around the world adopted these measures to restrict human movement and thus impede the spread of this highly transmissible disease. Malaysia has also become accustomed to these terms. The Movement Control Order (MCO) and social distancing are in fact critical means to break the cycle and reduce the risk of infection. According to the World Health Organisation (WHO, 2020), social distancing is maintaining at least a 1 meter distance between one person and another. This particular measure effects the economy, businesses, employees needing to work from home and educational institutes. Due to the pandemic, most if not all workers experienced work from home (WFH) or students online learning. Hence online learning had become one of the crucial strategy for the government in dealing the Covid-19 sporadic while keeping the education among the students. However, this current situation provides unique insight into how well working or studying from home works,

and may play a significant effects on social activities or engagement. The cooperation of the community at large is required during this situation to help the government and health care practitioners manage the infectious COVID-19 outbreak in Malaysia.

However, the propagation of misinformation can have significant psychological implications towards vulnerable populations. Certain groups of people have become upset due to the rapid circulation of fake news and rumours through social media about the outbreak (2,4). Additionally, the lock-down has led to uncertainty, anxiety, and apprehension among the general public.

As selected activities had to be allowed by the government and others in a progressive manner depending on the number of cases, other issues remained to be addressed. A study revealed that the appeal from governments, doctors, the police, and other stakeholders of the society to the public, to avoid gatherings had been ignored (2). This was evident in selected groups of people on the social distancing enforcements. The ignorance was mainly due to attitude. Furthermore, social distancing had psychological impacts and caused behavioural changes. Previously, an isolation has reduced social support, created the feeling of loneliness and subsequently increased mental health issues mainly psychological distress affected among individuals between 18 and 30 years of age (5). Considerably higher scores in the younger population may be associated with the high use of social media and a high load of information gathered from the social platforms. In addition, a lot of daily tasks have become remote. The main examples are online meetings during teleworking, academic online classes, and online schooling. These had led to life-style changes in communities that comparatively affect socio-psychological and behaviour implications.

On another hand, certain individuals continued with their social and travel activities while disobeying advisories from the authorities. These actions created a risk to fail in breaking the cycle of infection. It is thus crucial to gauge the compliance among young adults towards the measures taken to ensure public safety and health. In this light, a survey among university students was conducted to evaluate the compliance of this population during and after social distancing. The goal of this survey is to establish constructive and efficient in solving strategies, as encouraging the young adult especially to comply towards social distancing along with government effort controlling sporadic of the COVID-19. This is to obtain quantitative data of individuals who comply with guidelines on social distancing. Under the current circumstances, an online survey was deemed as an effective method of evaluation on the barriers and motivators of university students' compliance towards social distancing and their current mental health burden to cope with this changing of the new norm.

Although various studies have been conducted on social distancing, the aetiology of non-compliance with social distancing among Malaysians remains unclear. Specifically, the factors influencing social distancing among university students in Malaysia, have yet to be completely verified. The present study may produce new knowledge on a population's psycho-social status. The current study intends to focus on university students because this group express greatest concerns about attitudes, disposable income, and employment impacts of the COVID-19 crisis. Also the young adults reported to less coping with the social distancing orders as compared to older adult (32). The self-motivation theory application on social distancing could be significantly important, where the elements of motivators, barriers, and levels of social distancing intentions by college students seem vital to be addressed. It is because these elements play an integral role in determining a society's readiness to accept behavioural change measures from health authorities.

Several studies have highlighted that the feeling of stress and anxiety are major factors that affect the livelihood and attitudes or behavioural issues of university students (6-8). During the pandemic, social distancing led to heightened feelings of anxiety and depression. These experiences often have a greater impact on students from poor income families. Data have shown that increased economic pressure was a significant factor in students experiencing on anxiety level (6, 8). Another study found out that a high number of university students showed no to less symptoms of anxiety for those who stayed with their parents as compared to students who lived alone Cao et al. (2020) (7). Therefore, current study needs to explore whether there is any significant difference for those students who living alone, and how could it be.

The anxiety and paranoia that followed the COVID-19 pandemic may have catastrophic effects and lead to a negative psychological and social impact on people's mental health (9-11). Furthermore, limited information are available on the determinants of social distancing among university students in Malaysia. Belief, behaviour, feelings and self-reported actions in relation to social distancing and COVID-19 can be significant determinants. Thus, to design a successful campaign or guidelines, it is important to gain in depth information to allow university students in Malaysia to intensify their role in social distancing.

A better understanding of depression and stress as a mental health illness among university students may help reduce the impact of the COVID-19 pandemic. Thus, this project also aims to identify the possibilities of encouragement and motivation in fostering long-term adherence towards these new norms. This might help university students to create better awareness on the benefits of practicing social distancing. This is in line with Malaysia's current mission and vision, which is to

lead a national effort to improve public safety through raising awareness on the impact of COVID-19.

MATERIALS AND METHODS

A cross sectional survey was selected, with a quantitative research method to emphasize the objective measurement and data analysis. This is to determine the effects of the length of social distancing on the attitude and behaviour of university students. The deductive approach focused on the hypotheses and survey instruments' adaptation of the measures developed in a study on the Wisconsin residents' beliefs, attitude, feelings, and self-reported behaviour related to social distancing and COVID-19 (12). Four domains are attached to this questionnaire with a subtopic in each domain. The domains include 1) demographics, which surveyed participants' socio-demographic information, including gender, age, university name, field of study, highest level of education, race and nationality; 2) knowledge about COVID-19; 3) effects on psychological aspects; 4) self-reported behaviour towards barrier and motivators. The survey was offered in the English language in consideration of the target participants being university students who had most likely met the English requirements of their respective courses. Most questions were of one-choice, brief and easy to answer. The survey took 10 min on average to be completed.

To measure the knowledge on COVID-19, 14 items were adapted from previous research (12). These items include the participant's knowledge about practicing social distancing (items 1-8) and clinical presentations and transmission routes (9-14). A five-point Linkert scale of multiple choice was to measure the expression of agreement. Principle outcomes of the level of depression, anxiety and stress were measured by scale scores of depressions, anxiety and stress symptoms (DASS), respectively. The DASS scale consists of 21 items in total and the score was divided into five categories: normal, mild, moderate, severe and extremely severe. The validity of entire scale was 0.89, while the reliability coefficient scores were 0.99. To measure behaviour towards COVID-19, surveyed participants were asked about the level of sedentary behaviour during the week of social distancing and the reliability seem to be excellent. However, a low validity was recorded compared to the accelerometers (13).

The sampled population in this research were students of UiTM, Puncak Alam campus. Recruitment of the students (n=150) occurred through a snowball procedure, whereby the link to the survey was posted on social media platforms through personal and professional accounts. Readers were asked to complete the survey and share the link to their group of acquaintance. Criteria for inclusion were: (1) between 18-30 years of age and in their 1st year of Diploma studies, (2) must be a University Teknologi Mara (UiTM) Puncak Alam

student, (3) agree to participate in this study through a consent form, (4) can understand and read in English. Exclusion criteria were (1) postgraduate students, (2) had resigned as a respondent.

Data analysis was performed using the Statistical Package for Social Sciences (SPSS), version 27, in which $p < 0.05$ was accepted as a significant change. Descriptive analysis was used in calculating frequencies and percentages to determine the characteristics of each variable. Based on the normality test, the parametric independent T-test and One-Way ANOVA test were used.

This research was conducted after obtaining research approval and permission from the UiTM Research Ethics Committee by considering the principles of research ethics and participant confidentiality. Approval was given in the form of a research permit recommendation with the approval code 600-TNCPI (5/1/6).

RESULT

The survey link was made available to 150 pre-screened participants. Of this number, 142 respondents matched the inclusion criteria and were eligible for analysis. Respondents were mostly female participants, at 124 (87.3%), while males had only 18 respondents (12.7%). The average age of respondents was ≤ 23 , with average total percentage for both age groups. Most participants were from the Matriculation and Diploma level (73.9%), and from the health sciences courses (83.1%), as showed in (Table I).

Table I: Sociodemographic Characteristics of respondents and self-reported social distancing (n = 142)

	Mean (SD)	Median	No. (%)
Age (y)	1.54 (0.501)	2.00	
≥ 22			65 (45.8%)
≤ 23			77 (54.2%)
Gender	1.89 (0.319)	2.00	
Male			18 (12.7%)
Female			124 (87.3%)
Year of study	1.54 (0.500)	2.00	
<year 4			65 (45.8%)
Year 4			77 (54.2%)
Field of study	1.17 (0.378)	1.00	
Health sciences			118 (83.1%)
Others			24 (16.9%)
Level of education	1.74 (0.443)	2.00	
Degree level			37 (26.1%)
Diploma, Matric			105 (73.9%)
Ethnicity	1.07 (0.258)	1.00	
Malay			132 (93.0%)
Others			10 (7.0%)

Data is presented as mean \pm standard deviation.; %=percentage

Percentage of the level of depression, anxiety, and stress among respondents

In term of psychological issues that includes depression, anxiety, and stress level among the respondents. We had provides a series of questionnaire required that required respondents to give their information on stress, anxiety and depression level during the study period. Based on the surveys (see Figure I), for domain “depression”, about 46.5% reported moderately depressed. While, about 54.9% reported as extremely severe on “anxiety” and 23.2% reported as extremely severe on “stress” domain. From the result shown in bar chart, we can conclude that more than half of the university students having a conflict of their feelings that might leads to future behavioral changes, attitude problems and psychological distress.

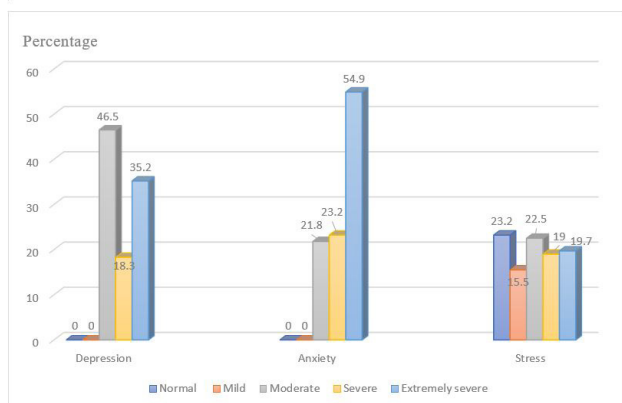


Figure I: Percentage of the level of depression, anxiety, and stress among respondents (n = 142)

Barriers that Influenced Social Distancing

Several factors that influenced compliance with social distancing were related to barriers. The responses were “not knowing how to keep busy” (66.2%), “not knowing how to stay connected” (40.1%), “social distancing worsening mental health” (43.6%) and believing that “most people are overreacting” (40.8%). This data is shown in Figure II.

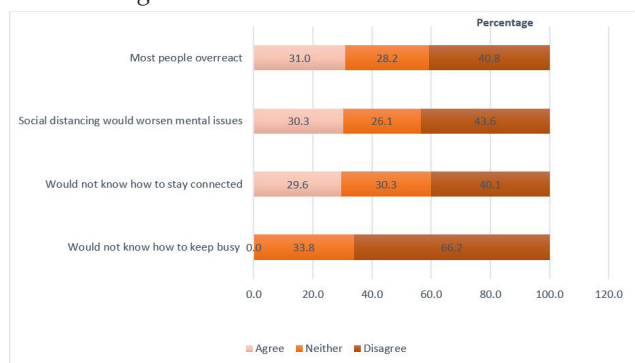


Figure II: The percentage the social distancing relatedness to barriers

Motivator that Influenced Social Distancing

Participants who got motivated during social distancing enforcements agreed to follow orders due to, “caring about other” (93%), “helping their families and public health” (92.3), “helping older family members” (91.5%),

concerns about “health consequences” (90.1%) and “high infection risk” (85.2%), as shown in Figure III.

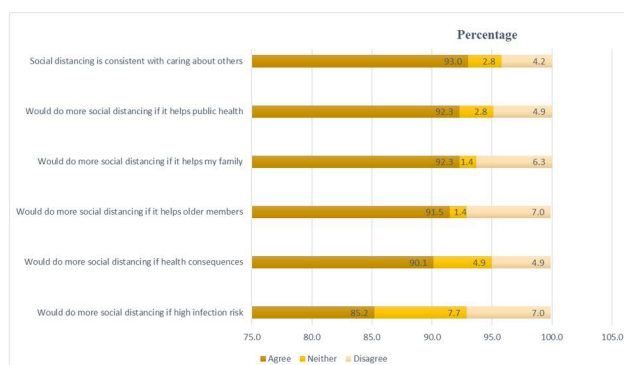


Figure III: The motivators: Message likely to lead to behavioral changes

Comparing gender with difference types of psychological issues

The association between gender and psychological issues related to complying to certain measures during the pandemic, was analyzed from the 142 participants (Tables II). In this study, there are significant differences were found between genders for the depression, anxiety and stress at p-value <0.01.

Table II: Comparing gender with difference types of psychological issues (n=142)

Variables	Male (n= 18)			Female (n= 124)			t(p)
	Mean	SD	Range	Mean	SD	Range	
De-pression	4.2	3.4	36	8.10	8.422	42	23.92* (<0.001)
Anxi-ety	5.0	3.3	38	7.78	7.412	42	23.01* (<0.001)
Stress	7.4	3.7	36	13.27	8.847	42	39.74* (<0.001)
Total scale	16.5	9.1	104	29.15	9.72	126	63.28* (<0.001)

Scores on the DASS-21 are multiplied by 2 to calculate the final subscale scores, producing a maximum of 42 points. *p< 0.01.

DISCUSSION

This study aimed to investigate the psychological health level, barriers and possibilities of encouragement in adapting long-term adherence towards this new norm among the university students. Based on the surveys, it seemed that university students in Puncak Alam were very mindful of the importance of compliance with social distancing during the COVID-19 pandemic. More than half of the university students had already participated in social distancing, and only 2.8 percent did not comply when asked about self-reported social distancing. This is further supported by Xiao, Shu, Li, et., al., (2020), whereby over 90% of the students complied with social distancing and successful protective steps such as constantly wearing masks when in public,

washing hands with water on a daily basis, avoiding needless rules, and keeping their room clean and ventilated (15). The perception of university students in compliance with social distancing during COVID-19 showed a positive outcome (14,15).

Knowledge towards Social Distancing

The public's loyalty towards public health measures is heavily influenced by their degree of awareness and information about the pandemic. Our findings on the respondent's knowledge towards social distancing shows that 95.8% of the students believed that social distancing can effectively prevent further transmission of the virus. Additionally, 91.5% agreed that effected people would experience negative consequences in social, financial or employment. Half of the respondents (50%) believed people are already getting infected with symptoms. Meanwhile, 23% of respondents still lacked knowledge related to the virus. This result was aligned with recent findings, which stated that the knowledge on the transmission, incubation period and symptoms of COVID-19 bring about good knowledge (99%, 91.7%, 93.2% and 89.51%. respectively) (16-19).

Sufficient knowledge on COVID-19 transmission and symptoms encouraged the public to take further precautionary measures including social distancing, improved personal hygiene and use of face mask. However, when compared to knowledge on the incubation time and accessible treatments, students studying public health were less educated about mortality and susceptibility. Moreover, less than half (43.7%) of medical students had a firm understanding of the pandemic's situation (15).

Psychological issues (Stress, Anxiety and Depression) related to Social Distancing

The first MCO in 2020 was shown to be beneficial in preventing the spread of COVID-19 in Malaysia, however, data is not available on how the lockdown influenced the psychological aspect of university students. Our results show that, 54.9% of students reported extremely severe anxiety symptoms, while 35.2%, and 19.7% had depression and stress symptoms, respectively. These results are supported by a research done in China. The study found that stress, anxiety, and depression among the general public had a higher level of psychological effect in the early stages of the pandemic. This suggest that university students experienced more psychological effects (20).

Almost 33.28% and 46.92% of students reported mild to extremely severe anxiety and depression levels (21). The disruption of educational activities as a result of the lockdowns may have caused an increased stress in university students and this uncertainty over academic progression may be a source of anxiety for young minds. Constant worries about educational delays and the impact of the epidemic on their academic were

positively connected with anxiety symptoms (2,7). Undergraduate students in the first year of their studies had significantly higher depression and stress rating, rather than fourth and sixth year students (including solely medical students) (22).

A study had proven that unnecessary stress, anger, resentment and anxiety among Malaysian university students were due to many educators failing to see that students are experiencing complex emotions as a result of the COVID-19, lockdowns, having to adjust to distant learning and being secluded from their classmates (23). However, this finding is in contrast to recent studies which reported that more than 70% of the students had no mental health issues such as depression, anxiety or stress during the challenging times of the pandemic (24). This data is supported by a report by Mohd et al., (2021), which stated that the majority of students experienced normal level of stress symptoms.

Barriers Towards Compliance in Social Distancing

Based on this study, majority of the respondents reported that "not knowing how to keep busy" is the most answered in the survey question. In the study Coroiu et al., (2020) reported that, feeling of having responsibilities in running errands to buy groceries, socializing with people to stay connected and not believe in government orders by seeing peoples on the street are probably strong set of barriers to adherence in social distancing (32). Since the COVID-19 hit the world, the students need to start online distant learning to avoid physical contact while keeping their education in par. From the surveys, 31% of the respondents had high emotional and behavior intensity while 29.6% of others had difficulty to stay connected. The mixed feelings in adjusting to new norms, especially when adapting to online learning was also a barrier for students to comply with current measures. The most common barriers found in online learning were difficulty to changing learning styles, inadequate communication, or a lack of clear directives from instructors. This finding was supported by Baticulon et al., (2021), which stated that it was more difficult to study topics on their own than it was to learn topics that lecturers had previously presented in a lecture (6). These had impacted them intellectually, mentally, and financially during this predicament (26). Thus, the medical students who had previously spent less hours studying online were less likely to cooperate that they could cope, and many claimed to having a lack of self-discipline and motivation to study.

Motivators and Behavioral Changes to Social Distancing

Motivation is an important element to successful social distancing among students. Almost 93% of respondents indicated that they are concerned toward others, which bring them to engage more in social distancing and this behavior shows care towards the safety of others. Meanwhile, they agree with a score of almost 90% that this practice can help others (public health, family

and the elderly). Supported by a recent finding, it was reported that engaging in social distancing for prosocial reasons, such as recognizing that social distancing is a social obligation and assists in the prevention of illness in others (28). In order to use this behavior as a successful behavioral intervention, it will be necessary to increase perceptions of the practice's efficacy (29). However, current studies have reported that there is no association between prior exposure to the virus and self-reported practice of social distancing (30,31).

Limitation And Future Research

This study has a number of limitations. Initially it should be noted that this was a small sample size, which was conducted in one university, although the students originated from all over the country. Thus the results might not be generalisable. Secondly, researchers gathered data via an online platform in which a Google Form link was emailed to university students and data was obtained from a variety of electronic sources. During this process, queries were raised, indicating that students did not understand certain aspects of the study. Finally, we did not expressly seek information on the socioeconomic status during data collection. This was despite the fact that socioeconomic status is likely to be a major factor influencing students' psychological well-being during the COVID-19 pandemic.

CONCLUSION

In response to the continuing COVID-19 outbreak, this research explored the intention of UiTM (Puncak Alam campus) students to socially isolate themselves. This study discovered the university student's perception related with psychological issue, barrier and motivators towards social distancing, throughout the health crisis. The finding found that social distancing had a psychological impact towards majority of the students who had suffered from anxiety, stress and depression. Furthermore, this study supports that barrier was one of main factors that contribute towards psychological problems. The student's motivation and its relationship with behavioral intention to continue practicing social distancing was also measured. It was revealed that most students was motivated if the practice had an impact on others. It was postulated that knowledge on social distancing due to the outbreak encouraged students to feel this way. With more precautionary measures that could be applied by the government and the university authority, more data based on the students could help provide sustainable guidelines while accommodating the young adults of the country.

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REFERENCES

1. Lupia T, Scabini S, Pinna SM, Perri G Di, Rosa FG De, Corcione S. Journal of Global Antimicrobial Resistance 2019 novel coronavirus (2019-nCoV) outbreak : A new challenge. 2020;21:22-27.
2. Roy D, Tripathy S, Kumar S, Sharma N, Kumar S, Kaushal V. Study of knowledge , attitude , anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic. 2020;51(April).
3. Haleem A. Current Medicine Research and Practice Effects of COVID-19 pandemic in daily life. 2020;(xxxx):10-11.
4. Shaw R, Kim Y, Hua J. Governance, technology and citizen behavior in pandemic: Lessons from COVID-19 in East Asia. Prog Disaster Sci. 2020;6:100090. doi:10.1016/j.pdisas.2020.100090
5. Qiu J, Shen B, Zhao M, Wang Z, Xie B, Xu Y. A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic : implications and policy recommendations. Published online 2020:19-21. doi:10.1136/gpsych-2020-100213
6. Baticulon RE, Alberto NRI, Baron MBC, et al. Barriers to online learning in the time of COVID-19 : A national survey of medical students in the Philippines. Published online 2020:1-19.
7. Cao W, Fang Z, Hou G, et al. The psychological impact of the COVID-19 epidemic on college students in China. Psychiatry Res. 2020;287(March):112934. doi:10.1016/j.psychres.2020.112934
8. Duraku ZL, Hoxha L. The impact of COVID-19 on higher education: A study of interaction among students' mental health, attitudes toward online learning, study skills, and changes in students' life. 2020;(May).
9. Sallam M, Dababseh D, Yaseen A, et al. Conspiracy Beliefs Are Associated with Lower Knowledge and Higher Anxiety Levels Regarding COVID-19 among Students at the University of Jordan. Int J Environ Res Public Health. 2020;17(14). doi:10.3390/ijerph17144915
10. Kamal AA, Shaipullah NM, Truna L, Sabri M, Junaini SN. Transitioning to online learning during COVID-19 Pandemic: Case study of a Pre-University Centre in Malaysia. Int J Adv Comput Sci Appl. 2020;11(6):217-223. doi:10.14569/IJACSA.2020.0110628
11. Weinstein N, Ryan RM. When Helping Helps: Autonomous Motivation for Prosocial Behavior and Its Influence on Well-Being for the Helper and Recipient. J Pers Soc Psychol. 2010;98(2):222-244. doi:10.1037/a0016984
12. Brauer M, Brossard D, Brown LD, Ho P, Schwakopf J. COVID-19 Coronavirus and Social Distancing Survey Results. Published online 2020.

13. Rosenberg DE, Norman GJ, Wagner N, Patrick K, Calfas KJ, Sallis JF. Reliability and validity of the sedentary behavior questionnaire (SBQ) for adults. *J Phys Act Heal.* 2010;7(6):697-705. doi:10.1123/jpah.7.6.697
14. Barrett C. Knowledge , socio-cognitive perceptions and the practice of hand hygiene and social distancing during the COVID-19 pandemic : a cross-sectional study of UK university students. Published online 2021:1-18.
15. Xiao H, Shu W, Li M, et al. Social distancing among medical students during the 2019 coronavirus disease pandemic in china: Disease awareness, anxiety disorder, depression, and behavioral activities. *Int J Environ Res Public Health.* 2020;17(14):1-13. doi:10.3390/ijerph17145047
16. Yanti B, Mulyadi E, Wahiduddin, et al. Community Knowledge , Attitudes , And Behavior Towards Social Distancing Policy As A Means Of Preventing Transmiss ... *J Adm Kesehatan Indones.* 2020;8(social issue):4-14. doi:10.20473/jaki.v8i2.2020.4-14
17. Christopher R, Margaret R, Dauda MAD, Saleh A, Ene P. Knowledge , Attitudes and Practices Towards COVID - 19 : An Epidemiological Survey in North - Central Nigeria. *J Community Health.* 2021;46(3):457-470. doi:10.1007/s10900-020-00881-1
18. Giao H, Thi N, Han N, et al. Knowledge and attitude toward COVID-19 among healthcare workers at District 2 Hospital , Ho Chi Minh City. 2020;13(March):260-265. doi:10.4103/1995-7645.280396
19. Saqlain M, Munir MM, Rehman SU, et al. Knowledge , attitude , practice and perceived barriers among healthcare workers regarding COVID-19 : a cross- sectional survey from Pakistan. *J Hosp Infect.* 2020;105(3):419-423. doi:10.1016/j.jhin.2020.05.007
20. Wang C, Pan R, Wan X, et al. Immediate Psychological Responses and Associated Factors during the Initial Stage of the 2019 Coronavirus Disease (COVID-19) Epidemic among the General Population in China. Published online 2019.
21. Hasan A, Sadia M, Hossain S, Hasan MT, Uddin H, Sikder T. Journal of Affective Disorders The impact of COVID-19 pandemic on mental health & wellbeing among home-quarantined Bangladeshi students : A cross-sectional pilot study. *J Affect Disord.* 2020;277(August):121-128. doi:10.1016/j.jad.2020.07.135
22. Odriozola-gonzález P, Planchuelo-gymez Б, Jesús M, Luis-garcía R De. Psychological effects of the COVID-19 outbreak and lockdown among students and workers of a Spanish university. *Psychiatry Res.* 2020;290(May):113108. doi:10.1016/j.psychres.2020.113108
23. Sundarasan S, Chinna K, Kamaludin K, Nurunnabi M. Psychological Impact of COVID-19 and Lockdown among University Students in Malaysia : Implications and Policy Recommendations. *Int J Environ Res Public Heal Artic.* 2020;17,6206(2020):1-13.
24. Rahman M, Ang AL, Lakshmi N, Chakraverty KH, Shafiqah D. Psychological Impact of Covid-19 Pandemic on Mental Health Among Medical Students in Malaysia. 2021;17(April):119-128.
25. Baticulon RE, Jenkin J, Nicole S, et al. Barriers to Online Learning in the Time of COVID - 19 : A National Survey of Medical Students in the Philippines. *Med Sci Educ.* Published online 2021:615-626. doi:10.1007/s40670-021-01231-z
26. Musingafi MCC, Mapuranga B, Chiwanza K, Zebon S. Challenges for Open and Distance learning (ODL) Students : Experiences from Students of the Zimbabwe Open University. 2015;6(18):59-67.
27. Blake H, Knight H, Jia R, et al. Students ' Views towards Sars-Cov-2 Mass Asymptomatic Testing , Social Distancing and Self-Isolation in a University Setting during the COVID-19 Pandemic : A Qualitative Study. Published online 2021.
28. Wilson JM, Oosterhoff B, Ph D, et al. Adolescents ' Motivations to Engage in Social Distancing During the COVID-19 Pandemic : Associations With Mental and Social Health Adolescents ' Motivations to Engage in Social Distancing During the COVID-19 Pandemic : Associations With Mental and Social Health. *J Adolesc Heal.* 2020;(May). doi:10.1016/j.jadohealth.2020.05.004
29. Williams L, Rasmussen S, Kleczkowski A, Cairns N. Protection motivation theory and social distancing behaviour in response to a simulated infectious disease epidemic. 2015;(May):37-41. doi:10.1080/13548506.2015.1028946
30. Frounfelker RL, Santavicca T, Li ZY, Miconi D, Venkatesh V, Rousseau C. COVID-19 Experiences and Social Distancing : Insights From the Theory of Planned Behavior. Published online 2021. doi:10.1177/08901171211020997
31. Broomell SB, Chapman GB, Downs JS. Psychological predictors of prevention behaviors during the COVID-19 pandemic. 6(2020):43-50.
32. Coroiu Id A, Moran C, Campbell T, Geller AC. Barriers and facilitators of adherence to social distancing recommendations during COVID-19 among a large international sample of adults. 2020; Available from: <https://doi.org/10.1371/journal.pone.0239795>