ORIGINAL ARTICLE

Perceived Stress, Causes of Stress and Coping Strategies among UniKL RCMP Undergraduate Students during COVID-19 Pandemic.

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Submitted:12/07/2022. Revised edition: 24/08/2022. Accepted: 10/09/2022. Published online: 01/11/2022

Abstract

Background: During the coronavirus disease (COVID-19) pandemic, people face many physical and social distancing consequences, which significantly affects students. University students have experienced emotional stress as a result of fulfil the university's increasing demands for assignments and tests, as well as and a variety of distractions during online classes. This study aims to identify perceived stress, causes of stress, and coping strategies among Universiti Kuala Lumpur Royal College of Medicine Perak (UniKL RCMP) students during the COVID-19 pandemic.
Methods: A total of 325 respondents participated in this cross-sectional study which was conducted by distributing online questionnaires through Google form via various platforms. Descriptive analysis was used to assess respondents' level of perceived stress and identify the causes of stress and coping strategies. Chi-square test was also used to identify the association between sociodemographic profiles with the level of perceived stress, causes of stress and respondents' coping strategies. P-value <0.05 was considered statistically significant.
Results: This study revealed that the majority of UniKL RCMP students experienced moderate levels of stress during the COVID-19 pandemic. Academic stressors (55.6%) and worry about the future (54.2%) were among the major stressors. Students used multiple coping strategies, including religion (84.6%) and positive reframing (84%) as the most common strategy used.
Conclusion: Findings from this study have proved that students had a moderate stress level during the pandemic. This study will provide valuable insight to lecturers, parents, and counsellors to control these potential factors to overcome the high level of stress experienced by students.

Keywords: *COVID-19, Stress, Coping strategies.*

Introduction

The newly infectious disease known as Coronavirus-19 (COVID-19) infection is currently spreading all over the world. Dr. Tedros Adhanom Ghebreyesus (2020), the Director-General of the World Health Organisation (WHO), confirmed that the COVID-19 outbreak had affected 213 countries worldwide. COVID-19 is a newly discovered viral infection triggered by a novel coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) mainly targeting the human respiratory tract.[1] This virus strain was first found in Wuhan, China in December 2019. Later in January 2020, COVID-19 was declared a public health emergency of international concern.[2] The Malaysian government has immediately taken measures to prevent the pandemic. A Movement Control Order (MCO) was announced on March 18, 2020, to enhance the Ministry of Health's efforts in keeping the viral infection under control. During the MCO period, public's movement into and out of a particular area was restricted, and they were encouraged to practise social distancing.[3] The effectiveness of these measures was proven in China when the country was able to control the pandemic by putting the infected patients under quarantine and imposing physical distancing on the citizens.[4]

In response to the MCO announced by the Malaysian government, Universiti Kuala Lumpur (UniKL) has established a special mitigation plan known as UniKL Beyond-C to overcome the challenges during the COVID-19 pandemic. All teaching and learning activities were conducted virtually using the UniKL Virtual Learning Environment (VLE) platform. The scheduled live classroom sessions were conducted in Microsoft TEAMS.[5] These new norms had dramatically altered students' behaviour and social interactions. Some students were under a lot of stress due to the sudden change in the norm of their usual study environment and a fear of getting infected, even though the Malaysian government has taken appropriate measures to curb the spread of COVID-19. Some of the measures include lockdowns, physical distancing, strict isolation, and online learning which in turn has affected students' psychology and anxiety levels.[3]

There are many ways to define stress. In general, stress can be well-defined in terms of pressure, opposing external forces, tension, or an emotional response.[6] Stress can be divided into two types, which are eustress and distress. The term "eustress" can be described as positive stress that inspires a person to continue to work. This kind of stress can improve the learning process and learning ability. In contrast, distress is negative stress related to extreme anxiety, pain, or sorrow. Distress must be avoided as it can negatively impact the students' emotional and learning process.[7] Students are subjected to various forms of stressors such as academic pressure with the need to maintain a good performance and environmental pressure.[8] An early study by Aktekin et al. in 2001[9] reported that the negative impacts of pandemics on students' psychological and behaviour can result in anxiety and acute depression. A review by Cao et al. in 2020[10] that studied the psychological impact of university students in China during the COVID-19 pandemic revealed that 21.3% out of 7143 students had mild stress, followed by 2.7% with moderate stress, and 0.9% with severe stress. Another study by Wang et al. in 2020[11] which was performed on 1210 university students from 194 cities in China revealed that 53.8% of students had severe to moderate stress, in which majority of them were female students.

Stress affects many individuals in critical circumstances, but everyone responded differently according to various coping strategies.[12] In a stressful situation, coping strategies including cognitive and behavioural efforts, can help to reduce and eliminate the pressure.[13] A study by Park and Adler in 2003[14] found out that appropriate and effective coping may buffer the effect of stressful circumstances on individuals' physical and mental health. People use different types of coping strategies to

overcome their stress. For example, Shankar et al. in 2014[15] found out that most premedical and undergraduate basic science medical students in a Caribbean Medical School mainly used active emotional and problem focused coping.

Special consideration should be given to public's mental health during COVID-19 outbreak. Pandemics are often associated with widespread fear which can obstruct infection control and results in depression, anxiety, and post-traumatic stress.[16] Previous health emergencies had shown that quarantine had psychological implications, including elevated stress levels and depression, especially in younger women. Although lockdown can slow the spread of COVID-19, it may negatively affect mental health.[17]

This study aims to assess the level of perceived stress, identify the causes of stress and coping strategies as well as investigate the association between sociodemographic profiles with level of perceived stress and coping strategies UniKL RCMP students during COVID-19 pandemic.

Materials and methods

This cross-sectional study was conducted among 325 undergraduates UniKL RCMP's students from various programmes such as Bachelor of Medicine and Bachelor of Surgery (MBBS), Bachelor in Nursing, Bachelor of Pharmacy, Bachelor of Sc. in Pharmaceutical Technology, Bachelor of Physiotherapy, Diploma in Nursing, Diploma in Pharmacy, Diploma in Physiotherapy, Diploma in Medical Imaging, and Foundation in Medical Sciences. The sample size for this study was calculated by using Raosoft calculator. Confidence interval was set at 95% with a margin error of 0.05 and response distribution of 50%. Convenience non-probability sampling technique was used to collect the sample for this study. Participants of this study were selected based on who met all the inclusion criteria; students of UniKL RCMP and students who were willing to participate in this study. The questionnaire comprised of four different sections. Section A consists of sociodemographic data of the respondents (age, gender, course and year of study). Section B consists of the Perceived Stress Scale (PSS) developed by Cohen, Kamarck & Mermelstein (1983)[18] with a slight modification to assess the level of stress of an individual. It consists of 10 items and each item scored on a 5-point Likert scale ranging from 0 (never) to 4 (very often). Section C was adapted and modified from a study by Sami, Redhwan, Mustafa & Krishna (2011)[19] to identify the causes of stress. This section consists of 10 items whereby each item scored on a 4-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree). Section D focused on the coping strategies of respondents by adapting and modifying the Brief Coping Orientation to Problems Experienced (COPE) scale developed by Carver (1997).[20] It consists of 9 items and the answer choices were based on how frequent each of these coping mechanisms were applied by the respondents. Every item scored on a 4-point Likert scale ranging from 1 (I have not been doing this at all) to 4 (I have been doing this a lot). Descriptive analysis was used to assess the level of perceived stress among UniKL RCMP's students and to identify the causes of stress and coping strategies during the COVID-19 pandemic. The data was summarised in frequency (n), percentage (%), and mean (±standard error). Chi-square test was used to identify the association between sociodemographic profiles with the level of perceived stress, causes of stress and coping strategies among UniKL RCMP students during the COVID-19 pandemic. P value < 0.05 was considered as statistically significant. All analyses were performed using SPSS.

Results

Majority of the students were in the age group between 21 to 23 years old (50.8%), followed by 18 to 20 years old (41.8%), 24 to 26 years old (6.8%) and 27 and above (0.6%). 226 (69.5%) female and 99 (30.5%) male students participated in this study. Majority of the students were from MBBS (60.6%), followed by Bachelor of

Pharmacy (25.5%), Diploma in Pharmacy (3.4%), Foundation in Medical Sciences (3.1%), Diploma in Nursing (1.8%), Bachelor in Nursing (1.5%), Bachelor of Sc. in Pharmaceutical Technology (1.5%), Diploma in Physiotherapy (0.9%), Diploma in Medical Imaging (0.9%) and Bachelor of Physiotherapy (0.6%) program. Apart from that, most of the students were in their first year (40.3%), followed by second-year students (27.7%), third-year students (25.5), fourth-year students (6.2%) and fifth-year students (0.3%).

As in table 1, it was found that out of 325 respondents, 266 (81.8%) had a moderate level of stress, followed by 38 (11.7%) with the low level of stress and the remaining 21 (6.5%) had high-stress level. The mean value of the total PSS scores was 19.14 ± 5.181. It was found that most of the students (55.6%) were stressed because of study while a smaller number of students (18.4%) were stressed because they had problems with their lecturer(s). The majority of the respondents had applied positive coping strategies with religious activity (84.6%) being the most used coping strategy. Other essential coping strategies were positive reframing (84%), active coping (80.6%), acceptance (76.9%), and seeking emotional support (66.8%). However, many students also attempted self-distraction (70.5%), blaming themselves (52.9%), denying something that has happened (26.5%) and venting their frustration/anger (22.7%) to relieve their stress.

There was a significant association between the level of perceived stress and two sociodemographic variables, which were age ($p = 0.000$) and gender ($p = 0.005$). The mean score of perceived stress level was significantly higher among respondents aged 27 years old and above ($M = 24$, $SD = 9.90$). With regards to gender differences, females ($M = 19.17$, $SD = 5.17$) had a significantly higher mean score of perceived stress level compared to males ($M = 19.06$, $SD = 5.24$). The mean score of perceived stress level was higher among students from Diploma of Pharmacy programme ($M = 22.64$, $SD = 5.61$). However, this was not found to be statistically significant ($p = 0.492$). In addition, the mean score of perceived stress level was higher among fifth-year students ($M = 22$, $SD = 0.00$). Nevertheless, this was also not found to be statistically significant ($p = 0.116$) (Refer Table 2).

There was a significant association between coping strategies and gender ($p = 0.029$). Male students ($M = 25.34$, $SD = 3.45$) had significantly higher utilisation of coping strategies compared to female students ($M = 24.91$, $SD = 3.60$). Nonetheless, age ($p = 0.425$), courses ($p = 0.087$) and year of study ($p = 0.488$) were found to have no significant association with the coping strategies (Refer Table 3).

Discussion

From our study, it was found that majority of UniKL RCMP's students experienced moderate to high levels of stress during the pandemic. This finding was similar to recent studies which had reported that students had moderate levels of perceived stress throughout the COVID-19 pandemic. For instance, Sheroun et al. in 2020[21] reported that the mean perceived stress score among Nursing students in Puna was 21.88 (4.30). Another study on perceived stress during COVID-19 pandemic through online survey which was performed on 2449 locals in 20 provinces of China found that students had the highest perceived stress level of 23.87 (6.18) as compared to other professions, and that stress posed a health risk to 48.66% of the respondents.[22] Son et al. in 2020[23] reported in their study that students with an average age of about 20.7 had a mean PSS score of 18.8 (4.9), showing moderate perceived stress during COVID-19 pandemic.

Age and gender were also reported to be the main determinants of perceived stress in the study. According to the statistics, female students were significantly more stressed than male students during the COVID-19 pandemic. A previous study by Al-Rabiaah et al. in 2020[24] have shown significant gender differences in the

psychological reaction to the epidemic. Similar studies by Li, Yao, & Luo (2020)[22] and Gonzalez, Gomez, MJ, & Garcia (2020)[25] had also supported this findings. Mirowsky & Ros in 2002[26] found that gender affects the assessment process of stressful experiences in ways that are consistent with male and female socialisation patterns.

The levels of stress also varied between students of different courses and the year of study. The students from Diploma of Physiotherapy reported a higher mean score of perceived stress level than the students from other courses. The fifth-year students reported to have higher mean score of perceived stress level than students from other year of study. This is because most of the final year students especially students from MBBS programme were subjected for clinical attachment at the hospital even during the pandemic. Hence, these students were particularly more vulnerable to the negative psychological impacts of the COVID-19 pandemic than the students from other years of study. In contrast, the study by Geng & Midford in 2015[27] have found out that the first-year students were exposed to higher stress than the students in the other years of study. However, these results were not comparable as the courses of the study were different from that in UniKL RCMP and the study was conducted before the pandemic.

Results from this study has concluded various sources of stress, with the majority of them claiming academics as the primary source. Majority of students reportedly had dealt with academic and/or psychological problems. Examinations and tests were the most stressful aspects of their academic life. Despite this, students value tests and exams as a norm for evaluation and assessment. Exams also motivate students to study while providing feedback to lecturers. Students who view tests/exams as a burden may face difficult situations, whilst those who view exams as beneficial may benefit them. Academics/exams have also been identified as a common source of stress among university students in a previous study by Shah et. al in 2010[28]. Worries about the future, low self-esteem, and hearing bad news were also important sources of stress among the university students.

UniKL RCMP students used a variety of coping strategies. The majority of them used positive coping, such as prayer (religious coping), positive reframing, active coping, acceptance, and seeking emotional support. Religion or praying as a way of coping stress is foreseeable, given that all students are Muslim. These findings were consistent with one Jordanian study on medical students.[29] Active coping, positive reframing, and emotional support have also been recognised as key coping strategies employed by Nepalese medical students.[30]

This study showed that the students responded to approach coping strategies (active coping, religious coping, positive reframing, planning, and acceptance) more frequently than they responded to avoidant methods (denial, self-blame, and alcohol or substance use). Nevertheless, we cannot overlook the reality that some students continue to engage in avoidant coping methods which are considered as potential risk factors for negative stress responses. Similar findings were reported in a previous study done by.[30] Another qualitative study conducted among Malaysian medical students discovered that the most frequently used coping methods for stressful occasions were approach coping strategies.[19]

On top of that, findings from this study had found a significant higher utilisation of coping strategies among male students. However, males and females cope with stress differently according to previous studies. According to the majority of studies, women were more prone than males to adopt emotion-focused coping strategies.[31] Additionally, a recent study has discovered that women engage in more sobbing and help-seeking behaviours than men.[32] Furthermore, females used avoidant coping strategies more frequently than males in a study conducted by.[33] Another

study by Asberg, Bowers, Renk, & McKinney in 2008[34] discovered that social support was associated with adaptation in females but not with males. Males coped by taking risks and solving problems, but females dealt by employing emotion-focused approaches such as detaching themselves from the unpleasant event. A recent study by Daughtry & Paulk in 2006[35] examined gender differences in coping using qualitative rather than quantitative measures. Males and women both use a number of coping strategies, but women utilise a broader diversity of strategies but may be more inclined to seek help for their difficulties than men.

Conclusion

The findings of this study indicate that the respondents had a moderate level of stress throughout the COVID-19 pandemic. During the study, the students were exposed to a variety of stressors. Academic stress was identified as the primary source of stress for students at UniKL RCMP as they adapt to the new learning environments. To cope with the stress, they primarily adopted approach coping strategies instead of avoidant strategies. Approach coping is considered a more effective method of dealing with stress, whereas avoidant coping is regarded as a psychological risk factor for negative reactions to stressful life situations. Understanding the causes of students' stress and the coping mechanisms used by students enable lecturers, counsellors, and university administrators to monitor and control these factors to minimise students' level of stress. This study also emphasises the importance of examining students' experiences in times of emergencies and crises and developing a plan for online stress management programmes that may assist in reducing stress during a global pandemic. Additionally, more studies are needed to determine the pandemic's influence on students' mental health in the final phases of a health crisis.

Conflict of Interest

The authors declare no conflict of interest.

Table 1. Total scores of the Perceived Stress Scale (N = 325)

Perceived stress scale	Frequency (%)
Low stress (0 – 13)	38 (11.7%)
Moderate stress (14 – 26)	266 (81.8%)
High stress (27 – 40)	21 (6.5%)

Table 2. Association between socio-demographic profiles and perceived stress level

Socio-demographic characteristic	PSS Mean Score (SD)	Pearson Chi-Square (P-value)
N = 325		
Age groups		
18 – 20 y/o	19.44 (5.31)	
21 – 23 y/o	18.78 (5.15)	0.000
24 – 26 y/o	19.55 (4.15)	
27 and above	24.00 (9.90)	
Gender		
Male	19.06 (5.24)	0.005
Female	19.17 (5.17)	
Course		
MBBS	18.58 (5.22)	
Bachelor in Pharmacy	19.78 (4.76)	
Diploma in Pharmacy	22.64 (5.61)	
Foundation in Medical Sciences	18.10 (5.95)	
Diploma in Nursing	17.17 (2.64)	0.492
Bachelor in Nursing	21.80 (4.09)	
Bachelor in Pharmaceutical Technology	19.40 (4.22)	
Diploma in Physiotherapy	24.00 (6.92)	
Diploma in Medical Imaging	23.00 (8.54)	
Bachelor in Physiotherapy	18.50 (4.95)	
Year of study		
Year 1	19.35 (5.610	
Year 2	19.18 (4.63)	0.116
Year 3	19.12 (4.84)	
Year 4	17.50 (6.12)	
Year 5	22.00 (0.00)	

Table 3. Association between socio-demographic profiles and coping strategies

Socio-demographic characteristic	Mean Score (SD)	Pearson Chi-Square (P-value)
N = 325		
Age groups		
18 – 20 y/o	24.59 (3.38)	
21 – 23 y/o	25.30 (3.71)	0.425
24 – 26 y/o	25.77 (3.15)	
27 and above	26.50 (6.36)	
Gender		
Male	25.34 (3.45)	0.029
Female	24.91 (3.60)	
Course		
MBBS	24.73 (3.75)	
Bachelor in Pharmacy	25.92 (2.94)	
Diploma in Pharmacy	25.00 (4.03)	
Foundation in Medical Sciences	25.10 (2.03)	
Diploma in Nursing	26.33 (2.25)	0.087
Bachelor in Nursing	23.80 (3.90)	
Bachelor in Pharmaceutical Technology	26.40 (2.79)	
Diploma in Physiotherapy	21.67 (6.35)	
Diploma in Medical Imaging	21.00 (4.36)	
Bachelor in Physiotherapy	26.50 (0.71)	
Year of study		
Year 1	24.68 (3.29)	
Year 2	25.67 (3.77)	0.488
Year 3	24.93 (3.75)	
Year 4	25.00 (3.37)	
Year 5	27.00 (0.00)	

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