Coping with COVID-19 and movement control order (MCO): experiences of university students in Malaysia

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ABSTRACT

This study examined how university students in Malaysia coped with the psychological impact of the COVID-19 pandemic and restrictions on movement (also known as MCO). A total of 983 students participated in a survey conducted online between April 20 and May 24, 2020. The psychological impact was measured using Zung's Self-Rating Anxiety Scale (SAS). The students were assessed on the usage of adaptive (humanitarian and seeking social support) and maladaptive coping strategies (acceptance and mental disengagement). The results showed that the students used maladaptive coping strategies more than adaptive coping strategies to deal with anxiety caused by the pandemic and the effect of restriction of movement. Seeking social support and acceptance coping strategies were significantly associated with the level of anxiety. The student's gender, age, ethnicity, level and type of study, and living arrangement were associated with coping strategies. The students' selection of coping strategies mirrors typical Asian culture, that is, submissiveness. The study proposes several practical and professional suggestions to address students' mental health issues.

1. Introduction

COVID-19 is the pandemic of this millennium. Almost every country worldwide is battling to control the spread of this disease. Extreme measures taken by governments include quarantines, lockdowns, social isolation, and restrictions of movement. While these are recognized as effective control measures to reduce the spread of COVID-19, their psychological consequences are enormous [1, 2, 3].

Public health emergencies, such as the COVID-19 pandemic, affect one's psychological state in the short-term and mental health in the long-term [4]. Early studies on the psychological and mental health effects of the pandemic were conducted in the general population and on health care workers at the disease epicenter in China [3, 4, 5, 6]. Besides the public, students' mental health also deserves attention. A study in China two weeks after the start of the outbreak reported that 14.4% of youth exhibited post-traumatic stress disorders [4]. Students are very much concerned with the threat posed by the coronavirus on their life and health [7]. Students, who are exposed to social media more than other age groups, are continuously pounded with numerous impetuses that lead to depression and anxiety [7, 8]. The American Psychological Association (APA) defines anxiety as “an emotion characterized by feelings of tension, worried thoughts and physical changes” [9]. A study in a Spanish university reported that 50.43% of the surveyed participants showed moderate to severe psychological impact after the first week of their confinement [10]. Disruptions to face-to-face learning and transition to online distance education have also presented many challenges [11] and are potential causes of stress for students. Graduating and/or final year students worry about their future, career, and further study plans amid a global health crisis [12].

In Malaysia, as of March 15, 2020, there were 190 new confirmed COVID-19 cases, bringing the total number of infections to 428, making it...
worse affected in Southeast Asia\(^2\). This was the peak in the initial period of the pandemic in Malaysia\(^1\). On March 18, 2020, the Malaysian government introduced a movement control order (MCO) \(^{[13]}\). The borders were closed, economic activities came to a standstill, and all academic institutions were closed. The imposition of the MCO has stranded several thousands of students in their college residences \(^{[14]}\). Being separated from and the looming uncertainty of being reunited with their families are major sources of students’ stress and anxiety \(^{[15]}\). Even though the timely imposition of strict measures has helped contain the disease outbreak, there is major concern about the impact of the disease and the measures imposed on the social, psychological, and mental well-being of the population \(^{[16]}\).

The purpose of this study is to investigate the socio-psychological wellbeing and coping strategies used by university students during the COVID-19 pandemic in Malaysia. Comparison in the usage of coping strategies by demographic variables such as gender, age, level, and type of study is also examined. We believe that this study is not only timely but also insightful for the understanding of the coping strategies used by university students to deal with this unprecedented pandemic.

### 1.1. Coping mechanisms

Coping is defined as “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” \(^{[17]}\). Coping strategies are generally classified into two: adaptive and maladaptive strategies. Adaptive coping strategies include actions and behaviors of active coping, problem solving, and seeking social support, including emotional support to reduce stress \(^{[18]}\). Adaptive coping creates buffers to reduce stress, promote psychological well-being, and improve general health outcomes \(^{[19]}\). Adaptive coping is enacted when an individual believes they have control over a stressful situation \(^{[20]}\). Maladaptive coping strategies include avoidance, self-blaming, and substance use, which are considered maladaptive and are more prevalent among young adults \(^{[21, 22]}\). Rather than dealing with stress, they prefer to avoid the issue and its source as they have little control over dealing with the stressor \(^{[23]}\). In addition, maladaptive coping through avoidance only temporarily dispels the stress factor which later will snowball and become more complex at a later stage \(^{[24]}\). Maladaptive coping tends to lead to more psychological distress and depressive symptoms \(^{[20]}\), such as anxiety in young adults \(^{[21]}\).

Maladaptive coping has been associated with low levels of life satisfaction and high levels of negative thinking \(^{[25]}\). The information processing model of anxiety \(^{[25]}\) indicates that in a stressful situation, negative thinkers tend to exhibit a fight-or-flight response, a typical response of maladaptive coping. Studies also suggest that maladaptive coping and anxiety may be associated with sex, age, and level of studies among students \(^{[21, 26]}\). Females are more likely to use maladaptive coping strategies \(^{[21, 26, 27]}\) aimed at changing their emotional responses to the stressor \(^{[27]}\). Additionally, as females think negatively more than males increases the tendency towards maladaptive coping \(^{[21]}\).

Studies on coping strategies indicate that the effectiveness of coping actions is context specific \(^{[20]}\). Coping strategies used to deal with common life stressors may not be the same as those used during a health crisis (i.e. a pandemic). People tend to engage in maladaptive coping in a crisis situation \(^{[28]}\). Main, Zhou, and Ma et al. \(^{[20]}\), referring to students’ experience with SARS, stated that maladaptive coping such as avoidance can be more adaptive than problem-focused coping when dealing with uncontrollable stressors \(^{[28]}\). Students’ way of coping by avoiding the SARS-related stressors led to less psychological distress and buffered the negative effect of the stressors on the students’ adjustment. On the contrary, Liang, Ren, and Cao et al. \(^{[4]}\) found similar maladaptive coping during the COVID-19 pandemic substantiated youths’ mental health problems.

### 2. Methods

#### 2.1. Ethical clearance, participants, procedure, and timeframe

This study received ethical approval from the Institutional Research Board of Taylor’s College, Malaysia. Students from both the public and private universities participated in this study. A questionnaire was designed and administered online using social media and emails through the respective university student administrations. We targeted for at least 1000 responses. Data were collected between April 20 and May 24, 2020. The respondents were briefed on the purpose of the study and consent obtained from those willing to participate. The participants were assured that their participation in the study was strictly voluntary and their responses would be anonymous.

#### 2.2. Research instrument

The questionnaire comprised questions about the students’ general demographics, assessment of anxiety, and questions on how the students coped with the psychological impact of COVID-19 and the effect of MCO. The questionnaire was content validated by an expert panel of psychologists and pilot tested among 30 university students.

#### 2.3. Basic demographics

The demographic data included gender, age, ethnicity, name of university and field, and level and year of study. The participants were asked whether their institutions had moved to virtual instruction and about their current living arrangements during the pandemic.

#### 2.4. Zung’s self-rated Anxiety Scale

Zung’s Self-rating Anxiety Scale (SAS) was used to assess the level of anxiety among the students. It is a validated 20-item self-report instrument that covers a variety of anxiety symptoms, both psychological and somatic \(^{[25]}\). The items are scored on a scale of 1–4: 1 = Never or very rare, 2 = Sometimes, 3 = Often, and 4 = Very Often or always. The sum of the raw scores is further converted to an anxiety index, with values ranging from 25 to 100. According to Zung, an anxiety index <45 indicates “anxiety within normal range,” values in the range of 45–59 indicate “mild to moderate anxiety,” values in the range of 60–74 indicate “marked to severe anxiety,” and values ≥ 75 indicate “most extreme anxiety.” In the pilot study the Cronbach’s alpha value was 0.974.

#### 2.5. Coping strategies

As coping strategies used may differ from chronic conditions and physiological impact in the midst of a pandemic, questions were designed adapting questions from previous studies. In this study, the use of four coping strategies—seek social support, acceptance, mental disengagement, and humanitarian—was assessed. Seeking social support refers to emotional or instrumental support from family and friends that provide stress-related interpersonal aid \(^{[29]}\). An example of the questions: “During COVID-19 and lockdown, I talked to someone about how I was feeling”. Acceptance is the adaptation to unchangeable negative events by maintaining the individual’s psychological well-being and capacity to act \(^{[30]}\). An example of questions asked: “About COVID-19 and lockdown, I learned to live with it”. Mental disengagement involves directing attention and effort toward alleviating negative emotions by engaging in substitute activities to keep one’s mind from ongoing stressors \(^{[31]}\). An example of questions asked: “To take my mind away from COVID-19 and lockdown, I watched TV”; Humanitarian coping involves the initiatives

\(^{[2]}\) https://www.usnews.com/news/world/articles/2020-03-15/malaysia-reports-190-new-coronavirus-cases-most-linked-to-mosque-event.

\(^{[3]}\) https://www.statista.com/statistics/1110785/malaysia-covid-19-daily-cases/.
taken by one in helping others in psychosocial despair [32]. An example of questions asked: “During COVID-19 and lockdown, I called/texted/videoed my friends to give them emotional support.”

The questionnaire was content validated by an expert panel of psychologists. The panel reviewed each item in the questionnaire and rated the appropriateness. Based on the assessment, the content validity index for each item was more than 0.83, and the overall value was 0.92. The items were measured on a scale of 1–4; 1 = never/rarely, 2 = sometimes, 3 = often, and 4 = very often/always. In the pilot study, the Cronbach's alpha values were 0.931, 0.923, 0.683, and 0.796 for the items in ‘seek social support’ (4 items), ‘acceptance’ (4 items), ‘mental disengagement’ (4 items), and ‘humanitarian’ (3 items) constructs, respectively. The dimensionality of the items (as hypothesized) was examined based on factor analysis, using the principal axis factoring extraction method followed by the Promax Rotation. The eigenvalue of more than one was used to determine the number of factors. In the initial analysis, two items in the ‘Mental disengagement’ construct did not fit well. Hence, the two items were dropped. In the final analysis, the Kaiser-Meyer-Olkin value was 0.843, four factors were extracted that explained 71% of the total variation in the remaining items, and the root mean square residual (RMSR) value was 0.01. In scoring, for each coping strategy, the mean scores for the respective items were computed; higher scores implied a higher level of use.

2.6. Data analysis

The data were analyzed using SPSS 22.0 software. Quantitative variables were summarized as means and standard deviations, while qualitative variables were described as frequencies and percentages. For the data analysis, t-test, analysis of variance (ANOVA), and multivariate analysis of variance (MANOVA) procedures were used. For ANOVA and MANOVA, the p-values were adjusted using Tukey’s multiple comparisons procedures. The level of significance was 0.05 for all tests.

3. Results

3.1. Demographic analysis

From a total of 1,054 responses received, 71 were from international students currently studying in Malaysian. Since the study population is Malaysian university students, the responses from the international students were excluded. The demographic characteristics of the respondents are shown in Table 1. Of the 983 respondents, 66% were females and 85% were in the age group of 19–25 years. In terms of ethnicity, 46% were Malay, 22% were Chinese, and 28% were Indian.

Most of the students were enrolled in management studies (30%), science (26%), or health sciences (28%). Of the students, 73% were pursuing undergraduate studies, 11% were pursuing diplomas, 11% were postgraduate, and the remaining 5% were in pre-university studies. About 70% of the respondents were either in their first or second year of study. The majority of the respondents (97%) indicated that they were in virtual learning mode and were staying in their family homes with their family members at the time of the data collection.

3.2. Students’ levels of anxiety

Based on Zung’s classification, 689 (70.1%) of the students were categorized as having normal levels of anxiety, 201 (20.4%) had minimal to moderate anxiety, 65 (6.6%) had marked to severe anxiety, and 28

| Variable                  | Frequency (N) | Percentage (%) |
|---------------------------|---------------|----------------|
| Gender                    |               |                |
| Female                    | 653           | 66.4           |
| Male                      | 330           | 33.6           |
| Age                       |               |                |
| Below 18 years            | 36            | 3.7            |
| 19–25 years               | 836           | 85.0           |
| 26–32 years               | 111           | 11.3           |
| Ethnicity                 |               |                |
| Malay                     | 456           | 46.4           |
| Chinese                   | 215           | 21.9           |
| Indian                    | 270           | 27.5           |
| East Malaysian            | 42            | 4.3            |
| Field of study            |               |                |
| Pre-University            | 38            | 3.9            |
| Management studies        | 295           | 30.0           |
| Sciences                  | 313           | 31.8           |
| Arts/Comm./Languages      | 118           | 12.0           |
| Health sciences           | 273           | 27.8           |
| Level of Study            |               |                |
| Pre-University            | 54            | 5.5            |
| Diploma/Cert.             | 108           | 11.0           |
| Degree                    | 714           | 72.6           |
| Postgraduate              | 107           | 10.9           |
| Current accommodation     |               |                |
| Family home               | 850           | 86.5           |
| Residency                 | 79            | 8.0            |
| Outside campus            | 54            | 5.5            |
| Currently staying with    |               |                |
| Alone                     | 42            | 4.3            |
| Friends                   | 83            | 8.4            |
| Family                    | 858           | 87.3           |
(2.8%) had most extreme levels of anxiety. For further analysis, due to the small frequencies in the higher levels, the marked to severe and most extreme categories were merged and named “severe to extreme” level of anxiety.

3.3. Coping strategies and anxiety

A descriptive summary of the coping strategies is shown in Table 2. The usage of all four strategies was moderate. The data distributions were fairly normal (skewness <2; kurtosis <7). Overall, the students practiced more acceptance strategies and less seeking social support strategies.

Associations between the coping strategies and the levels of anxiety were tested using ANOVA procedures. In the analyses, the variances were similar. The results are shown in Table 3. Out of the four coping strategies, seek social support and acceptance were significantly associated with level of anxiety. For seek social support, the mean values for minimal to moderate and severe to extreme were significantly higher compared to normal. For acceptance, the mean for normal was significantly higher compared to minimal to moderate.

3.4. Coping strategies by students’ demographic characteristics

Differences in the usage of the four coping strategies were tested using MANOVA procedures. The results are tabulated in Table 4. The females engaged in humanitarian coping strategies more than the males; the males used mental disengagement coping strategies more than the females. The students in the age group of 26–32 used more acceptance strategy than those in the age group of 19–25 years.

Among the ethnic groups, there were significant differences in the usage of acceptance and humanitarian coping strategies; the East Malaysian students used more acceptance coping strategies compared to the Indians, and the usage of humanitarian coping strategy was lower among the Chinese students compared to the Indians and East Malaysians.

There was a significant difference in the usage of acceptance coping strategies by field and level of study. The usage of this strategy was higher among the students in the health sciences compared to those in management studies, and its usage was lowest among the diploma/certificate level students compared to the others. The usage of mental disengagement strategy was higher among the science students compared to those in management studies and arts, communication, and languages fields.

The students who were staying in their family homes used more acceptance coping strategies compared to those who stayed outside the campus, and engaged in more humanitarian coping strategies than those who stayed in residences or outside campus. Students who stayed alone used fewer mental disengagement strategies compared to those who stayed with friends or family members. Those who stayed with friends used more humanitarian coping strategies compared to those who stayed with their family members.

4. Discussion

This study examined university students’ coping strategies during the COVID-19 pandemic and restrictions on movement in Malaysia. About 30% of the students in this study experienced some level of anxiety due to the COVID-19 pandemic. This proportion is similar to the results from studies in other countries [4, 7, 10, 33, 34]. In this study, the usage of four coping strategies; seeking social support, acceptance, mental disengagement, and humanitarian, were assessed. Seeking social support and engaging in humanitarian acts are part of adaptive coping, whereas acceptance and mental disengagement are part of maladaptive coping.

Based on our results, university students in Malaysia practiced more acceptance strategies and less seeking social support strategies. The strategies used were more maladaptive rather than adaptive. This indeed is a reflection of Asian cultural values. Rather than confronting the stressor(s), the students opted for maladaptive coping strategies [20] by accepting and accommodating the stressor(s). When people realize the source of stressor is beyond their control, they accept what happens around them and engage in some form of mental disengagement [20, 35].

The lower level usage of adaptive coping strategies such as seeking social support corroborates the findings of earlier studies in Asian cultures [20, 35]. Asians do not freely express their emotions as much as their Western counterparts [36]. In seeking social support, one has to disclose his or her problems to a third party, and this is often construed as emotional vulnerability or weakness [35], which may result in “losing face” [20]. In Asian society, having an ailment or a weakness is considered a stigma. Hence, many would rather find other means of coping than seeking support [35]. In our study, we did not find any significant differences in seeking social support coping strategy by the demographic characteristics.

Overall, seeking social support and acceptance coping strategies were significantly associated with levels of anxiety. Seeking social support strategy was associated with a high level of anxiety, while acceptance strategy was associated with low levels of anxiety.

In this study, the male students used more maladaptive coping, like mental disengagement, while the female students used more adaptive strategies, like helping others in need. These results contradict earlier studies that suggest females tend to engage in maladaptive coping strategies [21, 26, 27]. Notably, our findings are consistent with Liang et al. [4], who found that in dealing with the coronavirus disease, male youth in their sample tend to adopt maladaptive (or negative) coping strategies compared to female. Similarly, Main et al. [20] also found that females cope more adaptively than males in the SARS health crisis. Confronted with an unprecedented health crisis like COVID-19, female students in our sample cope more adaptively in the form of helping others. Females, which by nature are more empathetic, nurturing, and caring [37], engage in coping strategies associated with their social role in society [4].

In terms of age, the older students (>25 years old) practiced more maladaptive coping strategy, in the form of acceptance compared to the young ones. This finding is inconsistent with Deasy et al. [26], who reported that the older students (>26 years) avoid maladaptive coping such as escape/avoidance behavior but prefer adaptive and positive coping. This difference could be attributed to the level of maturity and previous coping experiences [38].

It is interesting to see how ethnicity plays a role in the coping strategies used. There are several ethnic groups in Malaysia. The major ethnic groups are Malays, Chinese, Indians, and East Malaysians. Geographically, the Malay, Chinese and Indian communities are predominantly in the peninsular, while East Malaysia is part of the Borneo

### Table 2. Descriptive statistics for coping strategies.

| Coping strategy (# items) | Mean ± S  | Median | Skewness | Kurtosis |
|--------------------------|-----------|--------|----------|----------|
| Seek social support (4)  | 2.08 ± 0.78 | 2.00   | 0.464    | 0.418    |
| Acceptance (4)           | 3.02 ± 0.72 | 3.00   | 0.365    | 0.426    |
| Mental disengagement (2) | 2.66 ± 0.92 | 2.50   | 0.107    | 0.831    |
| Humanitarian (3)         | 2.30 ± 0.75 | 2.33   | 0.408    | 0.250    |

S = standard deviation.
Island. In this study, there was some significant difference between the Indian and East Malaysian students. The East Malaysian students used more maladaptive (acceptance) strategy than the Indian students, while the Indian students used a more adaptive (humanitarian) strategy than the East Malaysian students. This is an interesting finding, as no studies have examined the cultural differences in coping strategies used in the Malaysian context.

Where the students stayed during the MCO made a difference in the coping strategies used. The students staying in their family home used more acceptance strategies than those who stayed outside the campus. For the students who were staying outside campus, the MCO could have had a major impact on their lives. The major problems would have been food, washing, communication, and comfort. Hence, it would not have been easy for them to brush aside the stressors (be more accepting). The

Table 3. Anxiety level and coping strategies.

| Coping strategy | Anxiety level | Freq (N) | Mean ± S | F     | P        |
|-----------------|---------------|---------|----------|-------|----------|
| Seek social support | Normal | 649 | 2.01 ± 0.77<sup>a,b</sup> | 10.691 | <0.001  |
|                  | Minimal to moderate | 201 | 2.24 ± 0.75<sup>a</sup> |       |          |
|                  | Severe to extreme | 65  | 2.29 ± 0.86<sup>b</sup> |       |          |
| Acceptance | Normal | 649 | 3.07 ± 0.73<sup>a</sup> | 6.847  | 0.001    |
|                  | Minimal to moderate | 201 | 2.88 ± 0.70<sup>a</sup> |       |          |
|                  | Severe to extreme | 65  | 2.92 ± 0.67 |       |          |
| Mental disengagement | Normal | 649 | 2.68 ± 0.84 | 1.534  | 0.586    |
|                  | Minimal to moderate | 201 | 2.64 ± 0.77 |       |          |
|                  | Severe to extreme | 65  | 2.60 ± 0.86 |       |          |
| Humanitarian | Normal | 649 | 2.28 ± 0.76 | 1.265  | 0.293    |
|                  | Minimal to moderate | 201 | 2.37 ± 0.73 |       |          |
|                  | Severe to extreme | 65  | 2.33 ± 0.77 |       |          |

<sup>a,b</sup> pairwise differences at 0.05 level. S = standard deviation.

Table 4. Results from MANOVA procedure.

| Variable | Freq (N) | Seek social support | Acceptance | Mental disengagement | Humanitarian |
|----------|---------|---------------------|------------|----------------------|--------------|
| Gender   |         | 0.075(0.428)        | 0.646(0.074) | <0.001(0.993) | 0.034(0.564) |
| Female   | 653     | 2.12 ± 0.08         | 3.04 ± 0.07 | 2.45 ± 0.08<sup>a</sup> | 2.52 ± 0.08<sup>a</sup> |
| Male     | 330     | 2.03 ± 0.08         | 3.07 ± 0.08 | 2.70 ± 0.09<sup>b</sup> | 2.41 ± 0.09<sup>b</sup> |
| Age      |         | 0.126(0.429)        | 0.039(0.621) | 0.595(0.136) | 0.412(0.203) |
| Below 18 years | 36 | 2.27 ± 0.15 | 3.06 ± 0.13 | 2.64 ± 0.15 | 2.42 ± 0.14 |
| 19-25 years | 836  | 2.07 ± 0.08 | 2.91 ± 0.07<sup>a</sup> | 2.61 ± 0.08 | 2.40 ± 0.07 |
| 26-32 years | 111  | 1.90 ± 0.12 | 3.20 ± 0.11<sup>a</sup> | 2.50 ± 0.13 | 2.57 ± 0.12 |
| Ethnicity |         | 0.215(0.397)       | 0.014(0.792) | 0.877(0.093) | <0.001(0.970) |
| Malay    | 456     | 2.11 ± 0.08         | 3.04 ± 0.07 | 2.67 ± 0.80 | 2.47 ± 0.08 |
| Chinese  | 215     | 2.01 ± 0.09         | 3.15 ± 0.08 | 2.60 ± 0.09 | 2.31 ± 0.08<sup>b</sup> |
| Indian   | 270     | 2.16 ± 0.09         | 2.84 ± 0.08<sup>a</sup> | 2.54 ± 0.09 | 2.60 ± 0.08<sup>a</sup> |
| East Malaysian | 42 | 2.03 ± 0.14 | 3.10 ± 0.13<sup>a</sup> | 2.58 ± 0.15 | 2.48 ± 0.14<sup>b</sup> |
| Field of study | 0.950(0.088) | <0.001(0.983) | 0.026(0.766) | 0.658(0.201) |
| Pre-University | 38 | 2.12 ± 0.15 | 2.88 ± 0.13 | 2.46 ± 0.15 | 2.45 ± 0.14 |
| Management studies | 295 | 2.06 ± 0.09 | 2.94 ± 0.08<sup>a</sup> | 2.56 ± 0.09<sup>a</sup> | 2.40 ± 0.058 |
| Sciences  | 313     | 2.07 ± 0.09 | 3.14 ± 0.08 | 2.74 ± 0.09<sup>b</sup> | 2.48 ± 0.09 |
| Arts/Comm./Languages | 118 | 2.03 ± 0.11 | 3.10 ± 0.10 | 2.49 ± 0.11<sup>a</sup> | 2.48 ± 0.10 |
| Health sciences | 273 | 2.10 ± 0.09 | 3.21 ± 0.08<sup>b</sup> | 2.61 ± 0.09 | 2.47 ± 0.09 |
| Level of Study | 0.375(0.191) | 0.001(0.951) | 0.645(0.165) | 0.998(0.053) |
| Pre-University | 54 | 2.01 ± 0.14 | 3.31 ± 0.12<sup>a</sup> | 2.61 ± 0.14 | 2.46 ± 0.13 |
| Diploma/Cert. | 108 | 2.01 ± 0.11 | 2.86 ± 0.10<sup>b</sup> | 2.56 ± 0.11 | 2.45 ± 0.10 |
| Degree    | 714     | 2.06 ± 0.09 | 3.11 ± 0.08<sup>b</sup> | 2.63 ± 0.09<sup>b</sup> | 2.47 ± 0.08 |
| Postgraduate | 107 | 2.22 ± 0.13 | 2.94 ± 0.12<sup>a</sup> | 2.48 ± 0.12<sup>a</sup> | 2.48 ± 0.12 |
| Accommodation | 0.254(0.296) | 0.014(0.792) | 0.877(0.093) | <0.001(0.970) |
| Family home | 850 | 1.93 ± 0.12 | 3.22 ± 0.12<sup>a</sup> | 2.41 ± 0.12 | 2.53 ± 0.11<sup>b</sup> |
| Residency  | 79      | 2.21 ± 0.12 | 3.10 ± 0.11 | 2.80 ± 0.12 | 2.44 ± 0.12<sup>a</sup> |
| Outside campus | 54 | 2.09 ± 0.13 | 2.85 ± 0.11<sup>a</sup> | 2.51 ± 0.13 | 2.42 ± 0.13<sup>b</sup> |
| Staying with | 0.292(0.269) | 0.120(0.437) | 0.022(0.700) | 0.016(0.733) |
| Alone     | 42      | 1.95 ± 0.14 | 3.00 ± 0.12 | 2.32 ± 0.14<sup>b</sup> | 2.49 ± 0.13 |
| Friends   | 83      | 2.06 ± 0.12 | 3.22 ± 0.10 | 2.63 ± 0.12<sup>a</sup> | 2.68 ± 0.11<sup>b</sup> |
| Family    | 858     | 2.22 ± 0.11 | 2.94 ± 0.10 | 2.77 ± 0.11<sup>b</sup> | 2.23 ± 0.10<sup>b</sup> |

Value are mean ± standard error. The numbers in bold are p-values (power) for the difference in the strategy used by the respective demographic characteristic. <sup>a,b</sup> pairwise differences at 0.05 level.
students who stayed in the family homes practiced more humanitarian strategies compared to the others. Apart from where they stayed, with whom they stayed, also made a difference. In line with the Malaysian spirit, the students who stayed with friends seemed to have helped each other as they used more humanitarian strategy.

Our findings showed that students from health science used more acceptance strategies than those from the management field. Since the effect of MCO would have been similar, this difference cannot be explained in the context of this study.

4.1. Practical implications

Among Malaysian university students, seeking support was the least preferred coping strategy. Culturally, in Asian countries, disclosing one's emotions is seen as exposing one's vulnerability. Students do not freely express their feelings and concerns, anonymously. If a student is found to be psychologically impaired, a carefully designed intervention strategy should be set in motion as timely action is critical. The contents and strategies must be carefully designed based on scientific knowledge and student feedback. Outcomes from interventions must be regularly reviewed and effectively enacted to raise confidence in the effectiveness of the interventions [39].

The universities can offer psychological aid through tele-counseling, hotline services, and chatbots through which the students can freely express their feelings and concerns, anonymously. If a student is found to be psychologically impaired, a carefully designed intervention strategy should be set in motion as timely action is critical. The contents and strategies must be carefully designed based on scientific knowledge and student feedback. Outcomes from interventions must be regularly reviewed and effectively enacted to raise confidence in the effectiveness of the interventions [39].

5. Conclusions

This study examined how university students in Malaysia cope with the psychological impact of the COVID-19 pandemic and restrictions of movement. We found that the students used maladaptive coping strategies (acceptance and mental disengagement) more than adaptive coping strategies (humanitarian and seeking social support). The usage of acceptance and seeking social support was significantly different between those who were highly anxious and those who were not. The type of coping strategies used differed by the student's gender, age, ethnicity, level and type of study, and living arrangement.

As the pandemic reaches its tail end, fear and the threat to an individual's health may slowly dissipate. However, the thought of the disease itself and the need to adapt to a “new normal” may have a long-term psychological impact on the students. This may, in turn, affect the students' academic performance.

5.1. Limitations and future research

First, this study used a cross-sectional design that cannot provide causal relationships. We suggest that future studies should employ a longitudinal design to capture the effects of students' anxiety, coping strategies, and psychological impact over a longer time period. Second, because this study used a self-reported questionnaire, it is difficult to determine if the students answered the questions honestly. Finally, as a convenience sampling approach was used in this study, the findings may not reflect the whole population of university students in Malaysia.

Declarations

Author contribution statement

K. Kamaludin, K. Chinna, S. Sundararase: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Wrote the paper.

H. B. Koshaim, M. Nurunnabi, G. M. Baloch: Conceived and designed the experiments; Analyzed and interpreted the data.

A. Sukayt, S. F. A. Hossain: Analyzed and interpreted the data.

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Competing interest statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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