



ANXIETY AND COPING MECHANISMS AMONG UNIVERSITY STUDENTS DURING THE COVID-19 LOCKDOWN

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Abstract

The outbreak of COVID-19 and the resulting lockdown had a great psychological impact on the lives of people in general and on the lives of students in particular. The current study aims to find the level of anxiety and the types of coping mechanisms utilized by university students during the lockdown period. Furthermore, the relationship between these two variables is also addressed. The participants of this study consist of 260 university students. Hopkins Symptoms Checklist and the Coping Strategies Inventory are the instruments that were used as measurement tools. The results showed that university students have probable anxiety, and their most commonly used coping mechanism is social withdrawal. The study also found a statistically significant correlation between social withdrawal, problem avoidance, and expression of emotion with anxiety. According to the findings, there exists a significant difference in anxiety between male and female students. In addition, a significant difference in the use of coping mechanisms among female and male students existed in the use of social withdrawal and expression emotion coping mechanisms, which were both used more by female students. The findings of this study highlight the need for psychological services to be available in the universities of the region.

Keywords: COVID-19; lockdown; anxiety; coping mechanisms; Kurdistan

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Introduction

The spread of COVID-19 had devastating impacts on the lives of people all around the world (Akhtarul Islam, Barna, Raihan, Nafiul Alam Khan, & Tanvir Hossain, 2020). Various areas of human functioning were impacted by COVID-19, and Education was among the most affected areas (Hessing, 2020). Consequently, university students were among the most vulnerable populations to the subsequent psychological impacts of the pandemic (Savitsky, Findling, Erel, & Hendel, 2020). According to the United Nations Educational, Scientific, and Cultural Organization (UNESCO), the pandemic interrupted the learning of more than one billion students in 129 countries around the world (Wang, Zhang, Zhao, Zhang, & Jiang, 2020). Studies done during lockdown show that university students, compared to the general population, show higher levels of anxiety (Skapinakis et al., 2020). According to the American psychological association, anxiety can be defined as: “an emotion characterized by feelings of tension, worried thoughts and physical changes like increased blood pressure” (Kazdin et al., 2000). In several studies, the potential reasons for the higher anxiety level among university students have been explored. For example, a correlational study in China found that the economic effects of the pandemic, its effects on daily life, as well as delays in academic activities, were all factors that positively correlated with university students’ anxiety during lockdown (Cao et al., 2020). Some other reasons were pointed out in a quantitative study conducted in Ghana; reporting internet accessibility issues as the main concern, followed by social issues, lecturer issues, and generic issues (Aboagye, Yawson, & Appiah, 2020). Other explored reasons included: belief in conspiracy theory (Patsali et al., 2020), financial constraints, remote online learning, and uncertainty related to their academic performance, and future career prospects, respectively (Sundarasan et al., 2020).

As pointed out, most studies conducted during the lockdown period showed high levels of anxiety among university students. Among those studies is a cross-sectional one done in Malaysia, which reported high levels of anxiety among university students during online studies in the lockdown period along with other adverse effects on their psychological well-being (Sundarasan et al., 2020). In addition, in a report by the American Psychiatric Association (APA), it was stated that around 62% of Americans, including university students, suffer from symptoms of anxiety due to the COVID-19 pandemic (Canady, 2020).

Another cross-sectional study conducted in Spain found moderate to severe anxiety, stress, and depression among university students during the peak of the pandemic and lockdown (Odrizola-González, Planchuelo-Gómez, Irurtia, & de Luis-García, 2020). A correlational study also conducted in Spain reported that the majority of university students had severe anxiety as the pandemic and the consequent lockdown emerged (Díaz-Jiménez, Caravaca-Sánchez, Martín-Cano, & De la Fuente-Robles, 2020). Moreover, according to Brooks, et. al (2020) the pandemic and the related lockdown have caused individuals to suffer from a lot of emotional and psychological problems, which they may have not experienced earlier as much, such as fear, confusion, anxiety, irritability, and frustration. Given the information above, prolonged anxiety can cause eventual mental disorders, and hence, must be dealt with through some healthy means. One way is through the use of coping mechanisms (Agha, 2021).

Coping is the process by which people try to manage the perceived discrepancy between the demands and resources they appraise in a stressful situation (Lazarus, 1993). Studies conducted during outbreaks of viruses highlight the importance of individuals' ability to cope with the associated stresses (Khalid, Hashmi, Jamal Khan, Qazi, & Nasir, 2016; Bah et al., 2015). Consequently, studies during the COVID-19 pandemic and lockdown also point out such importance. Specifically, university students have reported that the use of coping mechanisms was perceived essential due to the high levels of anxiety they were facing (Nurunnabi et al., 2020a). Another study also found that university students reported the need of using coping mechanisms and that most of them came up with personal coping strategies, such as playing online and computer games, avoiding social media and getting themselves distracted, to endure during the lockdown (Baloran, 2020). In addition, one study pointed out a correlation between the specific coping mechanisms of emotion-oriented and avoidant coping with anxiety symptoms (Mariani et al., 2020).

There is limited data regarding the mental health effects of COVID-19 in the Kurdistan Region of Iraq (KRI), especially among university students. Furthermore, the effects of anxiety and the use of different coping mechanisms are even less explored. Therefore, there is a need for research to be done in this regard. The results of this study provide related authorities with an insight into students' mental health conditions and in turn, further steps could be taken in providing appropriate psychosocial support.

Objective

The general aim of this study is to find the relationship between anxiety and coping mechanisms among university students during the lockdown. Specifically, the study aims to find out the level of anxiety during the lockdown; to address the most commonly used coping mechanisms by university students; to find the relationship between anxiety and each given coping mechanism; to point out gender differences in the level of anxiety; to find out gender differences in the use of coping mechanisms.

Method

Participants and procedure

The participants of this study were non-randomly selected through the Snowball sampling technique. All university students during the time of the study that were enrolled in one of the private and/or public universities of the KRI were eligible to participate in this study. The ethical committee of Koya University approved the method of this study. A retrospective methodology was utilized for conducting this study as the participants were asked to rate their symptoms backward by thinking back to the time of the lockdown.

An online survey was first made to be distributed among the study participants. It was then sent to a number of university students, who were also asked to share the survey with their friends. At the beginning of the online survey, the purpose of the study was clarified and participants were ensured their information remained confidential. All the data was collected through the online survey. The estimated time of filling the survey was 15-20 minutes. The data was collected between November 2020 to January 2021. In the beginning of the scales, the participants were asked to answer the questions by thinking back to the time of the lockdown.

Measures

Hopkins Symptom Checklist - 25 (HSCL-25). The HSCL-25 is a self-report questionnaire on the existence and severity of both anxiety and depression symptoms (Bris, 2017). It was originated from the Cornell Medical Index but later expanded by Johns Hopkins University in the 1950s, hence the name (Fares, Dirani, & Darwish, 2019). The HSCL-25 is a shorter version of the original 90-item checklist. The 25 items include 10 items about anxiety and 15 about

depression. In this research, the Kurdish version of the 10 items regarding anxiety were used. All 10 items are positive ones. These 10 items are measured on a 4-point scale with the following options: Not at all (1), a little (2), quite a bit (3), extremely (4); and anxiety scores, which range between 1 and 4, are obtained by dividing the sum of the item scores by the number of all items. The higher the score is above the cut-off score, the higher the probability of having anxiety. The psychometric properties of the HSCL-25 have been analyzed in many studies. It has been translated and validated from English into several languages including Arabic (Mahfoud et al., 2013), Swedish (Fröjd, Håkansson, & Karlsson, 2004), Russian, Serbo-Croatian, Farsi (Kleijn, & Hovens, & Rodenburg, 2001) and Vietnamese (Hinton et al., 1994). In most studies, the cutoff score of the English version has been 1.75 for both the total score and each of the 2 sub-scores. Also, the internal consistency for most versions as mentioned in different studies was generally high, around 0.76 to 0.90 in most of such studies (Al-Turkait & Ohaeri, 2010; Jakobsen, Thoresen, & Johansen, 2011; Kaaya et al., 2002; Lee, Kaaya, Mbwambo, Smith-Fawzi, & Leshabari, 2008). A pilot study was performed to assess the reliability of the Kurdish version of this scale, and it was revealed that the scale had a high internal consistency of the scale using Chronbach's Alpha ($\alpha=.849$).

Coping Strategies Inventory. This inventory is a self-report instrument that assesses the type of coping used by individuals when they face a problem. It was developed by (Tobin et al., 1989). The original scale is composed of 40 items; it is a 5-point Likert-scale type and its options are: Never (1); rarely (2); sometimes (3); often (4); very often (5). It is divided into eight domains, each of which is composed of five items. The domains are Problem-solving, Self-criticism, Expression of emotion, Wishful thinking, Social support, Cognitive restructuring, Problem avoidance, and Social withdrawal. The higher score of a domain indicates that the domain is the most frequently used coping mechanism. This research adopted a shorter 25-item version of the scale, which used five out of the eight domains and it was back-translated to the Kurdish language. The coping strategies inventory has also been validated and translated into different cultures from 13 different countries. Moreover, its reliability as assessed in different countries such as the United States, the United Kingdom, Canada, Australia, New Zealand, German, and Swedish versions has ranged from 0.56 to 0.80, which is considered acceptable (Speyer et al., 2016). For this scale, an alpha

value of .804 was found, based on a pilot study conducted on 100 university students.

Data analysis

The data in this research was analyzed through the Statistical Package for the Social Sciences (SPSS) version 22 for Microsoft Windows. Anxiety and coping mechanisms were dependent variables, while gender and age were independent variables. Exploratory data analysis was used for checking the normality of the Hopkins symptoms checklist and the coping strategies inventory scores. Results from the Shapiro-Wilk test, and visual inspection of the histograms and normal Q-Q plots (Ghasemi & Zahediasl, 2012) revealed that for neither Hopkins symptoms checklist nor the coping strategies inventory, the scores were normally distributed. Hopkins symptoms checklist score had a skewness of .662 (SE=.151) and kurtosis of .128 (SE=.301), while the scores of coping strategies inventory had a skewness of -1.018 (SE = .151) and kurtosis of 4.509 (SE=.301). Descriptive statistics were used to analyze the demographic variables, as well as to find out the level of anxiety and the most frequently used coping mechanism. For finding the relationship between anxiety and each coping mechanism, Spearman's correlation was used. Furthermore, the Mann-Whitney U test was used to find the gender differences in terms of both anxiety and coping strategies.

Results

The participants of this study were 260 university students, aged from 18 to 30. The mean age of the sample was 21.23 with a standard deviation of 1.615. Of the total number of participants, 145 were females and 115 were males. They were all Kurdish, from three private and six public universities in the cities of Sulaimani, Koya, Erbil, and Duhok. The majority of the participants were in the fourth year of their studies (*see* Table 1).

Table 1. Demographic characteristic of the participants

Characteristics	Categories	Frequency	Percentage
Age	18-20	85	32.7%
	21-23	161	61.9%
	24 and more	14	5.4%

Table 1. Demographic characteristic of the participants – *continued*

Characteristics	Categories	Frequency	Percentage
Gender	Female	145	55.8%
	Male	115	44.2%
Stage	First	17	6.5%
	Second	53	20.4%
	Third	58	22.3%
	Fourth	100	38.5%
	Fifth	28	10.8%
	Sixth	4	1.5%

The first objective of this study was to find out if university students had probable anxiety during the lockdown. Table 2 shows descriptive statistics for anxiety levels. The level of anxiety among participants (N=260) was (M=18.46, SD=5.10). In the HSCL-A, the score is calculated by dividing the mean by 10, which according to the mean in this study is equal to 1.85. This is above the cut-off score (1.75) which is indicative of probable anxiety.

Table 2. Level of anxiety among university students

Variable	N	Mean	Std. Deviation
Anxiety	260	18.46	5.10

The second objective of this study was to find out the most commonly used coping mechanisms by university students during the lockdown. The rank of the different coping mechanisms according to the mean score is listed in table 3. social withdrawal coping mechanism had the highest score (M=16.84, SD=3.93). Problem avoidance was the second most used mechanism (M=15.40, SD=3.59). Social support was third (M=14.18, SD=3.03), Problem-solving was fourth (M=13.47, SD=3.03), and finally, expression of emotion was the least used coping mechanism (M=13.41, SD=3.09).

Table 3. Rank of types of coping strategies according to mean level

Rank	Coping strategy	N	Mean	Std. Deviation
1	Social Withdrawal	260	16.8462	3.93178
2	Problem Avoidance	260	15.4038	3.59354
3	Social Support	260	14.1808	4.01373
4	Problem Solving	260	13.4731	3.03952
5	Expression Emotion	260	13.4115	3.09000

The third objective of this study was to find the correlation between anxiety and each coping mechanism. Spearman's correlation was used. The results showed a statistically significant negative correlation between anxiety and Problem Avoidance, $r(260)=-0.156$, $n=260$, $p<0.012$; as anxiety increases, the use of Problem Avoidance coping decreases. Whilst, there was a significant positive correlation between anxiety with Social Withdrawal $r(260)=0.192$, $n=260$, $p<0.002$, and Expression of Emotion $r(260)=0.399$, $n=260$, $p\leq 0.001$. This means that, as anxiety increases, the use of these two types of coping mechanisms also increases. However, as shown in table 4, the other two coping mechanisms Social Support and Problem Solving did not have a significant correlation with anxiety.

Table 4. The correlation of each coping strategy and anxiety

Coping strategies	Anxiety
Social Withdrawal	.192**
Problem Avoidance	-.156*
Social Support	.112
Problem Solving	.007
Expression Emotion	.399**

Note: **Correlation is significant at the 0.01 level (2-tailed); *Correlation is significant at the 0.05 level (2-tailed).

The fourth objective of this research was to point out gender differences in the level of anxiety. In table 5, the results of a Mann-Whitney U test show that there is a statistically significant difference between female and male students in terms of their anxiety. Females (Mdn=149.71) had a significantly greater level of anxiety than males (Mdn=106.71), $U=5552.000$, $p<.000$.

The fifth objective of this research was to address gender differences in the use of different coping mechanisms. The results of a Mann-Whitney U test show that there is a statistically significant difference between female and male students in terms of using the two coping strategies Social Withdrawal: females (Mdn=138.56), males (Mdn=120.34), $U=7169.500$, $p<.052$, and Expression Emotion: females (Mdn=143.48), males (Mdn=114.14), $U=6456.000$, $p<.002$ (see Table 5).

Table 5. Gender differences in the use of coping mechanisms

Variable	Gender	N	Mean Rank	Sum of ranks	U	P
Anxiety	Female	145	149.71	21708.00	5552.000	.000**
	Male	115	106.28	12222.00		
Social Withdrawal	Female	145	138.56	20090.50	7169.500	.052*
	Male	115	120.34	13839.50		
Problem Avoidance	Female	145	128.30	18603.00	8018.000	.594
	Male	115	133.28	15327.00		
Social Support	Female	145	134.29	19472.50	7787.500	.360
	Male	115	125.72	14457.50		
Problem Solving	Female	145	124.73	18086.00	7501.000	.162
	Male	115	137.77	15844.00		
Expression Emotion	Female	145	143.48	20804.00	6456.000	.002*
	Male	115	114.14	13126.00		

Note: * $p < 0.05$; ** $p \leq 0.001$

Discussion

The first finding of this research demonstrates that university students had probable anxiety during the lockdown. This finding is correspondent to most studies done about university students during the lockdown. For example, data from university students in Israel (Savitsky et al., 2020), Spain (Díaz-Jiménez et al., 2020), Greece (Skapinakis et al., 2020), and Malaysia (Sundarasan et al., 2020) also point out that university students experienced feelings of anxiety during the COVID-19 lockdown. This tells us that, because COVID-19 was a global pandemic, the psychological issues related to it may, more or less, have been a global experience as well.

This study had the objective of finding the most commonly used coping mechanisms among university students during the lockdown. According to the results of this study, Social Withdrawal coping mechanism was the type of coping that was used the most among university students. This finding contradicts the results of a number of other studies done during the lockdown, which point out that the use of more effective coping mechanisms, especially Problem Solving was more evident in university students during lockdown (El-Monshed, El-Adl, Ali, & Loutfy, 2021; Skapinakis et al., 2020). A potential reason for this could be the lack of education and awareness about mental health topics in the KRI due to the lack of an adequate number of specialized mental health institutions that can spread awareness and information about such topics

so that people could learn how to deal with and cope with their problems in more effective manners (Al-Salihi & Rahim, 2013). Moreover, in a study conducted in the KRI among university students during the lockdown, it is especially pointed out that university students' psychological well-being, compared to the population, was more negatively affected, and that they could not cope effectively with the psychological problems they faced (Seidi, 2020). This could be a sign that educational institutions in the KRI have not put enough effort into educating students about their psychological well-being (Darweish & Mohammed, 2018), which may partially explain the use of such ineffective coping mechanisms as Social Withdrawal as this study has found.

This research found a positive correlation between Social Withdrawal and Expression of Emotion types of coping with anxiety. The correlation was found to be negative with Problem Avoidance, while no correlation was found with Problem Solving and Social Support. Only the correlation between anxiety and Expression Emotion type was compatible with the findings of a number of previous studies (Mariani et al., 2020). The other findings about the relationship between anxiety and the different coping mechanisms are incompatible with the existing literature. For example, one study shows a significant positive correlation between anxiety and Social Support (Nurunnabi et al., 2020b). In addition, another study pointed to Problem Solving as having a positive correlation with anxiety (El-Monshed et al., 2021). One other study, which examined specific coping strategies used by university students to cope with their anxiety during the lockdown, found a positive correlation between anxiety and Problem Avoidance (Baloran, 2020); this also contrasts with the findings of the current study. Two of the possible reasons behind such differences may be because first, due to the studies are being done in different societies. Secondly, most of the other studies used different instruments from the ones used in this study to assess the types of coping mechanisms, for example, the COPE (Gärtner & Fischer, 1987) and CISS (Endler & Parker, 1990) scales.

Another finding of this research was that the female students had more anxiety during the lockdown in comparison to male students. Other studies conducted during lockdown also support this finding. For example, one study conducted in the KRI also found a significant difference between female and male students in terms of their anxiety, with females having higher anxiety scores than males (Kamal & Othman, 2020). Another study that was conducted in India also found similar results (Kazmi, Hasan, Talib, & Saxena, 2020). Previous

literature confirms that, because of many biological (Hasbi et al., 2020) and environmental (Rasing et al., 2020) factors, females are more prone to anxiety, and this could be the reason for the higher level of anxiety among female participants of the current study.

The fifth finding of this study was regarding the gender differences in the use of coping mechanisms. The results showed a significant difference between female and male students in the use of the two coping mechanisms (*i.e.*, Social withdrawal and Expression of Emotion), which were both used by females more. One main reason behind this could be the difference in the participants' number; having 145 female participants and 115 male participants. Moreover, one study reported the use of the expression of emotion to be done more by females than males, which is justifiable, considering the difference in their nature (Hessing, 2020).

This investigation had a number of limitations. Firstly, the study was done after lockdown had finished, meaning it was a retrospective study, so the information reported by the participants may not be very precise. The data was collected using an online survey and not manually, meaning there was less chance to observe how the questionnaires were filled, and the participants did not get to ask for clarifications if they needed them.

Conclusion

From the findings of this study, we conclude that university students have probable anxiety and that females have higher anxiety than males; this finding aligns with most previous literature. The most commonly used coping mechanism among university students is Social Withdrawal, and there is no significant difference between females and males in terms of the coping strategies they use except for Social Withdrawal and Expression Emotion types which are both used more by females. The correlation between anxiety with Social Withdrawal as well as with Expression of Emotion types of coping is a statistically significant positive correlation, and the correlation between anxiety and Problem Avoidance coping was a statistically significant negative correlation; while no correlation is found between anxiety with Social Support and Problem Solving coping mechanisms. The findings of this study could be helpful for KRI universities to learn about the issue and consider it in their plans. They could arrange occasional seminars in which they invite someone

specialized to raise awareness about mental health issues related to students' lives so that students get to know what to do and how to manage the stressful situations they encounter.

Ethics statement:

This study was carried out in accordance with the recommendations of the Code of Ethics of the American Psychological Association. The protocol was approved by the Ethics Committee for Research at Koya University. In accordance with the Declaration of Helsinki, all the participants gave written informed consent for their participation in the study.

Conflicts of interest:

The authors declare no conflict of interest.

Author contributions:

All authors listed have made a substantial, direct, and intellectual contribution to the work, and approved it for publication.

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