THE IMPACT OF COVID IN HIGHER EDUCATION

How students in the Kingdom of Saudi Arabia are coping with COVID-19 pandemic

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Abstract

The novel coronavirus is the worst pandemic of this century. Unfortunately, there is no clear solution for how to cope with such an epidemic. This study examines the coping strategies used by university students in the Kingdom of Saudi Arabia. From March to May 2020, a questionnaire was administered and completed by 400 students. This study used the Zung Self-rating Anxiety Scale (SAS) to examine the respondents' level of anxiety. The results indicate that 35% of students experienced some levels of anxiety. Moreover, there was a moderate use of four types of coping strategies: Seek social support, acceptance, mental disengagement, and humanitarian. These findings can guide policymakers on the importance of developing practical guidelines to handle such lethal diseases. Moreover, the results inform the Saudi community what strategies were used to cope so far with the pandemic. Future research is expected to address the validity and appropriateness of these strategies and encourage other approaches.

Introduction

Facing stressors in our life is part of the humanitarian formula. It is a common challenge we encounter at some stages of our lives. Stressors are not always perceived negatively. In fact, we need some challenges that will be accompanied by stressors to keep us motivated and push us to try harder.[1] However, some stressors can cause negative psychological implications. The "ability to maintain positive well-being (not merely lack of psychopathology) despite exposure to stressors is defined as resilience".[2] Individuals' resilience is an internal characteristic that distinguishes individuals' reactions to stressors; On the other hand, strategies that one applies to survive and manage stressors are called coping strategies. Coping is defined as "the decision of which behaviors to utilize to handle the event".[1] It can be seen as an "interaction between the person's internal resources and external environmental demands".[1]

The novel outbreak of coronavirus disease 2019 (COVID-19) is stressful. Fear and anxiety of infection and transmission can be overwhelming and might cause psychological disturbance.[3-7] Like other pandemics, survivors might face stigmatization and societal seclusion even in their own society.[8] Even those not being affected will suffer from the curfew or quarantine measurements applied in the affected area. Such enforced measures impose people's lives, attack their freedom, and (in many cases) separate them from their loved ones.[9]

Recovering from an epidemic is not given or straight forward. In fact, an epidemic's psychological effect can begin as soon as the epidemic itself is initiated[7] and recovery from the aftermath might take up to a decade.[8] To recover from a natural disaster, people use various coping strategies. However, not only some coping strategies do not succeed in helping to deal with the situation, some might be deadly harmful.[10]

Outbreaks of infectious diseases and the actions taken to contain it such as curfew and quarantine measures are considered large-scale stressors and have psychological implications, especially on students.[11] Emotional instability, panic and anxiety are among the other symptoms of psychological disturbance. Because outbreaks of infectious diseases occur rarely, their psychological influence is under investigated.[2] Nevertheless, such a stressor is "a unique opportunity to study individuals' psychological adjustment under stress".[2] As for the recent unexpected COVID-19 pandemic, researchers are still working to provide the right treatment and vaccinations, hence, minimum research has been conducted on the coping strategies used to survive this pandemic.

Significance for public health

Students, being part of the community, are experiencing the social and psychological impacts of the novel COVID-19 pandemic. In addition to coping with the new methods of learning and assessments, the fear of them or their loved ones contracting the disease and the unusual quarantine circumstances could lead to social and psychological anxiety. Such anxiety can affect their well-being and threatened the health status of their families. Thus, this study aims to address their concerns and learn about the strategic interventions that need to be put in place to minimize any adverse or long-term effects of the pandemic in students' lives. The research outcome brings added value for universities to adopt and incorporate feasible and fair approaches in handling students' socio-psychological preparedness. Moreover, the findings enlighten the public on the appropriate coping strategies and the suitable adaptability skills that can be emphasized to pass through such a pandemic with a minimum health effect.

Especially because COVID-19 is an unprecedented incident in Saudi Arabia, people apply coping strategies mostly based on their own knowledge and intuitions. University students, as part of this society, face such unexpected situations with some strategies. Hence, it is essential to learn about the coping strategies applied during COVID-19 in Saudi Arabia. The results of this study will inform the society on any needed intervention for the current epidemics and the future advice that might be shared with the public. Due to students' anxiety about uncertainty in the academic year, and uncertainty in their assessments, this paper aims to determine the coping strategies used by college and university students during the COVID-19 pandemic.

Related literature

Humans react differently when it comes to unanticipated disasters. There are several factors that influence the amount of damage an individual might experience as a result of a disaster. It is probably convincing to argue that the prior mental and psychological status of an individual is an important factor that will contribute to the ability to cope with the pandemic or the actions related to it, such as quarantine measures.[3,12] In fact, it is a multidimensional system[13] that depends on several factors, including the person's personality, environment, sex, culture, and the stressor itself.[14] At one end of this spectrum of strategies is denial. Avoiding or denial is one passive coping strategy. Not only does the passive coping approach not improve the situation, it might also lead to serious mental illness.[7] Moreover, previous research shows that young adolescents, especially, might use dangerous strategies, such as excessive use of alcohol[15] and marijuana or even cutting themselves and attempting suicide, to gain attention or relieve emotional distress.[10]

At the other end is the active approach, where a person faces the problem and tries to deal with it directly. In that case, a person might apply problem-solving skills to deal with the stressor or seek support from family and friends to facilitate coping and recovery.[14] During quarantine, the creation of productive time[15] and the intensive use of exercises or meditation methods are active coping strategies. Tai chi practice, for example, was one coping approach used by survivors of SARS in Hong Kong.[8] In addition, acceptance and self-regulation of one's emotions are other active coping approaches that will protect an individual from being severely affected by the stressor or the disaster.[14,16] Interestingly, talking about the issue or even joking about it could help.[15] In sum, the avoidant approach has been associated with negative psychological impacts whereas the active approach was found to result in minimum psychological disturbance.[7,17] This is relatively convincing, as the passive approach tends not to change the situation.[2] To the contrary, the active approach seeks to understand the problem, address it, and discover a solution.

COVID-19 in the Kingdom of Saudi Arabia

The first case of COVID-19 in the Kingdom of Saudi Arabia (KSA) was reported on March 2, 2020. However, the number of cases increased dramatically to reach 100,000 by June 2020.[18] Accordingly, beginning March 8, several unprecedented decisions have been made to control the virus. For example, all schools and higher education institutions were closed and a virtual mode of education was imposed for the remainder of the academic year.

Coping strategies in KSA

COVID-19 has changed the life of every Saudi. Social life is one essential factor for families in KSA. A typical family consists of 5–6 people, and a family gathering with extended family members every week is a traditional event. KSA is also known for its massive religious gatherings, such as Umra and visitations to the Prophet's mosque. These are held at different times throughout the year but are more active during the holy month of Ramadan—most recently held in May 2020, the peak of the pandemic. Moreover, other social, religious, or family gatherings occur just after the holy month and during *Eid Alfitr*. Hence, the fact that COVID-19 lockdowns took place during such critical times of the year definitely made coping with the situation much harder.[19]

However, KSA has made efforts to help people cope with this unprecedented situation. Some studies suggest that effective mitigation measures must be imposed during the quarantine planning process to reduce the negative psychological effects; these measures include providing the public with information that explains the nature of the risks they are facing and why they were being quarantined, and providing the people who are quarantined with basic needs.[3] For instance, to reduce fear and anxiety, the Ministry of Health (MOH) in KSA encouraged the public to obtain information only from reliable sources and to avoid rumours. Moreover, the MOH held several coronavirus follow-up meetings to report accurate information about the disease, the current situation in kingdom, and the preventive measures that must be followed. This is consistent with previous findings that stated that the level of anxiety due to a disaster is associated with the extent to which the people are well-informed and the transparency of information.[20] Providing adequate access to information has been shown to influence people coping with disasters.[12]

Moreover, permission to leave home or even to travel among cities is granted in emergency or humanitarian situations. People can apply through an announced application (*Tawakkalna*) for such permissions. Several applications were available to be used for delivery, either for basic requirements, such as grocery shopping, or even to order coffee or ice cream.[21,22] Such measurements gave people alternatives and helped them apply the quarantine actions satisfactorily. On the other hand, people in KSA applied several coping strategies. The young generation focused their energy on alternative activities. Instead of meeting with friends, they developed new hobbies, such as cooking and gardening.[23] They even shared this with friends through social media channels. For others, to be proactive and instead of complaining about the situation, they created jokes and sarcastic comments.

Materials and Methods

This study examined the coping strategies used by university students in KSA to deal with the unprecedented pandemic of COVID-19. An online questionnaire was administered to all students at one private university in the capital city of Riyadh between April 20 and June 6, 2020. Students were informed that their participation was voluntary and their consent was obtained. The study used anonymous data to ensure confidentiality. By June 6, 2020, a total of 400 responses had been received. It is important to mention here that the researchers have obtained ethical approval from the Institutional Review Board (IRB) of the university.

Research instrument

The instrument was partially self-developed and it consisted of

three sections. The first section of the questionnaire obtained demographic data, such as age, gender, and field of study. Items about the mode of study during COVID-19 and living conditions were added. In the second section, the researchers used Zung's[24] Self-rating Anxiety Scale (SAS) as an instrument to examine the anxiety level of the participants. The instrument consists of 20 items, with a 0.70 reliability rate and a 0.60 criterion-related validity rate.[24] In the 20-item SAS, each item is scored on a Likert scale of 1 to 4, coded as: 1 = "Never or very rare," 2 = "Sometimes," 3 = "Often," and 4 = "Very often or always." For each respondent, the total anxiety score was obtained by adding the responses for the 20 items. The total score ranged from 20 to 80. The scores were then converted to an Anxiety Index, with values ranging from 25 to 100. Based on the responses, participants' anxiety levels were classified as "normal" (<45)," "mild to moderate" (45–59), "severe anxiety" (60–74), and "most extreme" (75 and over).

The third section consisted of several items to measure the coping strategies applied by students. Each item was rated on a scale of 1 to 4: 1="never/rarely," 2="sometimes," 3="often," and 4="very often/always." They were divided among four categories: i) Seek social support (4 items), ii) Acceptance (4 items), iii) Mental disengagement (4 items), and iv) Humanitarian (3 items). The first category refers to pursuing help or support from family or friends.[25] An example would be an item that stated: "During Covid-19 and lockdown, I discuss my feeling with someone". The Acceptance category is when a person adapts and tolerates the unpleasant situation.[26] For example, a student might agree on the item: "About Covid-19 and lockdown, I accept the reality of the fact that it is happening". On the other hand, Mental Disengagement means that an individual disconnects from the negative situation and directly engage in other activities.[27] Watching TV or doing indoor sports is one example of a mental disagreement approach. Finally, the Humanitarian coping strategy includes reaching out to others and attempting to helping them.[28] For example, the student might agree with the statement: "During Covid-19 and lockdown, I pray for those who are infected with COVID-19" (see the Appendix for the full instrument). For each coping category, the mean scores for the respective items were computed, and higher scores implied higher levels of use. It is important to mention here that in the pilot study, the Cronbach's alpha values were a 0.931, 0.923, 0.683 and 0.796 for the items in the four categories respectively.

Data analysis

This research used IBM SPSS version 22 software to analyse the data. Chi-square and ordinal regression procedures were applied to explore the association between demographic variables and coping style. Next, the associations between anxiety level and demographic information with the coping strategy style were tested.

Results

The purpose of this paper is to identify the strategies that university students in KSA used in coping with anxiety during the COVID-19 pandemic, from March 2020 to June 2020. The sample was selected from Prince Sultan University in Riyadh, the capital city of KSA.

Demographic characteristics

In this study, 400 responses were received. The demographic characteristics of the respondents are shown in Table 1. Out of the 400 respondents, 75.25% (301) were females, and 24.75% (99) were males. Most of the respondents were Saudi, with only 13% (52) non-Saudi participants. With regard to age, 93.5% of the respondents were age 19–25 years. One-third of the students were from the College of Business Administration, and around one-sixth each were from the College of Law and the College of Computer and Information Sciences. Most of the students (80%) were undergraduates, and 20% were in the Preparatory Year Program (PYP). With regard to accommodation, 89.8% (359) were living in their family homes. Moreover, it terms of their living arrangement, 94.2% were staying with their families.

Levels of anxiety

Based on the Zung scale, among the respondents, 21.5% (86), 8.8% (35), and 4.3% (17) experienced minimal to moderate, marked to severe, and most extreme levels of anxiety, respectively. For further analysis, respondents in the marked to severe anxiety category and the most extreme anxiety category were grouped as severe to extreme levels of anxiety. A summary of the results is shown in Table 2.

Coping strategies and anxiety

Four coping strategies—"Seek social support," "Acceptance," "Mental disengagement," and "Humanitarian"—were tested. The mean scores for the respective items were computed. The descriptive summary for the coping strategies is shown in Table 3. Overall, the usage of all four strategies was moderate. The distributions were fairly normal (skewness <2, kurtosis <7). Overall, the students practiced more acceptance strategies and fewer seeking-social-support strategies.

Table 1. Demographic characteristics of the respondents.

Variable	Frequency	Percentage
Gender		
Female	301	75.2
Male	99	24.8
Age		
≤ 18 years	15	3.8
19–25 years	374	93.5
≥ 26	11	2.8
College		
Business Administration	131	32.8
Computing & IS	73	18.2
Engineering	65	16.2
Humanities	16	4.0
Law	69	17.2
Preparatory Year Program	46	11.5
Level of study		
Preparatory Year Program	79	19.8
Undergraduate	321	80.2
Year of study		
Year 1	127	31.8
Year 2	72	18.0
Year 3	74	18.5%
Year 4	72	18.0
Year 5 and above	55	13.8
Current accommodation		
Family home	359	89.8
Rented premises	41	10.2
Currently staying with		
Family/relatives	377	94.2
Alone	23	5.8

Coping strategies used, by students' demography

Differences in the usage of the four coping strategies were tested using the Multivariate Analysis of Variance (MANOVA) procedure. The results are provided in Table 4. There were significant differences in means in gender, college, level of study, and current accommodations. Generally, females used the seek-social-support coping strategy more frequently than the males, and those from the College of Humanities used this strategy more than those from the College of Law.

The usage of the mental-disengagement coping strategy was higher among the PYP students compared to the undergraduates. The students who stayed in family homes used the humanitarian coping strategy more frequently than those who stayed at rented premises.

The associations between coping strategies used and level of anxiety were tested using Analysis of Variance (ANOVA) procedures. In the analyses, the variances were similar. The results are shown in Table 5. Out of the four strategies, only "Acceptance" was significantly associated with level of anxiety. The usage of the "Acceptance" coping strategy was higher in the "Normal" anxiety group compared to the "Severe to extreme" anxiety group.

Open-ended responses analysis

The qualitative data support the statistical results presented above. Only 35% of the respondents were classified as anxious, and only 13% were grouped in the "Severe to extreme" level. So, many students were just fine. This is consistent with students' comments: "Sure, life isn't as amazing as before, but we're appreciating every little thing we took for granted." Gender differences showed that females are more likely to seek social support. This is a natural instinct, as males might feel that they do not want to seek help from anyone. This justification is supported by the following comment: "I am a man and I can live with that." Moreover, seeking social support is a way of venting and sharing. Participants felt better just because they were given a chance to reflect about their feeling by completing this survey, which is apparent from the follow-

Table 2. Anxiety levels based on Zung's Classification

Anxiety	Frequency	Percentage	Anxiety	Frequency	Percentage
Normal	262	65.5	Normal	262	65.5
Minimal to moderate	86	21.5	Minimal to moderate	86	21.5
Marked to severe	35	8.8	Severe to extreme	52	13.0
Most extreme	17	4.3			

Table 3. Descriptive statistics for coping strategies.

Coping strategy	Mean ± S	Median	Skewness	Kurtosis
Seek social support	2.12 ± 0.87	2.00	0.519	0.628
Avoidance	2.94 ± 0.81	3.00	0.385	0.645
Mental disengagement	2.54 ± 0.63	2.50	0.286	0.031
Humanitarian	2.53 ± 0.80	2.33	0.158	0.757

Table 4. Results from Multivariate analysis of variance (MANOVA).

Variable	Seek social support	Avoidance	Mental disengagement	Humanitarian
Gender	0.003	0.976	0.398	0.148
Female	218±0.86[a]	2.94±0.79	2.53±0.64	2.57±0.79
Male	1.91±0.86[a]	2.392±0.85	2.57±0.58	2.42±0.83
College	0.919	0.646	0.749	0.109
Business Administration	2.13±0.88	2.97±0.79	2.53±0.65	2.68±0.81
Computing & IS	2.33±0.97	2.90±0.76	2.57±0.55	2.46±0.83
Engineering	2.07±0.81	3.00±0.76	2.38±0.57	2.45±0.63
Humanities	2.44±0.75[a]	3.01±0.54	2.44±0.55	2.50±0.74
Law	1.88±0.82[a]	2.82±0.89	2.56±0.71	2.39±0.86
PYP	2.03±0.87	2.97±0.82	2.73±0.62	2.57±0.86
Level of study	0.745	0.391	0.048	0.333
PYP	2.12±0.75 2.	3.01±0.79	2.72±0.58[a]	2.61±0.79
Undergraduate	2.12±0.89	2.92±0.81	2.49±0.63[a]	2.51±0.80
Current accommodation	0.631	0.145	0.134	0.021
Family home	2.11±0.87	2.95±0.80	2.56±0.63	2.56±0.81[a]
Rented premises	2.15±0.84	2.79±0.0.84	2.35±0.57	2.24±0.69[a]

The numbers in bold are p-values for the difference in the strategy used by the respective demographic characteristic. [a]pairwise differences.

ing comments:

"I love this survey a lot; it made me know myself more!!"
"Thank you for doing this."
"This was a really good survey and it has helped me to feel there is someone who feels for me and cares about me."
"Thank you for being concerned and caring; we really appreciate it."

Mental disengagement is also clear from some responses:

"Honestly, because of the free time I have because of COVID-19, I started learning a
new language and improving my academic skills more than I did at Uni."

Discussion

Natural disasters, such as pandemics, are outbreaks unanticipated by many people in society. Individuals have experienced fears, anxiety, and depression during the pandemic due to changes to their daily activities, financial security, and their loved ones' well-being.[29] Previous studies indicate the use of different coping methods in reducing anxiety and stress.[29,30]

This paper examined the coping strategies that university students in KSA have practiced to handle anxiety during the COVID-19 outbreak. The results indicate that, among this young generation, only a small percentage (13%) of the responding students experienced some severe to extreme level of anxiety. Thus, many students got along well, and the association of the acceptance strategy and the normal level of anxiety is convincing. This does not coincide with previous studies that have reported on the effects of COVID-19.[31] The authors argued that younger generations are more vulnerable and less resilient to disasters. However, the fact that this research focused on a young generation (university students) who have no experience or knowledge about what to expect from such a pandemic, and the fact that this research occurred at the early stage of the pandemic, could explain this result.

Moreover, the descriptive statistics showed that students used all types of coping strategies. This suggests that their mental health and natural intuition guided them to the strategy that is best for them to use. However, this usage was related to some demographic data. The observation that females seek social support more than males is convincing. In fact, previous studies revealed that females react differently to disaster than do males.[12,32-34] Moreover, Cvetković *et al.*[35] argued that females' caring social attitudes make them more willing to reach out to others to help or to seek help during disasters.

The selection of the coping strategies can be attributed to nature or convenience, or even to luck or coincidence. The lack of experience and the limited research funding and knowledge among the Saudi community increased the self-selection process. This is a significant finding and, in fact, dangerous. Previous research has argued about the importance of identifying coping strategies and encouraging the public to apply them.[31,36] Then, these suggested coping strategies must be translated into doable protocols to be used in the future by students. For example, Columbia University announced a list of coping strategies to be used by students to deal with the pandemic.[37]

Limitations

The study focused on students in KSA from one private university. This decision was made to avoid time constraints in obtaining IRB approval from various higher education institutions. The respondents are mostly Saudi students. Hence, the findings should not be generalized to the overall student population.

Implications and conclusions

The world has been attacked by an unprecedented pandemic, COVID-19, and this has influenced university students in KSA. The ability to survive this catastrophic event depends to a great extent on their reaction to it. The psychological impact of the pandemic, or any harsh decisions to contain it, on students cannot be ignored. The well-being of individuals is affected by anxiety, depression, and other psychological responses and can continue even after the outbreak.[29,38] To ease such impacts, certain strategies can be adopted to cope. However, ideal and safe coping strategies must be identified and encouraged by students to face this pandemic and other challenges in the future. Prioritizing research on the mental health, anxiety, and coping strategies of students, along with psychological effects, needs to occur on an urgent basis. This is consistent with the previous findings that argued that identifying coping strategies is essential,[31,36] and may help to ensure sustainable educational development in the world.

Moreover, the findings of this research inform the Saudi community on what strategies were used, so far, to cope with the pan-

Table 5. Anxiety level and coping strategies.

Coping strategy	Anxiety level	Mean ± S	F	P
Seek social support	Normal	2.06 ± 0.88	2.072	0.127
	Minimal to Moderate	2.17 ± 0.82		
	Severe to Extreme	2.31 ± 0.86		
Avoidance	Normal	3.02 ± 0.81[a]	4.121	0.017
	Minimal to Moderate	2.82 ± 0.81		
	Severe to Extreme	2.72 ± 7.49[a]		
Mental disengagement	Normal	2.57 ± 0.62	2.306	0.101
	Minimal to Moderate	2.55 ± 0.65		
	Severe to Extreme	2.37 ± 0.64		
Humanitarian	Normal	2.55 ± 0.82	2.226	0.109
	Minimal to Moderate	2.60 ± 0.75		
	Severe to Extreme	2.32 ± 0.77		

[a]pairwise differences

demic. However, future research must focus on the validity of these strategies and the possibility of encouraging other approaches. Moreover, using in-depth data collection strategies, such as interviews or focus groups, in future research can help explain why students adopted one strategy more than others.

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