

Psychological Distress of University Students during COVID-19 Pandemic – A Cross-Sectional Survey

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Abstract

Background: The COVID-19 pandemic is a worldwide emergency that necessitates immediate action to prevent the disease's rapid spread. This study attempted to examine the psychological distress **University** students. Students' commitment to preventive measures is impacted by their knowledge, attitudes, and practices toward the disease. **Method:** A quantitative non-experimental approach was used for the study. A descriptive, comparative design was instituted among the students of Sultan Qaboos University. A valid and reliable online survey was used to gather the data. **Results:** We found that a significant association between psychological distress and the demographic characteristics of the participants like college, known psychological issues, current social support, and current health status at $p < .05$. Non-nursing college students (59.7%) were likely to be well compared to the nursing students ($X^2(3) = 70.831, p < .001$). Students with known psychological issues reported higher psychological distress (41.3%) than other students ($X^2(9) = 8.811, p = .032$). Students who received their social support from their families (48%) reported more severe psychological distress than other students ($X^2(6) = 18.177, p = .006$). Students who had perceived excellent health (52.6%) reported likely to be well during this COVID 19 pandemic ($X^2(3) = 25.853, p = .002$). **Conclusion:** University students experienced a moderate amount of psychological distress during the COVID-19 pandemic. The psychological distress experienced by the university students could be associated with many factors such as their nature of studies, known psychological issues and their current health status, and the social support they had received.

Keywords: *Students, Coronavirus, COVID-19, Psychological distress*

INTRODUCTION

The outbreak of coronavirus disease (COVID-19) as a public health pandemic represents a serious issue of international public health concerns and has reserved awareness around the world (WHO,

2020). Coronavirus disease 2019 (COVID-19) is a respiratory illness caused by a new strain of coronavirus, which is referred to as the '2019 novel coronavirus that was first identified during a realization outbreak in Wuhan, China (CDC, 2020).

While COVID-19 continues to spread, communities must take action to prevent further transmission, support control measures, and reduce the psychological impacts of the outbreak on students (WHO, 2020; CDC, 2020). Education and training settings should continue to be welcoming, respectful, inclusive, and supportive environments, and minimize discrimination against students (WHO, 2020).

The risk of infection with COVID-19 is higher for a student who is in close contact with one another, through respiratory droplets when an infected patient coughs or sneezes, especially healthcare workers and students in clinical settings (CDC, 2020). It also may be possible that a student can get COVID-19 by touching an object or surface that has the virus on it, then touching their mouth, nose, or eyes (CDC, 2020).

Patients with COVID-19 have had mild to severe respiratory illness with symptoms of fever, cough, and shortness of breath, some patients suffer from pneumonia in both lungs, breathing difficulties, and multi-organ failure as complications of COVID-19; rarely, the disease can be fatal. Until now, there is no specific antiviral treatment for COVID-19; patients with COVID-19 can seek medical care to help relieve symptoms (CDC, 2020; Huang, et al. 2020).

Mental health problems among students pose a big challenge; they are under insurmountable psychological pressure (Tran et al., 2022; Zhang & Liu, 2021). Their problems included inadequate protection from contamination and a high risk of infection during their training in clinical settings in hospitals and health centers. Difficulties in doing assignments, writing proposals, frustration, discrimination, isolation, lack of contact with their families, and exhaustion were reported by many university students (CMHA, 2020; Khan et al., 2021). All of these could lead to various psychological problems, such as stress, anxiety, fear, insomnia and depressive symptoms among the students (Li, et al., 2020; Brooks, et al., 2020; Xu, 2021).

World Health Organization (WHO) declared the COVID-19 outbreak a pandemic. Globally, approximately 34,030,494 confirmed cases of coronavirus disease 2019 caused by the 2019

novel coronavirus had been reported to CDC, including 175,189,276 of these cases that have recovered and an estimated 607,289 deaths in about 150 countries (WHO, 2021; CDC, 2021). In the Sultanate of Oman, as of July 22, 2021, a total of 289,042 approved cases of COVID-19 have been reported by the Ministry of Health, 263,752 cases are recovered, and 3,498 deaths associated with COVID-19 are reported (WHO, 2021).

Psychological effects of the COVID-19 outbreak

University students experience fear of COVID-19 consequences and contagion (Khan et al., 2021; Zhang & Liu, 2021). Therefore, they may experience mental health problems such as loneliness, anxiety, depression, insomnia, despair (Villani et al., 2021), and develop obsessive-compulsive symptoms, such as repeated temperature checks and sterilization (Lu, & Wang, 2020; Xu, 2021). In addition, they may even have an increased risk of aggression, violence, and suicide and suffer from discrimination and stigmatization (Li, et al., 2020; Tran et al., 2022). During the COVID-19 pandemic, many faculty and students reported feelings and reactions such as fear of falling ill and dying, fear of being socially isolated or placed in quarantine, feeling powerless, helplessness and depression (Tadesse et al., 2022; Zhang & Liu, 2021; United Nations [UN], 2020; Tadesse et al., 2021; Villani et al., 2021). They even avoided approaching clinical settings due to fear of becoming infected while training in the hospital and community settings.

Instructions and guidelines for psychological services during the COVID-19 outbreak

The standard of psychological crisis interventions; includes three basic points:

- understanding the mental health and psychological status of staff and students caused by the COVID-19 outbreak (Shigemura et al., 202; Tran et al., 2022; Khan et al., 2021);
- identifying staff and students who are at high risk of violence, aggression, and suicide;

- Providing appropriate psychological interventions for those staff and students in need (Xiang et al., 2020; Xu, 2021).

To reduce the risk of adverse psychological outcomes caused by the COVID-19 outbreak and to promote social stability (Li, et al., 2020; Khan et al., 2021), mental health associations have taken many measures during this COVID-19 pandemic. They organized expert teams, published instructions and guidelines for mental health services, online educational articles and videos, hotlines, and mobile applications for the students (Li, et al., 2020; Zhang & Liu, 2021)

Further, mental health professionals have established an expert team for psychological crisis intervention (Lu, & Wang, 2020; Zhang & Liu, 2021), psychological counseling, and psychological assistance expert groups for providing professional guidance. Additionally, videos on mental health education for the students were uploaded to many universities and common websites to decrease the level of stress and anxiety (Lu, & Wang, 2020; Khan et al., 2021).

The global health impact of COVID-19 has been profound, and students have been exposed to a range of traumatic experiences, fears, and anxieties around COVID-19 (Zhang & Liu, 2021). These experiences have a dramatic impact on mental health and psychological well-being (Xu, 2021; Tran et al., 2022; Villani et al., 2021) the university students globally. This study provides key messages and considerations for faculty and students to promote mental health and coping after the students return to the universities.

University students especially those who are studying in nursing college are on the front lines in the hospital and community training sites. They are the ones who are involved in screening the patients in the emergency areas, taking care of the critically ill patients in the intensive care units, and communicating with families (Tran et al., 2022; Zhang & Liu, 2021). This makes it vulnerable to this fast-spreading coronavirus infection in our students (Xu, 2021; Tran et al., 2022). Many students have been exposed to a range of life-changing and traumatic experiences. This has made them susceptible to experiencing mental health problems such as loneliness, denial,

anxiety, depression, and developing obsessive-compulsive symptoms (Tadesse et al., 2021; (Zhang & Liu, 2021), suffer from discrimination and stigmatization. Moreover, an increased risk of aggression, violence, and suicidal ideation due to the fear of exposure to COVID-19 has been reported (CDC, 2020; Kang, et al., 2020; Tran et al., 2022). The researchers believe that students who have been working near patients and the community at large during their clinical placements and community postings in the initial periods of the outbreak would be facing a different type of psychological experience in comparison with their counterparts.

The psychological distress of university students represents a big challenge and higher prevalence at the beginning of the COVID crisis due to the nature of learning objectives and the learning environment. Therefore, the objectives of this study were to describe the psychological distress among university students. Using the K10 (Kessler, Barker, et al., 2003), a widely used measure to screen for serious mental illness, this study aims to assess the prevalence and severity of mental health problems in university students at an Omani university during the COVID 19 pandemic. In addition, identifying the association of psychological distress with their demographic characteristics was the purpose of this study.

METHODOLOGY

Research Design

A quantitative non-experimental approach was used for the study. A descriptive, comparative design was used to evaluate the differences in the psychological distress among university students in SQU (Polit & Beck, 2010).

Setting

The study was conducted at Sultan Qaboos University (SQU) which is the largest Government University in Oman and was established in 1986. There are nine colleges under the umbrella of the University such as Colleges of Nursing, Medicine and Health Sciences, Science, Engineering, Education, Agriculture and Marine

Science and Law, Economics and Political Science, and Arts and Social Science.

Population, Sampling, and Sample size

All students registered in SQU during the COVID 19 pandemic were the target population. The students were included if they had registered at SQU for any of the courses in the nine colleges, aged 18 years or above, third and fourth level, students. The students with somatic disease and psychiatric disorders are excluded. As it was, an online survey with informed consent was shared with the university students with the permission of respective college Deans through their e-mail addresses. 16353 undergraduate students were enrolled in this university during the data collection period. With the help of slovin's formula, the required sample size was calculated to be 300 and 222 agreed and filled the online survey (74% response rate). Convenient sampling was done.

Data Collection Procedures

After getting ethical approval from the College Research and Ethics Committee, a name list of the SQU students was obtained from the Assistant dean for academic affairs of the respective colleges with their email IDs. Based on the sampling frame students were approached by sending flyers about the research and consent forms through email. Those who consented automatically will be accessing the link for the survey. The survey took around 10 minutes for them to answer. Data were collected at one time from each participant. The completed questionnaire was checked for completeness and stored by the first two investigators in the password-protected files on their personal computers.

Instruments

The demographic form consists of questions about age, gender, marital status, living arrangement, college, academic year, psychological issues, and current social support. Psychological distress was measured by using the Kessler Psychological Distress Scale (K10) (Kessler et al., 2003) a simple measure of psychological distress. The K10 scale includes ten questions about emotional states, each with a five-

level response scale. Each item of the K10 scale is scored from one "none of the time" to five "all of the time." Scores of the ten questions are then summed, submitting a minimum score of 10 and a maximum score of 50. Low ratings indicate low levels of psychological distress, and high scores indicate high levels of psychological distress (Kessler et al., 2003). Reliability tests were done on the K10 using the 2002 Collaborative Health and Wellbeing Survey; the values ranged from 0.42 to 0.74, which indicates that K10 is a moderately reliable instrument, and it is an appropriate screening tool for population health surveys (Grande, Taylor & Wilson, 2002). The Cronbach's alpha of the scale was .788 for our sample.

Ethical Considerations

The first step in conducting this study was obtaining the Scientific Research and Ethics Committee approval from the College of Nursing and approval from the Human Research Ethics Committee in SQU. All participants were aware that participation was voluntary, and they could withdraw at any time, the consent form was written before they participated in the survey questionnaire and they had the opportunity to clarify their doubts by contacting the investigators through phone and mail.

Anonymity and the confidentiality of participants' information were assured; by not including any form of personal identity in the final submission of the questionnaires. The filled data were directly accessible to the researchers.

Data Analysis

After cleaning the data, analysis was done using IBM SPSS software version 23. Descriptive statistics like mean and standard deviation were used to analyze and present the demographic characteristics of the participants and the psychological distress. A chi-square analysis was conducted to identify the association between the psychological distress and the demographic characteristics of the participants and the results were considered statistically significant at $p < .05$ level.

RESULTS

Demographic Characteristics

The data presented in Table 1 show that the majority of the students were females (73.9%), with a mean age of 21.3 years, who lived on campus before the COVID-19 (55.4%). The majority were single (97.3%), and studied in level 3 (63.5%). The University has nine colleges like nursing and eight other non-nursing colleges (medicine and health science, engineering, law, education, science, arts and social sciences, economics and political science and agriculture and marine sciences) and most of our participants

were from the non-nursing colleges (53.6%). Most of them reported no known psychological issues (82.9%), as well as no family history of psychiatric disorder (71.6%). The majority of the participants (68.5%) reported that they received social support from their families. Most of them (53.6%) were unhappy with the university's decision to close the colleges and 56.3% of them were comfortable with emergency remote teaching. However, the majority of the participants (77.9%) have expressed that this change had affected their regular course of study.

Table 1. Demographic characteristics of the participants

N=222

DEMOGRAPHIC CHARACTERISTICS	CATEGORIES	FREQUENCY	PERCENT
GENDER	Female	164	73.9
	Male	58	26.1
AGE	Mean and SD = 21.30±.831		
MARITAL STATUS	Married	6	2.7
	Single	216	97.3
LIVING ARRANGEMENTS	In-campus	123	55.4
	Out-campus	99	44.6
COLLEGE	Nursing	103	46.4
	Non-nursing	119	53.6
ACADEMIC YEAR	3rd level	141	63.5
	4th level	81	36.5
KNOWN PSYCHOLOGICAL ISSUES	No	184	82.9
	Yes	38	17.1
FAMILY HISTORY OF PSYCHIATRIC DISORDER	No	159	71.6
	Yes	63	28.4
CURRENT SOCIAL SUPPORT	Family	152	68.5
	Friends	65	29.3
	Health care personnel	5	2.3

HAPPY WITH THE UNIVERSITY'S DECISION TO CLOSE THE COLLEGES	No	119	53.6
	Yes	103	46.4
THIS CHANGE HAS AFFECTED MY REGULAR COURSE OF STUDY	No	49	22.1
	Yes	173	77.9
COMFORTABLE WITH THE ERT	No	97	43.7
	Yes	125	56.3

Psychological distress

Psychological distress was measured by using the Kessler Psychological Distress Scale (K10) (Kessler et al., 2003) which consisted of ten questions about emotional states, each with a five-level response scale. Each item of the K10 scale is scored from one 'none of the time' to five 'all of the time.' Scores of the ten questions are then summed up to get a minimum score of 10 and a

maximum score of 50. Psychological distress was categorized as one (likely to be well- 10 to 20), two (likely to have mild distress – 21-30), three (likely to have moderate distress – 31-40), and four (likely to have severe distress – 41-50). Figure 1 depicted the psychological distress of the participants. The majority of them (40.1%) had reported severe distress followed by 36.5% likely to be well without any distress.

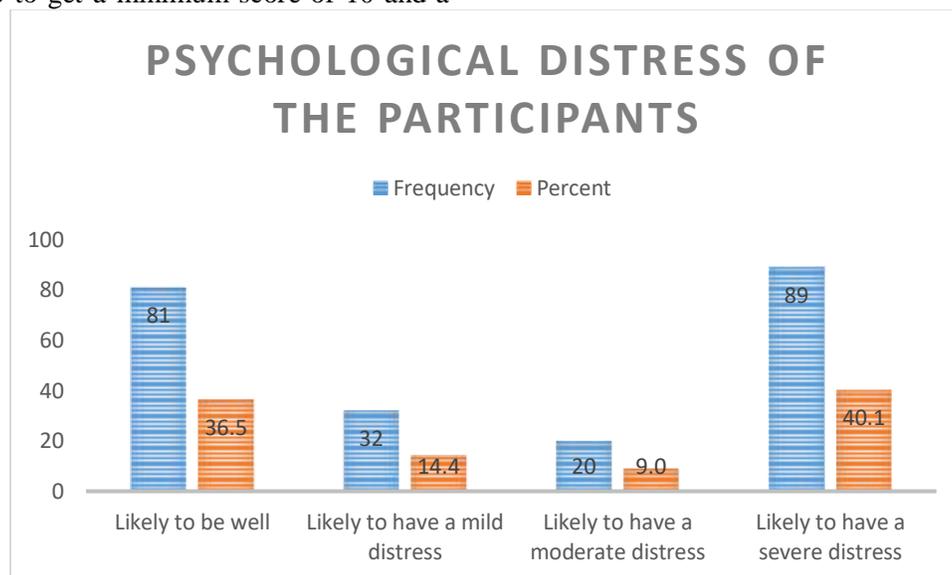


Figure 1. Psychological distress of the participants as per Kessler’s scale

The Chi-square test results (Table 2) showed a significant association between psychological distress and the demographic characteristics of the participants like college, known psychological issues, current social support, and current health status at $p < .05$. Non-nursing college students

(59.7%) were likely to be well compared to the nursing students ($\chi^2 (3) = 70.831, p < .001$). Students with known psychological issues reported higher psychological distress (41.3%) than other students ($\chi^2 (9) = 8.811, p = .032$). Students who received their social support from

their families (48%) reported more severe psychological distress than other students ($\chi^2(6) = 18.177, p=.006$). Students who had perceived

excellent health (52.6%) reported likely to be well during this COVID 19 pandemic ($\chi^2(3) = 25.853, p=.002$).

Table 2. Association of Psychological distress with the demographic characteristics of the participants

<i>Demographics</i>	<i>Categories</i>	<i>Likely to be well</i>	<i>Likely to have a mild distress</i>	<i>Likely to have a moderate distress</i>	<i>Likely to have a severe distress</i>	<i>Chi square value</i>	<i>P value</i>
<i>college</i>	Nursing	10(9.7%)	19(18.4%)	7(6.8%)	67(65%)	70.831***	.000
	Non-nursing	71(59.7%)	13(10.9%)	13(10.9%)	22(18.5%)		
<i>Known psychological issues</i>	No	13(33.1%)	4(10.8%)	8(21.6%)	12(32.4%)	8.811*	.032
	Yes	68(37%)	28(15.2%)	12(6.5%)	76(41.3%)		
<i>Current social support</i>	Family	53(34.9%)	15(9.9%)	11(7.2%)	73(48%)	18.177 ^a	.006
	Friends	2538.5%)	16(24.6%)	8(12.3%)	16(24.6%)		
	Health care personnel	3(60%)	1(20%)	1(20%)	0(0%)		
<i>Current health status</i>	Excellent	41(52.6%)	11(14.1%)	6(7.7%)	20(25.6%)	25.853 ^a	.002
	Very good	25(36.8%)	6(8.8%)	7(10.3%)	30(27.3%)		
	Good	14(21.2%)	14(21.2%)	7(10.6%)	31(47%)		
	Poor health	1(10%)	1(10%)	0(0%)	8(80%)		

DISCUSSION

While there is increasing concern about mental health problems among university students, COVID 19 pandemic necessitated us to survey the psychological distress they were experiencing during this time. In this study, we sought to determine the level of psychological distress of university students during the COVID-19 pandemic in a pioneering University of Sultanate of Oman.

In the current study, 40.1% of university students reported severe psychological distress during COVID 19 pandemic. Moreover, nursing students

experienced higher psychological distress (65%) as compared to non-nursing students (18.5%) while answering the Kessler Psychological Distress Scale (K10). A large-scale study of college students in France showed a prevalence of suicidal thoughts, severe distress, high level of anxiety, and severe depression (Wathelet, et. al., 2020). Another study conducted among College Students in Guangdong found that fear, depression, and trauma scores were significantly higher in the group of students who sought counseling, and had a history of psychiatric follow-up, than among their counterparts (Liang, et. al, 2020). The results from the university

students in China are contradictory to the current reports that the non-medical students had higher prevalence rates of depression and insomnia than medical students. (Zheng, et. al., (2021). In the current study, considering the data collection was held during the initial period of COVID-19, around (41.3%) of students had psychological issues, uncertainty over clinical learning and fear of the possible exposure to COVID-19 during their training postings compared to their counterparts.

The researchers in the present study found that the current social support from the family is not providing the students with psychological support rather it was associated with severe psychological distress. In addition, this contradicts the existing evidence put forth by Ma, et. al., 2020; and Wathélet, et. al., 2020. Zheng, et. al., 2021, also reported that university students who were living away from their families had reported anxiety and depression. The present study finding of social support is not found as a risk factor corresponds to the unique culture of Oman with exceptionally high family bonding and support system, due to quality family time, and healthy communication between family members, followed by friends who play a vital role in maintaining and strengthening wellbeing and mental health. This could have caused the family members also to worry about the health status and the future of education of their children.

Moreover, the university students who had reported poor health status had severe psychological distress as well. A study conducted in China showed that college students had a prevalence rate of probable acute stress, depressive symptoms, anxiety symptoms, and poor health during the initial periods of the COVID-19 outbreak (Ma, et. al., 2020).

Our University had implemented measures to mitigate the effects of COVID-19 restrictions on students' psychological distress by establishing blended learning strategies, balancing the unique clinical learning opportunities offered by COVID-19 prevention and control services with proper protective measures and equipment, offering leniency on tests, exams, and deadlines, and ensuring prompt access to quality psychosocial services. Our study results have depicted the lesser

psychological distress of our university students compared to other universities. Further research exploring the improved online technologies and modules on the psychological stress levels of students during the COVID 19 pandemic can shed more light on the mental health of university students. In addition, developing stress management programs, such as self-hypnosis, meditation, mindfulness-based stress-reduction, educational sessions, and music therapy can be implemented for medical and nursing students to reduce the psychological distress among students. Training faculty to use active learning strategies with modern technology also can reduce the psychological distress of the students and improve their academic performance.

LIMITATION

The major limitation of this study is the small sample size, which is limited to students enrolled at SQU in Oman. This small number of students does not represent the entire Omani population, thus preventing us from generalizing the results. The self-reported nature of the survey also poses another limitation for the generalization of the results. The response rate for this sample was relatively low. Future research focusing on the psychological distress of university students and their academic performance can bring more authentic findings.

CONCLUSION

University students experienced a moderate amount of psychological distress during the COVID- 19 pandemic. The Omani students are mostly worried about spirituality and religion, future security, and personal safety during COVID-19. The psychological distress experienced by the university students could be associated with many factors such as their nature of studies, known psychological issues and their current health status, and the social support they had received. This research supports the need for multilevel interventions to address the broader mental health needs of university students during crisis periods like the COVID 19 pandemic.

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