# Prevalence of Depression Among Jordanian University Students During COVID-19 Pandemic

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**The global COVID-19 pandemic has a significant impact on individuals, physical and mental health. This study aims to investigate the relationship between the COVID-19 pandemic and depression as a mental health problem among students of Jadara University. Methods: a cross-sectional study among Jadara University students by survey forms was conducted between 6 -12 of May 2020. The CES-D scale was used to assess depression. Result: Out of 200 participants, 45% were classified as high risk for depression and 55% as low risk for depression. Our resulting study revealed that the academic year and the professional status of the student had a significant relationship with depression. Conclusion: COVID-19 pandemic gives insight into the importance of universities and states natural resources to respond to mental health problems among the most vulnerable.**

**Keywords:** Corona; COVID-19; Depression; Jordan; Pandemic; University Students.

The latest WHO reports in April 2023 Epidemiological Update on the COVID-19 pandemic have reported Nearly 2.8 million new cases and more than 16,000 deaths worldwide for regional and country-specific issues[1]. Before the COVID-19 pandemic, SARS-CoV was the most recently emerged outbreak in China between 2002 and 2003, and then by 2012, MERS-CoV had appeared in Saudi Arabia[2]. Coronavirus was initially identified in Wuhan, China, in December 2019. And it was clinically observed by the surprising number of inpatients with pneumonia or flu-like symptoms who were hospitalized, crowding and overburdening many healthcare

facilities (3). The Coronavirus species has four well-known subgroups: Alpha, Beta, Gamma, and Delta. SARS-CoV-2, the source of the worldwide Covid-19 pandemic, has been significantly linked to Beta Coronaviruses developed initially in birds and pigs, causing severe symptoms, such as breathing difficulties, fever, cough, weakness, headache, and muscle pain[4].

By mid-March 2020, the world health organization (WHO) announced that the number of infected individuals was more than 180,000, and the death cases were not less than 7500 in 159 countries[5]. In early March 2020, the first COVID-19 case was reported in Jordan[4]. The Jordanian government established a measure to combat the spread of the virus, including suspending work for all officials and private institutions, prohibiting people from leaving their homes, banning gatherings and local traveling, and halting public transportation[6]. More than half of Jordanians had concerns and fears about traveling and being in crowded places. In contrast, 34% of them had noticed an apparent change in their social lifestyle, and 27% of the respondents were worried about unemployment and poverty[7].

Psychological issues, mainly presented as depression, fear, anxiety, or insecurity, have been strongly linked in numerous studies to the COVID-19 pandemic[2, 8]. This impact is well documented in China in early 2020, where a study reported that anxiety was most prevalent[9]. In another survey from March 11 to 15, 2020, 976 Spanish individuals showed that anxiety, stress, and depression rates were highest in the 18-25 age group, mainly university students and young adults. This may be caused by the need for university students to meet the adaptation requirements to the newly developed online education system[9]. Consequently, practices had been taken to minimize the occurrences of poor mental health; for example, crisis services and hotlines provided within the psychological counseling department at the universities started offering free psychological counseling during the COVID-19 crisis.

Furthermore, Peking University, China, designed the mental health handbook and used it to provide solutions and guidance for the cognitive problems raised among most university students through the COVID-19 pandemic (9). Therefore, the study of COVID-19-related- mental health and its burden on university students inside the Hashemite Kingdom of Jordan is critical and should be prioritized. Accordingly, efforts should be made to identify the COVID-19 pandemic depression effect on university students to implement programs and practices to reduce the psychological symptoms and predict potential factors contributing to such symptoms. Hence, this study measures the risk of depression during the COVID-19 crises in a sample of university students at Jadara University, Jordan, via a web-based design questionnaire. The study results can provide a better understanding and guidance to help improve the psychological diseases associated with the pandemic and thus implement governmental or certified educational programs to relieve the symptoms and potential factors[2].

## METHODS

### Study design

Among university students, a cross-sectional survey was distributed to assess depression. Google Forms was used to design an online self-administered survey, and a link was uploaded, distributed randomly, and collected from students between 6 - 12 May 2020. Students of Jadara University across Jordan were the target population of the online questionnaire, and the data was collected from students of Jadara University through different social networks. The study was approved by the Research Ethics Committees (REC) at Jadara University (Irbid, Jordan, approval number PHAR-09/012021).

### Questionnaire measurement of depression

The Center for Epidemiologic Studies Depression Scale (CES-D), designed by Radloff, was used in this study to evaluate depression among Jadara University students. The CES-D shows good discrimination, reliability, and construct validity in assessing the type, degree, and characteristics of depression in various populations (10-12). CES-D contains 20 self-report items rated on a 4-point scale that measure important domains of depression experienced in the past week. However, the score on (CES-D) ranges from 0 to 60, with higher scores indicating more symptoms. The questionnaire contains questions that evaluate the socioeconomic factors that could play a role in the prevalence of depression. These questions include

gender, age, living area, and Residence Working during quarantine. These factors have a significant impact on increasing depression prevalence[28].

**Statistical analyses**

Statistical Package for the Social Sciences (SPSS, version 20.0) software was used for data analysis. The chi-square test was used for qualitative variables; data were analyzed using SPSS version 20, with percentages calculated for each categorical variable. Student's t-test was used to determine the significance of differences between the means of two independent variables. All statistical tests were two-sided, and p d" 0.05 was considered statistically significant.

## RESULTS

**Study sample and demographic characteristics**

A total of 200 students answered the online questionnaire; 44% of the males and 56% were females, more than half were aged 18 to 23 years, and about 56% of the sample sizes were students who worked during the pandemic quarantine. Among them, 41.5% were students in medical college. The majorities were urban residents (66.2%) and were single (54.5%).

Table (1) demonstrates the detailed characteristics of participants by depression and expected response. There was a significant difference between depression and ordinary concerning students' college type, marital and occupation status during the pandemic (p d" 0.005). Table 1 shows that non-working students are more depressed than working students. Furthermore, the differences in students' academics also significantly impact the mental health status of students and their marital status. A trend is seen between the age group and their responses linking to the risk of depression; however, it is not significant (0.06).

## DISCUSSION

The Corona pandemic has exhausted the lives of many worldwide; thus, numerous countries have been studied to examine the psychological impact of this pandemic, including Ireland, Bangladesh, China, Turkey, and USA (3, 13-16). One of the first studies was conducted on China's general population, revealing higher distress levels in the young adult group, 18–30 years[17]. Such results seem to confirm findings from previous research, which could be explained by the tendency of young adults to obtain their information from social media leading to trigger stress[18]. Therefore, our study has focused on examining the stress levels and the risk of depression among young adults of university students in Jordan.

Our study found that university students were at greater risk of having depression symptoms in association with their field of education or the college type they enrolled in. Similarly, young adults enrolled in the medical colleges tend to have more distress, probably due to high self-awareness of their health and the science behind the coronavirus. Moreover, it is known that people with higher education tend to have higher stress levels[19]. A study conducted during the pandemic has also reported that people with higher education exhibited more severe depression symptoms in comparison to less educated individuals[20].

A recent clinical questionnaire study showed that 73% of the sample population developed depression and anxiety after one month of COVID-19 hospital treatment, while the depression in females was more prevalent than in males[21]. Our result shows that 22% of males and 23 % of female with high risk of depression. There are some discrepancies within the literature; another study among Bangladeshi universities revealed 82.4% were found to have mild to severe depressive symptoms[14]. Thus, there are some discrepancies within the literature on whether gender is a factor in depression, while most indicate females are more inclined to depression during the pandemic.

A review article identified specific socio-demographic characteristics as risk factors to be associated with symptoms of depression during the COVID-19 pandemic, such as younger age group, student status, education level, employment, and marital status. Similarly to the current study, we found a significant association between high risk of depression and marital and employment status, p d" 0.005 and p d" 0.001, respectively. However, in Jordan, the economic level of individuals living in rural areas is lower than those living in urban areas and this factor could contribute to increasing the prevalence of depression according to students' living areas, as revealed in our study. Moreover, this finding was consistent with the results of other studies[22].

This indicates that students restricted at home and not working are more prone to experiencing depression. This finding is consistent with the result of various previous studies[23, 24]. The pandemic of coronavirus could be stressful for many people, and isolation for reducing the spread of the corona virus may raise the depression, anxiety, stress, and other mental health problems[25-27].

Findings from this study and in comparison with the literature, we recommend the following for future interventions to universities: a) more attention needs to be paid to vulnerable groups such as the young, women and unemployed individuals; b) should encourage students to take elective courses about psychological health and spiritual well-being; c) developing workshops or conferences regarding spiritual well-being and psychological first aid to prevent further mental health problems and to reduce psychological distress. This will significantly influence psychological health, a potentially important step to decrease depression among university students.

Certain limitations that apply to this should be mentioned. Firstly, the sample was limited to students at the university who have internet access to social media to carry out the online questionnaires; excluding students with poor or no internet access created a selection bias in the population studied.

**Table 1.** Social-Demographic characteristics and the association between risk of depression and socio-demographic factors among Jordanian university students

| Variables | Total N = 200 n (%) | High risk of depression N = 90 n (%) | Low risk of depression N = 110 n (%) | P value |
|---|---|---|---|---|
| Gender | | | | |
| Male | 88 (44.0) | 44 (22.0) | 44 (22.0) | 0.20 |
| Female | 112 (56.0) | 46 (23.0) | 66 (33.0) | |
| Age (years) | | | | |
| 18-23 | 101 (50.5) | 38 (19.0) | 63 (31.5) | 0.06 |
| 24-28 | 71 (35.5) | 35 (17.5) | 36 (18.0) | |
| 29-34 | 28 (14.0) | 17 (8.5) | 11 (5.5) | |
| Residence | | | | |
| Rural | 68 (33.8) | 30 (15.0) | 38 (19.0) | 0.86 |
| Urban | 132 (66.0) | 60 (30.0) | 72 (36.0) | |
| Collage | | | | |
| Literature collage | 71 (35.5) | 32 (16.0) | 39 (19.5) | 0.009* |
| Medical collage | 83 (41.5) | 29 (14.5) | 54 (27.0) | |
| Scientific collage | 46 (23.0) | 29 (14.5) | 17 (8.5) | |
| Academic Year | | | | |
| 1st | 31 (15.5) | 12 (6.0) | 19 (9.5) | 0.43 |
| 2nd | 60 (30.0) | 33 (16.5) | 27 (13.5) | |
| 3rd | 49 (24.5) | 21 (10.5) | 28 (14.0) | |
| 4th | 42 (21.0) | 16 (8.0) | 26 (13.0) | |
| 5th | 18 (9.0) | 8 (4.0) | 10 (5.0) | |
| Marital status | | | | |
| Married | 79 (39.9) | 44 (22.0) | 35 (17.5) | 0.005* |
| Single | 109 (54.5) | 38 (19.0) | 71 (35.5) | |
| Divorced | 12 (6.0) | 8 (4.0) | 4 (2.0) | |
| Working during quarantine | | | | |
| Yes | 108 (54.0) | 8 (4.0) | 100 (50.0) | 0.001* |
| No | 92 (46.0) | 82 (41.0) | 10 (5.0) | |

*P-value ≤ 0.005

## CONCLUSION

This study further indicates the mental health challenges university students are facing in the context of COVID-19. Future research focusing on mental health trajectories and exposure to COVID-19 may need to inform how universities and states natural resources to respond to mental health problems among the most vulnerable.

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