#### RESEARCH ARTICLE



# Depression, anxiety and stress among undergraduate students during COVID-19 outbreak and "home-quarantine"

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#### **Abstract**

Aim: Many people including students affected physically and psychologically by coronavirus disease (COVID-19) outbreak and "home-quarantine." This study aimed at assessing the prevalence and predictors of depression, anxiety and stress among university students in Jordan during "home-quarantine" due to the outbreak of COVID-19.

**Design:** This is a cross-sectional descriptive study.

**Methods:** Data were collected from a convenience sample of 1,380 Jordanian university students. A web-based survey was used to collect data from the participants using the DASS-21.

**Results:** The prevalence of depression, anxiety and stress in different levels was 78.7%, 67.9% and 58.7%, respectively, which are higher during "home-quarantine." The mean scores of depression, anxiety and stress were at moderate levels. Strong correlations were found between depression, stress and anxiety, with demographic, health-related, lifestyle variables. Several variables also predicted depression, stress and anxiety.

#### KEYWORDS

Anxiety, COVID-19, Depression, Jordan, Stress

#### 1 | INTRODUCTION

The World Health Organization declared that coronavirus disease (COVID-19) as a pandemic Public Health Emergency (WHO, 2020a). Several months after the onset of the disease, more than 40 million cases have been reported and confirmed in more than 220 countries, resulting in about more than one million deaths (WHO, 2020b). In Jordan, according to Ministry of Health, of 20 December 2020, there were 275,000 confirmed cases with and 3,568 deaths (Ministry of Health, 2020). The pandemic of the COVID-19 has forced many

countries in the world to call for emergency plans and pose social and public restrictions. Parts of the public health procedure are to force curfew and declare "home-quarantine" and isolation which resulted in forcing the educational systems to use the online platforms. The COVID-19 pandemic is associated with increased levels of psychological distress such as anxiety, depression, post-traumatic stress and stress (Xiong et al., 2020).

Home quarantine or home isolation is an unpleasant experience for most human beings as it limits their freedom, causing apprehension of losing their jobs, feeling bored, separating from others,

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fearing from diseases, depression and anxiety (Lee et al., 2020a; Wu et al., 2009). One particular group is the university students whom forced to stay at homes and completely adhere to online education that seems unusual and unexpected for many of them especially for those who are lacking experience of online education and its required facilities. Such group previously reported to lack the psychological capabilities to manage their psychological and academic needs (Hamaideh & Hamdan Mansour, 2014), suffer high level of academic stress and efficacy (Shehadeh et al., 2020) and vulnerable to psychosocial disturbances (Hamdan-Mansour et al., 2018). Therefore, COVID-19 outbreak and "home-quarantine" are expected to affect physical and psychological health of university students (Al-Rabiaah et al., 2020). A recent report found that university students during COVID-19 outbreak suffered post-traumatic stress disorder, anger, fear, sadness, nervousness and emotional disturbances (Al-Rabiaah et al., 2020; Brooks et al. 2020; Cao et al., 2020; Liu et al., 2020; Molddofsky & Patcai, 2011; Qiu et al., 2020). Moreover, university students expressed their worry about their academic grades and delay in their graduation (Sahu, 2020).

In Jordan, the government has declared in mid of March 2020 a state of emergency to confine COVID-19 and forced strict quarantine measures, social and public health measures, and lockdown. University students were turned to online learning. Such situation caused burden to students whom were also under family pressure to adhere to public health measures and online education within limited information technology devices for many of them (Human Rights Watch, HRW, 2020). However, no psychosocial and mental interventions were directed towards mental health needs or problems that university students might suffer. The WHO (2020) have called to give priority to mental health and psychosocial support need of public during the outbreak of COVID-19 where university students were in need as well.

Depression, anxiety and stress are considered crucial indicators for mental health in the community, in general, and among university students in particular (Tee et al., 2021). As aforementioned, university students often face physical, psychological, social and academic demands that increase their risk and vulnerability to psychological distress such as depression, anxiety and stress. Few studies have addressed depression, anxiety and stress among university students although psychological disturbances reported highly during the time of COVID-19 outbreak (Liu et al., 2020; Qiu et al., 2020; Sahu, 2020; Wu et al., 2009; Zheng, 2020).

Most studies conducted to measure depression, anxiety and stress among university students used Depression, Anxiety and Stress Scale (DASS) (Livebond & Livebond, 1995) and reported results in terms of percentages (prevalence) and/or means. Different ways used to measure depression, anxiety and stress relying mainly on means and percentages. Controversial reports found addressing moderate to high level of depression, anxiety and stress across university students across different population (Astutik et al., 2020; Bahhawi et al., 2018; Choudhary et al., 2019; Lu et al., 2018; Nadeem et al., 2017). Prevalence of depression, anxiety and stress is reported to be around 60% in several studies (Abdallah & Gabr, 2014;

Abdelwaheb & Hassan et al., 2017; Iqbal et al., 2015). It was noted that most studies reported higher mean scores of DASS among females than male counterparts (e.g. Abdelwaheb & Hassan, 2017), while few ones reported higher scores among male students than female students (e.g. Choudhary et al., 2019; Dalky & Gharaibeh, 2019). However, in Jordan, depression, anxiety and stress' mean scores among university students were almost equivalent to other cultural groups (16.0–20.0) and that female students had higher mean scores than males supporting the international results (Hamaideh, 2018).

Several studies worldwide measured levels of depression, anxiety and stress among university students; however, none of those studies measure those variables during the time of "home-quarantine" and COVID-19 outbreak. Therefore, this study aimed at assessing the prevalence and predictors of depression, anxiety and stress among university students in Jordan during "home-quarantine" due to the outbreak of COVID-19. More specifically, this study aimed to: measure levels of depression, anxiety and stress among Jordanian university students during "home-quarantine" and outbreak of COVID-19; identify the associations between depression, anxiety and stress with demographic, educational and lifestyle variables among Jordanian university students; and identify the predictors of depression, anxiety and stress among Jordanian university students.

#### 2 | METHODS AND MATERIALS

#### 2.1 | Design

A descriptive, cross-sectional, quantitative, correlational design was employed to measure levels and correlates of depression, anxiety and stress among Jordanian university students.

#### 2.2 | Instrument

The questionnaire consisted mainly of two parts: demographic, educational and lifestyle variables, and the Arabic version of DASS-21.

1. Demographic variables were: age, gender, marital status (married, single or others) and income level (low, middle or high). Educational variables were college type disciplines (scientific or humanistic) and grade point average (GPA) (poor/weak, fair, good, very good or excellent). Health-related variables were smoking status (no or yes), participants' chronic diseases (no or yes), and if family members have chronic diseases (no or yes).

Few lifestyle questions were added to check some related factors it may impact on participants' psychological well-being in such circumstances. These linked factors include the following: in general, how you would rate your satisfaction with distance-learning during the quarantine (scale from 1 "very dissatisfied"-5 "very satisfied"; do you have any sleeping disturbances (scale from 0 "I do not have at all "-3 "I have very much or most of the time "); do you/or your family suffer from "home-quarantine" (scale from 0 "I do not suffer"-3 "I suffer very much or most of the time"; do you have any eating disturbances (scale from

0 "I do not have at all"-3 "I have very much or most of the time"); are you afraid of decreasing in your academic grades during this semester (scale from 0 "I do not have at all"-3 "I have very much or most of the time"); and do you feel loneliness or isolation from others (scale from 0 "I do not at all"-3 "I have very much or most of the time")?

2. The Arabic version of DASS-21 (Lovibond & Lovibond, 1995; Moussa et al., 2017) was used to measure the severity of symptoms common to depression, anxiety and stress. Individuals required to rate the presence of each symptom during the past week. The DASS-21 is composed of three subscales: depression, anxiety and stress. Each subscale consisted of seven items, and each item is rated on a Likert type scale ranging from 0 "did not apply to me at all"-3 "applied to me all the time." The score for each subscale ranged from 0-21. The higher the scores the more negative experiences of depression, anxiety and stress during the last week. DASS-21 has good validity and reliability and used widely among university students (Cavanagh at all, 2016; Lovibond & Lovibond, 1995; Lu et al., 2018; Moussa et al., 2017) and used by different cultures during COVID-19 pandemic (Le, Dang, et al., 2020; Wang et al., 2020a; Wang et al., 2020b). In the current study, Cronbach's alpha was 0.942 for the whole scale and was 0.874, 0.876 and 0.875 for depression, anxiety and stress subscales, respectively. Since the original scale consisted of 42 items (14 items for each subscale), therefore if using the short version (DASS-21), scores should be multiplied by two.

#### 2.3 | Sample

G\*power analysis, using small effect size, power of 0.80, alpha of 0.05 and two-tailed test; the minimum required sample size is around 400 participants. All undergraduate, Jordanian Hashemite University students who are registered in second semester of 2019–2020 academic year were invited to participate in the study (total number around 18,000), by completing the web-based questionnaire designed by using Goggle Forms. Non-Jordanian and postgraduate students were excluded from the study as it recorded a tiny percentage of the total sample.

## 2.4 | Data collection

Data were collected through a web-based survey during the period of "home-quarantine" in Jordan and the curfew between 1 April–15 April 2020 by uploading the online questionnaire on the official portal and social media pages of the university (such as Facebook pages and the university websites) and asking the interested and eligible students to take part in the study voluntarily.

#### 2.5 | Ethical considerations

The Research Ethics committee approval of the study has been approved by the Institutional Review Board (IRB) of the university. In the

introduction part, the researchers explained the purpose of the study and told the participants that their participation is voluntary, their confidentiality is protected, and their data will be kept confidential. The participants were informed that completing the questionnaire is considered as their consent for participation in the study. No identifying information was collected to promote the participants' confidentiality. During the COVID-19 pandemic, the university launched a web page and a hotline for students who feel that they have any psychological and emotional turmoil such as depression, anxiety and stress.

#### 2.6 | Data analysis plan

The data analysed using Statistical Package for Social Sciences (IBM-SPSS v 24) programme. Pearson measure of skewness values and standard errors was used to check the normality of continuous variables. Descriptive statistics were used to describe sample characteristics. Levels of depression, anxiety and stress were presented in means (standard deviations) and percentages. Differences in mean scores of depression, anxiety and stress with demographic, educational and lifestyle variables were tested using t test and ANOVA. Pearson and Spearman correlation were used to detect the correlations between depression, anxiety and stress with lifestyle variables. To detect the predictor variables of depression, anxiety and stress, three stepwise multiple regression analyses were performed separately. Variables that correlated with depression, anxiety and stress were entered as independent variables in each multiple regression analysis. Assumptions of ANOVA and regression were met. Using a histogram distribution, there were very little deviations of the sample distribution from the bell curve distribution, indicating that the sample was normally distributed. A significant p value set at 0.05.

#### 3 | RESULTS

#### 3.1 Demographics and related variables

The sample consisted of 1,380 students, 1,050 (76.1%) were females. Participants' age ranged between 17–33 years old (mean = 20.8, SD = 1.89). Regarding college type, three fourth of the sample were from scientific colleges (n = 1,068,77.4%) from different levels. In the first two years of their studying, they study general scientific courses, then study specialized courses according to their specialty and were more mature at later stage of their university life. Other demographic, educational and lifestyle variables were presented in Table 1.

# 3.2 | Levels and prevalence of depression, anxiety and stress

DASS-21 has a scoring guide with predetermined scoring levels. The mean scores of depression, anxiety and stress were designated moderate (mean = 18.72, SD = 9.27), moderate (mean = 13.11, SD = 7.11) and moderate (mean = 19.04, SD = 9.16), respectively. The prevalence of depression, anxiety and stress at different levels were (78.7%), (67.9%) and (58.7%), respectively (see Table 2).

**TABLE 1** Characteristics of participants (N = 1,380)

%	N	Variable
Gender		
23.9	330	Male
76.1	1,050	Female
Marital status		
3.8	53	Married
96.2	1,327	Single
College type		
77.4	1,068	Scientific faculty
22.6	312	Humanistic faculty
Grade Point Average		
1.4	19	Weak
9.1	125	Fair
30.0	414	Good
40.7	561	Very good
18.9	261	Excellent
Smoking status		
11.4	157	Yes
88.6	1,223	No
Income level		
22.3	308	Low
74.6	1,029	Middle
3.1	43	High
Students' chronic illne	ess	
4.6	63	Yes
95.4	1,317	No
Family chronic illness		
39.9	551	Yes
60.1	829	No

## 3.3 | Associations between depression, anxiety and stress with demographics

ANOVA and *t* test results are shown in Table 3. Regarding depression, the statistical significances were found with each of the GPA, smoking status, income level, students' Long-term illness/ enduring illness and Long-term illness/ enduring illness among one of the family members. For anxiety, the statistical significances were found with gender, smoking status, income level, students' Long-term illness/ enduring illness amd Long-term illness/ enduring illness among one of the family members. For stress, the statistical differences were found with GPA, smoking status, income level, students' Long-term illness/ enduring illness among one of the family members. Although the mean scores of depression, anxiety and stress were higher among female students, the statistical difference was found only in anxiety subscale. Pearson and Spearman correlations between depression, stress, anxiety and demographics were shown in.

#### 3.4 | Predictors of depression, anxiety and stress

Variables that predicted depression were satisfaction with distance-learning, suffering from "home-quarantine," disturbances in sleeping and eating, afraid of decreasing in academic grades, feeling loneliness and the presence of chronic illness at the participants' family members; and accounted for 41.9% of the variance. Variables that predicted anxiety were suffering from "home-quarantine," disturbances in sleeping and eating, afraid of decreasing in academic grades, feeling loneliness and the presence of chronic illness at the participant; and accounted for 34.0% of the variance. Variables that predicted stress were satisfaction with distance-learning, suffering from "home-quarantine," disturbances in sleeping and eating, afraid of decreasing in academic grades and feeling loneliness; and accounted for 44.5% of the variance.

#### 4 | DISCUSSION

This study is addressing psychological well-being of university students during a critical global situation; the outbreak of coronavirus

**TABLE 2** Depression, anxiety, and stress mean scores and prevalence (N = 1,380)

Scale	Mean (SD)	Normal (%)	Mild (%)	Moderate (%)	Severe (%)	Extremely Severe (%)
Depression	18.72 (9.27)	21.3	21.1	21.2	19.9	16.5
Anxiety	13.11 (7.11)	32.1	24.3	16.8	11.7	15.1
Stress	19.04 (9.16)	41.3	15.5	19.6	13.6	10.0

Scores of Depression, anxiety and stress were from DASS-21.

Scores for each subscale classified into 5 levels: normal, mild, moderate, severe and extremely Sever. For depression subscale, normal, 0-9; mild, 10-13; moderate, 14-20; severe, 21-27; and extremely sever, 28 and more. For anxiety subscale, normal, 0-7; mild, 8-9; moderate, 10-14; severe, 15-19; and extremely sever, 20 and more. For Stress subscale, normal 0-14; mild, 15-18; moderate, 19-25; severe, 26-33; and extremely sever, 34 and more.

**TABLE 3** Associations of depression, anxiety and stress with demographics (N = 1,380)

Stress			Anxiety		Depression				
p	F <sup>a</sup>	Mean (SD)	p	F <sup>a</sup>	Mean (SD)	p	F <sup>a</sup>	Mean (SD)	Variable
Gender									
.774	-0.287	18.91 (9.3)	0.041	-2.04	12.41 (7.2)	0.724	-0.354	18.56 (9.6)	Male
		19.08 (9.1)			13.33 (7.1)			18.77 (9.2)	Female
Marital sta	atus								
.760	0.31	19.41 (9.9)	0.986	-0.02	13.09 (6.9)	0.349	-0.94	17.54 (8.9)	Married
		19.02 (9.1)			13.11 (7.1)			18.76 (9.2)	Single
College ty	pe								
.888	-0.14	19.02 (9.1)	0.166	-1.39	12.69 (7.0)	0.637	-0.47	18.65 (9.1)	Scientific
		19.10 (9.3)			13.60 (7.3)			18.93 (9.1)	Humanisti
Grade Poi	nt Average								
.040	2.52	23.89 (7.5)	0.135	1.76	15.68 (8.6)	0.021	2.90	24.01 (9.2)	Weak
		19.96 (9.5)			13.54 (7.6)			18.70 (8.8)	Fair
		19.49 (9.5)			13.54 (7.4)			19.45 (9.6)	Good
		18.64 (9.1)			12.90 (6.9)			18.32 (9.2)	Very good
		18.37 (8.6)			12.47 (6.6)			18.02 (8.8)	Excellent
Smoking Status									
.001	3.47	21.42 (9.7)	0.021	2.31	14.43 (8.3)	0.014	2.45	20.42 (9.8)	Yes
		18.73 (9.1)			12.95 (6.9)			18.49 (9.2)	No
Income le	vel								
.001	10.91	21.17 (9.9)	0.001	9.44	14.65 (8.2)	0.001	11.28	20.88 (10.0)	Low
		18.42 (8.8)			12.68 (6.6)			18.14 (8.9)	Middle
		18.49 (9.4)			12.46 (7.5)			17.02 (9.5)	High
Students' chronic illi	ness								
.001	4.11	23.65 (10.9)	0.001	5.70	18.4 (10.6)	0.001	4.55	23.87 (11.2)	Yes
		18.82 (9.0)			12.87 (6.8)			18.47 (9.1)	No
Family chronic illi	ness								
.001	3.27	20.05 (9.2)	0.004	2.92	13.79 (7.4)	0.001	4.47	20.07 (9.5)	Yes
		18.38 (9.1)			12.65 (6.7)			17.81 (9.0)	No

<sup>&</sup>lt;sup>a</sup>F (Result of ANOVA, t-for two groups).

that resulted in global lockdown and home quarantine. The study aimed at assessing prevalence and predictors of depression, anxiety and stress among university students in Jordan during "homequarantine" due to the outbreak of COVID-19. We found that university students are suffering moderate to high level of depression, anxiety and stress which is higher than typical levels in ordinary circumstances. When comparing our results regarding depression, anxiety and stress with results from the general populations from seven middle-income countries (Vietnam, China, Iran, Malaysia, Philippines, Pakistan, and Thailand), higher levels were found among Jordanian students except those among Thailand who have higher levels (19.74, 18.66–21.95), for depression, anxiety and stress, respectively (Wang et al., 2021). The figures are warranting vulnerability to psychological disturbances and infer a probability of academic

and psychosocial deterioration during the quarantine period at home. One explanation could be due to sudden overwhelming academic online assignments and sessions added to social apprehension of lethally and the outbreak of COVID-19. Another explanation could be related to fears that students bear due to uncertainty of their grades and graduation-related issues as supported by Sahu (2020) who have emphasized the fear issues among college students. Academic work is considered a source of anxiety in a normal situation (Shehadeh et al., 2020); however, the global apprehension and anxiety due to COVID-19 might have worsened the psychological status of students. Depression, anxiety and stress might be observed apparently among students who lack the essential facilities of information technology that is needed to accomplish their online academic requirements. This has been also indicated through the

negative associations of depression, stress and anxiety with students' level of income inferring the economic level effect on their psychological well-being.

Results of this study indicated that depression was higher than similar studies conducted pre-COVID-19 and even during (Astutik et al., 2020; Dalky & Gharaibeh, 2019; Hamaideh, 2018). The results commensurate with the WHO (2020b) worries that psychosocial well-being should be given a priority for quarantined population due to COVID-19 and has been also proved psychosocial well-being was not given a priority among healthcare professionals during COVID-19 pandemic (Hamdan-Mansour et al., 2020). On the other hand, anxiety level was lower in this study than in other similar population at pre-COVID-19 period (Hamaideh, 2018). One explanation could be related to students' perception that anxiety was related to their academic requirements in addition to other general factors such as smoking status, students and family history of Long-term illness/ enduring illness than being general anxious about the situation. The study a positive and significant association indicating that sources of anxiety, depression and stress among students are multifaceted. This has been sustained by Shehadeh et al. (2020) who reported that students were able to identify sources of anxiety that are related to their academic requirements and assignments. Students were aware about their capabilities and did connect their anxiety to their academic self-efficacy in which being able to perform the academic task is associated with lower level of anxiety. Nevertheless, university students remain almost to same level of stress in this study in comparison with other previous reports (Bahhawi et al., 2018; Choudhary et al., 2019). This infers that stress and anxiety among students are influenced with several factors such as their socioeconomic status and lifestyle; however, quarantine elevated levels of stress, anxiety and depression.

Number of factors contributes to psychological well-being among university students. In this study, and adding to the body of knowledge, we found that satisfaction with online learning, suffering from "home-quarantine," sleeping disturbances, eating disturbances, afraid of decreasing in academic grades, feeling lonely and family history of chronic illness were factors that predicted depression, anxiety and stress among university students. The results confirmed the effect of physical and psychological deterioration and give an indication that physical and psychological disturbances contribute to the development of more serious forms of psychological disturbances such as depression and anxiety. The results agreed with previous studies that depression, anxiety and stress are associated with physical and psychological disturbances (e.g. Hamdan-Mansour et al., 2018; Tee et al., 2020). Actually, such factors are overlapped with signs of depression and anxiety which may sustain the aforementioned notion that sources of stress, depression and anxiety are multifaceted.

Socio-demographic characteristic of students is considered significant influencing factors on student's psychological well-being. This study has confirmed this effect and added to the body of knowledge that even during home quarantine and being close to family members, personal and demographic characteristics remained

significant contributors. One significant input was that female university students had higher scores in depression, stress and anxiety than male students; and this is valid even before the pandemic (Lim et al., 2018). Such findings infer that females in general might have used different coping and adaptation skills that have not helped them to control their psychological disturbances. In previous studies (Hamdan- Mansour et al., 2018; Shehadeh et al., 2020), it has been found that female university students in Jordan have higher levels of anxiety and stress. This could explain why female university students during quarantine period suffered higher levels of depression, anxiety and stress as probably they were more concerned, worried and oriented towards their academic performance taking in consideration the role of females in the Arabian culture with given home responsibilities to females (girls) and waving such responsibility for their male siblings. In this study, we have not tested the effect of sources and nature of social support that students received which, if done, might allow better understanding the role of social support in buffering the effect of academic anxiety during "home-quarantine."

#### 4.1 | Limitations

Although this study provides valuable information about depression, anxiety and stress, it has few limitations. First, the study used a cross-sectional design; therefore, a causal relationship cannot be determined. Prospective follow-up studies may address the issues of causality (i.e., Wang et al., 2020c). Second, as with most survey questionnaires, bias and subjectivity may be an issue, but with a large number of participants completing the questionnaire help to mitigate the effect of bias. In future studies, bias and subjectivity can be decrease by employing structured clinical interview and functional neuroimaging (Ho, Lim, et al., 2020; Husain, Ong, et al., 2020; Husain, Yu, et al., 2020). Third, the sample was from one Jordanian university and this may limit the generalizability of results to all population.

### 4.2 | Implications for practice

The study showed that university students suffered from depression, anxiety and stress during "home-quarantine" period of COVID-19 outbreak. Number of factors contributed to gravitate the psychological disturbances including online education, and sleeping and eating disturbances, in addition to sociodemographic and lifestyle factors. The study has an implication to psychiatric nurses and mental health professionals. Psychiatric nurses need to develop and use screening tools to measure psychological disturbances among university students. The sources of psychological disturbances among university students are multidimensional; therefore, psychiatric nurse practitioners need to conduct a comprehensive assessment and develop their interventions accordingly. The role psychological intervention such as online mindfulness and other simple relaxation technique also can be

helpful during "home-quarantine" (Sidi, 2020). Also, the issues of depression, stress and anxiety are still high even if quarantine and lockdown were lifted (Woon et al., 2020). One particular approach is using TeleMHPSS (mental health and psychosocial support) to screen, identify and provide psychological interventions appropriately. Depression, anxiety and stress are serious mental conditions that require attention of academic mental health counsellors. University students are in need to high-quality and crises-oriented psychological services (Cao et al. 2020).

To decrease the effect of psychological distress among students during "home-quarantine," it is important to create programmes such as TeleMHPSS and hotlines where students are encouraged to seek help whenever they feel anxious, depressed or stressed. Such programmes will allow psychiatric nurse practitioners to early detect and appropriately intervene to prevent development of depression, anxiety or stress. In addition to that, the university administrators should pay more attention to students including international students and provide timely appropriate mental health services (Zhai & Du, 2020). Further, the most cost-effective evidence-based treatment of psychiatric symptoms such as insomnia during COVID-19 pandemic is cognitive behaviour therapy (CBT), especially Internet CBT that can prevent the spread of infection during the pandemic (Ho et al., 2020; Soh et al., 2020; Zhang et al., 2017). In addition, religiosity and spiritual practices may alleviate the emotional stress.

#### 5 | CONCLUSIONS

The study findings indicate that mental health is a core component of well-being. University students suffer moderate levels of depression, anxiety and stress inferring that during quarantine periods university students are vulnerable to serious mental illnesses if no appropriate interventions are indicated. Screening for university students is needed on admission to university to identify risk factors. We have found that sleep and eating disturbances, concern about academic grades, and feeling of loneliness are significant elements that need to be addressed and taking care of by mental health nurses and counsellors at academic institution and counselling departments. Faculty members and administrators are responsible also for providing appropriate psychological support and not to overwhelm students during quarantine times.

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#### **CONFLICT OF INTEREST**

Authors' have no conflict of interest

#### DATA AVAILABILITY STATEMENT

Data available on request from the authors

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