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Students' Stress and Loneliness During the COVID-19 Period

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Annotation. This study investigated stress and loneliness among students at the University of Shkoder, Albania, during COVID-19, finding higher stress among females and increased loneliness in social sciences students. It highlighted a significant correlation between stress and loneliness, suggesting implications for student health interventions and further research.

Keywords: *COVID-19, stress, loneliness, quantitative study, students.*

Introduction

The COVID-19 pandemic, which originated in Wuhan, China, in December 2019, has quickly spread to over 200 countries and territories worldwide (Johns Hopkins University, 2020, as cited in Kallçiu et al., 2020). On March 12, 2020, the World Health Organization (WHO) declared COVID-19 a pandemic and urged countries to take appropriate measures (WHO, 2020). It was indicated that mental health problems increased among the general population from pre-pandemic assessments during lockdown (Richter et al., 2021). The pandemic has resulted in significant disruptions to people's daily lives, including social distancing, isolation, and quarantine, which have affected the mental health and well-being of individuals globally (Brooks et al., 2020; Miltenienė et al., 2023).

Studies have indicated that the COVID-19 pandemic has had a significant impact on the mental health of university students (Cao et al., 2020; Wang et al., 2021).

Consequently, not only the academic demands of students in their coursework, but also the emotional toll from social isolation.

The pandemic has led to increased loneliness among students due to limited social interactions and reduced opportunities for in-person communication (Killgore et al., 2020; Wang et al., 2021). Research has also shown that stress and loneliness levels vary among different populations of university students (Wang et al., 2021; Yang et al., 2021).

Stress and loneliness are two common mental health issues that have been linked to negative physical and psychological outcomes (Hawkley & Cacioppo, 2010). Prolonged exposure to stress can lead to adverse health outcomes, such as anxiety, depression, and other mental health problems (Segerstrom & Miller, 2004). Loneliness, on the other hand, is a subjective experience of isolation and social disconnectedness, which can result in poor mental health outcomes, such as depression, anxiety, and poor sleep quality (Hawkley & Cacioppo, 2010). The sudden shift to remote learning has caused students to adapt to new technology, a lack of face-to-face interaction with classmates and professors, and an entirely different learning environment, leading to an increase in workload, feelings of overwhelm, and burnout (Wang et al., 2020).

In the midst of the pandemic, it has become increasingly important to make a clear distinction between social isolation and loneliness. Just because someone is experiencing a decrease in social interactions does not automatically mean they are feeling lonely. Loneliness is a complex concept, influenced by more than just reduced social contact. It also includes individual characteristics, such as those highlighted by Mund et al. (2020), and environmental factors such as personality traits, the desire for social interaction, and relationship expectations, as discussed by Qualter et al. (2015). Moreover, other factors like physical and mental health, as well as cultural norms, play a significant role in determining how the pandemic affects individuals.

Data indicate a higher prevalence rate of loneliness in the midst of young people during the COVID-19 pandemic than older adults (Barreto et al., 2021). Various studies have estimated that at least 38-50% of young people aged 18–24 have experienced higher levels of loneliness during social isolation (Rauschenberg et al., 2021), with females more likely to experience loneliness than males (Losada et al., 2021). Researchers from several countries have studied the effects of COVID-19 on students' feelings of stress and loneliness and have reached important conclusions.

In an effort to determine how people were feeling about the COVID-19 pandemic, Limcaoco et al. (2020) found that female and younger individuals, particularly students, perceived increased stress and worry associated to COVID-19. Similarly, the study by Aslan and Pekince (2020) sought to assess nursing students' perceptions of stress and their opinions of the COVID-19 pandemic. It was found that students experienced a moderate level of stress, higher than in previous years. A study conducted by Labrague et al. (2021) revealed that a significant proportion of students experienced medium (56.7%) and high (23.6%) levels of loneliness during the period of total isolation. However, limited studies

have been conducted on stress and loneliness among students in Albanian universities. In this research, our objectives are: to investigate and assess the stress and loneliness levels exeperienced by students during the COVID-19 pandemic; considering a range of factors including age, gender, academic discipline, and level of study. It is essential to understand how these factors affect students' mental health for the purpose of undertaking interventions and creating effective support networks where educators, mental health professionals, and policymakers can collaborate to foster a feeling of community and reduce negative effects on students' wellbeing (OpenAI, 2023).

Research questions:

1. Are there gender and age differences in the level of experiencing stress and loneliness caused by COVID-19 among the students at the University of Shkoder?
2. Are there differences between first, second, and third-year students in experiencing stress and loneliness caused by COVID-19?
3. Are there differences between students of social sciences and those of exact sciences, in terms of experiencing stress and loneliness caused by COVID-19?
4. To what extent is stress related to the variable of loneliness?

Method

Study Design

The present study employs a descriptive and correlational quantitative design, which is characterized by reporting summary statistics, such as measures of central tendency (e.g., mean, median, mode), variability (e.g., standard deviation, variance), percentages, and correlations between variables. Descriptive research can include multiple variables for analysis, but it differs from other research methods in that it only requires one variable for analysis (Borg & Gall, 1989).

Participants

A population of 5500 students from Bachelor studies at Shkoder University, Albania, was selected for this study. A probabilistic sample of 359 subjects was created, of 45 males (12.5%) and 314 females (87.5%). The respondents' age ranged from 18 to 42 years, with a mean age of 21.11. The representation of the population was conducted through random selection. The confidence level was 95% with an error 5%. The sample was selected using Yamane's formula (1967):

$$Wn = \frac{N}{1 + N e^2},$$

here, n = sample size

N = the size of the population

e = the error of 5%

We invited students via e-mail to complete the online questionnaire (in Google Forms), informing them about the aims of the study and ethical guidelines for research through an informed consent form.

Instruments

Demographic questions

At the start of the questionnaire, participants were asked about demographic questions such as gender, age, year of study, and academic discipline.

The Student Stress Questionnaire COVID-19 (CSSQ) was developed by Zurlo et al. (2020) to assess perceived stress levels of students during isolation resulting from the COVID-19 pandemic. The CSSQ consists of seven statements, on a five-point Likert scale ranging from 0 (not at all stressful) to 4 (extremely stressful), categorized into three subscales: Relationships, Academic Life, Isolation, Fear of Contagion (Appendix 1).

The total score was obtained by summing all responses, with scores ranging from less than 6 points (indicating a low level of stress), 7–15 points (indicating an average level of stress), to 16 points and above (indicating a high level of stress). The CSSQ revealed a suitable internal consistency (McDonald's ω = 0.71; Cronbach's α = 0.71) (Vallone et al., 2022).

The questionnaire's reliability was assessed using Cronbach's alpha coefficient, resulting in a value of a = .712.

The UCLA Loneliness Scale (UCLA-LS), initially developed by Russell (1978), comprises of 20 items scored on a Likert scale ranging from 0 to 3, with 0 representing never, 1 representing rarely, 2 representing sometimes, and 3 representing often (Appendix 2). All statements are negatively worded and evaluate negative appraisals of social relationships and negative emotions, particularly feelings of abandonment associated with these appraisals (Shaver & Brennan, 1991). The sum of scores for each statement gives a total loneliness score ranging from 0 to 60 points, with a higher score indicating greater levels of loneliness. The respective score ranges are 0–19 (no symptoms), 20–28 (low level of symptoms), 29–45 (medium level), and 46–60 (high level). The estimates of internal consistency range from 0.88–0.93, as found in various studies (Pretorius & Padmanabhanunni, 2022).

In the present study, Cronbach's alpha was calculated as a = .811. The questionnaire underwent the process of translation and re-translation.

Data analysis

Data were analyzed using the SPSS version 28.0 software (SPSS Inc., Chicago, IL). The main analysis included reliability and descriptive statistics, correlation, independent sample t-test, and one way ANOVA.

Results

Distribution of Demographic Variables

The study analyzed a final sample of 359 university students. Table 1 displays the distribution of demographic variables, which indicates that the sample consisted mostly of female participants (87.5%), aged between 18–21 years (71.9%), second-year students (30.9%), and pursuing social sciences (72.7%).

Table 1

Distribution of Demographic Variables in the Study Sample

Variables	Groups	Frequency	Percentage (%)
Gender	Female	314	87.5
	Male	45	12.5
Age group	18–21	258	71.9
	22–25	70	19.5
	26–29	17	4.8
	30–33	5	1.4
	34–37	3	0.8
	38–42	6	1.6
Year of the study	First year	194	54
	Second year	111	30.9
	Third year	54	15
Discipline	Social Sciences	261	72.7
	Exact Sciences	98	27.3

The relation of stress and loneliness in the pandemic period with demographic variables

Gender differences in relation to stress and loneliness

To examine gender differences in stress and loneliness levels, we used an independent sample *t-test*. Levene's test of homogeneity of variance revealed that both variables were statistically non-significant, allowing further analysis (p = .121 >.05 and

p = .965 >.05). The mean stress levels in female students (M = 12.74, SD = 6.24) was higher than in male ones (M = 9.49, SD = 4.46) and the difference was statistically significant [t(357) = 4.323, p = .000]. However, there were no gender-related variations in loneliness symptoms during the pandemic [t(357) = .002, p = .746 > .05].

Table 2

Mean, Standard Deviation, F and t for Male and Female Students in Stress and Loneliness

Variable	Gender variable	N	Mean	S. Deviation	t (173)	F	p
Stress	Female	314	12.74	6.24	4.323	6.113	.000
	Male	45	9.49	4.46			
Loneliness	Female	314	21.45	16.89	.325	.002	.746
	Male	45	20.64	15.24			

Age group differences in stress and loneliness

To compare the means of many groups we used the analysis of variance (ANOVA). Levene's test revealed that the homogenity of variance was statistically non-significant (p = .117 > .05). As can be seen from the Table 3, the mean score of stress is higher at the +25 years (M = 13.54, SD = 7.21), but the results are statistically non-significant [F (2, 356) = 1.034, p = .357>.05].

For the second variable, the mean score of loneliness was higher in 18–21 age group (M = 23.08, SD = 17.13), and the results are statistically significant [F (2,356) = 5.137, p =. 006 <. 05].

Table 3

Mean, Standard Deviation, F and P for Age Variable in Stress and Loneliness

Variable	Age group	N	Mean	S. Deviation	F (2, 356)	p
Stress	18–21	258	12.06	6.19	1.034	.357
	22–25	70	12.78	5.41		
	+ 25	31	13.54	7.21		
Loneliness	18–21	258	23.08	17.13	5.137	.006
	22–25	70	16.72	14.74		
	+25	31	17.25	14.60		

Years of study and academic discipline in stress and loneliness

As shown in Table 4, ANOVA indicated no statistically significant differences between groups in stress variable F [(2, 356) = 2.052, p = .130 > .05] or loneliness variable F [(2, 356) = 1.014, p = .364 > .05]. These findings revealed that students of different years of the study had the same amount of stress and loneliness.

Table 4

Means, F and p for the Level of Stress and Loneliness in Relation to the Year of the Study

Variable	Year of study	N	Mean	S. Deviation	F (2, 356)	p
Stress	First	194	11.74	6.24	2.052	.130
	Second	111	12.92	5.41		
	Third	54	13.28	6.43		
Loneliness	First	194	22.20	18.62	1.014	.364
	Second	111	21.20	13.84		
	Third	54	18.56	14.42		

Regarding academic discipline in stress, Table 5 shows that the results are not statistically significant [t(357) = -.327, p = .744>.05]. Although exact sciences students have a higher mean score (M = 12.51, SD = 5.19) than other groups, the results are not statistically significant. While for academic discipline in loneliness, the study found a statistically significant relation between academic discipline and loneliness [t(357) = 5.066, p = .000<.05], indicating that the social sciences students have a higher mean loneliness score (M = 23.64, SD = 17.48) than that reported by exact sciences students (M = 15.22, SD = 12.48).

Table 5

Means, F and t for the Level of Stress and Loneliness in Relation to Academic Discipline

Variable	Group	N	Mean	S. Deviation	t (357)	F	p
Stress	Social Sciences	261	12.27	6.47	-.327	6.440	.744
	Exact sciences	98	12.51	5.19			
Loneliness	Social Sciences	261	23.64	17.48	5.066	19.919	.000
	Exact sciences	98	15.22	12.48			

Correlation Between Stress and Loneliness

Correlations were conducted in an attempt to determine the nature of the relationship between the constructs of loneliness and stress. The results of these correlations suggest that there is a weaker positive correlation between loneliness and anxiety ($r = .379$, n = 359, $p < .01$). When we control gender on the relationship between stress and loneliness, we found the following partial correlation $r (356) = .383$, $p = .000$; when we control for age, it was found to be $r (356) = .402$, $p = .000$; for the year of the study, $r (356) = .390$, $p = .000$ and for academic discipline $r (356) = .393$, $p = .000$.

Discussion

The purpose of this study was to verify the level of experiencing stress and loneliness caused by COVID-19, among students at the University of Shkoder, as well as to analyze the relationship with some other demographic variables.

Results from our study revealed that female students reported higher levels of stress compared to male students during COVID-19 pandemic. However, there were no significant gender differences in reported levels of loneliness during this period. This finding concerning stress is consistent with recent research, which suggests that women are generally more likely to experience stress and anxiety than men (Boursier et al., 2020; Smith, 2018; Misra et al., 2000). The reasons for this difference are not entirely clear, but it may be due to a combination of biological and social factors, such as hormonal differences, greater caregiving responsibilities, and gender stereotypes. This can be understood when considering the well-documented sex differences in affective disorders (McLean et al., 2011; Kibbey et al., 2021). In contrast to these results, the study of Mukherjee and Pahan (2021) showed that compared to women, men tended to show higher sensitivity during COVID-19. We did not find any significant gender differences in the factor of loneliness. Both male and female students reported similar levels of loneliness. This result is somewhat surprising, as previous studies have suggested that women may be more likely to experience loneliness than men (Hawkley & Cacioppo, 2010). However, it is possible that the university environment, which offers many opportunities for social interaction (although most of the time online), may mitigate gender differences in loneliness.

Studies about age differences in loneliness and stress among university students are limited.

The findings of this study indicate no statistically significant differences in stress levels across age groups during the pandemic. However, significant differences were found in the experience of loneliness. This is consistent with the results of a study conducted by Karpinski and Kinney (2005), which found that age was related to higher levels of loneliness.

Age group differences have also been found in the level of stress and loneliness among university students during the pandemic. For example, a study of university students in Brazil found that younger students (aged 18–25) reported higher levels of stress and loneliness compared to older students (aged 26–40) (Borges et al., 2020). Similarly, a study of university students in Malaysia found that younger students (aged 18–20) reported higher levels of stress compared to older students (aged 21–25) (Abdullah et al., 2020). This collection highlights the complexity of age and mental well-being during pandemic. Although stress levels may not differ significantly by age, the experience of loneliness appears to be different, with younger students reporting higher levels of loneliness.

The results of the present study showed that there were no differences in the experience of stress and loneliness according to the year of study during the COVID-19 pandemic, which could be explained by a number of factors. One reason might be that the pandemic had a significant effect on all students, resulting in similar levels of stress and loneliness. The impact of the pandemic on students' lives – including social isolation, financial strain, and uncertainty about their academic future – may have contributed to the comparable levels of stress and loneliness experienced by students in different academic years (OpenAI, 2023). Another explanation would be that students in all academic years had experienced similar difficulties and stressors during the lockdown.

It's also possible that students from all academic years utilized similar coping strategies to deal with the stress and loneliness caused by the pandemic, such as looking to friends and family for support, exercising or taking up a hobby, or getting professional help. Overall, the similar experiences of loneliness and stress across different years of study during the pandemic could be due to a combination of these factors, among others. However, it's important to note that the reasons may vary depending on the specific context and characteristics of the subjects. But in contrast to our results, research conducted by Stallman (2010) found that first-year students reported higher levels of stress than second, third, and fourth-year students. The study suggests that this may be due to the transitional period of adjusting to university life.

Results have shown that there were no differences in the experience of stress based on the academic discipline. In contrast to this result, a study conducted by Rospenda et al. (2009) found that students in health-related programs reported higher levels of stress than students in other programs. The study suggested that this may be due to the rigorous and demanding nature of health-related programs.

Finally, academic disciplines have been found to be a factor in the frequency of loneliness among university students during the pandemic. Similarly, a study of university students in Pakistan found that students in the social sciences reported higher levels of loneliness compared to students in other academic disciplines (Siddiqui et al., 2020). Loneliness is a complex phenomenon that can arise due to a variety of factors,

such as personal circumstances, individual differences, social support networks, and environmental factors.

In this study, the level of self-reported loneliness was related to perceived stress. These findings are consistent with previous research that has demonstrated the profound impact of social isolation on mental health (Steptoe & Fancourt, 2020; Leigh-Hunt et al., 2017; Holt-Lunstad et al., 2015; Monkevičienė et al., 2023). In the era of COVID-19, loneliness is a widely shared experience. A study of social support and mental health among college students found that students with lower-quality social support were more likely to experience mental health problems (Hefner & Eisenberg, 2009).

It is important to note that this study has several limitations. Firstly, the study used a cross-sectional design, which limits the ability to draw conclusions about the causal relationship between stress and loneliness during pandemic. Secondly, the study relied on self-reported measures of stress and loneliness, which may be subject to response bias. Thirdly, the study was conducted only in the conditions of the COVID-19 pandemic and cannot be compared with the results of the same sample under normal conditions. Fourthly, the study exhibits a notable underrepresentation of males in comparison to their female counterparts, emphasizing the importance of acknowledging and contextualizing this demographic imbalance for a judicious interpretation of the outcomes associated with male respondents.

Future research could expand on these findings by investigating the factors that lead to stress and loneliness during times of crisis, as well as assessing the efficacy of interventions targeted at reducing distress and promoting mental health. To avoid negative long-term consequences, health providers and policymakers must prioritize mental health care during crisis situations (OpenAI, 2023).

Conclusions

According to our research, female students expressed more stress than males, but no significant differences were observed in terms of loneliness. Students in social sciences reported a higher level of loneliness compared to those in exact sciences. No significant correlations were found between stress and loneliness and other demographic variables such as age and years of study. In conclusion, this study revealed a weak positive correlation between stress and loneliness due to the coronavirus pandemic, in university students of Shkoder. This correlation persisted even after partial correlation was performed, controlling for gender, age, year of study, and academic discipline.

Recommendations

From the results of this study can benefit universities that deal with the psychological consequences of the COVID-19 pandemic among their students.

It is recommended that universities organize educational seminars and healthy lifestyle activities to support students dealing with psychological issues such as stress and loneliness.

It is recommended that students replace their excessive exposure to news and media coverage of the pandemic with beneficial activities like yoga, exercise, meditation, and team sports (Andersons et al., 2021). Regular heart rate monitoring can be implemented as a new socio-technical activity during the implementation of the training program, which is a promising direction to improve the functional ability of students (Otaraly et al., 2023).

Psychologists can also be very helpful in motivating reluctant students to seek professional assistance by publicizing resources and initiatives that address psychological difficulties during the pandemic.

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Conflict of Interest

No potential conflict of interest was reported by the authors.

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Appendix 1

The COVID-19 Student Stress Questionnaire (CSSQ)

Questions	Not at all stressful	Somewhat stressful	Moderate-ly stressful	Very stressful	Extremely stressful
1. How do you perceive the risk of contagion during this period of COVID-19 pandemic?	0	1	2	3	4
2. How do you perceive the condition of social isolation imposed during this period of COVID-19 pandemic?	0	1	2	3	4
3. How do you perceive the relationships with your relatives during this period of COVID-19 pandemic?	0	1	2	3	4
4. How do you perceive the relationships with your university colleagues during this period of COVID-19 pandemic?	0	1	2	3	4
5. How do you perceive the relationships with your university professors during this period of COVID-19 pandemic?	0	1	2	3	4
6. How do you perceive your academic studying experience during this period of COVID-19 pandemic?	0	1	2	3	4
7. How do you perceive the changes in your sexual life due to the social isolation during this period of COVID-19 pandemic?	0	1	2	3	4

Appendix 2

UCLA LONELINESS SCALE

Questions	I often feel this way"	I sometimes feel this way	I rarely feel this way	I never feel this way
1. I am unhappy doing so many things alone.	3 3	2 2	1 1	0 0
2. I have nobody to talk to.	3	2	1	0
3. I cannot tolerate being so alone.	3	2	1	0
4. I lack companionship.	3	2	1	0
5. I feel as if nobody really understands me.	3	2	1	0
6. I find myself waiting for people to call or write.	3 3	2 2	1 1	0 0
7. There is no one I can turn to.	3	2	1	0
8. I am no longer close to anyone.				
9. My interests and ideas are not shared by those around me.	3 3	2 2	1 1	0 0
10 I feel left out.	3	2	1	0
11. I feel completely alone.				
12. I am unable to reach out and communicate with those around me.	3 3	2 2	1 1	0 0
13. My social relationships are superficial.	3	2	1	0
14. I feel starved for company.	3	2	1	0
15. No one really knows me well.	3	2	1	0
16. I feel isolated from others.	3	2	1	0
17. I am unhappy being so withdrawn.	3	2	1	0
18. It is difficult for me to make friends.	3	2	1	0
19. I feel shut out and excluded by others.				
20. People are around me but not with me.				

Studentų stresas ir vienatvė COVID-19 laikotarpiu

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Santrauka

Straipsnyje nagrinėjamas Albanijos Škoderio universiteto studentų streso ir vienatvės ryšys COVID-19 pandemijos metu, ypatingą dėmesį skiriant šių veiksnių sąsajoms su demografiniais kintamaisiais. Tyrime dalyvavo 359 šio universiteto studentai, studijuojantys socialinius ir tiksliuosius mokslus. Tyrimas atskleidė, kad moteriškos lyties studentės patiria didesnį stresą palyginti su vyriškos lyties studentais. Studijuojantys socialinius mokslus studentai yra labiau vieniši nei kitų akademinių disciplinų studentai. Vis dėlto reikšmingų skirtumų, susijusių su kitais demografiniais kintamaisiais, nenustatyta. Nustatytas tik statistiškai reikšmingas ryšys tarp Škoderio universiteto studentų streso ir vienatvės. Atlikus dalinę koreliaciją, kai buvo įtraukti kntamieji, tokie kaip lytis, amžius, studijų metai ir akademinė disciplina, buvo nustatyta, kad tarp streso ir vienatvės išliko teigiamas ryšys.

Šis tyrimas atskleidžia universiteto studentų sveikatos poreikius pandemijos metu ir tinkamų intervencijų svarbą. Siūloma atlikti tyrimus, susijusius su universiteto studentų streso ir vienatvės santykiu ir jo poveikiu gerovei.