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RESEARCH ARTICLE

Impact of COVID-19 on education, social life, and mental health to university population in Albania: A cross-sectional survey

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ABSTRACT

The outbreak of COVID-19 affected the lives of all sections of society and caused serious implications for mental health. The aimed study was to investigate and analyzed the consequences of the COVID-19 pandemic on the life of students. This cross-sectional survey was conducted from October - December 2020 on 472 students. We prepared the questionnaire addressing some factors such as demographic, education, social life, and mental health. The $p < 0.05$ was considered significant. The average age was 20.45, and 70% of participants were females. Approximately 23% of students referred to present problems with depression, fear, and anxiety during COVID-19. The mean value of PHQ9 resulted in the moderate range while the mean GAD7 score was in the mild range. In females, 61% are more likely to be affected by mental health during this worldwide pandemic compared to males 39%. The findings of this study identify mild levels of anxiety and depression in students. These mental health levels were related to a combination of pandemic-related stresses and limitations caused by the lockdown, negative impact on social life, poor social communication, and disturbed sleep habits. However, we strongly recommend providing students support by academics and stakeholders to reduce the likelihood of longer-term problems.

Keywords: COVID-19; students mental health; education

1. Introduction

COVID-19, also known as the SARS-CoV-2 virus, first surfaced in late 2019 and it has been characterized by WHO as a pandemic with a high negative impact on all facets of human life, including the world's healthcare, financial, and social systems[1]. It is already evidenced by many researchers that the corona crisis and its numerous aftereffects will last for years and have a lasting impact on our lives. The challenges brought about by this pandemic will, in some way or another, have an impact on each of us as well as the welfare of all societal groups in each of the impacted countries as well as globally[2–4].

On March 8, 2020, in Albania, were reported two first cases as COVID-19-positive. The Ministry of Health decided to take drastic measures in the middle of March. Immediately, the nation was placed under lockdown, isolating the social life of people to reduce the spread of the virus and, as a result, "flatten and the curve"[5]. First, public and non-public educational institutions were shut down due to restrictions for two weeks. In the first week of April, schools and universities discontinued functions, and immediately after this, we had

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a complete shift to online learning until the end of the academic year. During the pandemic, access to normal education was prohibited for about 1.5 billion students globally[6]. Restriction of academic life and lockdown had adverse effects on mental health, leading to issues such as fear, frustration, stress, depression, anxiety, and sadness[7–10]. Furthermore, according to many studies, this pandemic has put people's health at immediate risk, added to their financial stress and uncertainty, increased their chance of losing their jobs or being laid off, increased their loneliness and social isolation, and restricted their access to essentials like food and medicine[3,11–17]. The pandemic presented several specific challenges for higher education students, which included the implementation of new learning and support services via the Internet. More learners had challenges taking part successfully in online learning which resulted in rising anxiety and concerns about their educational achievements and future job prospects[18,19].

Two studies conducted by Gao et al.[20] and Xiong et al.[21] reported in their study that the COVID-19 pandemic corresponds with exceptionally high levels of psychological distress in students, and it can produce symptoms resembling those of post-traumatic stress disorder (PTSD)[22]. Countless research papers published after the first months of the outbreak highlighted the same mental health issues induced by the COVID-19 pandemic. Countless research papers published after the first months of the outbreak highlighted the same mental health issues induced by the COVID-19 pandemic[23–27]. Meng et al found an association between anxiety and depression with poor sleep quality, and smoking in patients with COVID-19[28]. Husky et al. in their study reported an increase in anxiety among two-thirds of the university students[29]. Furthermore, in another study conducted in Greece throughout the COVID-19 lockdown, there were more intensified cases of anxiety, sadness, and suicidal thoughts, among university students[30]. A study conducted by Khan et al. found stress at 28.5%, anxiety at 33.3%, and mild to severe depression at 46.92% of college and university Bangladesh students[31]. Stress, anxiety, and depression have increased among students, and the numbers indicate that this is now a reality. The study aimed to evaluate how the COVID-19 pandemic affected people's mental health, notably how much dread, tension, depression, and anxiety they experienced, as well as to discover demographic factors linked to mental health problems during the COVID-19 pandemic in Albania.

2. Methods

2.1. Study design and participants

This is a cross-sectional survey of 472 Alexander Xhuvani University students conducted between October–December 2020, during the online lecture courses that were held as a result of the unprecedented situation brought on by COVID-19. All students of both sexes, between the ages of ≥18 and ≤30, who agreed to participate in the study and completed all online questions, met the eligibility requirements for this survey. Students who declined to participate in the study and others who did not attend the same university were excluded.

2.2. Procedures

An online questionnaire using the Google Forms platform was designed to collect information from the participants. To fill out the online forms took no more than 20 min for each student to complete. All students were informed about the study's objectives and were invited to participate in the survey via social media and online messaging services like WhatsApp and Facebook Messenger. During our online lectures with students, we explained every questionnaire that they had before starting to fill them out. Before the survey, we obtained consent from any students who agreed to participate in this study and kept their identities hidden. They were assured that participation was optional and that they might discontinue the study at any moment. Students

completed the online survey that included questions about their demographics, faculty program study, degree, personal COVID-19-related concerns, and mental health status.

2.3. Measurement

2.3.1. Demographic data, education skills, sleeping and weight

The demographic information included gender, age, residence area, living place, marital status, employment, faculty program study, degree, personal experiences related to the COVID-19 outbreak, and medical and psychopathological histories. For education skills, we have included some questions related to online learning such as how satisfied or dissatisfied were with online classes, what challenges they had and what were the most failures while learning online. Moreover, the students were asked if they had a problem with their body weight or sleep during the pandemic.

2.3.2. Mental health problems

In this survey, we evaluated the level of stress, fear, anxiety, and depression that emerged among university students as a result of the COVID-19 pandemic waves. Moreover, we also aimed to elicit how much has this pandemic affected education, social life, and mental health of students. The main research question is has the mental health of students changed during the COVID-19 pandemic, what factors have contributed to the change in mental health, and how it affected education and social life? The questions used in this survey were developed and adapted by the author's group, and it had open-ended, multiple-choice questions based on pertinent literature. The scale of perceived stress is a ten-item self-report tool that determines the level of stress people have felt in their daily lives in the previous month. The questions are scored on a 5-point Likert scale (0 = never to 4 = constantly)[32]. The fear scale[33] is a tool to evaluate fear in relation to COVID-19. This instrument contains ten items that are scored on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Summing the scores of each item, which range from 7 to 35 points, yielding a total score where a higher score implies a greater level of dread of COVID-19. To assess symptoms of Psychological Disorders among participants, two structured clinical research methodology tools and self-managed Generalized Anxiety Disorder-7 (GAD-7) and the Patient Health Questionnaire (PHQ-9), were used. The GAD-7[34] was applied in evaluating anxiety disorder, and the PHQ-9 in evaluating depression-related symptoms[35]. PHQ-9 and GAD-7 scores are calculated by assigning points of 0, 1, 2, and 3 to the answer groups of "not at all", "several days", "more than half of the days" and "nearly every day", respectively, and then incorporating the results for each of the nine PHQ-9 and seven GAD-7 inquiries. The total GAD-7 score was summed, and anxiety levels were classified as normal (0–4), mild (5–9), significant (10–14), or severe (15–21). The PHQ-9 total score was calculated, and the degree of depression was classified as normal (0–4), mild (5–9), moderate (10–14), fairly serious (15–19), or severe (20–27). The total score can be determined by adding the outcomes of the nine questions. A variety of studies have investigated such indicators to test for psychological diseases or to evaluate the psychological health of a certain population group[36–39].

In this study's sample, Cronbach's α resulted in 0.81 on the Perceived Stress, 0.89 Fear of COVID-19 Scale, 0.88 on Generalized Anxiety Disorder-7, and 0.90 on Patient Health Questionnaire-9.

2.4. Statistical analysis

The data was assessed using the statistical software IBM SPSS Statistics 20.0. For sociodemographic variables, descriptive statistics presented in frequencies, percentages, mean, and standard deviation, ($\bar{x} \pm s$) were used. T-tests and one-way ANOVA tests were used to determine the relationship between demographics and responses related to mental health diseases. The $\chi 2$ test was used to compare categorical

data, while Cronbach's alpha was used to evaluate the scales' internal consistency. We also investigated the link between mental health (such as fear, stress, sadness, and anxiety) and education, social life, activities, and so on. Our research looks into the issues that are affecting students' mental health. Logistic regression analysis was used to analyze the factors linked with mental health problems. p values≤ 0.05 were considered statistically significant.

3. Results

Table 1 shows descriptive statistics of student participants in this study. In this table, we initially showed the sociographic information of the students, afterwards we showed the information on the variables relating to academic performance (such as online learning), body weight, or sleep issues. In terms of socio-demographic characteristics, the average age of the 472 student participants in this study was 20.45 ± 2.78 St,D, with a minimum age of 18 and a maximum age of 28 years old. The majority of participants (47.9%) were between the ages of 18 and 21, with students aged >21 to 23 years old accounting for 42.6% of all cases and students over 23 years old accounting for only 9.5% of all participants. Females were the most common gender among 70% of students, with male students accounting for 30%. More than half of the students—58.9%—live in urban areas, and 41.1% live in rural areas. This university offers two programs at the degree level, which are the bachelor's level and the master's level. Students with a bachelor's degree accounted for 67.8% of those polled, while those with a master's degree accounted for 32.2%. One of the questionnaires was about the medical and psychopathological histories of the students. About 23.1% of students referred to medical problems with psychopathological histories at the time of the survey. Related to education skills, nearly 52% of students were dissatisfied with online learning because they failed to manage their time well (34.7%), monitor academic progress (29.2%), and reported fewer opportunities to collaborate with lecturers and colleagues (44.5%) and ask questions during the online class (21%). On the other hand, 38% reported increased body weight, and 46% were not able to sleep as usual.

Table 1. Descriptive statistics related to sociodemographic characteristics, education skills, weight, and sleeping problems, October–December, 2020, among university students.

Variables	Frequency	Percentage	Frequency
Gender	Male	142	30%
	Female	330	70%
Age groups (years old)	18–21 years old	226	47.9%
	>21–23 years old	201	42.6%
	>23 years old	45	9.5%
City	Elbasan	295	62.5%
	Other	177	37.5%
Residence area	Urban	278	58.9%
	Rural	194	41.1%
Living place	Dormitory/share the house with friends	211	44.7%
	Living with family	261	55.3%
Marital status	Single never married	133	28.2%
	In a relationship	117	24.8%
	In a relationship/married and cohabiting	72	15.2%
	I prefer not to say	150	31.8%

Table 1. (*Continued*).

Variables	Frequency	Percentage	Frequency
Degree	Bachelor	320	67.8%
	Master	152	32.2%
University: study programs	Economy Faculty	69	14.6%
	Faculty of Human Sciences	90	19%
	Faculty of Technical Medical Sciences	214	45.3%
	Faculty of Education Sciences	48	10.2%
	Faculty of Natural Sciences	51	10.9%
Employment status	Unemployed	291	61.7%
	Employed	181	38.3%
Medical and psychopathological history	No	363	76.9%
	Yes	109	23.1%
Problems related to education skills: online learning (only answer with negative impact)	Dissatisfied with online classes	245	51.9%
	Failed to manage the time	164	34.7%
	Problems to monitor academic progress	138	29.2%
	Fewer opportunities to collaborate with lecturers and colleagues	210	44.5%
	Problems asking questions during the online learning	99	21%
Weight problems	No	293	62%
	Yes	179	38%
Sleeping problems	No	255	54%
	Yes	217	46%

The second section assessed personal experiences related to the COVID-19 outbreak. The researcher group created the questionnaire, which included open-ended, questions based on applicable literature.

Table 2 shows the descriptive frequency statistics of the Stress scale among students. Regarding the stress scale, almost 34.4% of students resulted in a range from (0–1) scores, and are considered normal stress, 19.6% of students are classified as "hardly ever" stress with a range of scores (15–18), 18.8% of students are classified as "occasionally stress" with a range of scores (19–25), 14.6% are classified with "almost always stress" with range scores (26–33) and only 12.6% of students are classified "always stress" in COVID-19 time with range score (+34).

Table 2. Descriptive frequency statistics of the stress scale, October–December, 2020, among university students.

Stress scale 10 items	Never	Hardly ever	Occasionally	Almostalways	Always
I have felt as if something serious was going to happen unexpectedly with the epidemic.	44.5	7.2	19.4	17.2	11.7
I have felt that I am unable to control the importantthings in my life because of the epidemic.	33	18.9	15.9	18.9	13.3
I have felt nervous or stressed about the epidemic.	33.9	11	19.9	18.9	16.3
I have been confident about my ability to handle myproblems related to the epidemic.	9.96	15.04	19.9	28.4	26.7
I have felt optimistic that things are going well with the epidemic	11.9	15.9	25	23.1	24.1
I have felt unable to cope with the things I have to do tomonitor for a possible infection	53.2	17.8	16.8	7.8	4.4

Table 2. (*Continued*).

Stress scale 10 items	Never	Hardly ever	Occasionally	Almostalways	Always
I have felt that I can control the difficulties that couldappear in my life as a result of the infection	8.05	7.84	22.03	27.54	34.54
I have felt that I have everything under control about the epidemic	8.9	10.8	19.7	25.2	35.4
I have been upset that things related to the epidemic areout of my control	30.9	29.2	22.5	6.8	10.6
I have felt that the difficulties are increasing these daysof the epidemic and I feel unable to overcome them	34.5	31.2	17.8	9.7	6.8

Table 3 shows the descriptive frequency statistics of the fear of COVID-19 Scale among 472 student participants of this survey. Based on the calculation of data, most of the students 27.2% do not reflect fear towards COVID-19 in the range scores (7–14), 26.1% of students reflect fear in mild score (15–21), 15.5% reflect fear in moderate score (22–26), 16.8% of students reflect fear in severe score (27–31) and the last students 14.2% refer to fear in extremely severe score (32–35).

Table 3. Descriptive frequency statistics of the fear of COVID-1.9. Scale, October–December, 2020, among university students.

Fear of COVID-19-scale 10 items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I am most afraid of coronavirus-19.	30.7	23.7	15.3	15.9	14.4
It makes me uncomfortable to think aboutcoronavirus-19.	23.7	28.6	17.6	16.7	13.4
I worry a lot about coronavirus-19.	23.9	29	13.6	17.6	15.9
Coronavirus-19 is almost always terminal.	27.1	28	14.4	14.8	15.7
Coronavirus-19 is an unpredictable disease.	21	25.2	19.5	17.8	16.5
My hands become clammy when I think about Coronavirus-19.	40.5	29	9.3	12.1	9.1
I am afraid of losing my life because of Coronavirus-19.	26.5	22.2	18.6	18.4	14.3
When I watch news and stories about Coronavirus-19 on social media, I become nervous or anxious.	28.4	26.05	16.74	16.95	11.86
I cannot sleep because I'm worried about getting Coronavirus-19.	27.75	23.5	14.8	18.9	15.05
My heart races or palpitates when I think aboutgetting Coronavirus-19.	22.9	26.3	15.5	19.2	16.1

Table 4 shows the descriptive frequency statistics of the GAD COVID-19 scale among 472 students. Almost 37.6% of students reflect anxiety in the normal scores (0–4), 34.9% of students reflect anxiety in mild scores (5–9), 17.1% reflect anxiety in moderate scores (10–14) and 10.4% reflect anxiety in severe scores (15–21).

Table 4. Descriptive frequency statistics of the GAD COVID-1.9. Scale, October–December, 2020, among university students.

Questions GAD	Not at all	Severaldays	More thanhalf of thedays	Nearly every day
Feeling nervous, anxious, or on edge.	33.3	40.5	18.6	7.6
Not being able to stop or control worrying.	31.14	40.04	15.9	12.92
Worrying too much about different things.	34.1	36.4	17	12.5
Trouble relaxing.	41.1	36.7	15.2	7
Being so restless that it's hard to sit still.	42.6	29	18.2	10.2
Becoming easily annoyed or irritable.	39.2	30.9	15.7	14.2
Feeling afraid as if something awful might happen.	41.9	30.7	18.9	8.5

Additionally, **Table 5** shows descriptive frequency statistics of the PHQ COVID-19 Scale among 472 students. Based on 9 items of PHQ-9 calculation questions, most of the students 43.3% reflect depression in normal scores (0–4), 33.9% of students reflect depression in mild scores (5–9), 15.3% of students reflect depression in moderate scores (10–14), and 7.5% of students reflect depression in severe scores (15–27).

Table 5. Descriptive frequency statistics of the PHQ COVID-1.9. Scale, October–December, 2020, among university students.

Questions PHQ-9 (9 items)	Not at all	Severaldays	More than days	Nearly
Little interest or pleasure in doing things.	39.8	37.1	14.4	8.7
Feeling down, depressed, or hopeless.	32.8	44.1	15.3	7.8
Trouble falling or staying asleep, or sleeping too much.	31.6	38.8	23.5	6.1
Feeling tired or having little energy.	34.9	35.2	17.8	12.1
Poor appetite or overeating.	32	48.8	11.4	7.8
Feeling bad about yourself or that you are a failure or havelet yourself or your family down.	38.6	37.9	14.6	8.9
Trouble concentrating on things, such as reading thenewspaper or watching television.	32.9	29.2	25.6	12.3
Moving or speaking so slowly that other people could havenoticed? Or the opposite of being so fidgety or restless that you have been moving around a lot more than usual.	70.8	18	9.1	2.1
Thoughts that you would be better off dead or hurtingyourself in some way.	76.1	16.1	6.3	1.5

Figure 1 shows the mental health burden among students of the University, while **Figure 2** shows the mean scores of all scales by gender which means that females are more stressed, they fear more from COVID-19 and also, they have a higher level of anxiety and depression than males. The mean score of all scales is significantly higher in females compared to males. The mean score of the Stress scale in males is $M = 2.3 \pm 1.1$ while in females is $M = 3.1 \pm 1.2$ ($p = 0.01$). The mean score of the fear of COVID-19 scale in males is $M = 3.2 \pm 1.3$ while in females is $M = 4.4 \pm 1.5$ ($p < 0.01$). The mean score of GAD in males is $M = 1.2 \pm 1.0$ while in females is $M = 2.4 \pm 1.2$ ($p < 0.01$). The mean score of PQH in males is $M = 1.2 \pm 0.9$ while in females is $M = 2.4 \pm 0.8$ ($p < 0.01$).

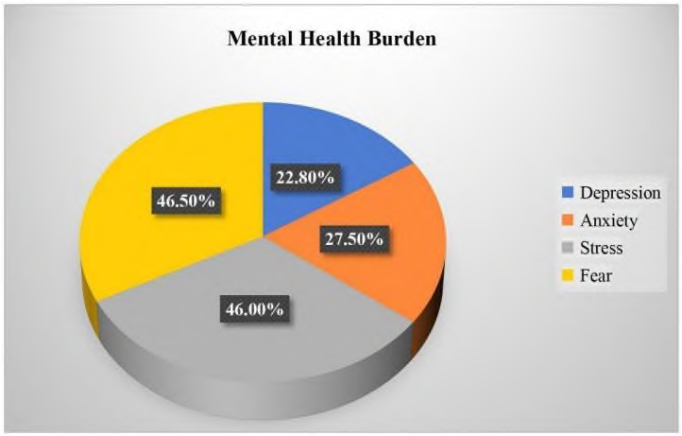

Figure 1. Mental health burden, October–December, 2020. among university students.

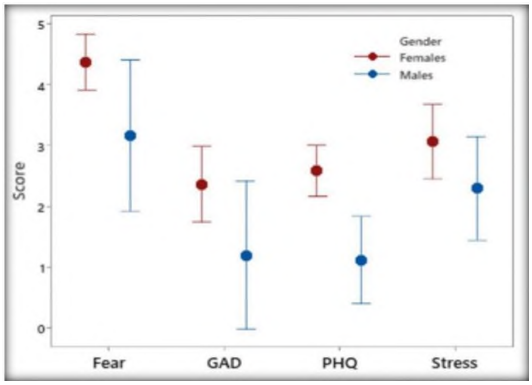

Figure 2. The mean score of scales, October–December, 2020. by gender.

The logistic regression analysis of factors associated with mental health problems among student participants of this survey were presented in **Table 6**. Many factors were found that contribute significantly to the elevated risk for mental health problems among students during the COVID-19 times. A significant association was found between the total score of mental health problems and gender ($p < 0.0001$), age groups ($p < 0.0001$), residence area ($p = 0.005$), living place ($p = 0.004$), degree ($p = 0.006$), university programs ($p = 0.034$), employment status of students ($p = 0.0005$), medical and psychopathological history before the pandemic time ($p = 0.0001$), problems related to education skills: online learning ($p = 0.0031$), and weight and sleeping problems with ($p = 0.0008$ and $p = 0.001$ respectively) (**Table 6**).

Table 6. Logistic regression analyses of factors associated with mental health problems, October–December, 2020, among university students.

Variable	B	S.E.	Wald	df	Sig.	Oddsratio	95.0% C.I. për Exp (B) lower	upper
Gender	−19.642	1.4377	1.023	1	0.0001	2.141	0.0921	3.752
Age groups (years old)	−14.355	1.021	5.322	1	0.0001	10.540	1.425	77.947
Cit	−1.222	1.136	1.157	1	0.282	0.295	0.002	2.730
Residence area	−0.165	0.058	7.987	1	0.005	1.848	0.757	2.951
Living place	−3.159	2.643	0.000	1	0.004	1.130	0.847	1.859
Marital status	0.415	0.994	0.174	1	0.676	1.514	0.216	10.622
Degree	−0.792	0.288	7.562	1	0.006	1.453	0.758	2.197
University: Studyprograms	−1.280	1.367	0.878	1	0.034	0.278	0.019	4.049
Employment status	−1.609	542	0.294	1	0.0005	3.544	2.160	4.904
Medical and PsychopathologicalHistory	−19.225	1.7114	0.000	1	0.0001	10.00	1.869	35.028
Problems related to education skills: Online learning (only answer with negative impact)	2.271	0.730	0.138	1	0.0031	1.311	0.313	5.487
Weight problems	−7.802	0.575	9.827	1	0.0008	6.062	1.965	18.705
Sleeping problems	−9.258	0.484	6.770	1	0.001	3.520	1.364	9.084

4. Discussion

The pandemic has undoubtedly made the student population's mental health, which will be a significant worry for the coming years, worse. Furthermore, like with Yang, the pandemic crisis has spread swiftly around the world because to a lack of effective control mechanism[40]. Many students have experienced catastrophic repercussions from the COVID-19 pandemic outbreak, which most likely may include adverse

effects on their emotional health[41]. According to Raccanello et al., psychological problems can seriously harm students' ability to learn and communicate with others, which can have an impact on both their personal and professional lives in the future[42]. However, even for students who are more resilient and do not exhibit mental health issues, typical reactions to the pandemic can include more frequent, intense negative feelings, including those that are related to their daily tasks like studying and learning[42]. This research was carried out at the same time as the second COVID-19 outbreak in our country. At that time there were a lot of infected people, and fatalities increased dramatically.

Until now, only one study had been published in Albania related to mental health problems among students. But this study, conducted by Mechili et al., assessed only the level of depression among nursing and midwifery students, as well as their family members, during the quarantine period in Albania[43]. Our study is the first one to assess the prevalence of mental health issues among university students in Albania during the COVID-19 epidemic, including stress, fear, anxiety, and sadness. A total of 472 students from the university participated in this study. The average age was 20.45 ± 2.78 St,D, with a minimum age of 18 and a maximum age of 28 years old, and the majority of the participants were female. We emphasize that there was a very high response rate among students, particularly for the Faculty of Technical Medical Sciences, with 45.3% of participation. Students of online learning have certainly had mixed satisfaction, but most of the time was stressful, especially when combined with a sudden switch to heavier workloads and in places where learning technologies or internet connectivity are lacking[44–46]. In this study, 51.9% of respondents reported being unsatisfied with online learning, 34.7% reported difficulty managing their time while juggling online learning and the pandemic, 29.2% reported difficulty keeping up with their academic progress, 44.5% reported fewer opportunities for collaboration with professors and friends, and 21% reported difficulty in asking questions during online learning.

Students also reported weight and sleeping problems during the pandemic in 38% and 46% respectively. A strong association between mental health problems and problems related to education skills was found: online learning, and weight and sleeping problems with a p-value <0.05. Before and during the COVID pandemic, Charles et al. measured the psychological symptoms, perceived stress, and alcohol use among college students in the Southeast United States[47]. The findings shed light on how young adults' mental health and well-being were impacted in the first several months of the COVID-19 pandemic and the ensuing disruption. In particular, study participants who finished the survey in the first few weeks of the COVID-19 pandemic in the U.S. reported increased signs of mental disorders, stress, and alcohol misuse than study participants who finished the survey before the pandemic[47]. Moreover, a study conducted by Ramasaco et al. reported a high level of fear and stress and mild to moderate burdens of depression and anxiety during the COVID-19 pandemic[48]. Additionally, several studies noted declines in students' mental health that manifest with increased psychological stress, anxiety, sadness, and even post-traumatic stress disorder, which nowadays appears to be a global issue[49–56]. According to the findings of this study, the mental health prevalence among students resulted in moderate and severe severity. Depression was reported in 23% of students, anxiety in 28% of students, stress in 46% of students, and fear in 46.5% of students. The prevalence of depression was lower compared to another study published in 2021 in Albania by Mechili et al.[43] In this study, the prevalence of depression among nursing and midwifery students resulted at 25.2%. While in another study conducted by Basheti et al[57], in Jordan, the result of the prevalence of anxiety and depression during the pandemic time among healthcare students was 33.8% classified as having abnormal anxiety scores, while 26.2% were classified as having abnormal depression scores.

Moreover, in this study, females were in 61% more likely to be affected by mental health during this worldwide pandemic compared to males 39%. In this survey, among 22.8% of students that have referred

stress in moderate and severe scores the prevalence in males was 42.4% while in females 57.6%. Females were 2.1 times at risk for stress during the COVID time compared to males for 95% CI% (1.7–3.5), *p*-value < 0.0001. The prevalence of fear, among 27.5% of students, was 37% in males, and 63% in females. Females were 1.3 times at risk for fear during the COVID time compared to males for 95% CI% (0.87–2.6), *p*-value = 0.002. The prevalence of anxiety, among 46% of students, was 36.2% in males, and 63.8% in females. Females were 1.4 times more at risk for stress during the COVID time compared to males for 95% CI% (0.67–2.1), *p*-value = 0.07. The prevalence of depression, among 108 students, was 39.8% in males and 60.1% in females. Females were 1.57 times at risk for stress during the COVID time compared to males for 95% CI% (1.1–2.3), *p*-value = 0.01. Furthermore, higher-education students ran a significant risk of either suffering aggravated pre-existing depressed symptoms or developing depression and anxiety during the COVID-19 pandemic, according to the research of van de Velde et al. These authors also point out that whereas France and the Nordic nations (Iceland, Norway, Sweden, Denmark, and Finland) reported the lowest mean levels of mental health symptoms, Turkey, South Africa, Spain, and the United States had the highest mean levels[58]. Numerous academics have published their findings on the factors that contributed to the increase in mental health issues among both students and the general public during the pandemic years. Martnez-Lorca et al., noted that the uncertainty of losing relatives to COVID-19 has emerged as a major worry and fear factor for many students, contributing to their poor mental health[59]. Furthermore, it was discovered that students who were female or had less social support, had a lower socioeconomic status, students that lived in dormitories or shared the house with friends, students that were employed before the pandemic and lost their work during the lockdown and students who referred previous medical and psychopathological history were more likely to experience mental health symptoms[60–64]. In this study, we assessed the correlation between some of the factors that probably have a high impact on mental health problems among students. Based on logistic regression analyses factors that were associated with mental health problems among student participants of this survey were: Gender, age, residence, living area, degree and university programs, employment status of students, and medical and psychopathological history before the pandemic time.

5. Conclusion

The findings of this study identify mild to severe levels of mental health problems among students. These findings highlighted the issues that students had to confront within various aspects of their lives. The mental health levels among students were related to a combination of pandemic-related stresses and limitations caused by the lockdown, negative impact on social life, poor social communication, and disturbed sleep habits. Additionally, this finding shows that not the pandemic itself, but rather the secondary effects of the pandemic were related to students' mental health. However, we strongly recommend providing students support by academics and stakeholders to reduce the likelihood of longer-term problems. Professional support including psychological therapy and counseling will strongly benefit the lives of students now and in the future. As a result of the COVID-19 pandemic and in order to prepare for the upcoming pandemic, policies can be created and the necessary steps can be made by the authorities to support and assist students.

6. Study limitations

Based on our research and knowledge, this is the second study conducted on the mental health of students. the peculiarity of this study is that it has gone deeper into finding the degree of importance of four mental health pathologies such as fear, stress, depression, and anxiety among the students who agreed to be part of this study for several months. As we highlight in this article, the study's results show that the pandemic has had an effect on Albanian students' mental health and that any necessary remedies should be founded

on solid research. Although the pandemic has been over for two years, Albania has few studies on the subject. One limitation is related to the small number of students. More studies, with a wider inclusion of all students (females and males), in all the country's universities, would enable a more accurate determination of the impact that COVID-19 and the lockdown had on the mental health of students.

Author contributions

Conceptualization, GK and EA; methodology, GK; software, EA; validation, GK and EA; formal analysis, GK; investigation, GK; resources, GK; data curation, EA; writing—original draft preparation, GK and EA; writing—review and editing, GK and EA; visualization, GK; supervision, EA; project administration, GK; funding acquisition, GK. All authors have read and agreed to the published version of the manuscript.

Conflict of interest

The authors declare no conflict of interest.

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