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# COVID-19: Health risk factors among students' population in Albania

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## Abstract

Covid-19 pandemic is one of the most impactful events that has happened at 21<sup>st</sup> century. Changing the daily habits and facing serious health risks are common during this period of the pandemic, especially at the first year when the world population was unprepared. There have been different categories of people that suffered from such stressful impact. Student category also had a lot of difficulties in dealing with the changes and with severe health consequences. In this article there are described the complications Albanian students confronted during the first year of the pandemic. The study aimed to investigate mental health consequences on students and their ability to cope with the pandemic. This study is part of a longitudinal research with more data collected for an additional wave. Descriptive statistics are used to describe the evidence of depression rate, anxiety, and suicide ideation. Students were invited to compile an online questionnaire distributed on basis of a convenience sample. The outcome confirmed the hypothesis that on a psychological level there could have been some repercussions on student's lifestyle, habits, and mental health. These results could lead to recommendations on how to build a better resilience to face properly the pandemic that is still ongoing.

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## I. Introduction

The pandemic of Covid -19 has brought into focus the mental health of the various populations affected by it. The prevalence of the epidemics emphasizes or create new stressors including fear and worry for familiars and relatives, restrictions on physical movement and social activities due to quarantine and immediate changes and radical lifestyle changes.

A recent review of viral outbreaks and pandemics documented stressors such as fear of infection, frustration, upset, insufficient information, financial loss and stigma. [1] (Brooks et al, 2020). Findings from recent studies show the increase in mental health issues among university or college students. According to the experts there is an urgent need to assess the effects of the current pandemic on the mental health and well – being of students. [2] (Holmes et al, 2020). The increased risk of health, strict preventive measures, and radical changes in the lifestyle of the students were reflected in their mental health and even in the quality of their sleep. Students were worried, also about the effects of COVID -19. [3] (XieJ, et al. (2021)).

According to the studies caried out in the first months of the pandemic time, students present increased rates of depression and severe anxiety, fear, and anxiety for realizing the requirements of the new educational reality. These findings were common among the female population. [4] (Halperin et al. (2021). The immediate change in the educational environmental of students, the quality of their education and other circumstances made students to experience unique challenges that negatively affecting their mental health. The lack of internships, campus jobs and other opportunities contributed to students' stress and declining their mental health.

According to a study realized from Dartmouth College, it was found that there were obvious differences in the behavior and mental health of students since the start of the pandemic and onward, with a high number of self–reported cases of depression and anxiety mainly in final exams. [5] (Wang et al 2018).

The student's mental health is an important issue of public health concern, requiring epidemiological data. Recent systematic reviews presenting evidence from primary research worldwide highlights the increase in psychological service costs associated with the COVID – 19 pandemics. [6] (Santabárbara et al 2021). Most studies reported an increase of students' stress and anxiety levels during the pandemic and the period of isolation along with six different themes of risk factors identified as: psychological, academic, biological, lifestyle, social and financial aspects. [7] (Mofatteh, M. 2021). There is a growing resignation about the mental health of university students and the impact that undiagnosed and untreated students' mental illness. Unnormal stress and depression among students not only affects their performance but is also associated with increased self - harm and suicide attempts. [8] (Patsali, et al 2020). Chronic anxiety is associated

with disability and lower academic achievement. The severity of the disability is further worsening when individuals engage in avoidance behaviors characteristic of people with anxiety. [9] (Hendriks, et al. 2016). It is important that colleges and universities accept and improve the safety system of mental health and psychological education and certainly provide students with the opportunity to get the help they need. [10] (E. T. Baloran, 2020). The early identification of young people at different levels of risk enables the development of targeted and appropriate interventions. Resilient groups (those with lower risk) can be identified by Antonovsky's approach, which focuses on the general resources of resistance of individuals facilitating their ability to effectively cope with stressors. [11] (Idan, et al 2017). Antonovsky's approach can be applied in universities by focusing attention on vulnerable students, while also providing help for resilient students to cope effectively when they need help. Mental health and psychological problems, if left unrecognized can result in failing exams or even dropping out of university or college; even in attempted or completed suicide; as well as dangerous involvement leading to serious injury, disability, or death. [12] (Cook, L.J. 2007). The present study was focused on students' psychological problems experienced during the period of Covid – 19; how the situation has affected their academic life. It was hypothesized that Covid-19 pandemics has inflicted at student's population on level basis of anxiety, depression, suicide risk and disturbing the daily lifestyle.

## II. Materials and Methods

The present study was focused on university and college students in Albania during the first year of the pandemic Covid-19. The strategy used for the sample was of a convenience based, distributing the questionnaire in the capital Tirana, and Elbasan, Durres, Gjirokaster and Vlore. The study received the Ethical Approval by the Ethical Committee of the Department of Pedagogy-Psychology of LOGOS University College in Tirana.

### 2.1. Procedure

The inclusion criteria specified that students over the age 18 years old could be recruited. Other criteria were about the Albanian language because the battery of questionnaires was translated in Albania and verified with the method of back translation. Also, it was specified that only students enrolled in universities could participate. There were no exclusion criteria for institutional enrollment. Students were recruited on a web-based survey. The participation was anonymous, and students were free to leave the questionnaire if they have no willingness to continue.

### 2.2. Measures

#### *Sociodemographic characteristics*

Personal information was collected in form of questions part of the battery of the questionnaires, investigating age, gender, academic discipline, personal income, academic year, etc. Questionnaires regarding depression, suicidal thoughts, anxiety, and traumatic events were used for the battery. Other socio-demographic factors included location, eventual profession, and living situation. Depressive symptoms are measured in a university context widely and replicated

also by other authors (Cassady et al., 2019).

### *Depression and suicidal thoughts*

Depression was assessed with the PHQ-9 questionnaire (Kroenke et al. 2001), that is one module of the Patient Health Questionnaire. It includes 9 short questions designed to identify signs or symptoms of depression. The PHQ-9 questionnaire evaluates factors as irritability, loss of interest, sleep issues, fatigue, and difficulty of concentration. Scoring goes in a range from 0-3 points, where 0 is the minimum and 3 the maximum. The total score goes from 0 to 27. More than 20 points indicates severe major depression, 15-19 indicate moderate major depression, 10-14 indicate moderate depression and 5-9 points indicate mild symptoms of depression. The assessment of suicidal thoughts was based on item 9 of the PHQ-9.

### *Anxiety*

Anxiety symptoms were measured with GAD-7 questionnaire (Spitzer et al., 2006). It is a self-administered instrument that measures generalized anxiety symptoms on a four-point scale. Scores over 5 points indicate mild anxiety, over 10 points indicate moderate one and over 15 points indicate severe anxiety.

## 2.3. Data analysis

Descriptive statistics were performed to characterize the sample and to determine the levels of depressive symptoms, suicide thoughts and anxiety symptoms. Different analyses were performed, calculating mean, standard deviation, frequencies calculating age-groups, gender, level of education and personal income. Moreover, binary crosstabulation was performed analyzing gender and age group versus risk of depression, suicide ideation and generalized anxiety.

**Table 1.** Statistics

age	
<b>Nr valid</b>	224
<b>Nr missing</b>	3
<b>Mean</b>	22,10
<b>Std deviation</b>	4,854
<b>Minimum</b>	18
<b>Maximum</b>	51

**Table 2.** Gender, Age groups, level of education, personal income

	Gender	Age groups	What is your highest completed level of education	What is your personal net income
<b>Nr valid</b>	225	224	222	206
<b>Nr missing</b>	2	3	5	21

**Table 3. Gender**

	Frequency	Percent	Valid percent	Cumulative percent
Valid Woman	213	93,8%	94,7%	94,7%
Valid Man	12	5,3	5,3	100%
Total	225	100%		
Missing system	2	0,9		
Total	227	100%		

**Table 4. Age Groups**

	Frequency	Percent	Valid percent	Cumulative percent
Valid 18-29 years old	206	90,7%	92%	92%
30-39 years old	15	6,6%	6,7%	98,7%
40-49	2	0,9%	0,9%	99,6%
50-59 years old	1	0,4%	0,4%	100%
Total	224	98,7%	100%	
Missing system	3	1,3%		
Total	227	100%		

**Table 5. Level of Education**

	Frequency	Percent	Valid percent	Cumulative percent
I am a student and have not graduated	114	50,2%	51,4%	51,4%
Undergraduate degree, bachelor	56	24,7%	25,2%	76,6%
Master, PhD	52	22,9%	23,4%	100%
Total	222	97,8%	100%	
Missing system	5	2,2%		
Total	227	100%		

**Table 6. Incomes in Euro**

	Frequency	Percent	Valid percent	Cumulative percent
0-500	171	75,3%	83%	83%
500-1000	17	7,5%	8,3	91,3
1000-1500	5	2,2%	2,4%	93,7%
1500-2000	3	1,3%	1,5%	95,1%
2000-2500	6	2,6%	2,9%	98,1%
Over 2500	4	1,8%	1,9%	100%
Total	206	90,7%	100%	
Missing system	21	9,3%		
Total	227	100%		

Table 7. Frequencies

	At risk of depression	Suicide ideation	Generalized anxiety categories
Nr valid	219	218	218
Nr missing	8	9	9

Table 8. Frequency table risk of depression

	Frequency	Percent	Valid percent	Cumulative percent
Valid- not at risk of depression	118	52%	53,9%	53,9%
At risk of depression	101	44,5%	46,1%	100%
Total	219	96,5%	100%	
Missing system	8	3,5%		
Total	227	100%		

Table 9. Frequency table suicide ideation

	Frequency	Percent	Valid percent	Cumulative percent
No	175	77,1%	80,3%	80,3%
Yes	43	18,9%	19,7%	100%
Total	218	96%	100%	
Missing system	9	4%		
Total	227	100%		

Table 10. Frequency table generalized anxiety categories

	Frequency	Percent	Valid percent	Cumulative percent
Minimal anxiety	86	37,9%	39,4%	39,4%
Mild anxiety	72	31,7%	33%	72,5%
Moderate anxiety	38	16,7%	17,4%	89,9%
Severe anxiety	22	9,7%	10,1%	100%
Total	218	96%	100%	
Missing system	9	4%		
Total	227	100%		

Table 11. Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Age groups depression binary	216	95,2%	11	4,8%	227	100%
Age group suicide ideation	215	94,7%	12	5,3%	227	100%
Age groups generalized anxiety	215	94,7%	12	5,3%	227	100%
Gender risk of depression binary	217	95,6%	10	4,4%	227	100%
Gender suicide ideation	216	95,2%	11	4,8%	227	100%
Gender generalized anxiety	216	95,2%	11	4,8%	227	100%

Table 12. Age groups 1.0 riskdek. At risk of depression binary Crosstabulation

		At risk of depression binary		
Age groups		Non at risk of depression	At risk of depression	Total
18-29 years old	Count	103	98	201
	Within age groups	51,2%	48,8%	100%
	Within risk of depression binary	88,8%	98,0%	93,1%
	% of total	47,7%	45,4%	93,1%
30-39 years old	Count	11	1	12
	Within age groups	91,7%	8,3%	100%
	Within risk of depression binary	9,5%	1,0%	5,6%
	% of total	5,1%	0,5%	5,6%
40-49 years old	Count	1	1	2
	Within age groups	50%	50%	100%
	Within risk of depression binary	0,9%	1%	0,9%
	% of total	0,5%	0,5%	0,9%
50-59 years old	Count	1	0	1
	Within age groups	100%	0%	100%
	Within risk of depression binary	0,9%	0%	0,5%
	% of total	0,5%	0%	0,5%
Total	Count	116	100	216
	Within age groups	53,7%	46,3%	100%
	Within risk of depression binary	100%	100%	100%
	% of total	53,7%	46,3%	100%

**Table 13.** Age groups Suicide ideation Crosstabulation



	Age groups		Suicide ideation		
			0,00 No	1,00 Yes	Total
18-29 years old	Count		160	41	201
	Within age groups		79,6%	20,4%	100%
	Within suicide ideation		92,5%	97,6%	93,5%
	% of total		74,4%	19,1%	93,5%
30-39 years old	Count		10	1	11
	Within age groups		90,9%	9,1%	100%
	Within suicide ideation		5,8%	2,4%	5,1%
	% of total		4,7%	0,5%	5,1%
40-49 years old	Count		2	0	2
	Within age groups		100%	0%	100%
	Within suicide ideation		1,2%	0%	100%
	% of total		0,9	0%	100%
50-59 years old	Count		1	0	1
	Within age groups		100%	0%	100%
	Within suicide ideation		0,6%	0%	0,5%
	% of total		0,5%	0%	0,5%
Total	Count		173	42	215
	Within age groups		80,5%	19,5%	100%
	Within suicide ideation		100%	100%	100%
	% of total		80,5%	19,5%	100%

**Table 14.** Age groups Generalized anxiety categories

		Generalized anxiety categories				
Age groups		0,00 Minimal anxiety	1,00 mild anxiety	moderate anxiety	Severe anxiety	Total
18-29 years old	Count	74	70	36	21	201
	Within age groups	36,8%	34,8%	17,9%	10,4%	100%
	Within generalized anxiety categories	87,1%	98,6%	94,7%	100%	93,5%
	% of total	34,4%	32,6%	16,7%	9,8%	93,5%
30-39 years old	Count	9	1	1	0	11
	Within age groups	81,8%	9,1%	9,1%	0%	100%
	Within generalized anxiety categories	10,6%	1,4%	2,6%	0%	5,1%
	% of total	4,2%	0,5%	0,5%	0%	5,1%
40-49 years old	Count	1	0	1	0	2
	Within age groups	50%	0%	50%	0%	100%
	Within generalized anxiety categories	1,2%	0%	2,6%	0%	0,9%
	% of total	0,5%	0%	0,5%	0%	0,9%
50-59 years old	Count	1	0	0	0	1
	Within age groups	100%	0%	0%	0%	100%
	Within generalized anxiety categories	1,2%	0%	0%	0%	0,5%
	% of total	0,5%	0%	0%	0%	0,5%
Total	Count	85	71	38	21	215
	Within age groups	39,5%	33%	17,7%	9,8%	100%
	Within generalized anxiety categories	100%	100%	100%	100%	100%
	% of total	39,5%	33%	17,7%	9,8%	100%

**Table 15.** Gender at risk of depression binary

		At risk of depression binary		
Gender		0,00 Not at risk of depression	1,00 At risk of depression	Total
1,00 Woman	Count	110	95	205
	Within age groups	53,7%	46,3%	100%
	Within risk of depression binary	93,2%	96%	94,5%
	% of total	50,7%	43,8%	94,5%
2,00 Man	Count	8	4	12
	Within age groups	66,7%	33,3%	100%
	Within risk of depression binary	6,8%	4%	5,5%
	% of total	3,7%	1,8%	5,5%
Total	Count	118	99	217
	Within age groups	54,4%	45,6%	100%
	Within risk of depression binary	100%	100%	100%
	% of total	54,4%	45,6%	100%

Table 16. Gender suicide ideation

		Suicide ideation		
Gender		0,00 No	1,00 Yes	Total
Woman	Count	164	41	205
	Within gender	80%	20%	100%
	Within suicide ideation	94,8%	95,3%	94,9%
	% of total	75,9%	19%	94,9%
Man	Count	9	2	11
	Within gender	81,8%	18,2%	100%
	Within suicide ideation	5,2%	4,7%	5,1%
	% of total	4,2%	0,9%	5,1%
Total	Count	173	43	216
	Within gender	80,1%	19,9%	100%
	Within suicide ideation	100%	100%	100%
	% of total	80,1%	19,9%	100%

Table 17. Gender generalized anxiety categories

		Generalized anxiety categories				
Age groups		0,00 Minimal anxiety	1,00 mild anxiety	moderate anxiety	Severe anxiety	Total
Woman	Count	81	70	34	20	205
	Within gender	39,5%	34,1%	16,6%	9,8%	100%
	Within generalized anxiety categories	94,2%	97,2%	94,4%	90,9%	94,9%
	% of total	37,5%	32,4%	15,7%	9,3%	94,9%
Man	Count	5	2	2	2	11
	Within gender	45,5%	18,2%	18,2%	18,2%	100%
	Within generalized anxiety categories	5,8%	2,8%	5,6%	9,1%	5,1%
	% of total	2,3%	0,9%	0,9%	0,9%	5,1%
Total	Count	86	72	36	22	216
	Within gender	39,8%	33,3%	16,7%	10,2%	100%
	Within generalized anxiety categories	100%	100%	100%	100%	100%
	% of total	39,8%	33,3%	16,7%	10,2%	100%

### III. Results and Discussion

227 participants of the student category of the University of Tirana took part in this study, where the minimum age of the participants was 18 years, and the maximum was 51 years, who gave their opinion on the prevalence of depressive symptoms after covid-19.

From these data, it was observed that a total of 224 respondents had an average of 22.10 and a standard deviation of 4.854. Of them, 225/227 indicated their gender, while 224/227 indicated their age. Regarding the level of education, the respondents were 222 out of 227. The question about personal income was answered by 206 people.

We must emphasize the fact that there was an extreme participation among women and an extremely negative participation among men where almost all participants were women 213/227 and only 5.3% of the sample were men.

Regarding the age group, there is a significant testimony from participants aged

18-29 years. It may be that the questionnaire was distributed mainly among university students. All other age categories were in total about 10% of the participants. 206 out of 27 were in the 18-29 age group.

The education level category can also be seen as related. Almost half of the participants had not yet graduated, about 50%. 56 out of 227 had received a bachelor's degree, 24.7% of the total. Interestingly, 22.9% of the respondents also obtained a Master's degree.

Referring to the result where 206 out of 227 answered about personal income, with about 9% of the sample who did not answer and the main category includes personal income up to 500 euros/month, it is understood that social capital is significantly related to depressive symptoms and socio status - economic of the family. The results are an indication of the fact that students with low socio-economic perception, where 171 out of 206 respondents were part of this category, are more predisposed to exhibit depressive symptoms. These two data are consistent with previous studies that have shown a significant relationship between socio-economic capital and mental health related to the level of self-esteem<sup>1</sup>.

219 participants answered questions about the risk of depression, while 218 people answered questions about suicidal ideation and the category of generalized anxiety. These elements are presented as necessary for the protection of socio-economic status according to discrimination statutes that regulate employment, housing, education, voting, public housing, and credit/lending<sup>2</sup>.

As I mentioned earlier, 219 of the 227 answered the questions about depression. Where 52% of the participants did not show depressive symptoms and 44.5% of the participants according to the data, were at risk of depression, which is a significant result. Out of the population, 218/227 answered the question about suicidal ideation. 77.1% of them have not shown suicidal symptoms, while 18.9% are at risk of suicide, a low but still significant number.

Regarding generalized anxiety, 218 people out of 227 answered the questions. 37.9% of them showed no anxiety 86 people had minimal anxiety. 72 people showed mild anxiety (31.7%). 38 people had moderate anxiety (16.7%) and 22 people had experienced severe anxiety (9.7%), still a significant number. Referring to international studies on student anxiety, it is suggested that to reduce the risk factors of creating anxious situations in this population, better cooperation between the family and the university is needed<sup>3</sup>.

According to age groups, it was observed that 46.3% of the participants were at risk of depression. This number is significant for the 18-29 age group because there are low figures for other age groups, the highest being 5.6% participation. Therefore, in the 18-29 age group there are 98 participants out of 201 who can be considered at risk of depression, which is almost 49% of the participants in this age group. This is an important result for this category. The prevalence of depression symptoms in our study is consistent with the average rates reported in previous research<sup>4</sup>.

The same can be said for participation in suicidal ideation. 201 respondents out of 215 were part of the 18-29 age group. So the number of other age groups is not relevant. Of the 205, 19.5% experienced symptoms of suicidal ideation. There are 41/215 people who have experienced symptoms of suicidal ideation who are part of the 18-29 age group. Based on the results of other studies, the experience of suicide among students should be considered by the country's health care system<sup>5</sup>.

Regarding the category of generalized anxiety, there were a total of 215 respondents. 39.5% had no signs of anxiety, only minimal anxiety. 33% indicated mild anxiety, 17.7% had experienced moderate anxiety and 9.8% are at risk of severe anxiety. The number of participants in the over-29 age group is not significant because the number is very low. The 18-29 age group had massive participation 201/215 were from this age group. The new globalized economy has affected the anxiety of many young age groups without gender differences<sup>6</sup>. The distribution of percentages is almost equal. We can

see that there were minimal symptoms of anxiety in 34.4% of the participants in this age group. There were 32.6% of participants showed mild symptoms of anxiety. In addition, 16.7% showed moderate anxiety and 9.8% had severe anxiety symptoms, both latter categories having significant numbers. In total, 60.5% of the participants had anxiety symptoms.

In terms of gender, there were very few male participants. As we can see, there are 12 male participants out of 217 total participants. Therefore, the statistics for men are not relevant. As for women, there is a high number of respondents, almost 94.5%. 43.8% of them are at risk of depression (95/205). The assessment of the importance of knowing statistics for citizens with a level of anxiety has resulted in an increasing number of topics in university degree programs, turning them into an imposition for legal solutions to such problems<sup>7</sup>.

Furthermore, the same can be said about suicidal ideation. The participation of men is very low and the results are not significant. On the other hand, there are 205/216 female participants. Out of 205 women, 41 had experienced symptoms of suicidal ideation, which means that the result of 19% is very reasonable. The high number of suicidal feelings among women occurs because of their social role in dealing with issues such as poverty, migration, violence, family instability, and bullying<sup>8</sup>.

Furthermore, generalized anxiety is also not significant for the male category. Where 205/216 were female participants. There were 37.5% of participating women had minimal symptoms of anxiety and 34.1% experienced mild symptoms of anxiety. Moreover, 34 of them had moderate. Based on two similar studies, it results that, unlike women, men have a life course that tends to be timely about professional events, whereas compared to women, men focus more on problems arising from work performance (Lowenthal et al. 1975) and economic difficulties (Lowenthal and Chiriboga 1972)<sup>9</sup>.

## IV. Conclusions and Recommendations

The study confirmed a prevalence of depressive symptoms among students during the first year of the pandemic (44.5%). Also, anxiety rates were present in more than 55% of participants. Besides, a relevant outcome were the high levels of suicidal thoughts (18,9%). Female participants were at risk of depression in more than 43% of the cases, had 62,5% anxiety symptoms and 19% rate of suicidal ideation. These results confirm that students' population perceived anxiety and depression and high rates of suicidal thoughts. Moreover, high levels of education were evidenced among female participants and most of personal income were under 500 euro/monthly. The outcome of suicide ideation, depression and anxiety could be correlated with personal low incomes experienced during the pandemic with all economic activities closed. It could be remarkable to correlate the high level of education with depression, anxiety, and suicide ideation. It could be possible to speculate that the high level of education was associated with great expectation of job finding, a failed objective, stopped by the lockdown. Likewise, this could bring frustration among high educated people that was correlated with high rates of depression, anxiety, and suicide ideation.

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EB and IXH conceived the idea of the study, designed the methodology and procedure, and took care of the back translation of the questionnaire. JH and JN collected the data and wrote down the survey via google form. Statistical analyses were conducted by EK. JM interpreted the results and wrote the discussion, and JN wrote the introduction. All authors contributed to revising the manuscript and approved the final version.

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## Footnotes

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