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Psychological Distress due to COVID-19 in the Albanian Adult Population

Vjollca Ndreu [1, †, *], Yllka Themeli [1, †], Ilirjana Zekja [1], Fatjona Kamberi [2]

1. Faculty of Technical Medical Sciences, University of Medicine Tirana, Albania; E-Mails: vndreu@hotmail.com; yllkathemeli@gmail.com; ilirjana.zekja@umed.edu.al
2. Research Centre of Public Health, Faculty of Health, University of Vlore "Ismail Qemali", Vlore, Albania; E-Mail: fatjona.kamberi@univlora.edu.al

† These authors contributed equally to this work.

* **Correspondence:** Vjollca Ndreu; E-Mail: vndreu@hotmail.com

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Abstract

The World Health Organization declared the COVID-19 pandemic on March 11th, 2020. The pandemic had significantly affected public health, and the mental health of people was compromised regardless of age or socioeconomic status. In this study, we measured the psychological distress caused by the pandemic and determined the associated factors. An online survey was conducted from November 16th (2020) to January 31st (2021). The participants were Albanian adults (≥18 years old). The call to participate was posted on social networks. A questionnaire based on the Generalized Anxiety Disorder (GAD-7) scale and Patient Health Questionnaire (PHQ-9) was distributed to the participants via Google Forms. The internal consistency of the scales was assessed using Cronbach's alpha. The total number of participants was 488, and 87.3% were females. The mean age was 21.17 years. Full-time students and health care workers comprised 58% and 12.9% of the participants, respectively. The participants were asked 24 questions, and five factors explained 54.14% of the variance. The factors included mental fatigue, psychological consequences in metabolism, obsession with protective measures, negative perception of the situation, and empathy for patients with

COVID-19. Effective and relevant mental health interventions and policies to help cope with psychological distress specifically related to COVID-19 should be designed and implemented.

Keywords
COVID-19; impact; psychological distress; adult population; Albania

1. Introduction

The World Health Organization (WHO) declared the COVID-19 pandemic on March 11th, 2020 [1]. Globally, till March 2022, there were 476,374,234 confirmed cases of COVID-19, including 6,108,976 deaths, reported to the WHO. By 27 March 2022, 11,054,362,790 doses of vaccine had been administered. In Albania, from January 3rd, 2020, to March 4th, 2021, there were 109,674 confirmed cases of COVID-19 and 1,856 deaths. By January 25th, 2021, 671 doses of vaccine had been administered [2]. The Albanian population consists of more than 1,000,000 individuals who are at least 20 years old (January 2020) [3]. The most potent and common method of COVID-19 transmission is through airborne particles [4]. Many countries, including Albania, adopted prevention and control measures to limit the spread of the infection in their communities. These measures included quarantine, social distancing, mandatory use of masks, and emphasis on personal hygiene and handwashing [5-7]. A combination of social distancing measures at the national and international levels, such as travel restrictions, partial or total lockdowns, and limitations on mass gatherings, prevented the spread of the infection effectively [8]. Besides physical distancing measures, the self-isolation of patients showing COVID-19 symptoms and the tracing of their contacts also kept the virus under control [9]. Although physical distancing measures are effective in controlling the spread of COVID-19 and positively affect public health, they can affect the economy negatively and have other indirect effects on the environment [10]. Social distancing has also affected society in general; for example, it has increased individualism and social rejection [11]. The pandemic greatly affected the mental health of the population, particularly that of children and teens, the elderly, people with disabilities, chronic conditions, and healthcare workers who are at a greater risk of infection [12]. In Albania, the percentage of individuals in the population who are at least 65 years old increased from 11.0% in 2011 to 14.1% in 2019, which increased the burden of chronic conditions [3]. People with chronic conditions and those without depression or anxiety showed an increase in stress-related symptoms during the COVID-19 pandemic [13, 14]. The impact of the COVID-19 pandemic on mental health, such as psychological distress, might last longer than its effects on physical health [15]. Psychological distress is defined as a suffering emotional state characterized by symptoms that include loss of interest, mental fatigue, sadness, irritability, restlessness, and nervous tension, which are typical signs of depression and anxiety [16]. Psychological distress commonly occurs in the population, and its symptoms might be associated with physical complaints [17]. The most common risk factors related to psychological distress are loneliness, job dissatisfaction, conflicts at work or with family, as well as being a woman [18]. Other risk factors include exposure to stressful situations that threaten the physical and mental state, as well as emotional inability to cope effectively with these situations [19]. Quarantining during the COVID-19 pandemic was strongly associated with a higher risk of mental health disorders, especially

among vulnerable groups [20]. Various studies have reviewed and highlighted the effect of the pandemic on the mental health of the community [21-23], including that of the population in low-middle income countries [20]. These studies have shown that the effect on mental health can be observed through high levels of anxiety, depression, psychological distress, stress, and post-traumatic stress disorder symptoms reported in this period. At an international level, a population-based cross-sectional study found that mental health distress during the lockdown was moderate [24]. Another study investigated the effect of the pandemic on mental health and found that the issue needs to be addressed urgently [25]. Providing support to communities can minimize pandemic-related effects on mental health [26, 27]. Although numerous studies have been conducted worldwide, studies on this topic, particularly from the Eastern European and Western Balkan regions, are lacking. Using the data from this survey, we addressed the knowledge gap concerning the effect of the COVID-19 pandemic on the mental health of Albanian adults.

2. Materials and Methods

2.1 The Study Design

A cross-sectional online survey was conducted from November 16th, 2020, to January 31st, 2021. The call to participate was posted on the social networks (Twitter, Facebook, email, Instagram, and WhatsApp) of the authors and their friends. Each participant could complete an anonymous questionnaire using Google Forms only once. Participation was voluntary, and all answers were kept confidential. The informed consent of the participants was obtained before participation.

2.2 Participants and Sample Size

Participants were adult Albanians (≥18 years old) living in different cities in Albania. The adequate sample size was calculated based on the sample size calculation methods for medical studies [28]. Based on a simple formula for cross-sectional studies, the estimated size was 385 participants. The formula n = Z^2P (1-P)/d^2 was used to estimate the population prevalence with a given precision. Using the formula, we evaluated the minimum sample needed to determine the appropriate size with 5% precision (margin of error), 95% CI, Z = 1.96, and the expected prevalence (proportion) P = 0.5. According to previous studies, books, and guides, we found that a precision d of 5% is optimal if the prevalence P is between 0.1 and 0.9. We used the SPSS program to conduct a power analysis.

2.3 Research Objectives

We measured the prevalence and severity of psychological distress among participants and determined the socio-demographic factors (age, gender, marital, educational, and employment status) associated with mental health issues (psychological stress, anxiety, and depression) to implement relevant mental health interventions and policies for coping with this challenge efficiently.

2.4 Questionnaire

The survey included two sections: 1) demographic characteristics (age, gender, marital status, educational level, employment status, etc.) and 2) the questionnaire based on the Generalized

Anxiety Disorder (GAD-7) scale [29] with 24 items and the Patient Health Questionnaire (PHQ-9) with nine items [30]. The responses were recorded as 0: not at all, 1: several days, 2: more than half of the days, and 3: nearly every day. The Generalized Anxiety Disorder 7-item (GAD-7) questionnaire was used to assess the anxiety levels of the participants. The questions of GAD-7 were asked to assess the following problems: nervousness, anxiety, the inability to control feeling worried, irritable, and afraid, and having trouble relaxing. The validated Patient Health Questionnaire (PHQ-9) was used to assess depression levels among the participants. The questions of the PHQ-9 are related to interest or pleasure in doing things, depression, sleep disorders, concentration, appetite, and thoughts of self-harm. Factors associated with psychological distress were assessed by performing a logistic regression analysis. The minimum score for evaluating a person to be suffering from psychological distress was 29 [29-30]. Participants who had scores higher than 52 were considered to be in severe psychological distress [31].

2.5 Statistical Analysis

Statistical analysis was performed using the EpiInfoTM 7 software version 7.1.3.10 and IBM SPSS Statistics 25. Demographic data were analyzed using descriptive statistics, and frequency rates or percentages were used to describe the categorical variables. Continuous variables were described using the mean and standard deviation. The outcome variables included psychological distress, risk perception, and coping strategies. All variables of interest were summarized with the most suitable statistical indices. The construct validity of the questionnaire was tested by conducting exploratory factorial analysis. All differences were considered to be statistically significant at $p < 0.05$. The KMO test value >0.6 indicated that the sampling was adequate. Exploratory Factorial Analysis (EFA) was performed to investigate construct validity. The value of reliability used to analyze the data was based on Cronbach's alpha. Only those factors with Eigenvalues greater than 1 were extracted. The exploratory factorial analysis is a very common statistical procedure in psychological research for investigating the underlying variable structure methods. Exploratory factorial analysis with VARIMAX rotation was performed on these items to determine the underlying factors.

The ethical principles of the Declaration of Helsinki and The European Code of Conduct for Research Integrity were followed while conducting the study. Anonymity, privacy, and confidentiality of the participants were guaranteed. The aim of the study and the use of the generated data were described to all participants. By completing the questionnaire voluntarily, they gave consent to participate in the study. The study was approved by the Research Ethics Committee of the Faculty of Health, University of Vlore "Ismail Qemali", Vlore Albania.

3. Results

The sample included 488 participants. The survey was completed by 490 individuals, but due to irregularities, two questionnaires were not included in the final data analysis. Most participants were females (n = 426; 87.3%); there were 62 male participants (12.7%). The average age of the participants was 21.17 years. Most participants (n = 122) lived in Tirana (the capital of Albania), followed by Vlore (n = 75) and Elbasan (n = 55); 86.5% (n = 422) of the participants were single, and 30.5% and 55.7% had completed secondary and bachelor level university education, respectively. Regarding employment, 58% (n = 283) were full-time students, 22.7% (n = 111) were unemployed,

and 17.4% (n = 85) were employed full-time. Most participants (n = 339) were Muslims, and 12.9% of the participants were healthcare workers (Table 1).

Table 1 The socio-demographic characteristics of the participants (n = 488).

Variables	Frequency	Percent	P value
Gender			0.64
Male	62	12.7	
Female	426	87.3	
Nationality			0.96
Albanian	485	99.4	
Not Albanian	3	0.6	
City of residence			0.68
Tirana	122	25.0	
Vlora	75	15.4	
Elbasan	55	11.3	
Fier	33	6.8	
Durrës	32	6.6	
Berat	22	4.5	
Lushnje	17	3.5	
Kukës	16	3.3	
Pogradec	16	3.3	
Dibër	13	2.7	
Lezhë	12	2.5	
Korçe	8	1.6	
Krujë	7	1.4	
Other	60	12.3	
Age (years)			0.98
<20	322	66.0	
21–30	138	28.3	
31–40	17	3.5	
41–50	9	1.8	
>50	2	0.4	
Mean ±SD	**21.17 ±5.38**		
Marital status			0.84
Cohabit[a]	28	5.7	
Single	422	86.5	
Divorced[b]	1	0.2	
Married	37	7.6	
Educational Level			0.84
Primary	1	0.2	
Secondary	149	30.5	
University degree (Bachelor)	272	55.7	
University degree (Master)	66	13.5	

Employment status			0.91
Full-time employed	85	17.4	
Not employed	111	22.7	
Caregiver (e.g., children, elderly)	1	0.2	
Homemaker	5	1	
Full-time student	283	58.0	
Part-time student	3	0.6%	
Religion			0.92
Muslim	339	69.47	
orthodox	37	7.58	
Other Christians	31	6.35	
Bektashi	21	4.30	
Atheists	15	3.07	
Unqualified believers	8	1.64	
I prefer not to answer	31	6.35	
Are you a healthcare worker			0.05
Yes	63	12.9	
No	425	87.1	

[a] Participants who are married or cohabit with a partner

[b] Participants who are either widowed, divorced, or unmarried

The mean score for each item, which was used to assess anxiety, depression, and other psychological distress symptoms, is presented in Table 2. The items used to evaluate anxiety (GAD-7) and depression (PHQ-9) had the highest mean scores. The total mean score of the 24 items for assessing psychological distress symptoms (anxiety, depression, and stress in general) was 29.8046.

Table 2 The mean score of the 24 items for psychological distress symptoms (anxiety and depression).

Items	Mean	±SD*
Q1: Compared to usual, I feel more nervous and anxious.	1.90	4.93
Q2: I felt insecure and bought a lot of masks, medications, sanitizers, gloves, and/or other home supplies.	1.85	1.24
Q3: I cannot stop imagining that my family or I might get infected and feel terrified and anxious about it.	1.90	1.32
Q4: I feel helpless no matter what I do.	1.55	1.28
Q5: I feel sympathetic to COVID-19 patients and their families.	1.30	1.38
Q6: I feel helpless and angry about people around me, governors, and the media.	1.77	1.35
Q7: I am losing faith in the people around me.	1.25	1.27
Q8: I collect information about COVID-19 all day. Even if it is not necessary, I cannot stop myself.	0.94	1.09
Q9: I believe the information on COVID-19 from all sources without any evaluation.	0.81	1.14

Q10: I would rather believe in negative news about COVID-19 and be skeptical about the good news.	1.01	1.15
Q11: I am constantly sharing news about COVID-19 (mostly negative news).	0.66	1.05
Q12: I avoid watching COVID-19-related news since I am too scared to do so.	1.19	1.24
Q13: I am more irritable and have frequent conflicts with my family.	0.86	1.11
Q14: I feel tired and sometimes even exhausted.	1.70	1.26
Q15: When I feel anxious, my reactions become sluggish.	1.38	1.25
Q16: I find it hard to concentrate.	1.87	1.26
Q17: I find it hard to make any decisions.	1.64	1.20
Q18: During the COVID-19 period, I often felt dizzy or had back pain and chest distress.	1.19	1.23
Q19: During the COVID-19 period, I often felt stomach pain, bloating, and other stomach discomforts.	0.96	1.22
Q20: I feel uncomfortable when communicating with others.	0.81	1.11
Q21: Nowadays, I rarely talk to my family.	0.70	1.09
Q22: I frequently wake up at night because of a dream that my family member or I might be affected by COVID-19.	0.39	0.88
Q23: My eating habits have changed.	1.15	1.28
Q24: I have constipation or frequent urination.	0.87	1.15
Total score	29.80	32.60

* Standard deviation.

The total variance explained is presented in Table 3. The five factors were correlated with each other, and the questionnaire was valid; Cronbach's alpha was 0.9. All questions contributed to the reliability and construct validity of the questionnaire (Additional Materials). In the Principal Component Analysis (Rotation Method: Varimax with Kaiser Normalization), the five underlying components and the questions have correlations greater than 0.4. The Exploratory factorial analysis (EFA), used for determining the construct validity, and the value of reliability, based on Cronbach's alpha, were used to analyze the data. Only the first five factors with Eigenvalues greater than 1 were extracted. The results of the analysis showed that the five factors explained 54.14% of the variance with Eigenvalues greater than 1. These factors included 1) Mental fatigue from COVID-19 — questions (Q) Q1, Q4, Q6, Q7, Q13, Q14, Q15, Q16, and Q17; 2) Psychological consequences in metabolism — Q18, Q19, Q20, Q21, Q22, Q23, and Q24; 3) Obsession for protective measures — Q2, Q3, and Q8; 4) Negative perception of the COVID-19 pandemic — Q9, Q10, and Q11; 5) Empathy for patients with COVID-19 — Q5 and Q12.

Table 3 The total variance of the five factors.

Total Variance Explained									
Component	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**			**Rotation Sums of Squared Loadings**		
	Total	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	**7.83**	**32.62**	**32.62**	7.83	32.62	32.62	5.16	21.52	21.52
2	**1.73**	**7.23**	**39.85**	1.73	7.23	39.85	3.04	12.70	34.22
3	**1.32**	**5.52**	**45.38**	1.32	5.52	45.38	1.99	8.33	42.55
4	**1.07**	**4.48**	**49.86**	1.07	4.48	49.86	1.73	7.21	49.76
5	**1.02**	**4.27**	**54.14**	1.02	4.27	54.14	1.04	4.37	54.14

1-Mental fatigue from COVID-19; 2-Psychological consequences in metabolism; 3-Obsession for protective measures; 4-Negative perception of the COVID-19 situation; 5-Empathy for patients with COVID-19.

4. Discussion

The final analysis included data from 488 participants with a mean age of 21.17 ±5.38 years. Excluding occupation, no significant statistical relationship was found between socio-demographic characteristics and symptoms of psychological distress ($p > 0.05$, Table 1). The results of our study differed from those of studies performed at an international level. A review found that females, younger age groups, unemployed people, students, and people who received news concerning COVID-19 frequently had a higher risk of mental health problems [21], but our study found no statistical association between gender, age, employment, or student status and symptoms of psychological distress.

Age affected behavior during the pandemic. Throughout the pandemic, older people were more likely to comply with regulations, while young people were more likely to engage in risky behaviors [32]. The participants in this study were young. Depression is more prevalent among young adults even in non-pandemic situations and can have serious consequences, such as cognitive changes, somatic symptoms, and loss of interest [33].

Social isolation reduces protective behaviors in younger groups [34], and younger people have a higher risk of mental disorders during a pandemic [35]. Younger females have the highest levels of stress, anxiety, and depression [36].

In our study, 58% of the participants were full-time students. Students were shown to have higher levels of anxiety and stress, mostly fear and worry concerning themselves and their families [37]. Female students expressed higher levels of psychological problems due to the COVID-19 pandemic [38]. A study conducted during the quarantine period in Albania found that the mental health of university students and their parents was affected, considering that they expressed increased symptoms of anxiety and depression [39].

The employment status of individuals is associated with the presence of different stressors, such as perceived safety, threat, risk of contagion, stigma, social and financial loss, and job insecurity [40]. The most common symptoms among individuals working from home during the pandemic were stress, depression, and fatigue [41].

In our study, a statistical association was found between being a healthcare worker and the prevalence of anxiety and depression ($p = 0.05$, Table 1). Similar results were found in other studies. Being a healthcare worker increases the risk of developing mental health disorders, as determined by evaluating healthcare workers from many different countries, including Albania [42, 43]. This is also related to professionals who work closely with COVID-19 patients and the fear of getting infected and transmitting the virus to family members [44].

The association between the city of residence and the presence of symptoms of depression, stress, or anxiety was not statistically significant ($p > 0.05$, Table 1). Our results, therefore, differed from those of other studies, which showed that mental health problems were significantly more prevalent in urban areas and densely populated cities. The most prevalent mental disorders identified in the population were anxiety, depression, and insomnia, with no association with age, gender, or marital status. Living with others was a risk factor for anxiety, while being married was associated with a lower risk of depression [38, 45].

The 24 items' mean scores, or the total score of 29.8, were utilized to calculate the symptoms of psychological distress (anxiety and depression). Higher ratings revealed pandemic-related

psychological symptoms in the participants (Table 2).The results were similar to those of another study on Albanians residing abroad; that study was conducted during the first wave of the pandemic [46].

The total variance of five factors is presented in Table 3. The results showed that the five factors explained 54.14% of the variance with Eigenvalues greater than 1. These factors included: 1) Mental fatigue from COVID-19; 2) Psychological consequences in metabolism; 3) Obsession regarding protective measures; 4) Negative perception of the COVID-19 situation; 5) Empathy for patients with COVID-19. Mental fatigue caused by COVID-19 was also found in three-quarters of the participants in another study [47]. There are many social and psychological consequences of COVID-19 in the general population [48]. The participants showed consequences of psychological distress through changes in metabolism, as determined from the responses to questions 18–24, similar to other findings (Table 3). Excessive energy due to physical inactivity can increase metabolic disorders [49] and affect neuromuscular, cardiovascular, and metabolic health [50]. Information on the pandemic from non-official and non-trusted sources every day also influenced the response of the population to the preventive measures implemented and was associated with high levels of anxiety and panic [51]. The participants were obsessed with the protective measures. We found a negative perception of the COVID-19 situation (Q9, Q10, and Q11) and empathy for patients with COVID-19 (Q5 and Q15) among the participants (Table 3). Our study was conducted close to the third wave of the pandemic in Albania; by then, many had been infected by or died due to the coronavirus. The duration of the pandemic was associated with a higher risk of death worldwide and increased the negative perception of the situation, as well as aggravated mental health disorders already present since the onset of the pandemic [52]. We found higher levels of empathy for COVID-19 patients, especially among female participants. A study showed that higher empathy is associated with higher depression, anxiety, and trauma [53]. During the COVID-19 pandemic, empathy, or a profound understanding of others through observing or experiencing their condition, brought people closer. [54]. Highly altruistic people experienced higher negative effects due to the pandemic, which indirectly increased their anxiety and depression [55]. Additionally, the consequences of the COVID-19 pandemic on the mental health of the population were more severe in countries where access to remote mental health support was not available even before the pandemic [56].

5. Limitations

Our study had some limitations. These limitations mostly occurred since the study was conducted online. These kinds of surveys are mostly completed only by young and literate people who can easily use the internet, frequent users of social networks, and those willing to respond to online surveys [57]. In our study, most participants were young and females, which might have introduced bias in our results. The lack of mental health assessment of Albanian adults before the pandemic prevented us from better comparing and determining the effect of the pandemic on psychological distress. Moreover, the snowballing method used for data collection limited our access to participants from different regions, making it a non-random sample. However, studies on this topic from Albania are lacking. From that perspective, our study provided an opportunity for further development.

Moreover, our results showed that the COVID-19 pandemic is associated with mental fatigue, psychological consequences in metabolism, obsession with protective measures, and a negative

perception of the situation among young females and healthcare workers. These issues should be addressed immediately and effectively.

6. Conclusions

In this study, we examined the psychological distress of the Albanian adult population due to the COVID-19 pandemic and the associated factors. The results showed that the effect of the COVID-19 pandemic on the mental health of the population had a great impact. In this study, the psychological distress among Albanian participants due to the pandemic was expressed as mental fatigue, consequences in metabolism, obsession with protective measures, and a negative perception of the situation. The participants showed empathy for COVID-19 patients and poor coping strategies. They also reported high levels of stress**.** Deterioration of mental health due to the pandemic was reported in Albania, mostly in densely populated and economically developed cities, which are often hotspots of COVID-19 infections. Besides containing and treating infections and conducting vaccination, preventing and decreasing the negative effects of the pandemic on the mental health of the population should also be prioritized by the healthcare system, as it is often underestimated, especially in low and middle-income countries.

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Author Contributions

"Conceptualization, V.N. and Y.TH.; methodology, V.N and Y.TH.; software, F.K.; validation, F.K., and I.Z.; formal analysis, F.K.; investigation, V.N.; resources, Y.TH.; data curation, V.N.; writing—original draft preparation, V.N. and Y.TH.; writing—review and editing, visualization, I.Z.; supervision, FK.; project administration, V.N. All authors have read and agreed to the published version of the manuscript."

Competing Interests

The authors have declared that no competing interests exist.

Additional Materials

The following additional materials are uploaded at the page of this paper.

1. Total variance explained.

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