Coping Strategies, Anxiety and Mental Health Among Female Undergraduate Students in Kosova

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***Abstract**: This study aimed to explore the possible effects of coping strategies and anxiety on mental health among female undergraduate students in Kosovo. 492 students (M = 20.54, SD = 1.98) from three universities, voluntarily completed the Mental health SRMH, the Brief-COPE self-report questionnaire, the 7-item Generalized Anxiety Disorder Scale, and a sociodemographic survey through a web-based Google form. Descriptive, correlation, t-Test, ANOVA, linear and multiple regressions were used. 65% suffered from anxiety and 62.6% of them rated their general health as poor. Students of second and third year reported more poor mental health (64.5%; 64.1%; 66%) and higher anxiety level (47.7%; 36.8%; 36.4%) than other students. There was a significant moderate positive relationship only between the anxiety and avoidant coping style. The hierarchical regression models indicated that the mental health score of students were predicted by being infected with COVID-19 (P = 0.00), study year (P = 0.00), and type of university (P = 0.000). Overall, the findings indicated that coping strategies don't appear to predict mental health among students (P>0.00). The universities should be more aware of the students' mental health. Organizing intervention programs with professionally trained counselors, may be one of the activities provided for them*

Keywords: Anxiety, Coping, Mental Health, Intervention, Students, Pandemic.

I. INTRODUCTION

Covid-19 has caused, as never before, the biggest challenge for the education system, with 94 per cent of learners worldwide having been affected by the pandemic, from pre-primary to higher education, in 200 countries (UN 2020). The nationwide closures of schools initiated last year and continuing also throughout this academic year, have negatively impacted over 90 % of the world's student population (Lee 2020). More recently, Browning et al. (2021) identified a range of psychological consequences of the COVID-19 pandemic on students' psychosocial functioning, indicating that the pandemic impacted them negatively, with 59% reporting a high level of psychological impact.

Mental health is probably the most significant determinants of life quality and nowadays it is well known that mental health problems are a very common among college students.

Literature showed that mental health problems are common phenomenon among students with a higher prevalence compared to the general public (Mofatteh 2020), and poor mental health is a complex and common psychological problem among university undergraduate students in developed and developing countries (Pedrelli et al. 2015).

Anxiety continues to be the most common problem among students. It is highly prevalent among college students and has a negative effect on the quality of students' life and their education (Sanad 2019; Farrer et al. 2016). A longitudinal study indicated that students' levels of anxiety worsened compared to that before the pandemic (Elmer et al. 2020). Anxiety level among female students was usually higher than among males in previous studies (Mirón et al. 2019; Kamberi et al. 2019; Batra et al. 2021; Wang and Zhao 2020; Arënliu et al. 2021; Shala et al. 2021). Factors related to these high rates of anxiety range across multiple themes including psychological, academic, biological, lifestyle, social and economic. Coping strategies are considered a psychological construction referring to knowledge, skills and strategic behaviors that people use to manage emotions occurring within a situation of stress (Chartier et al. 2011; Freire et al. 2016; Dubow and Rubinlicht 2011; Folkman 1984). Researchers have generally grouped these strategies into two broad dimensions of more actionable approach coping strategies and more disengaged avoidance coping strategies (Causey & Dubow 1992; Compas et al. 2001). In general, people adopting an approach coping style, sometimes called positive coping because of its ties with better behavioral and mental health outcomes, may manage stressors by proactively planning ahead, seeking social support, or framing the situation from a constructive standpoint, while the individuals adopting an avoidance coping style, often understood more broadly as negative coping (Boxer and Sloan-Power 2013) may, either actively or passively, move away from stressors through distraction, denial, or escape (Finset et al. 2002; Folkman & Lazarus 1988) being "oriented toward denying, minimizing, or otherwise avoiding dealing directly with stressful demands" (Holahan et al. 2005, 2). These efforts, therefore, are not meant to address the cause of the problem head on but, instead, are intended to allow the distraught person to live on in the midst of a difficult situation (Balmores-Paulino 2018). Students try to cope with stress, seek support from others, and prefer either negative or positive coping strategies (Son et al. 2020; Singh et al. 2020). Effective coping might buffer the impact of stressful events on the physical and mental health, and individuals differ with regards to the coping strategies they use (Adler 2003). Gender differences in coping strategies have been inconclusive.

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Graves et al. (2021), Ptacek et al. (1992) reported females using more problem-focused coping strategies, while other studies concluded that females used more emotion-focused coping strategies than males (Eaton & Bradley 2008; Graves et al. 2021). In contrast, additional studies have found that males used more emotion-focused strategies than females (Kieffer 2006).

There are limited studies focused on the relationship between anxiety, mental health and coping strategies among university students. In general, in Kosovo, there is a lack of investment in the health of university students. This study focuses on coping strategies, anxiety and mental health of female students and has three objectives: to describe different degrees of mental health, anxiety and coping strategies; to examine the relationship between them and to examine whether coping strategies and anxiety impact mental health of female students.

II. METHODS

A. Study design and procedure

This cross-sectional study was conducted using an online self-administered questionnaire of closed-ended questions with female undergraduate students from three universities (one nonpublic) in Kosovo. The online invitations highlighted that participation was voluntary, all the information collected would be kept confidential and participants could withdraw at any time. Through the first statement in the questionnaire, online consent was received from all the participants before they completed the questionnaire.

B. Study participants and sampling

This study was conducted with 492 undergraduate female students from three universities in Kosovo, with the mean age 20.54 (SD = 1.98). Data were collected within a time span of 12 days. We used the snowball sampling method and each student provided consent to participate in the study and for the usage of their anonymous data for research purposes. Although it has to be noted that snowball sampling does not allow for generalizing the results to the entire student population, we believe that certain trends in coping strategies among female students and the effect of these coping strategies and anxiety level on mental health can be shown.

C. Study instruments and measures

Our survey has adopted three international scales to collect data about mental health, coping styles, and anxiety level during the pandemic crisis, alongside with the information about the sociodemographic profile of participants including age (in years), place of residence (city vs. village), study year (in years), type of university attending (public vs. private), participants infected with Covid-19 (yes, no, I don't know) and vaccinated vs. non-vaccinated.

Mental health

Students responded to a single-item measure of self-rated mental health (SRMH): "In general, would you say your mental health since the coronavirus pandemic, is: excellent (coded as 5), very good (coded as 4), good (coded as 3), fair (coded as 2), or poor (coded as 1). A binary variable was created indicating good (good, very good, excellent) compared to poor (fair or poor) SRMH. The use of this single-item measures is seeing increased use in research and in population health surveys (Ahmad, 2014), and we decided to use this single-item measures to reduce respondent burden and simplify administration.

The Brief-COPE

The Brief-COPE (Carver, 1997) is a self-report questionnaire designed to measure effective and ineffective ways to cope with a stressful life event. The instrument consists of 28 items that measure 14 factors of 2 items each. The reliability coefficient presented adequate values (Cronbach's α =.794). The participants were instructed to indicate to which extent they have been using each strategy on a scale from 1 - 4, where 1 = I have not been doing this at all, 2 = I have been doing this a little bit, 3 = I have been doing this a medium amount, and 4 = I have been doing this a lot. The scale can determine someone's primary coping styles as either Approach Coping, which is characterized by the subscales of active coping, positive reframing, planning, acceptance, seeking emotional support, and seeking informational support (Cronbach's α =.696), or Avoidant Coping which is characterized by the subscales of denial, substance use, venting, behavioral disengagement, self-distraction and self-blame, (Cronbach's α =.661).

Anxiety

Generalized Anxiety Disorder Scale (GAD-7) (Spitzer et al., 2006), was used to assess the student's anxiety symptoms, as a self-administered screening tool which takes less than 3 min to complete and is easy to score. Students reported their symptoms for the last 2 weeks, using a 4-item rating scale ranging from 0 (not at all) to 3 (almost every day). The total anxiety scale was divided into: 0–5 minimal, 6–10 mild, 11–15 moderate, and 16–21 severe anxiety. The GAD-7 has demonstrated a very good internal consistency (Cronbach's α = 0.859).

Ethical aspects

The study was performed in accordance with the Declaration of Helsinki. All participants were informed about the study. Study participation was anonymous and voluntary, and students could withdraw from the study without any consequences. Only the researchers had access to the research data.

Data analysis

Descriptive statistics were calculated for demographic data and examine the normality of distribution. We used Spearman's rank correlation to assess the relationship between constructs of interest. T-test, analysis of variance (ANOVA) was used to explore differences between groups, while linear and multiple regressions were used to determine the significance contribution of sociodemographic variables, anxiety and coping strategies on mental health. For all the tests conducted, a P-value of ≤ 0.05 is considered statistically significant. Statistical Package for the Social Sciences (SPSS), version 25.0, was used to analyze the collected data.

III. RESULTS

This study explored the effect of coping strategies and anxiety on mental health among female undergraduate students in Kosovo during the COVID-19 pandemic. The age of participants ranged from 18 to 26, with the Mean age 20.54 (SD = 1.98).

The majority of respondents were from public universities (382; 77.6%), first year students (183; 37.2%), vaccinated (405; 82.3%) and not being infected with Covid-19 (257; 52.2%).

Female students of second and third year of study, reported poorer mental health (64.5%; 64.1%) and higher moderate to severe anxiety level (47.7%; 36.8%) than students in the first and fourth year. Similar outcomes were reported by students from public university, who showed poorer mental health (66 % vs. 50.9 %) and higher moderate to severe anxiety level (36.4 % vs. 34.5%) than nonpublic university students. Students that didn't know to be infected with Covid-19, reported poorer health (70.2%) than students that were or weren't infected (61.7%; 60.3%), while the level of moderate to severe anxiety was higher at students that didn't know to be infected (44.6%) and students infected with Covid-19 (44.7%). Regarding the residence, students living in city reported higher values in poor mental health (64.8% vs. 60.3%) while students living in village, showed higher moderate to severe anxiety level than the other group (37.2% vs.34.8%).

Prevalence of GAD was high, with 65% of students having suffered from anxiety, including 39.8 % of mild (n = 196), 20.7 % of moderate (n = 102), and 15.2 % cases of severe anxiety disorder (n = 75). Most of students rated their general health as poor (n = 308, 62.6 %) and 184 of them (37.4%) rated it as good. Demographic characteristics of female students and their levels of anxiety, mental health and copy style scale, are presented in table 1.

Table 1. Demographic characteristics and the levels of anxiety, mental health and copy style scale.

Variables		Frequency (N)	Percentage %
Place of residence	City	250	50.8
	Village	242	49.2
University type	Public	382	77.6
	Private	110	22.4
Study year	First year	183	37.2
	Second year	107	21.7
	Third year	117	23.8
	Fourth year	85	17.3
Participants infected with Covid -19	No	257	52.2
	Yes	141	28.7
	I don't know	94	19.1
Vaccinated	Yes	405	82.3
	No	87	17.7
Age	MA/SD	20.54	1.98
Anxiety	MA/SD	8.03	4.92
Mental health	MA/SD	2.32	1.07

Coping dimensions	MA/SD	70.79	10.46
Approach coping	MA/SD	44.39	7.08
Avoidance coping	MA/SD	26.19	5.26

A. Relationship between anxiety, mental health and coping strategies.

We correlated the anxiety and mental health using Spearman's rank correlation. There was not a significant relationship between the two variables ($p = 0.957$). There was a significant moderate positive relationship only between anxiety and avoidant coping style and between two broad dimensions of coping strategies ($p =0.000; p = 0.000$). Correlation among main study variables, are presented in table 2.

Table 2. Correlation among main study variables.

	Avoidant Coping	Approach Coping	Anxiety
Avoidant Coping	1		
Approach Coping	0.365**	1	
Anxiety	0.468**	0.067	1
Mental health	-0.011	-0.021	-0.009
**. Correlation is significant at the 0.01 level (2-tailed).			

In the ANOVA analyses (table 3), the avoidant coping strategy was significantly associated with levels of anxiety ($p=0.000$). None of the coping strategies were associated with the levels of mental health.

Predicting Mental Health

In model one (table 4), socio-demographic and personal variables and mental health produced a statistically significant model ($F = 2.470, p = 0.017$), accounting for only 4% of the variance in the mental health of students. There was a significantly negative relationship between being infected with Covid-19 and mental health, ($\beta = -0.169, t = -2.661, p = 0.008$), a significantly positive relationship between study year and type of university with mental health respectively: ($\beta = 0.113, t = 2.073, p = 0.039$), and ($\beta = 0.336, t = 2.893, p = 0.004$). In the second model (table 4), in addition to the personal variables of age, residence, study year, type of university, being infected with Covid-19 and being vaccinated, we added the coping broad dimensions and anxiety level. These variables did not show significant increase in the variance in the mental health scores. The entry of the coping strategies in the regression analysis resulted in a statistically significant model ($F=5.222, p=0.004$), accounting for approximately 22.7 % of the anxiety. Specifically, acceptance and planning coping styles were significant predictors of anxiety ($\beta= 0.250, t = 5.420, p = 0.000; \beta= 0.240, t = 5.456, p = 0.000$).

Table 3. Coping strategies through anxiety and mental health level ($n = 492$).

		N	Percent (%)	Avoidant Mean (SD)	F / P	Approach Mean (SD)	F / P
Anxiety Level	Normal Anxiety	238	26.5	23.69 (4.88)		44.60 (7.44)	
	Mild symptoms of Anxiety	344	38.4	25.38 (4.04)	F (29.58) P = 0.000	44.17 (6.56)	F (0.11) P = 0.95
	Moderate symptoms of Anxiety	199	22.2	28.31 (4.72)		44.52 (6.92)	

	Severe symptoms of Anxiety	116	12.9	29.37 (6.64)		44.48 (8.08)	
Mental Health	Poor	118	24.0	26.46 (5.84)		44.92 (7.84)	
	Fair	190	38.6	25.92 (5.23)	F (0.385) P = 0.819	44.21 (6.66)	F (0.595) P = 0.666
	Good	117	23.8	26.39 (4.96)		44.29 (7.37)	
	Very good	45	9.1	26.47 (5.34)		43.42 (6.83)	
	Excellent	22	4.5	25.45 (3.74)		45.68 (5.25)	

Table 4. Summary of hierarchical regression analysis for variables predicting mental health among undergraduate female students.

	Model 1			*Model 2*		
	B	St. err	Beta	B	St. err	Beta
Age	-0.055	0.030	-0.101	-0.055	0.031	-0.102
Residence	0.009	0.097	0.004	0.007	0.097	0.003
Study year	0.113	0.054	0.118*	0.114	0.055	0.120*
Type of university	0.336	0.116	0.131*	0.334	0.117	0.130*
Infected with Covid-19	-0.165	0.062	-0.120*	-0.168	0.064	-0.122*
Vaccinated	0.015	0.127	0.005	0.019	0.128	0.007
Avoiding style				0.000	0.012	-0.002
Approach				-0.002	0.008	-0.014
Anxiety				0.003	0.012	0.015
R^2	0.034			0.35		
F for change in R^2	2.874			1.926		

While the regression analysis (table 5) of coping strategies as predicter for mental health, resulted in a not statistically significant model ($p = 0.415$). Nevertheless, behavioral disengagement coping strategy accounted for approximately 0.2 % of the wellbeing (β= -0.105, t = -2.007, $p = 0.045$).

Table 5. Regression analysis with mental health and anxiety as dependent variable and coping strategies as predictor.

	Model 3 (on mental health)			*Model 4 (on anxiety)*		
	B	St. err	Beta	B	St. err	Beta
Active coping	0.037	0.043	0.048	-0.267	0.175	-0.076
Acceptance	0.029	0.036	0.041	0.806	0.149	0.250*
Self-distraction	0.068	0.045	0.077	0.323	0.186	0.080
Denial	0.022	0.040	0.029	0.243	0.163	0.072
Humor	0.032	0.040	0.043	-0.114	0.162	-0.034
Self-blaming	0.017	0.038	0.023	0.095	0.154	0.029
Behavioral disengagement	-0.113	0.056	-0.105*	0.022	0.231	0.004
Venting	-0.002	0.043	-0.003	-0.035	0.176	-0.011
Positive reframing	-0.068	0.042	-0.087	0.287	0.172	0.080
Substance use	-0.022	0.040	-0.031	0.012	0.164	0.004
Planning	-0.026	0.039	-0.033	0.867	0.159	0.240*
Emotional support	-0.027	0.038	-0.039	-0.236	0.156	-0.076
Instrumental support	0.008	0.044	0.009	0.340	0.182	0.080
R2	0.027			0.227		
F for change in R2	1.036			10.789		

IV. DISCUSSION

The COVID-19 outbreak has disrupted the lives of many people across the world, created a sense of uncertainty and anxiety about what is going to happen and as we witness the outbreak unfolding globally, the safety and well-being of students and staff members should be the highest priority (Sahu 2020). Several studies have reported that students have consistently higher levels of mental health problems which may be partly due to the lack of implementation of well-designed, and often expensive, preventive measures. The primary aim of this study was to evaluate the coping strategies, anxiety and mental health of female students and has three objectives: to describe different degrees of mental health, anxiety and coping strategies; to examine the relationship between them and to examine whether coping strategies and anxiety impact mental health of female students. Anxiety levels of female students in this study were similar to findings from two other studies exploring the anxiety of students in Kosovo during pandemics (Arënliu et al. 2021, Shala et al. 2021), and also similar to studies in other countries (Mirón et al. 2019; Mokhtari et al. 2013; Gao et al. 2020) which showed that female students suffered from significantly higher levels of anxiety than their male counterparts on average, but lower than those reported by Santillan et al. (2016).

The review of the literature showed that although the gender difference in mental health among college students has been studied, no consistent conclusions have been drawn in this regard. The findings from the current study indicate that student of second and third year of study reported poorer mental health and higher moderate to severe anxiety level than students in the first and fourth year. Our findings oppose some other studies [Gao et al. 2020; Roy Sai and Doshi, 2015) according to which female students score significantly higher in anxiety than males especially in the freshman and sophomore years. Literature reflects that first-year college students, aside from academic pressure, face more challenges in their effort to adapt to their new lives, being away from their old friends and families, and sometimes the stressful environment (Pedrelli et al. 2015) and that the experienced depression, anxiety, and stress downward trends during college, which may be attributable to issues of adjustment when prospective students first enter university, which later improve as students learn to cope better (Puthran et al. 2016; Liu Ping and Gao, 2019). In our case, this difference in results may be attributed to cultural reasons. The participants in our study live in the cities where they study, so they have not left family and friends. Meanwhile, the great changes in the academic activities at the university and the uncertainties that have accompanied this period, have been able to affect the level of anxiety and mental health of second- and third-year students. However, years in university fall on emerging adulthood, which is already a transitional and stressful period that corresponds to biological and developmental changes (Bennett and Baird 2006) and the onset of mental health disorders such as anxiety (Patten 2017), so the new reality of Covid-19, has only made this period more challenging. The findings indicate that the avoidant coping strategy was significantly associated with levels of anxiety, which is in line with the studies reporting that female tended to more frequently use emotion-oriented and avoidance-oriented coping styles when compared to men (Rogowska et al. 2020) and that female gender and poor self-rated health status were significantly associated with a higher level of stress, anxiety (Wang et al. 2020). Considering that emotion-focused coping strategies, such as rumination, blame and avoidance are often linked to negative outcomes (Lazarus 1993), such a finding, can justify why most of our students rated their general health as poor (n = 308, 62.6 %). Additionally, this study indicates that situational and personal variables related to the COVID-19 pandemic, such as being infected with Covid-19, study year and type of university, predicted anxiety among female students in Kosovo, accounting for 4% of the variance in their mental health. Overall, the findings indicated that coping strategies do not appear to predict mental health among students. Our findings enforce that the current COVID-19 pandemic is making a significant negative impact on mental health of college students, especially female students. Additional longitudinal and multidisciplinary studies investigating more in depth the effect of pandemic on mental health, may provide a better understanding of the impact of COVID-19 on higher education. Our findings suggest that the universities should be more aware of students' coping strategies and their mental health. Arranging or organizing programs such as an online experience-sharing competition, encourage students by offering rewards, supplying healthcare materials through university management system or intranet, or intervention programs with professionally trained counselors, may be some of the activities provided for them. Health service providers and university administrators need to consider proactive measures to support the mental health and well-being of students.

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