

ORIGINAL ARTICLE

THE IMPACT OF MENTAL HEALTH, SUBJECTIVE HAPPINESS AND RELIGIOUS COPING ON THE QUALITY OF LIFE OF NURSING STUDENTS DURING THE COVID-19 PANDEMIC

DOI: 10.36740/WLek202203120

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ABSTRACT

The aim of this study is to examine the effect of psychological distress and religious coping in quality of life of nursing students during the second wave of the pandemic in Greece.

Materials and methods: A cross-sectional online survey was conducted among nursing students. Data were collected via an e-survey consisting of five parts including HADS Questionnaire, SF-36, B-RCOPE and Subjective Happiness scale.

Results: From the total of 200 nursing students the 86.5% were female, 35.5% were in their first year of study, 54% were single and 65.5 were urban residents. 51.9% of the students were experiencing anxiety and 31,5% were depressed. In regard to subjective happiness, the mean value was 4.51 ± 1.27 . In addition, the majority of the students consider themselves unhappy (67.5%). Finally, in regard to SF-36 scores, we observed that PCS mean score was 68.49 ± 13.19 , MCS56. 12 ± 24.23 . Depression, as well as negative religious coping, can have a negative effect on both physical and mental health components of quality of life.

Conclusions: Nursing students experience very high levels of stress and anxiety during the COVID-19 pandemic and need support and guidance to better manage stress and fear in this unusual situation.

KEY WORDS: mental health, quality of life, religious coping, nursing students, COVID-19

Wiad Lek. 2022;75(3):678-684

INTRODUCTION

COVID-19 PANDEMIC PERIOD

COVID-19 is an infectious disease that can spread among humans. It first appeared in the city of Wuhan in China in late December 2019, when cases of pneumonia of unknown etiology were reported. Following the outbreak of the virus, it spread worldwide and led the World Health Organization (WHO) to declare a global pandemic. The compulsory quarantine that followed had a serious impact on the psychological state of the citizens. A recent review study showed that the negative psychological effects of quarantine typically include confusion, anger, and symptoms of post-traumatic stress, as well as an increase in the prevalence of anxiety and depression symptoms in the general population. The quarantine that was imposed changed the people's way of life [1].

With the introduction of recommendations for the non-spreading of COVID-19 such as frequent hand washing, use of a face mask outside the home, avoiding the touching of one's face, nose, eyes with hands, social distance has resulted. Ahorsu et al have shown that fear of COVID-19 is positively associated with depression, anxiety, perceived infectivity, and microbial aversion in

Iran [2]. Compared to the activity of Weibo users (popular social media in China) before and after the outbreak of COVID-19 in China, Li et al found an increase in negative emotions such as anxiety, depression, and resentment as there was a decrease in positive emotions and life satisfaction [3].

PANDEMIC AND QUALITY OF LIFE OF STUDENTS. NURSING STUDENTS

In addition, the changes that the pandemic brought to higher education and the implementation of online educational activities further isolated students globally. To date there are few studies examining the effect that COVID-19 pandemic and quarantine have on mental health and quality of life of nursing students and the role that negative/positive religious coping can have on these variables.

According to a cross-sectional study among nursing students in West Virginia, 21% to 54% of nursing student QoL scores indicated poor QoL. While resilience, having online experience, and being well prepared for online learning were found to affect various QoL domains [4]. Increased stress and poor mental health have been associated with poor quality of life among nursing students in Poland and

Spain revealing both the effect that the covid-19 pandemic had on those variables as well as the association between mental health and Quality of life [5].

MENTAL HEALTH, SUBJECTIVE HAPPINESS AND RELIGIOUS COPING. PANDEMIC PERIOD

According to a recent cross-sectional study in Colorado in which 222 nursing students participated, 25% of students reported moderate to severe levels of psychological distress while 23.8% of students scored within the area of clinical concern for the presence of posttraumatic stress disorder [6]. Similarly, in a larger scale study in the U.S.A among 2031 college students, 48.14% reported moderate-to-severe levels of depression, 38.48% reported moderate-to-severe levels of anxiety while 18.04% stated that had suicidal thoughts. According to the majority of participants (71.26%), their stress/anxiety levels had increased during the pandemic while less than half of the students (43.25%) indicated that they were able to cope adequately with the stress related to the current situation [7].

According to a recent qualitative study that aimed to explore the coping strategies of nursing students during the COVID-19 pandemic, three main effective strategies were used from the students staying positive, use of infection prevention measures and religion were identified as effective coping strategies [8]. In the context of another study among 331 students in Brazil religious practice, was found to be associated with lower scores of depression, anxiety, and stress symptoms, as well as with coping strategies that can act as protective factors [9]. Similar results were reported by Rahimi, Bakar, and Yasin in their study in which 450 students participated. According to the researchers, the level of psychological disorder among university students has been high during the pandemic. In addition, higher negative religious coping was significantly associated with psychological disorders, while higher positive religious coping was found to be protective against psychological disorders [10].

THE AIM

Although there are some international studies that examine the effect that religious coping can have on mental health in nursing students the effect that religious coping and psychological distress can have on the quality of life is not fully investigated, especially in Greece. Thus, the aim of this study is to examine the effect of psychological distress and religious coping on the quality of life of nursing students during the second wave of the pandemic in Greece.

MATERIALS AND METHODS

STUDY DESIGN AND PARTICIPANTS

A cross-sectional online survey was conducted among nursing students during March 2021 in two university nursing departments in Greece. Participation was volun-

tary. The Nursing students of the two universities were invited to participate in the online survey. The participants provided informed consent anonymously on the survey platform before they could proceed to the completion of the questionnaire. A structured questionnaire was used for data collection.

ETHICS

The study protocol was approved by the Ethics Committee of the participated Departments. Students were informed that their participation is voluntary, anonymous, the collected data would be used for the purposes of the study. In addition, they were informed that they could withdraw from the study at any point they wished. This study was in adherence with the Helsinki Declaration as well as with the ethical standards of the responsible institution on human subjects.

DATA COLLECTION

Data were collected via an e-survey using specially designed five-sections questionnaire.

The *first section* collected socio-demographic and academic information through standard questions.

The *second section* contained Hospital Anxiety and Depression Scale (HADS) [11,12]

In the *third section* we used Greek version of the Short Form 36 (SF-36) questionnaire (self-administrated questionnaire that evaluates health related Quality of Life) [13,14].

In the *fourth section* we assessed religious coping with the Brief Religious Coping inventory (B-RCOPE) (two score Positive Religious Coping (PRC) and Negative Religious Coping (NRC) styles) [15,16].

The *fifth section* contained Subjective Happiness scale [17,18].

STATISTICAL ANALYSIS

Data is presented as mean \pm SD or as percentages. Dichotomous variables are expressed as percentages. Normal distribution was assessed by the Kolmogorov-Smirnov test. Univariate correlations were performed by Pearson's correlation coefficient. Linear regression analysis was performed to estimate the impact of Mental health, Subjective Happiness, and Religious coping on the Quality of life of nursing students. The coefficient of determination (r^2) was used to estimate the percentage of effect explained by the model. A p-value of <0.05 was considered to be statistically significant. Analysis was performed using the SPSS 25 statistical package (SPSS Chicago, IL).

RESULTS

From the total of 200 nursing students the 86.5% were female, 35.5% were in their first year of study, 54% were single and 65.5 were urban residents. Detailed information

Table I. Sample demographic and academic characteristics (n=200), n (%)

Sex	Female	173 (86.5)
	Male	27(13.5)
Age		22.8±12.2
Sexual Orientation	Heterosexual	177(88.5)
	Homosexual	8(4)
	Other/No response	15(7.5)
Year of Study	1o	71(35.5)
	2o	81(40.5)
	3o	31(15.5)
	4o or more	15(8.5)
Classes	0	127 (63.5)
	1	30 (15)
	2	9 (4.5)
	3	7 (3.5)
	4 or more	25 (12.5)
Family status	Single	108(54)
	Married	7(3.5)
	Cohabitation agreement	3(1.5)
	In relationship	59(29.5)
	Other	23(11.5)
Area of Residence	Rural	37(18.5)
	Semi urban	33(16.5)
	Urban	130(65.5)
Monthly family income	Low income	43(21.5)
	Middle income	71(35.5)
	High income	76(38)

regarding sample demographic and academic characteristics are presented in table I.

Table II presents the results the SF36 questionnaire, HADS and subjective happiness scale. Briefly, the HADS score for anxiety was found to be 8.71 ± 4.32 and for depression was 7.03 ± 3.26 . Taking 8 as a cut-off value the 51.9% of the students were experiencing anxiety and 31,5% were depressed. In regards to subjective happiness, the mean value was 4.51 ± 1.27 . Taking into consideration as a cutoff point the value 5 then the majority of students consider themselves as unhappy (67.5%). Finally, in regards to SF-36 scores, we observed that PCS mean score was 68.49 ± 13.19 , MCS 56.12 ± 24.23 . The greater score in SF-36 was observed in PF 87.30 ± 18.86 while the lowest was observed in RE 41.16 ± 40.51 which was the only value below 50 that is considered a normative value of SF-36 scores. Detailed descriptive statistics for variables of the study are presented in table II.

Bivariate analysis between sample demographic characteristics and QoL domains revealed that there is a statistically significant difference [$F(4,195)=2.753$, $p=0.029$] in PF between married participants (69.5 ± 30.7) compared to singles ($87.3 \pm$), in relationship (88.3 ± 13.8) and other

relationship status (88.2 ± 18.4). In addition, a significant difference [$F(4,195)=2.527$, $p=0.042$] was observed in the BP score of the participants that were in cohabitation agreement (50 ± 50) as compared to singles (75.7 ± 20.7) and other relationship status (78.7 ± 20.7). Statistically significant differences [$F(2,187)=3.625$, $p=0.029$] also observed in RP in participants with low family income (47.09 ± 38.6) compared with middle (64.0 ± 40.25) and high (66.1 ± 37.7) family income. Moreover, statistically significant differences [$F(2,187)=4.558$, $p=0.012$] were also observed in PCS in participants with low family income (63.9 ± 12.5) compared with middle (71.4 ± 14.7) and high (68.6 ± 10.9) family income.

The association of QoL with students' mental health, subjective happiness and religious coping was estimated with the Pearson correlation coefficient. Negative significant correlations were observed between almost all of QoL subscales with HADS Anxiety, HADS Depression and Negative Religious Coping. Subjective Happiness exhibited significant positive correlations with almost all of QoL domain and significant negative correlations with HADS Anxiety, HADS Depression and Negative Religious Coping. The detailed results of the Pearson correlation test are presented in Table III.

Table IV show the results of multiple regression with enter method results with QoL Summary scores as dependent variables and Mental health, Subjective Happiness and Religious Coping as the independent variables, adjusted for demographic and work-related characteristics. We further found that HADS Anxiety (<0.001), HADS Depression (0.003), and Negative Religious Coping (0.001) were independently predictive of PCS of SF-36. While HADS Anxiety (<0.001), HADS Depression (0.003) Positive Religious Coping (0.013), and Negative Religious Coping (0.036) were independently predictive of MCS of SF-36.

DISCUSSION

The present study examined the effect of mental health, subjective happiness, and religious treatment on the quality of life of nursing students during the Covid-19 pandemic in Greece.

The mean HADS score for anxiety was found to be 8.71 ± 4.32 and for depression 7.03 ± 3.26 . Taking 8 as the cut-off value, 51.9% of students experienced anxiety and 31.5% depression. An online survey of the general population of Wuhan, China, found that the prevalence of stress was 22.6% during COVID-19 [19]. According to Huang and Zhao [20] the prevalence of stress in general population during the onset of the COVID-19 pandemic was up to 35%. In addition, as was reported by Liang et al [21], 40% of Chinese people were reporting psychological problems from the begging of the pandemic. Zhang and Ma found that the general population in China reported mild stress due to COVID-19 epidemic with 7.6% of participants to report moderate to severe stress according to the study [22]. According to recent review of the literature the most common psychological problems that were reported during

Table II. Descriptive statistics for variables of the study

	min	max	mean	SD
HADS Anxiety (HA)	0.00	18.00	8.71	4.32
HADS Depression (HD)	1.00	15.00	7.03	3.26
Happiness (HP)	1.25	7.00	4.51	1.27
Positive Religious Coping (PRC)	7.00	28.00	13.54	6.29
Negative Religious coping (NRC)	7.00	28.00	9.74	4.32
Physical Functioning (PF)	0.00	100.00	87.30	18.86
Role Personal (RP)	0.00	100.00	61.62	39.29
Bodily Pain (BP)	0.00	100.00	73.12	22.29
General Health (GH)	0.00	97.00	62.82	17.89
Vitality (VT)	0.00	95.00	50.75	19.92
Social Functioning (SF)	0.00	100.00	68.68	27.90
Role Emotional (RE)	0.00	100.00	41.16	40.51
Mental Health (MH)	4.00	92.00	53.04	20.16
Physical Component Summary (PCS)	0.00	94.25	68.49	13.19
Mental Component Summary (MCS)	5.00	98.00	56.12	24.23

Table III. Correlation between SF-36 scores, HADS, Subjective Happiness and Religious Coping

	HA	HD	SHP	PRC	NRC	PF	RP	BP	GH	VT	SF	RE	MH	PCS	MCS
HA		0.573 ***	-0.538 ***	0.058	0.358 ***	-0.328 ***	-0.252 ***	-0.177 *	-0.301 ***	-0.484 ***	-0.249 **	-0.426 **	-0.642 **	-0.477 **	-0.485 **
HD	0.573 ***		-0.629 ***	-0.020	0.191 **	-0.291 ***	-0.289 ***	-0.145 *	-0.286 ***	-0.565 ***	-0.321 ***	-0.368 ***	-0.619 ***	-0.476 ***	-0.492 ***
SHP	-0.538 ***	-0.629 ***		0.025	-0.302 ***	0.232 ***	0.100	0.008	0.418 ***	0.501 ***	0.328 ***	0.358 ***	0.646 ***	0.416 ***	0.419 ***
PRC	0.058	-0.020	0.025		0.442 ***	-0.099	0.050	-0.086	-0.005	-0.051	0.017	0.119	-0.053	-0.093	0.064
NRC	0.358 ***	0.191 **	-0.302 ***	0.442 ***		-0.290 ***	-0.148 **	-0.187 **	-0.303 ***	-0.217 **	-0.160 *	-0.129	-0.347 ***	-0.367 ***	-0.232 ***

*p<0.05, **p<0.01, ***p<0.001. HADS Anxiety (HA), HADS Depression (HD), Subjective Happiness (SHP), Positive Religious Coping (PRC), Negative Religious coping (NRC), Physical Functioning (PF), Role Personal (RP), Bodily Pain (BP), General Health (GH), Vitality (VT), Social Functioning (SF), Role Emotional (RE), Mental Health (MH), Physical Component Summary (PCS), Mental Component Summary (MCS)

the COVID-19 pandemic were anxiety and depression (16–28%) and self-reported stress (8%).

In terms of subjective happiness, the mean value was 4.51 ± 1.27 . Considering the value 5 as a cut-off point, the majority of students consider themselves unhappy (67.5%). In a survey conducted on 59 senior Turkish nursing students to assess subjective happiness, the majority of them (69.5%) showed sufficient subjective happiness. However, 55.9% of participants were worried about the future of the current COVID-19 pandemic [23].

Regarding the assessment of the quality of life related to health (SF-36), the average PCS score was 68.49 ± 13.19 while the average MCS score was 56.12 ± 24.23 . The highest score on SF-36 was observed at PF 87.30 ± 18.86 while the lowest was observed at RE 41.16 ± 40.51 which was the only

value below 50 which is considered the regulatory value of SF-36 scores. As evidenced by other studies, students faced emotional and mental health challenges during the pandemic. The psychological effects of COVID-19 on students vary between countries and regions due to differences in COVID-19 infection (24-27). A recent quantitative in Spain in regards to psychological distress experienced by faculty members as an effect of the COVID-19 pandemic indicated that lockdown severely affected both students (76.8%) and staff (23.2%). More specific showed that 87, 5%, 48.1%, 35.2%, and 40.3% of the respondents reported symptoms of post-traumatic stress disorder, depression, anxiety, and stress. Furthermore, the same study highlighted that nursing students were experiencing higher levels of depression, anxiety, and stress [28]. Similarly, in a study conducted

Table IV. Multiple regression results with SF-36 summary scores as dependent variables and HADS, Subjective Happiness and Religious Coping as independent, adjusted for demographics and other sample characteristics (n=200).

Quality of Life		β	SE	95% CI		p
				Lower	Upper	
Physical component Summary	HADS Anxiety	-0.830	0.212	-1.248	-0.412	<0.001
	HADS Depression	-0.923	0.305	-1.524	-0.322	0.003
	Happiness	0.798	0.781	-0.742	2.338	0.308
	Positive Religious Coping	0.117	0.136	-0.150	0.385	0.388
	Negative Religious Coping	-0.697	0.215	-1.121	-0.272	0.001
adjusted R ² =31.3%,F=12.577,p<0,001						
Mental component Summary	HADS Anxiety	-1,491	0,396	-2,271	-0,711	<0,001
	HADS Depression	-1,687	0,569	-2,809	-0,566	0,003
	Happiness	1,836	1,458	-1,037	4,709	0,209
	Positive Religious Coping	0,635	0,253	0,137	1,134	0,013
	Negative Religious Coping	-0,847	0,402	-1,639	-0,055	0,036
adjusted R ² =29%,F=11.353,p<0,001						

Notes: Regression coefficient (standard error) adjusted for sex, age, marital status and family income.

at Texas A&M University14, USA, found that 80.6% and 71.8% of respondents reported symptoms of depression and anxiety. While according to a similar study in Bangladesh among quarantined students, in regards on the impact of the COVID-19 pandemic on students' mental health showed that 69.3%, 46.9%, 33.3%, and 28.5% of students were reporting symptoms of post-traumatic stress, depression, anxiety, and stress [29]. Finally, in a large contemporaneous survey that was conducted among students in China's Guangdong Province which aimed to assess psychological impact of the COVID-19 pandemic indicated that half of the participants (50.9%) had abnormal scores on the health assessment scale and 0.5% them reported poor mental health and 3.2% reported poor sleep quality [30].

The average score of the PRC scale was calculated at 13.54 \pm 6.29 while that of the NRC was 9.74. 4.32. It has been found that during times of crisis, people often engage in religious activities [31]. During the COVID-19 pandemic, people around the world pray for an end to the crisis, as it concerns people from all walks of life [32]. In a Community survey [33] during the COVID-19 pandemic in India, more than half of the participants agreed that there has been an increase in spirituality during the ongoing pandemic among the general population. Studies (34) support that a positive religious attitude helps to combat stress, while a negative religious attitude can worsen stress and guilt. Previous studies [35] with chronic diseases have shown that positive religious treatment is associated with a better overall quality of life in patients. A study conducted in India and Nigeria found that significant proportions of people after the COVID-19 pandemic took religious measures to overcome their problems. During this pandemic, positive religious treatment among the communities of India and Nigeria is more prevalent than negative religious treatment [36].

The bivariate analysis between the demographic characteristics of the sample and the QoL domains revealed

that there is a statistically significant difference in the PF between the married participants compared to not married, in the relationship and other relationship status. In addition, a significant as observed in the BP score of the participants who were in a cohabitation agreement compared to the unmarried and the status of another relationship. In addition, an online survey conducted in Saudi Arabia reported mild to moderate levels of anxiety among the general population and a significantly higher level of anxiety among married respondents [37]. Statistically significant differences were also observed in the RP in participants with low family income compared to middle and high family income. In addition, statistically significant differences were also observed in PCS in low-income participants compared to middle-income and high family income. A similar studies concluded that the increased stress is due to reasons related to financial and labor market problems for Polish students [38], reduced psychological well-being is associated with low level of mental health literacy for Indonesian students [39] due to the COVID-19 pandemic.

LIMITATION OF THE STUDY

The present study includes some limitations. Although the sample size in this study is representative of the university, its results cannot be generalized to the entire population of university students in Greece as well as in other countries. Greater and more generalized research is needed on the impact of mental health, subjective happiness, and religious attitudes on the quality of life of nursing students during the Covid-19 pandemic worldwide.

Future research should include students from different types of universities and colleges (eg medical, social sciences, technical sciences, theoretical sciences). The research is about starting the general quarantine for the coronavirus, when the level of stress and anxiety may be the highest.

It is possible that over time and gaining the ability to deal with coronavirus quarantine, stress will gradually decrease. Future research should be conducted prospectively at different stages of coronavirus spread. Finally, this study did not examine variables related to stress and anxiety, such as contact with family, place of permanent residence (urban center or province), and time spent on social networking sites. Further research should include these co-variables in the examination of stress and anxiety during COVID-19 among college students.

CONCLUSIONS

The main conclusion of this research is that university students experience very high levels of stress and anxiety during the COVID-19 pandemic and need support and guidance to better manage stress and fear in this unusual situation. Participating in healthy activities such as physical exercise can improve the ability to cope with this dramatic situation. In addition, the university administration should organize strategies to prevent and deal with the stress and stress of their students. Finally, the information and education of students are considered necessary to be able to respond to the outbreak of the disease.

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Conflict of interest:

The Authors declare no conflict of interest

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Received: 16.09.2021

Accepted: 14.02.2022

A - Work concept and design, **B** - Data collection and analysis, **C** - Responsibility for statistical analysis, **D** - Writing the article, **E** - Critical review, **F** - Final approval of the article