

Stress, Anxiety and Depression in Nurses during COVID-19 Pandemic: Evaluation of Coping Strategies

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Abstract

Introduction: Nurses who face a public health threat globally are more likely to develop symptoms of anxiety, stress and depression trying to use specific coping strategies to be as effective as possible in providing health care. **Aim:** To evaluate stress, anxiety and depression levels of nurses during the Covid-19 pandemic in Greek hospitals and to analyze coping strategies used more or less frequently by them.

Methods: 130 Greek nurses completed online questionnaires about positive and negative attitude, resilience level, optimistic thoughts and stress, anxiety and depression questions during their daily practice working with patients who obtained or not coronavirus disease. According to these scales' scores, there was a further correlation with specific coping strategies. **Results:** 43.8% of the sample was working in reception of confirmed or possible coronavirus cases. 36.2% of the population experienced mild to extremely severe stress symptoms and one-third of them reported quite the same levels of depression and anxiety respectively. Behavioral disengagement, substance use, seeking support and avoidance were significantly and positively associated with the Stress subscale, while higher optimism and higher resilience were significantly associated with less depression, anxiety and stress symptoms.

Conclusions: Early recognition of symptoms of mental disorder and their proper treatment can be crucial for nurses' strengthening. Educational and supportive programs could be beneficial to provide the best care to these patients.

Keywords: Anxiety; Covid-19; DASS; Depression; Stress; Nurses

1. Introduction

In February 2020, the World Health Organization (WHO) declared the outbreak of a new coronavirus disease, COVID-19, to be a Public Health Emergency of international concern. WHO stated that there is a high risk of COVID-19 spreading to other countries around the world (WHO, 2020a). In March 2020, WHO made the assessment that COVID-19 can be characterized as a pandemic (WHO, 2020b). WHO announced "COVID-19" as the name of this new disease on 11 February 2020, following guidelines previously developed with the World Organization for Animal Health (OIE) and the Food and Agriculture Organization of the United Nations (FAO). International Committee on Taxonomy of Viruses (ICTV) announced "severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)" as the name of the new virus on 11 February 2020. This name was chosen because the virus is genetically related to the coronavirus responsible for the SARS outbreak of 2003. While related, the two viruses are different.

Viruses, and the diseases they cause, often have different names. For example, HIV is the virus that causes AIDS. People often know the name of a disease, but not the name of the virus that causes it (WHO, 2020c). The COVID-19 has shattered the daily routine, business, schools, lifestyle and economy of the globe (Gautam & Sharma, 2020). Facing this critical situation, health care workers on the front line who are directly involved in the diagnosis, treatment, and care of patients with COVID-19 are at risk of developing psychological distress and other mental health symptoms.

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The contextual factors surrounding COVID-19, such as the ease of transmission, lack of immunity among global populations, delayed testing, limited medical equipment, uncertainty of the pandemic trajectory and the general level of anxiety within the community all combine to place increasing pressure on health and welfare systems (Center for Disease Control and Prevention, 2021).

Healthcare workers during COVID-19 pandemic have shown an incredible commitment to their patients, sometimes in apocalyptic conditions (Jakovljevic, Bjedov, Laksic & Jakovljevic, 2020). Healthcare professionals are overwhelmed (Jakovljevic, 2020) because of many reasons: long working hours, enormous pressure, including a high risk of infection, shortages of protective equipment, frustration, discrimination, loneliness, physical fatigue, separation from families and exhaustion (Kang et al., 2020). Additionally, the risk of putting their family at risk of life-threatening condition is one of the major causes of psychological distress among healthcare workers.

Since 8 December 2019 and the onset of the first cases of coronavirus disease (COVID-19) in China, the disease rapidly spread around the world, with hundred- thousand cases and thousands of deaths (Dutheil, Navel & Clinchamps, 2020). Failure to address the pressing needs of individuals experiencing loss and grief may cause poor mental and physical health (Kang et al., 2020).

Dozens of health care professionals on the front line of the COVID-19 pandemic have become ill with the coronavirus and more have been in quarantine after being exposed to it. Assessing the extent to which health professionals have been affected emotionally is difficult. The Centers for Disease Control and Prevention (CDC), medical associations or unions of health professionals have not released worldwide data yet.

Several studies have assessed the mental health outcomes among health care workers treating patients exposed to COVID-19. Kang et al. (2020) emphasizes that hospital working conditions can cause mental problems like stress, anxiety, depressive symptoms, insomnia, denial, anger, and fear. Xiao, Zhang, Kong, Li & Yang (2020) report that medical staff treating patients with COVID-19 manifested anxiety, which was associated with stress and reduced sleep quality.

A systematic review and meta-analysis, that aimed to synthesize and analyze the evidence on the prevalence of anxiety, depression, and insomnia among health care workers during the COVID-19 outbreak, was conducted in April 2020. The findings pinpointed to an anxiety-pooled prevalence of 23.2%, a depression prevalence rate of 22.8% and an insomnia prevalence estimated at 38.9%. Moreover, female health care workers and nurses were the ones who exhibited higher rates of affective symptoms (Pappa et al., 2020). Nurses seem to be the health care workers who faced more psychological problems because of the COVID-19 outbreak. Although there is an evident initial impact on their mental health, at some point they appear to adapt to the “new normal reality” (Zhang et al., 2020a).

Another review carried out in April 2020 suggested that health care workers presented a considerable degree of stress, anxiety, depression, and insomnia due to the COVID-19 outbreak. Furthermore, according to the same review, there is increasing evidence suggesting that COVID-19 can even be an independent risk factor for stress in health care workers (Spoorthy, Pratapa & Mahant, 2020). A study of 994 medical and nursing staff showed that 36.9% presented subthreshold mental health disturbances, 34.4% mild disturbances, 22.4% moderate disturbances, and 6.2% severe disturbance (Kang et al., 2020).

When comparing medical health workers (i.e., medical doctors and nurses, n=927) and non-medical health workers (n=1255), the first group presented a higher prevalence of insomnia (38.4% vs. 30.5%), anxiety (13% vs. 8.5%), depression (12.2% vs. 9.5%), somatization (1.6% vs. 0.4%), and obsessive-compulsive symptoms (5.3% vs. 2.2%) (Zhang et al., 2020c). According to another study with 1257 respondents (60.8% were nurses), nurses, women, and frontline health care workers reported to have more severe mental health symptoms (Lai et al., 2020).

Tan et al. (2020) found that factors that were associated with the severity of psychiatric symptoms in the workforce were marital status, presence of physical symptom, poor physical health, and considering return to work a health hazard. In contrast, personal psychoneuroimmunity prevention, measures including hand hygiene and wearing face masks as well as organizational measures including significant improvement of workplace hygiene and concerns from the company were associated with less severe psychiatric symptoms.

Most of the current COVID-19 researches focusing on physical health, but research data on mental health during the COVID-19 pandemic are lacking (Ho, Chee & Ho, 2020; Qiu et al., 2020), especially in Greece. Evidence to gain empirical insights into the impact of COVID-19 on nurses is only just beginning to emerge.

In this study nurses in Greece, nurses working at referral hospitals for COVID-19, as well as nurses that work in healthcare organizations (non-frontline staff), were included, and the developed coping strategies towards this situation are investigated. Therefore, our findings may provide a theoretical basis and viable strategies for early psychological interventions during COVID-19 control.

2. Methods

2.1. Design and participants

This research was a contemporary study. A quantitative, descriptive correlational approach was used for its conduction. As the aim of the study was to investigate the relationship between variables that have not been studied and evaluated in combination for nurses during the COVID-19 pandemic period before, quantitative method was assessed to be the most appropriate due to its ability to make direct questions to investigate participants, to isolate one or more variables, to produce quantitative data that can be quantified and to evaluate the relationship between them with statistical analyzes offering data that can be generalized to a large sample of the population.

The study population was made up of 130 nurses working as frontline health workers in referral hospitals for COVID-19 patients, as well as of nurses working as non-frontline staff in healthcare organizations. The study participants were asked to complete online questionnaires using Google form platform due to restrictive quarantine measures implementation nationally that period. The research tool consisted of six parts.

Demographic data were used in order to evaluate the marital status of participants, the educational level of each individual and the working experience of staff in referral or non referral hospitals.

In this study, participants were asked to report their positive and negative feelings (**PANAS questionnaire**) on which individual had to answer for the intensity in which he or she could experience them. The scale of positive and negative emotions was initially constructed by Watson and Tellegen (1985) to organize and record emotional mood in two dimensions, positive and negative emotional mood. High positive emotionality expresses a state of excitement, alertness and high concentration, while low positive emotionality expresses sadness and lethargy. High negative emotionality refers to the degree of experiencing unpleasant and stressful emotions, such as fear, guilt, nervousness, while low negative emotionality indicates a state of peace and tranquility (Watson & Tellegen, 1985).

The short form of the scale (Watson, Clark, & Tellegen, 1988), used in this study, consists of 20 words / adjectives, randomly distributed, which are divided into two independent subscales, which express the positive (with interest, aroused, vigorous, excited, proud, alert, inspired, determined, focused, active), and negative (depressed, upset, guilty, agitated, hostile, resilient, ashamed, nervous, agitated, frightened) emotionality.

The **Brief Resilience Scale (BRS)** questionnaire was used to assess the resilience of health professionals. The short scale of resilience was constructed by Smith and his colleagues to assess a person's ability to recover from adversity and stressful life situations. The researchers point out that most scales for measuring resilience focused on studying the potential resources or protective factors that contribute to a person's positive adjustment rather than assessing the positive adjustment itself, that is, the ability to recover from a difficult situation or a stressful event (Smith et al., 2008). Participants indicated the degree of agreement or disagreement with the proposals, based on a Likert scale, five ratings, ranging from 1 (strongly disagree) to 5 (strongly agree).

Generalized optimism was measured by the **Life Orientation Test-LOT** (Scheier & Carver, 1985) in its revised form (Scheier et al, 1994). This is a six-item self-report questionnaire, which refers to the individual's generalized expectations for the outcome of future results or situations, such as: "In uncertain times, I usually expect the best." The three propositions are formulated as positive for the optimism factor and the other three as negative for the pessimism factor. Participants were asked to indicate the degree to which they considered each of the proposals to be characterized by a five-point Likert scale of five ratings, ranging from 1 (strongly disagree) to 5 (strongly agree). Also, in this study **DASS-21 Questionnaire** was used. DASS is not used as a diagnostic tool but more as a tool to investigate the common causes of anxiety, depression and stress. DASS in the form of 21 questions is a reliable and valid tool for measuring depression, anxiety and stress in both clinical and non-clinical populations (Osman, Wong et al. 2012).

The **Brief COPE questionnaire** (Carver, 1997), also used in this study, concerns the identification of strategies for dealing with various events by individuals. It consists of 28 questions ranging from 1 (not at all) to 4 (too much). The performance and weighting of the questionnaire has been done in Greek (Kapsou et al., 2010). This questionnaire focuses on 14 specific coping strategies, which the participants will give based on the score of their answers.

In this way, the statements that will most often have the answer "too much" will also indicate the strategy used. Examples of coping strategies are denial, humor, acceptance, guilt, outbursts, and the use of emotional support.

2.2. Data collection

As mentioned above, data collection was made only through online completion of the questionnaire. Form was sent by email to the nursing population through National Nursing Association database. The period of research was seven months (May-December, 2020) so as to extract the study results.

2.3. Data analysis

Quantitative variables were expressed as mean (Standard Deviation) and as median (interquartile range). Qualitative variables were expressed as absolute and relative frequencies. Spearman's correlation coefficients were used to explore the association between two continuous variables. Multiple linear regression analysis, in a stepwise method (p for entry 0.05, p for removal 0.10), was used with dependent the DASS-21 subscales. The regression equation included terms for demographics, occupational factors, factors concerning COVID-19 training, Brief-cope, LOT, RES and PANAS subscales. Adjusted regression coefficients (β) with standard errors (SE) were computed from the results of the linear regression analyses. Logarithmic transformations of the dependent variables were used in the linear regression analysis. All reported p -values were two-tailed. Statistical significance was set at $p < 0.05$ and analyses were conducted using SPSS statistical software (version 22.0).

3. Results

3.1. Demographic data

The sample consisted of 130 nurses, of whom 86.9% were females. 33.8% were between 22 and 35 years old and 33.1% were from 36 to 45 years old (*Table 1*). Most of the participants (96.9%) were Greek citizens. 68.5% of them were married and 43.8% had no children. Additionally, 78.5% of the study population was technical university alumni and 79.2% had a special education (i.e. postgraduate degree or nurse specialty). In addition, 27.7% of the participants had more than 20 years working experience in the current hospital and 20.8% had a position with responsibility, such as clinical head nurse, nurse administrator or assistant head nurse. Apart from that, 29.2% of the sample was working in a referral hospital for COVID-19 patients and 43.8% was working in reception of confirmed or possible coronavirus cases. Almost one out of ten participants (11.5%) received psychological support in hospital for pressure release due to applying new measures for nursing COVID-19 patients and 20.8% received such a support in their personal life. Special training in taking care patients with COVID-19 had 43.1% of the participants; in wearing/taking off uniform for taking care patients with COVID-19 had 58.5% of the participants and in applying measures for preventing COVID-19 spread at work had 66.9% of them. Most of the participants (90.8%) were applying measures for preventing COVID-19 spread at home.

Table 1. *Sample characteristics*

	N (%)
Gender	
Male	17 (13.1%)
Female	113 (86.9%)
Age	
22-35	44 (33.8%)
36-45	43 (33.1%)
46-55	39 (30.0%)
>55	4 (3.1%)
Nationality	
Greek	126 (96.9%)
Other	4 (3.1%)
Married	89 (68.5%)
Number of children	
None	57 (43.8%)
1	18 (13.8%)
2	39 (30.0%)
>2	16 (12.3%)

Working residence	
Urban	99 (76.2%)
Rural	31 (23.8%)
Working in referral hospital for COVID-19	38 (29.2%)
Working in reception of confirmed or possible coronavirus cases	57 (43.8%)
Working position	
Permanent	102 (78.5%)
Assistant Nursing Personnel	11 (8.5%)
Working contract over a year	17 (13.1%)
Working experience in current hospital	
1-2 years	19 (14.6%)
3-5 years	18 (13.8%)
6-10 years	16 (12.3%)
11-20 years	41 (31.5%)
>20 years	36 (27.7%)
Position with responsibility	27 (20.8%)
Educational status	
University	28 (21.5%)
Technological University	102 (78.5%)
Special education (MSc/ PhD/ Specialty)	103 (79.2%)
Psychological support in hospital for release pressure due to applying new measures for nursing COVID-19 patients	15 (11.5%)
Psychological support in personal life for release pressure due to applying new measures for nursing COVID-19 patients	27 (20.8%)
Special training in taking care patients with COVID-19	56 (43.1%)
Special training in wearing/taking off uniform for taking care patients with COVID-19	76 (58.5%)
Special training in applying measures for preventing COVID-19 spread at work	87 (66.9%)
Applying measures for preventing COVID-19 spread at home	118 (90.8%)

Mean values in all DASS-21 subscales are presented in *Table 2*. Mild to extremely severe *depression symptoms* experienced 35.4% of the sample, mild to extremely severe *anxiety symptoms* experienced 36.2% of them and mild to extremely severe *stress symptoms* experienced 31,4% of the participants.

Table 2. Description of DASS-21 subscales and participants' levels of depression, anxiety and stress

			Normal	Mild	Moderate	Severe	Extremely severe
	Mean (SD)	Median (IQR)	N (%)	N (%)	N (%)	N (%)	N (%)
Depression	3.59 (4.05)	2 (0 - 6)	84 (64.6)	18 (13.8)	19 (14.6)	5 (3.8)	4 (3.2)
Anxiety	3.59 (4.39)	2 (0 - 6)	83 (63.8)	5 (3.8)	21 (16.2)	8 (6.2)	13 (10.0)
Stress	5.36 (4.98)	4 (1 - 9)	89 (68.5)	18 (13.8)	13 (10.0)	5 (3.8)	5 (3.8)

Behavioral disengagement, substance use and avoidance were significantly and positively associated with Depression subscale (*Table 3*). Also, Behavioral disengagement, substance use, seeking support, avoidance and expression of negative feelings were significantly and positively associated with Anxiety subscale.

Table 3. *Spearman's correlation coefficients of DASS-21 with Brief-cope, LOT, RES and PANAS subscales*

	Depression	Anxiety	Stress
Active/ positive coping	-.10	-.02	.06
Behavioral disengagement	.47***	.43***	.38***
Substance use	.23**	.30**	.27**
Seeking support	.09	.23**	.19*
Religion	-.02	.05	-.01
Humor	.12	.10	.14
Avoidance	.31***	.33***	.42***
Expression of negative feelings	.12	.11*	.18
Life Orientation Test score	-.39***	-.34***	-.33***
Brief Resilience score	-.32***	-.38***	-.38***
Positive Affect Score	-.09	.02	.03
Negative Affect Score	.51***	.59***	.65***

* $p < .05$; ** $p < .01$; *** $p < .001$

Behavioral disengagement, substance use, seeking support and avoidance were significantly and positively associated with Stress subscale. Moreover, greater Negative Affect Score was significantly associated with more depression, anxiety and stress symptoms. Also, higher optimism (Life Orientation Test-LOT) and higher resilience were significantly associated with less Depression, Anxiety and Stress symptoms.

When multiple linear regression analysis was conducted, it was found that participants using more behavioral disengagement as coping strategies and participants with greater negative affect score had significantly greater depression and anxiety symptoms (Table 4). Additionally, participants using more avoidance as a coping strategy and participants with greater negative affect score had significantly greater stress symptoms. On the contrary, higher resilience was significantly associated with lower stress symptoms.

Table 4. *Multiple linear regression analysis with DASS-21 subscales as dependent variables and sample characteristics, Brief-cope, LOT, RES and PANAS subscales as independent ones, using stepwise method.*

+regression coefficient; ++Standard Error

	β +	SE++	P
Depression			
Negative Affect Score	0.024	0.004	<.001
Behavioral disengagement	0.094	0.018	<.001
Anxiety			
Negative Affect Score	0.030	0.004	<.001
Behavioral disengagement	0.073	0.018	<.001
Stress			
Negative Affect Score	0.029	0.004	<.001
Avoidance	0.049	0.012	<.001
Resilience score	-0.013	0.007	.050

Additionally, in this study, there was no correlation with DASS and age, years of work and number of children. It is very important that the number of children was negatively correlated with stop trying to deal with the situation ($r = -0.021$, $p = 0.019$).

It was more common for women the difficulty in calming down ($p = 0.003$, $m = 0.9$ vs. $m = 0.2$) and relaxing ($p = 0.009$, $m = 1.1$ vs. $m = 0.5$), overreacting ($p = 0.018$, $m = 0.7$ vs. $m = 0.2$), feeling sad and disappointed ($p = 0.042$, $m = 0.9$ vs. $m = 0.4$) or scared ($p = 0.047$, $m = 0.6$ vs. $m = 0.3$), feeling close to panic attack ($p = 0.018$, $m = 0.6$ vs. $m = 0.1$), feeling my heart beating quickly or irregularly ($p = 0.009$, $m = 0.6$ vs. $m = 0.1$). Also, women had more symptoms of anxiety ($p = 0.018$, $m = 3.9$ vs. $m = 2.5$) and stress ($p = 0.022$, $m = 5.7$ vs. $m = 2.8$).

Only 42 participants (32.3%) reported that they received psychological support (in hospital or in personal life) for release pressure due to applying new measures for nursing COVID-19 patients and 14 nurses (10.7%) chose to drink alcohol in order to feel better.

It was stated that the most frequent (often or very often) coping strategies were: acceptance of the reality (82.4%), thinking very seriously my next step (72.3%), trying to see the situation differently and more positive (69.2%), seeking something positive in the situation (69.2%), trying to choose the best strategy for my actions (67.6%) and taking measures in order to make the things better (63.9%). Older age was stronger correlated with active/ positive coping ($r=0.23$, $p=0.009$), than seeking support ($r=-0.18$, $p=0.041$).

Finally, by correlating the dimensions of the BriefCope scale with the scores of the other questionnaires, it was found that the older age of the sample was significantly associated with more active/positive coping and significantly less seeking support. Also, the more years of work the staff has, the less they applied the practices "I give up trying to deal with it" and "I get advice and help from others". The coping strategies did not differ significantly among nurses who work in Covid19 hospitals or not.

Nurses in positions with responsibility mostly applied the practices "I am seeking something positive to this situation" (0,002) despite getting advice or help from others (0,024). These nurses used significantly less strategies such as Behavioral disengagement (0,041) and Seeking support (0,014).

The coping strategies did not differ significantly among nurses who had special training in applying prevention measures to their working area.

4. Discussion

The aim of the present study was to investigate stress, anxiety and depression and to evaluate resilience levels of nurses during the COVID-19 pandemic in Greece. The COVID-19 outbreak has placed immense pressure on hospitals and those nurses at the frontline are more seriously affected. The majority of participants (almost 8 of 10) lives and works in urban hospitals. Huang, Lei, Xu, Liu & Yu (2020) found that the nearer a COVID-19 zone is to the participants, the stronger the anxiety and anger. Moreover, participants from cities exhibited more anxiety and fear than participants from rural areas, however, rural participants experienced more sadness than urban participants.

SARS-Cov-2 is a highly infectious virus, that spreads rapidly, with suspected and confirmed patients increasing daily. When nurses face public health emergencies, psychological stress reactions will occur because of a sense of uncertainty and potential harm (Singh, Cross, Munro & Jackson, 2020). The emergence of negative psychological emotions can lead to tension or fragility of various organs and systems of the body. These impact their health and their performance on the nursing job, reducing the quality of care provided and hence patients' safety (Johnson et al., 2017; Chen, Wang, Yang & Fan, 2016).

This study indicates that more than 1/3 of nurses are experiencing mild to extremely severe anxiety, depression and stress symptoms. A systematic search of literature databases was conducted up to April 2020. Thirteen studies were included in the analysis with a combined total of 33.062 participants. Anxiety was assessed in 12 studies and depression in 10 studies with a pooled prevalence at the ¼ of the sample. Insomnia prevalence was estimated at 4 to 10 participants across 5 studies (Pappa et al., 2020). The rates of anxiety and depression in our study are almost the same, but higher than these in the systematic review and much higher from the study of Chew et al., 2020 in 906 healthcare workers. Nevertheless, a recent study by Xu and Zhang (2020) found that 85.37% of the first-line nurses fighting COVID-19 had emotional reactions, including depression and anxiety.

Mo et al. (2020) referred that nurses in China feel anxiety and helplessness due to the increased number of patients. There is compelling evidence that nurses who are on the frontlines of combating coronavirus infection suffer from psychological, emotional, and mental consequences of the pandemic (Zhang et al., 2020c; Stelnicki et al., 2020). An important finding of the study was that the majority of participants were first-line nurses working in referral hospital COVID-19 or in reception of confirmed or possible corona virus cases. According to Wu et al. (2020), the focus of front-line personnel on what they are trying to achieve, may explain the more favorable outcomes in our study. This explanation, however, arguably implies that the nurses' focus is not on their own emotional well-being.

About half of the nurses had no training related to coronavirus. In particular, only for out of ten nurses had special training in taking care of patients with COVID-19, while the majority of participants had special training in wearing or taking off uniform for taking care patients with COVID-19 and had special training in applying measures for preventing COVID-19 spread at work.

This result is an affirmation of another study in which nurses were reported to be absolutely willing and fully prepared to manage and take care for coronavirus patients. Moreover, the same study showed that about half of the frontline nurses had no training related to coronavirus as well (Labrague & de los Santos, 2020).

The great majority of participants reported that they apply measures for preventing COVID-19 spread at home. This might be due to the largest portion of participants who was married with children and the responsibility of protecting the family members was extremely high. Sampaio, Sequeira & Teixeira (2021) reported that the only factors which are directly related to the COVID-19 outbreak and that were associated with the positive variation in nurses' symptoms of depression, anxiety and stress were the fear of infect others and of infection (higher fear of being infected or to infect someone corresponded to increased symptoms of depression, anxiety and stress).

Personal psychoneuroimmunity prevention measures including hand hygiene and wearing face masks, as well as organizational measures including significant improvement of workplace hygiene and concerns are associated with less severe psychiatric symptoms (Tan et al., 2020).

Shen, Zou, Zhong, Yan & Li (2020) identified that young nurses with no experience of caring for severely ill patients face a greater psychological crisis, but this finding is not consistent with our study. Additionally, in the current study, there was no correlation with DASS and age, years of work and number of children. It is very important that the number of children was negatively correlated with stop trying to deal with the situation.

It was more common for women the difficulty in calming and relaxing, overreacting, feeling sad and disappointed or scared or close to panic attack. Also, women had more symptoms of anxiety and stress. In the systematic review of Pappa et al. (2020), a subgroup analysis revealed gender and occupational differences with female healthcare workers and nurses exhibiting higher rates of affective symptoms compared to male and medical staff respectively.

More than 1/3 of participants reported that they received psychological support (in hospital or in personal life) for release pressure due to applying new measures for nursing COVID-19 patients. Similarly, Ali, Cole, Ahmed, Hamasha & Panos (2020) found that nurses in state of Alabama did not receive expert psychological support. In fact, they reported spending time with their children as a coping strategy during the pandemic or engaging in general activities with their children and reporting the use of arts and crafts with their children. Last but not least, in the same survey, 6 nurses reported drinking alcohol as a coping strategy. In the present study, 1 out of 10 nurses chose to drink alcohol in order to feel better.

Consequently, it is obvious that self-coping styles and psychological growth played an important role in maintaining mental health of nurses (Ali, Cole, Ahmed, Hamasha & Panos, 2020). On the other hand, it was suggested by literature that avoidance strategies are an attempt to avoid unnecessary interactions or new COVID-19 information might be a way for nurses to escape from stressors caused by overly engaging (Holshue et al., 2020). In the current study, the most frequent (often or very often for the majority of participants) coping strategies were: acceptance of the reality, thinking very seriously my next step, trying to see the situation differently and more positive or seeking something positive in the situation. Older age was stronger correlated with active/ positive coping, than seeking support.

5. Conclusions

We are facing unprecedented circumstances; this biothreat is the most serious global crisis of our generation. Healthcare staff is in the frontline of this fight, which faces a serious psychological impact; we therefore need to support them. The radical development of evidence-based knowledge and the increasing experience concerning the prevention and management of COVID-19 disease along with the development of international and national therapeutic protocols and the contemporary education of healthcare workers will lead to improvement of perception and empowerment of the therapeutic team facing the pandemic at both hospitals and community.

Besides the development of cognitive and emotional endurance to stress factors during the COVID-19 pandemic, healthcare staff and individuals should cultivate and improve emotion management skills, as well as cognitive restructuring, so as they survive psychologically and function properly into a well-organised plan of action. Further scientific research has to be done with much more participants and hospitals should focus on providing psychological support to nurses and their training in coping strategies.

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