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Perceived Social Support as a Predictive Factor of Fatigue and Quality of Life Among Healthcare Professionals in Greece

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Abstract

The multitude of stressful factors in the work environment, combined with work burnout and the absence of social support, significantly degrades the quality of life of health professionals. And while studies focus individually on each variable, the purpose of the present research is to classify and simultaneously correlate them, in the case of healthcare professionals in the post-pandemic era. The quantitative method with a structured questionnaire was selected to conduct the research in 506 health workers, from 14 hospitals of the 6th HealthCare Region of Greece. A fairly high level of fatigue, an alarmingly low level of social support and a moderate to high level of general health were found. Physical, mental, and overall fatigue were found to be significantly negatively correlated with family, friends, significant others, and overall social support. Their correlation was found to be significantly positive in terms of general health, as well as its individual subscales. Further investigation of the cumulative effects of fatigue and the low level of quality of life of health professionals on the efficiency and level of healthcare services provided, will contribute to the formation of new approaches to dealing with and preventing the phenomenon.

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Introduction

The Covid-19 pandemic had, among other things, the fatigue of health professionals, leading to burnout, withdrawal from the National Health System (NHS), or even retirement from the profession. Even before the pandemic, it was found that health professionals belong to a professional category with high exposure to stress factors, fatigue and exhaustion.

The fatigue of health professionals has been found to negatively affect their quality of life[1]. The quality of life of healthcare professionals has been associated with various sociodemographic and organizational factors [2][3][4]. An important factor identified as protective of high quality of life [5][6][7] and fatigue [8][9][10] is social support. Some studies [11][12] have found a correlation between burnout, quality of life and social support.

The relationship of quality of life and social support in a sample of 241 nurses working in Zanjan University of Medical Sciences in Iran was studied in the research of Shojaei et al. [13]. Data were collected with the SF-36 and the McCain Marquin Social Interaction Questionnaire. The majority of nurses have moderate social support and poor quality of life. Social support had a significant effect on nurses' mental health. Higher levels of social support led to higher levels of general health, mental health and happiness as dimensions of quality of life.

The effect of social support on the mental health of health professionals and its underlying mechanisms regarding the mediating role of resilience and the moderating role of age during the pandemic was the purpose of the study by Hou et al. [5]. The Social Support Rating Scale (SSRS), the Connor-Davidson Resilience scale (CD-RISC), and the Symptom Checklist 90 (SCL-90) were administered to a sample 1,472 healthcare workers from Jiangsu Province, China. Findings indicated that resilience could partially mediate the effect of social support on mental health among health professionals. Age group moderated the indirect relationship between social support and mental health through resilience. Specifically, compared to younger health care workers, the association between resilience and mental health was weaker in middle-aged workers.

The study by Woon et al.[7] examined the impact of the pandemic on the quality of life of 389 Malaysian health workers and its predictors, as well as the role of social support. All domains of quality of life were within general population norms except for social relationship quality of life, which was lower than the general population. Pandemic-related stressors (e.g. stress due to not taking annual leave, loss of daily routine and frequent exposure to Covid-19 patients) and psychological consequences (e.g. higher level of depression, anxiety and stress) predicted lower quality of life. Conversely, greater perceived social support from friends and significant others predicted higher quality of life. History of preexisting medical illness was associated with lower physical health QoL, while older age and marital status (single, divorced, or widowed) were predictive of higher environmental QoL.

In the study by Ortiz-Calvo et al.[14] examined the association between three potentially protective factors (self-reported resilience, self-perceived social support from coworkers, and self-perceived social support from family and friends) on three mental health outcomes (psychological distress, depressive symptoms, and thoughts of death). This cross-sectional study used online questionnaires (e.g. Brief Resilience Scale, Patient Health Questionnaire, 9) in a sample of 2,372 healthcare professionals in Spain. Resilience and social support were inversely associated with mental health problems (psychological distress, depressive symptoms, and thoughts of death).

The study by Marín and García-Ramírez [8] examined the role of three sources of social support (family, colleagues and supervisors) in the emotional exhaustion of 210 nurses in a general hospital in Seville, Spain. The Nursing Stress Scale and Multidimensional Support Scale were used for the research. The results showed the positive effect of all three

sources of social support on emotional exhaustion, but also the short-term effect of family and colleagues.

Nurses' burnout with a position of responsibility in association with various coping strategies, including social support, were investigated by Steege et al. [10]. The study was conducted through semi-structured interviews and the Occupational Fatigue Exhaustion Recovery Scale, with 21 hospital managers and nurse executives in one US state. Most leaders/in positions of responsibility experience fatigue. Nurse managers in particular reported higher levels of chronic fatigue. Fatigue had an impact on decision-making, work-life balance and intention to leave. Participants identified multiple sources of fatigue, including 24-hour accountability and intense role expectations, and used a combination of wellness, rehabilitation, social support, and boundary-setting strategies to cope with fatigue.

Tzeletopoulou et al.[15] in their study investigated the relationship of perceived social support and fatigue as predictors of aggressive behaviors among mental health professionals. A cross-sectional study was conducted on 104 mental health professionals with the following three online questionnaires: the Greek version of the Fatigue Assessment Scale (FAS), the Greek version of the Multidimensional Scale of Perceived Social Support (MSPSS) and the Greek version of the Aggression Questionnaire (G-AQ). Mental health professionals reported high rates of fatigue and aggression and low levels of social support. Mental and physical fatigue were found to be significant predictors of aggressive behavior, in contrast to social support.

Theofilou, Iona and Tzavella [16] investigated the relationship of health professionals' general health, perceived level of fatigue and social support. The survey was conducted on 165 health professionals working in hospitals in the region of Eastern Macedonia-Thrace and in the urban centers of Athens and Thessaloniki. Data were collected with the General Health Questionnaire (GHQ-28), the Fatigue Assessment Scale (FAS) and the Multidimensional Scale of Perceived Social Support (MSPSS). The research found a positive correlation between general health and fatigue, as well as a negative correlation between mental fatigue and social support.

The mediating role of social support in the relationship between secondary trauma and emotional exhaustion was examined by Brugman et al. [17], in 593 health professionals in the Netherlands. Emotional exhaustion was chosen as it is caused by exposure to prolonged stress-related work conditions such as secondary injury. It was hypothesized that social support is a protective factor for the development of emotional exhaustion, while higher levels of social support are associated with lower levels of secondary injury. In this cross-sectional study emotional exhaustion was measured with the Utrecht Burn-out Scale-C, secondary trauma with ten questions from the Professional Quality of Life scale, and social support with the Perception and Assessment of Labor 2.0 questionnaire. The research found that the relationship between secondary trauma and emotional exhaustion is partially mediated by social support. This means that health professionals have access to and use social support, preventing emotional exhaustion.

The relationship between compassion fatigue and perceived social support was examined by Pergol-Metko et al.[9] in a sample of 862 nurses in Poland. The professional quality of life scale (Quality of Life scale - ProQOL) and the Multidimensional Scale of Perceived Social Support (MSPSS) were used to collect the data. The presence of compassion satisfaction, compassion fatigue and burnout in nurses was demonstrated. Higher levels of perceived social support were associated with lower compassion fatigue, higher job satisfaction, and lower risk of burnout.

While several studies have been conducted that individually examine health professionals' fatigue, their quality of life, and the importance of social support in these two variables, fewer studies have investigated the association of these three variables. This issue, however, is particularly important as reduced levels of quality of life and correspondingly high levels of fatigue on the part of health professionals can lead to medical errors, errors in nursing practice and reduced levels in the quality of care provided. The above in turn result in reduced patient satisfaction and negative effects on their health. For this reason, the provision of social support, both on a personal and organizational level, can have significant positive effects in the prevention and treatment of fatigue, but also in improving the quality of life of health care workers.

Therefore, the purpose of this research is to examine the levels of fatigue, quality of life and social support in the case of healthcare professionals in the post-pandemic environment, as well as the correlation between them. The findings of this study will be useful in submitting proposals for practical application and at a preventive level, mainly through the creation of social support networks.

Method

This is a quantitative cross - sectional study investigating the variables of social support, fatigue and quality of life. The questionnaire used in this research consists of the following sections:

Section A - Demographic data: the demographic data questionnaire consists of eight questions aimed at capturing the demographic profile of the survey participants (gender, age, education level, marital status, specialty, years of service, work per week, position of responsibility), but also through statistical tests to examine the second research hypothesis.

Section B - Fatigue Assessment Scale: the Greek version of the Fatigue Assessment Scale (FAS) was used, as it has been translated and culturally adapted to the Greek population by Theophilou [18]. The scale was created in 2003 by Michielsen et al. and consists of ten (10) questions, where five(1-5) examine physical fatigue and five (6-10) mental exhaustion, while overall this tool examines the level of overall fatigue. Responses are given on a five-point Likert scale as follows: 1=Never, 2=Sometimes, 3=Always, 4=Often, 5=Always. Questions 4 and 10 are reversed. The total score ranges from 10 to 50. In the event that the total score is up to 22 the respondents fall into the "no fatigue" group, if it is 22-34 then they are categorized as "tired", while if it is more than 35 then they are categorized as " too exhausted." Alikari et al. [19] examined the internal reliability of the Greek version of the scale, where it was found equal to 0.761, while Theofilou et al. [20] report that the internal reliability of the scale is 0.91. In the present work, the Cronbach's a index was found equal to 0.869.

Section C - Social support of nursing staff: the Greek version of the Multidimensional Scale of Perceived Social Support (MSPSS) was used, as it has been translated and culturally adapted to the Greek population by Theofilou [21]. The scale was created in 1988 by students Zimmet et al. and consists of 12 questions that assess three sources of perceived social support: family (3, 4, 8, 11), friends (6, 7, 9, 12)and significant others (1, 2, 5, 10). Responses are given on a seven-point Likert scale as follows: 1=Strongly Disagree, 2=Strongly Disagree, 3=Disagree, 4=Neutral, 5=Agree, 6=Strongly Agree,

7=Strongly Agree. The total score ranges from 12 to 84 with higher scores indicating greater social support. Specifically, a score of 65 or less is considered indicative of sufficiently low levels of perceived social support. Mourdoukouta et al. [22] used this scale in their research and found that the internal reliability coefficient is 0.80. In the present work, the Cronbach's a index was found equal to 0.944.

Section D - General Health Questionnaire: the Greek version of the General Health Questionnaire (GHQ) scale 28 was used, as it has been translated and culturally adapted to the Greek population by Garyfallos et al. [23]. The scale was created in 1978 by Goldberg and consists of 28 questions concerning the respondent's overall health during the last two weeks. These questions are categorized into four groups: a) physical symptoms, b) anxiety and insomnia, c) social dysfunction, d) severe depression. Answers are given on a four-point Likert scale from 0 (best score) to 3 (worst score). The total score ranges from 8 to 84, with higher scores indicating less mental and physical well-being. Garyfallos et al. [23] report that the internal reliability of the scale is equal to 0.93, while Kokkinis et al[24] 0.89. In the present work, the Cronbach's an index was found equal to 0.899.

The research population consists of all public secondary care health professionals. The research sample consists of a part of this population and a total of 506 employees. In some questions there were missing values. As a result of this, answers from 504 healthcare professionals were presented. On the basis of convenience (opportunity) sampling, health workers working in 14 hospitals in the 6th Health Region (Peloponnese and Ionian Islands, Epirus and Western Greece) were selected. The criteria for entering the respondents into the sample were: a) over 18 years old, b) understanding of the Greek language, c) health professionals as a qualification, d) voluntary participation. Accordingly, exclusion criteria from the sample were: a) insufficient understanding of the Greek language, b) status other than that of a health professional, c) unwillingness to participate in the research voluntarily.

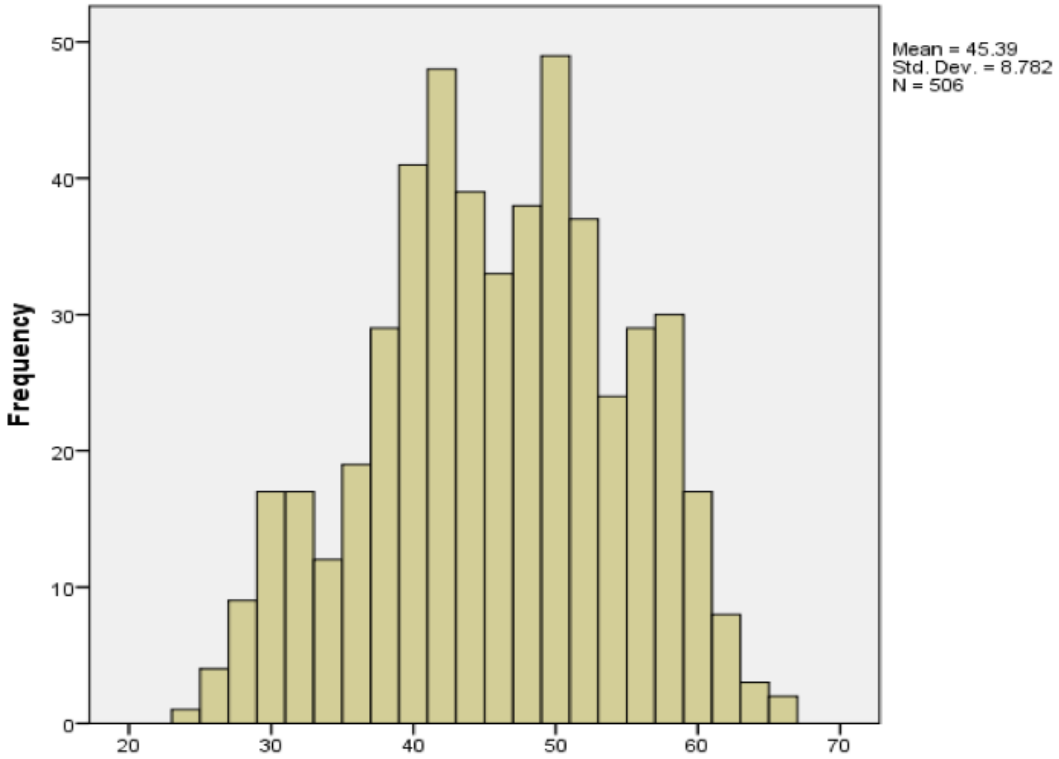
The researcher initially obtained permission from the administration of the 6th Ministry of Health for the research regarding the safeguarding of personal data protection and the method of data collection. Similarly, permission was then obtained from the scientific board of each nursing organization to distribute the questionnaires. Finally, permission was also obtained from the creators of the questionnaires in order to use them in this research. At the same time, together with the questionnaire there was attached a letter addressed to the health professionals and informing them about the following: a) the identity of the researcher and the purpose of the research, b) the assurance of their anonymity and the confidentiality of the data, c) the fact that the data will be analyzed and presented grouped, d) their voluntary participation in the research and their right to withdraw from the research until a specific date (15.01.2024), after which the processing of the questionnaires will begin, e) the estimated time to complete the questionnaire.

Afterwards, the researcher coded the data into the statistical program SPSS 26, in order to process them. Descriptive statistics (tables of descriptive measures and frequencies) as well as inductive statistics (correlation coefficients, mean differences of respondents' opinions) were used to test the hypotheses. For all controls the level of statistical significance was set equal to α=0.05.

Results

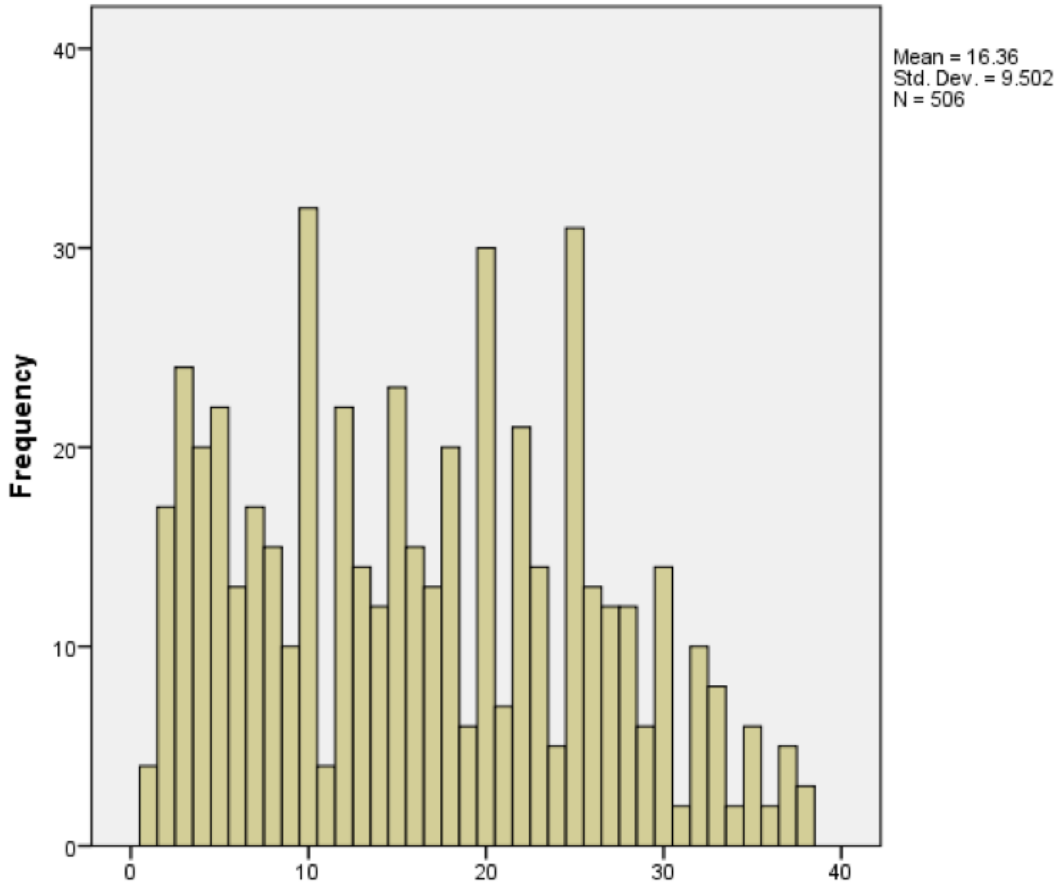
Demographics Most of the participants in the survey are women (65.6%), university graduates (49.4%), married (65.8%), members of the nursing staff (36.2%) and who do not hold a position of responsibility (71.7%).

In terms of age, the respondents are 24-66 years old with an average of 45.39 years (SD=8.782).

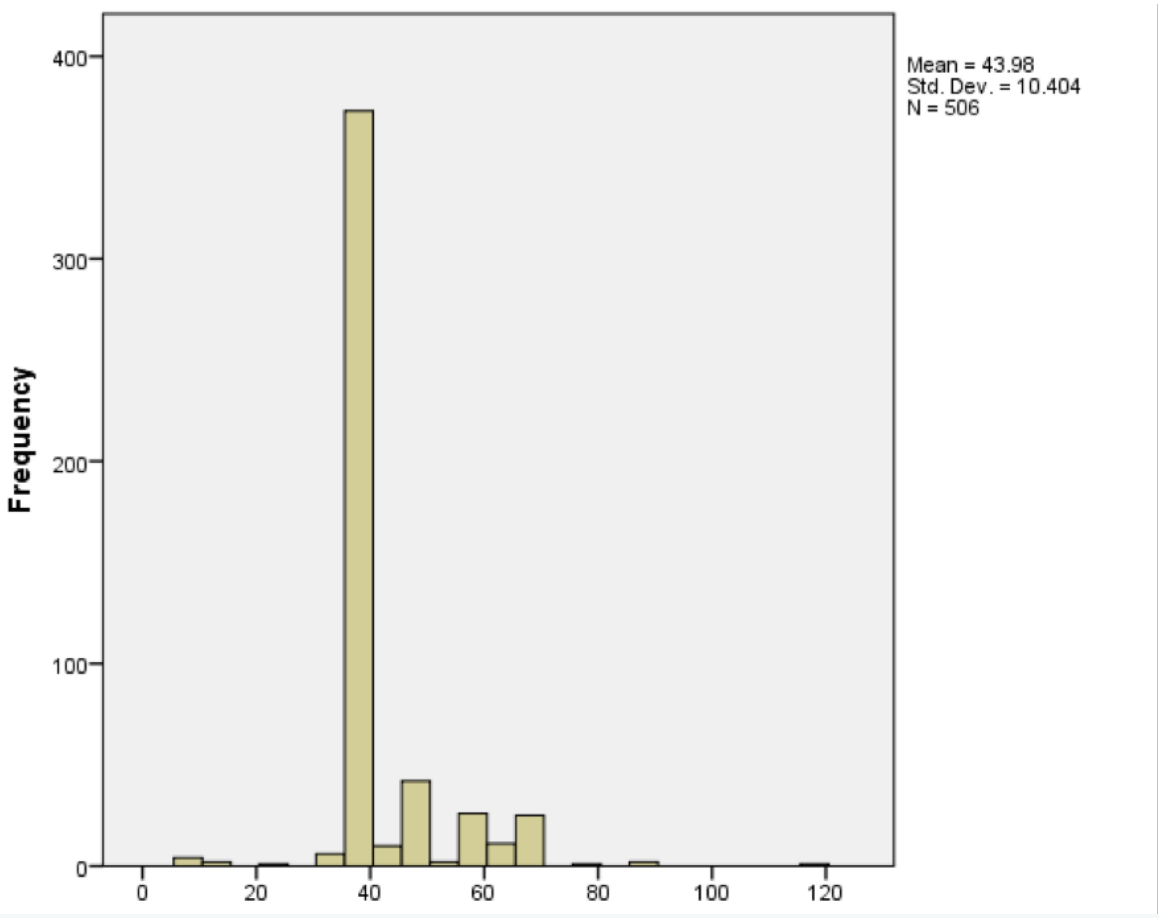


Graph 1. Age of respondents

Regarding the years of work in their specialty, the range is 1-38 years with an average of 16.36 years (TA=9.502). Regarding the weekly working hours, they range from 8-120 hours, with an average of 43.98 hours (TA=10.404).



Graph 2. Total years of work of respondents in their specialty



Graph 3. Respondents' working hours per week

Table 1 presents the descriptive measures of the FAS scale and its subscales. It is observed that for the separate scales of physical fatigue and mental exhaustion the average is less than 22 which means that the respondents fall into the "non-fatigue" group. Overall, however, it is found that M=24.10, which means that overall, there is fatigue.

Table 1. Descriptive FAS scale measures

	N	Mean	Standard deviation
Physical fatigue	506	12.4328	3.39429
Mental Fatigue	506	11.6680	3.70555
Total FAS	506	24.1008	6.54366

As can be seen from Table 2, more than half of the respondents (55.9%) fall into the 22-34 score category and are therefore categorized as "fatigued". The percentage of those categorized as "non fatigued" is also large (37%). Only a small percentage of 7.1% are categorized as "extremely fatigued".

Table 2. Categorization of respondents by fatigue level

	Frequency	Percentage
Up to 21	187	37.0
22-34	283	55.9
35 and over	36	7.1

Table 3 presents the descriptive measures of the MSPSS scale and its subscales. It is observed that for the individual scales and overall, the average is less than 65, which indicates low levels of perceived social support. The lowest levels of social support are found in friends (M=19.35, TA=4.193), then in family (M=20.41, TA=4.446) and highest in significant others (M=21.09, TA=4.236). Overall, however, there is not a high level of social support.

Table 3. Descriptive MSPSS scale measures

	N	Mean	Standard deviation
Family	506	20.4111	4.44649
Friends	506	19.3557	4.19334
Important Others	506	21.0949	4.23691
Total MSPSS	506	60.8617	11.30393

Table 4 presents the descriptive measures of the GHQ scale and its subscales. It is observed that there are moderate to high levels of mental and physical well-being in the individual scales. Higher average and therefore lower levels of mental and physical well-being are recorded in the anxiety and insomnia subscale (M=14.76, TA=4.267), then in physical symptoms (M=14.39, TA=3.951) and then in social dysfunction (M=14.30, TA=2.79). Conversely, a lower mean is noted in the depression subscale (M=10.36, TA=3.169). Overall, however, it is observed that the average of the entire scale is above average.

Table 4. GHQ Scale Descriptive Measures

	N	Mean	Standard deviation
Physical symptoms	504	14.3929	3.95155
Anxiety and Insomnia	506	14.7668	4.26788
Social Dysfunction	506	14.3024	2.79063
Severe depression	506	10.3617	3.16941
Total CHQ	504	53.7996	10.63872

Spearman's coefficient was used to test correlations between the three variables. The results are presented in Table 5

where a statistically significant relationship between the three variables is established. Specifically, a statistically significant negative correlation is found between physical, mental and overall fatigue with family, friends, significant others and overall social support. There is also a statistically significant positive correlation between physical, mental and overall fatigue with general health, as well as its individual subscales (physical symptoms, anxiety and insomnia, social dysfunction and severe depression). Finally, a statistically significant negative correlation was found between general health and total social support, as well as three of its individual subscales (anxiety and insomnia, social dysfunction and severe depression). Regarding physical symptoms, a statistically significant negative correlation was found only with significant others.

Table 5. Correlations of variables

		1	2	3	4	5	6	7	8	9	10	11	12
1. Physical fatigue	Correlation Coefficient	1.000											
	Sig. (2-tailed)	.											
	N	506											
2. Mental fatigue	Correlation Coefficient	.700**	1.000										
	Sig. (2-tailed)	.000	.										
	N	506	506										
3. Total FAS	Correlation Coefficient	.915**	.925**	1.000									
	Sig. (2-tailed)	.000	.000	.									
	N	506	506	506									
4. Family	Correlation Coefficient	-.140**	-.297**	-.239**	1.000								
	Sig. (2-tailed)	.002	.000	.000	.								
	N	506	506	506	506								
5. Friends	Correlation Coefficient	-.192**	-.307**	-.273**	.623**	1.000							
	Sig. (2-tailed)	.000	.000	.000	.000	.							
	N	506	506	506	506	506							
6. Significant others	Correlation Coefficient	-.221**	-.328**	-.298**	.720**	.630**	1.000						
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.						
	N	506	506	506	506	506	506						
7. Total MSPSS	Correlation Coefficient	-.215**	-.362**	-.316**	.890**	.833**	.891**	1.000					
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.					
	N	506	506	506	506	506	506	506					
8. Physical symptoms	Correlation Coefficient	.377**	.317**	.369**	-.031	-.050	-.108*	-.072	1.000				
	Sig. (2-tailed)	.000	.000	.000	.487	.263	.015	.104	.				
	N	504	504	504	504	504	504	504	504				
9. Anxiety and insomnia	Correlation Coefficient	.418**	.390**	.432**	-.094*	-.112*	-.143**	-.134**	.639**	1.000			
	Sig. (2-tailed)	.000	.000	.000	.035	.012	.001	.003	.000	.			
	N	506	506	506	506	506	506	506	504	506			
10. Social dysfunction	Correlation Coefficient	.359**	.456**	.444**	-.341**	-.298**	-.366**	-.394**	.289**	.319**	1.000	.343**	.577**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.	.000	.000
	N	506	506	506	506	506	506	506	504	506	506	506	504

Then it is examined whether social support and its subscales are predictors of overall fatigue. For this reason, a regression was carried out, the results of which are presented in the tables below. The dependent variables explained 8.9% of the dependent variable, with friends, significant others and overall social support being a determinant of overall fatigue ($p<0.05$).

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	34.424	1.535		22.431	.000
	Family	.020	.094	.014	.217	.828
	Friends	-.188	.091	-.120	-2.066	.039
	Significant others	-.337	.098	-.218	-3.422	.001
	MSPSS_TOTAL	-.164	.025	-.284	-6.638	.000

Then it is examined whether social support and its subscales are predictors of physical fatigue. For this reason, a regression was carried out, the results of which are presented in the tables below. The dependent variables explain 4.2% of the dependent, with significant others being a determinant of physical fatigue ($p<0.05$).

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.749	.816		19.294	.000
	Family	.066	.050	.087	1.322	.187
	Friends	-.127	.081	-.156	-1.569	.117
	Significant others	-.232	.089	-.290	-2.604	.009
	MSPSS_TOTAL	.020	.094	.035	.217	.828

Then it is examined whether social support and its subscales are predictors of mental fatigue. For this reason, a regression was carried out, the results of which are presented in the tables below. The dependent variables explain 12.3% of the dependent variable, with overall social support being a determining factor of mental fatigue ($p<0.05$).

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.749	.816		19.294	.000
	Family	.066	.050	.087	1.322	.187
	Friends	-.081	.084	-.092	-.966	.335
	Significant others	-.125	.093	-.143	-1.341	.180
	MSPSS_TOTAL	-.113	.014	-.345	-8.260	.000

It also examines whether social support is a predictor of overall general health. For this reason, a regression was carried out, the results of which are presented in the tables below. The dependent variables explain 7.5% of the dependent, with

the family being a determining factor of overall general health (p>0.05).

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.749	.816		19.294	.000
	Family	-.531	.104	-.221	-5.084	.000
	Friends	.004	.249	.002	.016	.987
	Significant others	-.399	.275	-.159	-1.452	.147
	MSPSS_TOTAL	-.117	.155	-.124	-.755	.451

It is also examined whether social support is a predictive factor of physical symptoms. For this reason, a regression was carried out, the results of which are presented in the tables below. The dependent variables explain 1.7% of the dependent, with significant others being a determinant of physical symptoms (p>0.05).

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.749	.816		19.294	.000
	Family	-.031	.040	-.035	-.774	.439
	Friends	-.047	.095	-.050	-.492	.623
	Significant others	-.241	.105	-.258	-2.290	.022
	MSPSS_TOTAL	.070	.059	.200	1.188	.236

Subsequently, it is examined whether social support is a predictor of anxiety and insomnia. For this reason, a regression was carried out, the results of which are presented in the tables below. The dependent variables explain 1.4% of the dependent variable, but none is a determinant of anxiety and insomnia (p>0.05). After all, the model does not fit the data (p>0.05).

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.749	.816		19.294	.000
	Family	-.060	.043	-.062	-1.402	.161
	Friends	-.025	.103	-.025	-.245	.807
	Significant others	-.182	.114	-.180	-1.597	.111
	MSPSS_TOTAL	.034	.064	.091	.534	.593

Subsequently, it is examined whether social support is a predictive factor of social dysfunction. For this reason, a regression was carried out, the results of which are presented in the tables below. The dependent variables explain 13% of the dependent variable, with family and significant others being determinants of social dysfunction (p>0.05).

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.749	.816		19.294	.000
	Family	-.182	.027	-.289	-6.789	.000
	Friends	-.017	.063	-.026	-.271	.787
	Significant others	-.142	.070	-.216	-2.038	.042
	MSPSS_TOTAL	-.033	.039	-.135	-.847	.397

Finally, it is examined whether social support is a predictive factor of severe depression. For this reason, a regression was carried out, the results of which are presented in the tables below. The dependent variables explain 12.6% of the dependent, with family, significant others and overall social support being determinants of major depression (p>0.05).

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.749	.816		19.294	.000
	Family	-.245	.030	-.344	-8.213	.000
	Friends	.102	.072	.135	1.415	.158
	Significant others	.157	.080	.210	1.971	.049
	MSPSS_TOTAL	-.181	.045	-.646	-4.050	.000

Discussion

The purpose of the research was to examine the levels of fatigue, quality of life and social support in the case of health professionals in the post-pandemic environment, but also the relationship between these variables. For this reason, a quantitative questionnaire survey was conducted on a sample of 506 employees from 14 hospitals in the 6th Health Region.

According to the results of the statistical analysis, the main findings of this research are:

1. The respondents are generally characterized by fatigue, especially physical fatigue and then by mental exhaustion.
2. Respondents reported low levels of perceived social support which in descending order are as follows in terms of its

individual dimensions: significant others, family, friends.

3. Respondents reported moderate to high levels of overall health which, in descending order, are as follows in terms of its individual dimensions: severe depression, social dysfunction, physical symptoms, anxiety and insomnia.
4. There is a statistically significant negative correlation between physical, mental and overall fatigue with family, friends, significant others and overall social support.
5. There is a statistically significant positive correlation between physical, mental and overall fatigue with general health, but also its individual subscales (physical symptoms, anxiety and insomnia, social dysfunction and severe depression).
6. There is a statistically significant negative correlation between general health and total social support, as well as three individual subscales of it (anxiety and insomnia, social dysfunction and severe depression).

Research participants reported moderate to high levels of quality of life, which was not found in previous research[4][16]. Specifically, anxiety and insomnia problems were found, as in the study by Kandula and Wake [25] but in contrast to the study by Pérez-Valdecantos et al. [3], but not depression, found in the research by Kandula and Wake[25] and Zhan et al. [26]. Moderate levels of anxiety were also found in the study by Latsou et al.[2], while higher in the study by Zhan et al. [26] and Sampaio et al.[27]. On the other hand, studies were also identified[3] that found a satisfactory level of quality of life, as found in the present research.

In addition, in the present research a higher score was found in physical fatigue compared to psychological exhaustion, contrary to the findings of Rashid et al. [28] who found a higher score in physical and then psychological quality of life. Overall fatigue was found, similar to other studies [1][15]. Regarding social support, a high level was not found, which is in agreement with the results of previous studies [15], but contrary to the findings of Theofilou et al.[16].

Fatigue has been found to negatively affect quality of life in several studies[1][11], which was also found in this research. Similarly, social support has been found to positively influence quality of life both in this research and in previous ones [11][27], as well as in mental health[14] and fatigue [10]. After all, from the regressions conducted it was found that: a) friends, significant others and overall social support are determinants of overall fatigue, b) significant others are a determinant of physical fatigue, c) overall social support is a determinant factor of mental exhaustion.

A correlation between stress and quality of life was also found in the study by Sampaio et al.[27], a correlation between fatigue and general health was found in the study by Theofilou et al. [16], while a correlation between quality of life and social support was found in the study by Fradelos et al. [11]. Similar to the present research, stress and mental health were found to be negatively related to social support in previous studies as well [16]. After all, from the regressions conducted it was found that: a) family is a determinant of overall general health, b) significant others are a determinant of physical symptoms, c) family and significant others are determinants of social dysfunction, d) family, significant others, and overall social support are determinants of major depression.

In the post-pandemic environment, a high level of fatigue, a low level of social support and a moderate to high level of general health are found. Similar findings have been reported in previous research on quality of life [3], social support [15] and fatigue [15]. The pandemic has had a significant negative impact on the physical fatigue of healthcare professionals, and possibly this accumulation of burnout and fatigue is reflected in existing levels of fatigue. Stress and

sleep problems experienced by healthcare professionals are a consequence of high levels of fatigue [11]. However, the mental health of the research participants was found to be at better levels, especially in terms of depression, but also social functioning. These findings cannot be interpreted only by the demographic characteristics of the respondents. Instead, the reasons should be sought in the organizational factors and in the wider work environment of health professionals that have been found by other research to have a significant impact on fatigue and quality of life of health professionals, such as for example working hours and shifts [4], work-life balance [10], fear of contamination [25].

Of particular concern is the finding of low levels of social support, particularly from family and friends. The importance of social support in the overall health and quality of life of health professionals has been demonstrated through several studies [11][27] and for this reason we should there should be initiatives to strengthen support networks, both at the individual level (e.g. interpersonal relationships) and at the organizational level (e.g. work groups). The cooperation of health units with professional counselors (e.g. psychologists) could be a way of strengthening the support of workers. Similarly, it is important to encourage health professionals to participate in peer networks, with the ultimate goal of exchanging opinions, experiences, difficulties, negative events, which will lead to the strengthening of positive emotions and the reduction of their psychological discomfort.

The present research is subject to certain limitations. The first limitation is that the sample of health professionals comes from a specific geographical region, which means that the results cannot be generalized to the wider research population. Therefore, there is a need for further investigation of this issue, involving a sample of healthcare professionals that is more representative of the wider population. The second limitation is that specific scales were used to collect the data, which examine specific dimensions of the variables under consideration. Possibly the use of other tools would (and) lead to other conclusions. Therefore, in the future it is worth using other tools to collect the data. Another limitation related to the data collection method is that quantitative research does not provide the possibility of in-depth investigation of respondents' opinions, attitudes and behaviors based on their experiences and the meaning they attribute to them, as in qualitative research. Consequently, the future conduct of a qualitative research, or even a mixed method research, could perhaps also lead to the production of new knowledge.

Conclusion

Even after the end of the pandemic, health professionals continue to suffer from fatigue, as well as general health problems. Various factors such as low level of social support, individual characteristics / socio-demographic and professional variables, organizational factors, interact and affect the fatigue and quality of life of health professionals. This means that measures should be taken to prevent and address fatigue and low quality of life, given their impact on the efficiency of health professionals and the level of health services provided.

Considering the importance of social support, health units can invest in initiatives to create networks (e.g. with health professionals of other units through virtual environments), strengthen interpersonal relationships, work-life balance (e.g. care for employees' children), self-care training, but also the provision of counseling services by psychologists and social

workers within the workplace.

As the health sector is constantly changing and given that it is influenced by various factors in the wider environment, it is necessary to carry out continuous research that examines the views, needs and also the proposals of the health professionals themselves, in order to formulate policies that respond to them needs, reducing the negative emotions of health workers and increasing their overall well-being.

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