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STRESS RELATED SYMPTOMS AND ASSOCIATED FACTORS AMONG MENTAL HEALTH PROFESSIONALS IN GREECE, DURING THE COVID-19 PANDEMIC

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Summary

Background: *The present study aims to explore the self-reported traumatic stress symptoms related to the impact of the COVID-19 outbreak and to investigate associations among trauma-related stress symptoms, demographic, work-related, and clinical characteristics in a sample of professionals drawn from psychiatric services in Greece.*

Subjects and Methods: *The following online questionnaires were used in this study. An I. self-reported questionnaire about demographic, work-related, and clinical characteristics, and II. the Impact of Event Scale, with modifications for COVID-19 (IES COVID-19). The research period was from June 5, 2021, to September 9, 2021, during which Greece had just emerged from a six-month total lockdown.*

Results: *We included 363 employees of public mental health services (females 77%, mean age 44±9 years). More than half of the participants (54.5%) answered that they felt that their patients might not have been offered the optimal possible care due to measures against COVID-19 dissemination, in the workplace. Linear regression analysis revealed that female gender (β= 6.42, 95% CI: 3.01, 9.82, p<0.001), being divorced/separated/widowed (β= 5.31, 95% CI: 0.86, 9.77, p=0.02) and feeling that patients might not have been offered the optimal possible care due to measures against COVID-19 dissemination (β=4.40, 95% CI: 1.53 – 7.26, p=0.003) were found to be significant factors for total IES COVID-19.*

Conclusions: *Challenges faced by those working in psychiatric and mental health services have received less attention and understanding, although they faced ethical dilemmas that have a significant impact on both patients and professionals, during the pandemic. These ethical dilemmas, in turn, may contribute to increased role stress and traumatic symptoms among mental health professionals.*

Keywords: *Health caregivers, mental health services, mental health workers, PTSD*

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INTRODUCTION

From the early stages of the COVID-19 pandemic, there has been a recognized need to address the mental health of healthcare professionals (Greenberg et al. 2020a, Greenberg 2020b, Galbraith et al. 2021). The current pandemic is characterized by significant factors that increase the risk of post-traumatic stress disorder (PTSD) among healthcare workers (Lamb et al. 2021, Marvaldi et al. 2021, Roberts et al. 2021). These factors include a large number of critically ill patients, the unpredictable course of the disease, high mortality rates, and the lack of effective treatment or guidelines (Carmassi et al. 2020, Peeri et al. 2020, Wang et al. 2020, Wang et al. 2020). Extensive research has focused on the impact of the pandemic on healthcare workers in acute medical settings, such as intensive care units (Bell & Wade 2020, Liu et al. 2021).

The pandemic has redefined the meaning of work for many professionals as they faced unique challenges such as changes in job roles, extended work hours, ambiguity in implementing protocols, and the complexity of making ethical choices amidst the ever-changing circumstances of COVID-19 (Austin 2016, Morley et al. 2019, Goldman et al. 2020, Jakovljevic et al. 2020, Stepanek & Paul 2020, Tawalbeh 2021, Kherbache et al. 2022). In the context of healthcare, which functions as an ethical community, these considerations can induce role conflict between the defined professional role and personal values, potentially leading to psychological effects and role anxiety (Stepanek & Paul 2020, Tawalbeh 2021). COVID-19 measures compelled practitioners to adapt their practices to maintain continuity of care while minimizing the risk of transmission, resulting in conflicting constraints and ethical dilemmas. Many practitioners observed a decline in the quality of care and patient health (Kane et al. 2022, Lasalvia et al. 2023).

Patients with serious mental illness, like the general population, have been directly influenced by the pandemic. Additionally, mentally ill patients, being a vulnerable

population group in need of psychosocial support, have been indirectly affected by the impact of the pandemic on the general population, resulting in increased pressure on psychiatric departments. However, the challenges faced by those working in community and inpatient mental healthcare settings have received less attention and understanding, despite their significant impact. Research on the effects of the COVID-19 pandemic on the mental health of healthcare providers in psychiatric and general hospitals has shown that health professionals working in psychiatric services do not differ from professionals in other specialties in terms of psychological outcomes, including depression, anxiety, and stress (Anzola et al. 2022). Guo et al. (2021) found that a large proportion of Chinese psychiatric specialists experienced mental health problems during the early stages of the COVID-19 pandemic, with severe psychological impact. The latest research across multiple studies, examining the psychological well-being, stress levels, and coping mechanisms in mental health professionals, indicates that occupational and mental health challenges during the pandemic have heightened distress among them. Mental health professionals in the Netherlands experienced heightened workload, stress, and mental health challenges, as evidenced by a cross-sectional study (Van Doesum et al. 2023). Similarly, a longitudinal survey by Leung et al. (2024) found that mental health care workers, especially those in infected wards, faced significant stress and sleep disturbances. Institutional support and interventions were crucial in mitigating these challenges. Kane et al. (2022) interviewed health professionals in psychiatric services, revealing deteriorating mental well-being due to pandemic-related stressors. A global survey conducted by Kogan et al. (2023) showed that while most mental health professionals maintained positive well-being, a significant minority (1 in 5) experienced chronic posttraumatic stress symptoms throughout the pandemic.

The primary responsibility of mental health professionals is to ensure the safety of their patients and themselves (Belfer et al. 2022). However, implementing measures to reduce the spread of COVID-19 has forced healthcare professionals to engage in behaviors that may not always be in the best interest of their patients (Carpiniello et al. 2020, Puangsri et al. 2021). The use of restrictive measures, even when not required by the patient's condition, and the lack of necessary inpatient treatment, coupled with limited accessibility to primary care, have been factors contributing to the development of PTSD and related symptoms such as recurrent and unpleasant memories, avoidance of reminders of the event(s), and disturbed sleep (Andersen & Papazoglou 2015, Borges et al. 2020, Saladino et al. 2022). PTSD is a syndrome that can result in individuals becoming exhausted and leaving their profession (Mealer et al. 2009).

The present study aims to explore the self-reported traumatic stress symptoms related to the impact of the COVID-19 outbreak and to investigate associations among trauma-related stress symptoms, demographic, work-related, and clinical characteristics in a sample of professionals drawn from psychiatric services in Greece.

SUBJECTS AND METHODS

Sample

All participants selected in this study were employees in public mental health services in different areas of Greece with well-developed psychiatric services (Athens, Alexandroupolis, and Leros areas). Participants were invited to take part in the study through the head of each department. Volunteers and student interns were excluded from the sample, as they did not meet the criterion of the employment status.

Process

Informed consent was obtained after each participant was informed about the aim of the study and ensured the protection of his/her anonymity. A code (three-digit number and one letter) was requested, in case a participant wished to withdraw from the process.

Setting

Athens is the capital of Greece, while Alexandroupolis and Leros are border-rural areas, mainland, and island respectively. The data collection period was from June 5, 2021, to September 9, 2021. At that time, Greece had just emerged from a six-month complete lockdown.

Ethical Approval-Permission

The study protocol complies with the Helsinki Declaration and ethical approval was obtained by the Research Ethics Committee of Democritus University of Thrace.

Tools

The online platform Lime Survey was used for data collection (LimeSurvey GmbH, Survey Services & Consulting, Hamburg, Germany). The time required to complete the questionnaires was approximately 20 minutes.

Study participants completed the following questionnaires:

1. A self-rating questionnaire designed to gather general information about:
   i. Demographic characteristics: sex, age, education, family status, having children or not

ii. Work-related characteristics: occupation, work area, working in inpatient or outpatient service, years of work experience. In addition, the participants were asked whether: i. they believed they had been adequately trained by their institution to be able to protect themselves and their patients from COVID-19 (yes/no) and ii. they felt that their patients might not have been offered the optimal possible care due to measures against COVID-19 dissemination, in the workplace. For example, "Is there more frequent use of restraints, refusal of an under other circumstances necessary admission, or early discharges?" (yes/no).

iii. Clinical characteristics: coronavirus vulnerability for themselves and their family members (yes/no)

2. The following self-rated instrument:

i. Impact of Event Scale with modifications for COVID-19 (IES COVID-19) is a short self-rated scale that assesses subjective discomfort related to a specific traumatic life event and categorizes reactions to traumatic stressors in two subscales: i. the "intrusion subscale" consists of 7 items and the score ranges from 0 to 35 and ii. the "avoidance subscale" consists of 8 items and the scores range from 0 to 40. The sum of all 15 items calculates the overall score. Higher scores indicate a higher level of traumatic stress symptoms related to the impact of the COVID-19 outbreak. According to Horowitz et al. (1979), there is a 75% probability of developing PTSD when the IES score is ≥27. The IES COVID-19 was developed based on the Dutch version (Brom & Kleber 1985) of the IES by Vanaken et al. (Vanaken et al. 2020). For this research, IES-COVID-19 was appropriately translated into Greek after permission was granted by Lauranne Vanaken, the original author, who validated the IES with modifications to COVID-19.

Statistical Analysis

Descriptive statistics were used to present the general characteristics of the sample. Categorical variables were described using absolute and relative frequencies n (%), while continuous variables were presented as mean and standard deviation if the data were normally distributed, or median and interquartile range (IQR) for non-normal distribution. The normality of continuous variables was tested by using probability plots (P-P plots) and the Kolmogorov-Smirnov test. Continuous characteristics or IES COVID-19 scores were compared between different subgroups, with the use of Student's independent t-test, Mann-Whitney U test, or Kruskal-Wallis test depending on whether the data are normally or not normally distributed. Post hoc analyses were conducted using Bonferroni-adjusted alpha levels. Spearman's rank-order correlation was used to evaluate the relationship between the age of the participants (measured in years), and scores of scales (IES COVID-19 scale and subscales).

For each study outcome - IES COVID-19 total score, IES COVID-19-avoidance subscale, and IES COVID-19 intrusion subscale – a separate multiple regression was performed. To decide which independent variables to include in each multiple regression model, simple linear regressions were performed to calculate the univariate associations between sociodemographic and work-related characteristics (sex, age, education, family status, work area, working in a hospital ward or outpatient service, years of working experience, having confidence regarding the protection of COVID-19 due to institutional training, feeling that their patients might not have been offered the optimal possible care due to measures against COVID-19 dissemination, in the workplace), variables related to COVID-19 (coronavirus vulnerability about them and their family members) and psychological outcomes (the IES COVID-19 total score, intrusion, and avoidance subscales). All variables with a $p \leq 0.10$ in univariate analyses were entered into the multivariate regression models. Results from multivariate analyses were reported with beta coefficients (β) and 95% confidence intervals (CIs). Assumptions of all linear regression models were verified with (1) visual inspection of histograms to assess the normality of residuals and (2) plotting residuals versus fitted predictive values for checking homoscedasticity.

All statistical comparisons were two-sided, with a statistical significance level set at $p \leq 0.05$. Statistical analysis was conducted using Statistical Package for Social Sciences (SPSS) (IBM Statistics), version 24.0.

RESULTS

Description of the sample

The sample consists of 363 employees in psychiatric and mental health services, with a working experience of 15 ± 9.5 years (range: 1 to 35 years). The mean age of the sample is 44±9 (22-67) years, and most (77%) are females.

More than half (57%) of the employees work in psychiatric services in the capital city and most of them (66%) have been educated for>12 years, are married or in a relationship (65%), and have children (66%). Regarding

occupation, 169 (47%) were nurses and 33 (9%) physicians. Of the rest, 25% work in clinical psychiatric services (psychologists, social workers, occupational therapists) while the remaining 19% belong to administrative, technical, or other services (administrative employees, cleaners, technical staff, or other specialty). As far as vulnerability to COVID-19 is concerned, 47 (13%) of the sample considered themselves as vulnerable due to their medical history and 130 (36%) had at least one vulnerable member in their family. More than half of the participants (54.5%) answered that had the feeling that their patients might not have been offered the optimal possible care due to measures against COVID-19 dissemination, in the workplace and 51% answered that they didn't believe that had been adequately trained by their institution to be able to protect themselves and their patients from COVID-19. (table 1).

IES COVID-19 and subscales

The total IES COVID-19 score ranged from 0 to 75 with a median score of 16 (IQR 22). The IES COVID--19-avoidance score ranged from 0 to 40 (median 10, IQR 13), and the IES COVID-19-intrusion score from 0 to 35 (median 5, IQR 9). The Cronbach's alphas for the total IES COVID-19, α=0.80, the avoidance subscale, α=0.82, as well as for the intrusion subscale, α=0.86, indicated an acceptable internal consistency. (table 2). One hundred and four (28.7%) had an IES COVID-19 score>27.

In this study, we examined whether the general characteristics of participants influence their level of trauma-related stress symptoms (Table 3). As shown in Table 3, female employees, participants who have a family member vulnerable to COVID-19, and staff who felt that their patients might not have been offered the optimal possible care due to measures against COVID-19 dissemination, in the workplace, had significantly higher scores on IES COVID-19, indicating that they experienced significantly

Table 1. General characteristics of the sample (demographic, work-related and clinical characteristics) (N=363)

General characteristics of the sample		N	%
Age (years)	Mean (±SD)	44 (±9)	
	Range	22 - 67	
Years of working experience in mental health services	Mean (±SD)	15 (±9.5)	
	Range	(0.5 – 35)	
Sex	Male	84	23
	Female	279	77
Work area	Capital	208	57
	Capital of the prefecture	86	24
	Town of more than 10,000 residents	35	10
	Town of less than 10,000 residents	34	9
Family status	Married/ living together in a relationship	236	65
	Divorced/Separated	37	10
	Widowed	7	2
	Single	83	23
Children	Yes	239	66
	No	124	34
Level of Education	University Education (UE)	100	27.5
	Technological Education (TE)	139	38
	Secondary Education (SE)	108	30
	Primary Education (PE)	16	4
Occupation	Physicians (total)	33	9
	Psychiatrists	21	6
	Psychiatrist trainees	6	2
	Physicians of another specialty	6	2

Table 2. The score of the IES COVID-19 (total score and subscales) and Cronbach's alpha

Scales	Mean ±SD	Median	Q1, Q3	Min, Max	Cronbach's alpha
IES COVID-19 *Total score*	19±14	16	7, 29	0, 75	0.80
IES COVID-19 *Avoidance subscale*	12±9	10	5, 18	0, 40	0.82
IES COVID-19 *Intrusion subscale*	7±7	5	2, 11	0, 35	0.86

IQR = Q3 – Q1, IES COVID-19: Impact of Event Scale

increased traumatic stress symptoms related to the impact of the COVID-19 outbreak (p-value <0.05 in all cases).

Analyzing further the IES COVID-19 avoidance and intrusion subscales, scores were significantly higher in women than in men for both the avoidance (Mann-Whitney U test, p-value=0.003<0.05) and intrusion subscales (Mann-Whitney U test, p-value=0.002<0.05) (table 3).

Significantly higher scores on the Intrusion subscale were reported by those participants who responded that they have children (Mann-Whitney U test, p-value=0.02<0.05). Morover, on the same subscale, a statistically significant difference emerged between different types of marital status (Kruskal-Wallis, p-value=0.017<0.05). Workers who are divorced, separated, or widowed have significantly higher scores than those who are single (Dunn-Bonferroni corrected p-value=0.022<0.05). Significantly higher levels on the intrusion subscale of IES-COVID-19 (Mann-Whitney U-test, p-value<0.001<0.05) were reported by employees who felt that their patients might not have been offered the optimal possible care due to measures against COVID-19 dissemination, in the workplace (table 3).

General characteristics of the sample		N	%
(Occupation)	Staff of Psychiatric Services (total)	262	72
	Nurses	169	47
	Psychologist	44	12
	Social workers	39	11
	Occupational therapists	10	3
	Other staff (total)	68	18
	Administrative employees	32	9
	Technicians	4	1
	Cleaning workers	20	5.5
	Other	12	3
Type of Mental health service	Inpatient services only (Hospital ward only)	197	54
	Outpatient Community, Psychosocial Rehabilitation Services, or a combination of inpatient and outpatient services	166	46
Belonging to a COVID-19 vulnerable group	Yes	47	13
	No	316	87
Having a vulnerable in COVID -19 family member	Yes	130	36
	No	233	64
Having confidence regarding the protection of COVID-19, due to institutional training	Yes	179	49
	No	184	51
Having the feeling that patients might not have been offered the optimal possible care due to measures against COVID-19 dissemination	Yes	198	54.5
	No	165	45.5

Table 3. IES COVID-19 and Subscales in relation to General Characteristics

		Median	min	max	p-value	Median	min	max	p-value
		IES COVID-19				IES COVID-19 avoidance/ IES COVID-19 intrusion			
Sex	Man	12	0	47		8/3	0/0	28/21	
	Woman	18	0	75	**0.001**	11/5	0/0	40/35	**0.003/0.002**
Work Area	Capital/Co-capital	15	0	67		10.5/5	0/0	40/33	
	Other Cities	16.5	0	75	0.492	9/10.5	0	34/35	0.592/0.319
Mental Health Service	Inpatient only	15	0	67		10/5	0/0	34/33	
	Outpatient only	16	0	75	0.998	10/5	0/0	40/35	0.728/0.565
Education	University	16	0	47		9/5	0/0	30/29	
	Technological	18	0	75		12/5	0/0	40/35	
	Secondary	16	0	55		9/5	0/0	30/33	
	Primary	11	0	52	0.435	8/4	0/0	34/18	0.40/0.58
Family Status	Married/living together in a relationship.	16	0	67		10/5	0/0	34/33	
	Divorced or widow/er.	23	0	59		12/9	0/0	34/33	
	Single	15	0	75	0.167	10/3	0/0	40/35	0.37/**0.017**
Having Children	Yes	16	0	75		10/5	0/0	40/35	
	No	15	0	59	0.284	11/4	0/0	32/29	0.90/**0.02**
Occupation	Doctor	13	0	45		8/5	0/0	24/21	
	Nurse	15	0	59		10/5	0/0	30/33	
	Psychiatric Services	19	0	75		11/5	0/0	40/35	
	Other staff	16.5	0	67	0.745	10/4	0/0	34/23	0.61/0.65
Belonging to a vulnerable group	Yes	21	0	59		12/7	0/0	30/33	
	No	15	0	75	0.127	9/5	0/0	40/35	0.09/0.22
Having a vulnerable family member	Yes	21	0	59		11/6	0/0	34/33	
	No	15	0	75	**0.002**	9/5	0/0	40/35	0.08/0.065
Having confidence regarding protection of COVID-19 -19 due to institute training	Yes	16	0	75		10/4	0/0	40/35	
	No	16	0	55	0.347	10/5	0/0	34/29	0.59/0.096
Having the feeling that patients might not have been offered the optimal possible care due to measures against COVID-19 dissemination	Yes	14	0	75		11/6	0/0	40/35	
	No	18	0	59	**0.006**	9/4	0/0	4/33	.088/<**0.001**

IES COVID-19: Impact of Event Scale

A significant positive association was found between the intrusion subscale and years of working experience (Spearman r=0.13, p=0.02). In all other cases, the correlation between age and years of work experience was not statistically significant (p>0.05 in all cases).

Effect of selected respondent's characteristics on total impact of events score (IES COVID-19) and Subscales (avoidance and intrusion)

The results of the multivariate analyses were applied to check for the simultaneous effect of all variables with a p≤0.10 in univariate analyses on the total score of IES COVID-19 and subscales (dependent variables) (table 4).

Table 4. Multivariate regression analysis of IES COVID-19 and subscales (Intrusion and Avoidance)

	Total IES COVID-19 scale	**Regression coefficient (β)**	**95% Confidence Interval**	**p-value**
Sex	Male	-		
	Female	6.42	3.01, 9.82	**<0.001**
Family status	Married/Living together in a relationship	-		
	Divorced/Separated/ Widowed	5.31	0.86, 9.77	**0.02**
	Single	-0.33	-3.82, 3.16	0.85
Having a vulnerable COVID-19 member of the family	No	-		
	Yes	3.02	0.001, 6.04	**0.05**
Having the feeling that patients might not have been offered the optimal possible care due to measures against COVID-19 dissemination, in the workplace	No	-		
	Yes	4.40	1.53, 7.26	**0.003**
	IES COVID-19 intrusion	**Regression coefficient**	**95% Confidence Interval**	**p-value**
Sex	Male	-		
	Female	2.63	1.02, 4.24	**0.001**
Family status	Married/Living together in a relationship	-		
	Divorced/Separated/ Widowed	2.41	0.31, 4.52	**0.025**
	Single	-1.80	-3.47, -0.12	**0.04**
Having a vulnerable COVID-19 member of the family	No	-		
	Yes	1.59	0.16, 3.02	**0.03**
Having the feeling that patients might not have been offered the optimal possible care due to measures against COVID-19 dissemination, in the workplace	No	-		
	Yes	2.82	1.47, 4.17	**<0.001**
	IES COVID-19 avoidance	**Regression coefficient**	**95% Confidence Interval**	**p-value**
Sex	Male	-		
	Female	3.41	1.30, 5.53	**0.002**

IES COVID-19: Impact of Event Scale

Sex, family status, being vulnerable to COVID-19 members in the family, and feeling that patients might not have been offered the optimal possible care due to measures against COVID-19 dissemination, in the workplace, were found to be significant factors for total IES COVID-19. Women's total IES COVID-19 levels were significantly higher by an average of 6.42 in comparison to men (95% CI: 3.01, 9.82, p<0.001), while respondents who were divorced/separated or widowed had a total IES COVID-19 level that was on average higher by 5.31 (95% CI: 0.86, 9.77, p=0.02) compared to those who were married or living together in a relationship and having a vulnerable COVID-19 members in the family significantly increased levels of total IES COVID-19 (β=3.02, 95% CI: 0.001, 6.04, p=0.05). Feeling that patients might not have been offered the optimal possible care due to measures against COVID-19 dissemination, in the workplace was significantly associated with an increase in total IES COVID-19 levels (β=4.40, 95% CI: 1.53 – 7.26, p=0.003).

Regarding intrusion subscale sex, family status, having a vulnerable COVID-19 member in the family, and feeling that patients might not have been offered the optimal possible care due to measures against COVID-19 dissemination, in the workplace were still found to be associated with intrusion scores (Table 4). Additionally, IES COVID-19 intrusion levels were significantly lower for those who were single compared to those who were married or living together in a relationship (β=-1.80, 95% CI: -3.47, -0.12, p=0.04).

Finally, female respondent's IES COVID-19 avoidance levels were significantly higher by an average of 3.41 in comparison to men (95% CI: 1.30 – 5.53, p=0.002).

DISCUSSION

This study aimed to explore the self-reported traumatic stress symptoms related to the impact of the COVID-19 outbreak on mental health workers in Greece and to investigate associations between trauma-related stress symptoms and demographic, work-related, and clinical characteristics.

Our regression analysis identified four factors significantly associated with IES COVID-19 scores: i. workers' sex, ii. family status, iii. having a vulnerable COVID-19 family member, and iv. having the feeling that patients might not have been offered optimal care due to COVID-19 measures in the workplace. Specifically, women, workers with COVID-19 vulnerable family members, and those having the feeling that patients might not have been offered optimal care showed a significant increase in IES COVID-19 scores, indicating more traumatic stress symptoms related to the impact of the COVID-19 outbreak. In contrast, participants who were married or living together in a relationship reported fewer symptoms of traumatic stress related to the impact of the pandemic, as indicated by lower IES COVID-19 scores.

On both the overall IES COVID-19 scores and the intrusion and avoidance subscales, women consistently scored higher than men. This finding aligns with numerous studies examining mental health outcomes during the pandemic, suggesting that women were more likely to develop PTSD or other common mental disorders (Bayazit et al. 2022, Qi et al. 2022, Scott et al. 2022). Furthermore, existing literature indicates a higher prevalence of PTSD among women in non-pandemic contexts, extending to the specific context of the COVID-19 pandemic (Olff 2017). Research during the pandemic has shown that women experienced an increased emotional burden, stemming not only from their roles as mothers and family caregivers, which are traditionally demanding and involved (Chaplin 2008, Collantoni et al. 2021, García-Fernández et al. 2021) but also from exacerbated domestic violence during the COVID-19 period (Piquero et al. 2021, Kourti et al. 2023). Additionally, women, constituting the majority of health and frontline workers, were disproportionately affected by pandemic adversities, while also shouldering essential responsibilities at home (Morgan et al. 2022). Longitudinal studies are needed to determine whether there was a transient increase in psychological symptoms due to a particularly stressful situation, or if these symptoms will persist in the long term.

Regarding marital status, the group identified as "Married/Living together in a relationship" showed the lowest levels of stress-related symptoms according to the IES COVID-19 total score and intrusion subscale. This finding is in line with the majority of the literature published during the pandemic, which has included marital status as a risk factor for PTSD (Salehian et al. 2021, TMGH-Global COVID-19 Collaborative 2021). This finding underscores the importance of family support and communication during stressful periods, as a lack thereof can contribute to psychological issues (Pan et al. 2021).

Having a vulnerable COVID-19 family member was found to be a significantly associated factor regarding stress-related symptoms (total IES COVID-19 and intrusion subscale scores). This aligns with the majority of the literature during the pandemic, showing that fear associated with COVID-19 infection and transmission is particularly evident among healthcare workers who live with family members in a vulnerable category, such as children, the elderly, or individuals with an underlying

health condition (Giorgi et al. 2020, Nam & Yang 2021, Xue et al. 2022).

Despite not experiencing mortality rates as high as those in units treating COVID-19 patients, mental health professionals encountered significant decisions and dilemmas, leading to heightened role stress. This situation prompted them to implement restrictive measures not typically seen under normal conditions. More than half of the participants (54.5%) answered positively to the question: "*Did you feel that your patients might not have been offered the optimal possible care due to measures against COVID-19 dissemination, in the workplace? For example, is there more frequent use of restraints, refusal of an under other circumstances necessary admission, or early discharges?*" Psychiatric personnel are frequently exposed to stressful events that could result in PTSD due to work-related repeated exposure to violence. During the COVID-19 pandemic, numerous healthcare workers may have been exposed to moral stressors, traumatic experiences, and ethical dilemmas regarding providing the necessary quality of care. These adverse conditions are likely to have increased the risk of mental disorders, such as PTSD (Olashore et al. 2018, Greenberg 2020b).

Horowitz et al. (1979) suggest that an IES score of 27 or higher indicates a high probability of PTSD. In our study, the mean and median scores were lower, but this does not rule out the existence of trauma-related stress symptoms. Moreover, 28.7% of the sample had an IES score ≥27.

Major changes in the operation of health systems accompanied the pandemic. However, any change in normal organizational routines must be followed by specific training programs for nurses and health professionals (Gianneta et al. 2021, Uphoff 2021). This will enable them to cope with the difficulties and provide patients with the most optimal care possible. The hospital staff were trained and informed, with priority given to frontline departments such as intensive care, while non-frontline departments like psychiatry wards, received less training and support. Additionally, mentally ill patients, as a vulnerable population group usually in need of psychosocial support, were indirectly affected by the impact of the pandemic on the general population. This resulted in increased pressure on psychiatric departments (Alexiou et al. 2021).

To our knowledge, this is the only survey on the psychological impact of the pandemic on mental health workers in Greece. The collection of samples from different parts of the country and various psychiatric services enhances its strength. Our study also has some limitations, including the use of self-rated questionnaires. The IES COVID-19 is a self-rating scale that evaluates the subjective distress associated with a specific traumatic life event. The pandemic affected people in so many different ways over an extended period, depending on factors such as their type of work, exposure to the disease, preexisting psychopathology, etc. Some people can report a single traumatic event in the context of the pandemic, but many cannot. So, the IES serves to monitor subjective distress over time but is inadequate for independent diagnosis of PTSD. However, it remains a valid instrument for assessing post-traumatic stress symptoms (Sundin & Horowitz 2002). Furthermore, the study did not assess the emotional responses of participants to their institution's COVID-19 prevention measures.

CONCLUSIONS

Workers in mental health services, despite not encountering elevated mortality rates similar to those in units handling COVID-19 patients, confronted decisions and ethical dilemmas accompanied by stress-related symptoms. This was a result of having to enforce various restrictive measures that would not be instituted under normal circumstances. The pandemic has shown us the importance of reviewing and possibly changing how psychiatric services are organized. By prompting inquiries into their effectiveness and adequacy, we can make mental health systems stronger and better prepared for future challenges, both for patients and professionals.

Ethical Considerations: Does this study include human subjects? YES
Authors confirmed the compliance with all relevant ethical regulations.
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