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ORIGINAL RESEARCH

Post-Traumatic Stress Disorder Among Research Assistants Struggling Against the Pandemic in a University Hospital

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Abstract

Objective and Aim

The social, political, economic and psychological negative effects of the Covid-19 pandemic, which started in China and affected the whole world, are an undeniable fact. The Covid-19 pandemic threatens both physical and psychological health of people. The aim of this study is to screen the research assistants struggling against the Covid-19 pandemic in Erciyes University Faculty of Medicine for post-traumatic stress disorder and to examine the relationship between these symptoms with sociodemographic variables.

Materials and Methods

The population of this cross-sectional, descriptive study consists of research assistants working at Erciyes University Faculty of Medicine. Datas were collected between December 2021 and May 2022. During this period, it was aimed to reach all 675 research assistants who working at Erciyes University Faculty of Medicine, but 387 participants who agreed to participate in the study were included in the study. The participants signed an informed consent form firstly. Data collection tools are sociodemographic data questionnaire and posttraumatic stress disorder checklist for DSM-5 (PCL-5). The questionnaire and scale were applied to the participants by face-to-face interviews.

Results

The mean age of 387 research assistants is 29.6 years old. 52.5% of the research assistants are female and 47.5% of them are male. PCL-5 average score of the participants is 20.28. The number of participants who have 31 cutoff point and above this are 49, and the rate is 12.66%. 70% of the participants work in internal diseases departments and 85.3% of them like their profession. 83.7% of them have worked in pandemic units, 84.5% of them had Covid-19 infection and 98.2% of them have vaccinated against the Covid-19. Women, novices, participants who don't like their profession, who aren't satisfied with their department, who use alcohol, who work in intensive care unit, who had 3 or fewer doses of vaccine and

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who think that the pandemic is a stressor have higher PCL-5 scores.

Conclusion

Our study has revealed how the research assistants were worn out psychologically during the pandemic. Therefore, precautions should be taken for the protection and improvement of research assistants' mental health. Research assistants should be able to get psychiatric support and treatment easily.

Keywords: Covid-19 Pandemic, Research Assistants, Post Traumatic Stress Disorder

1. Introduction

The Covid-19 pandemic emerged on December 1, 2019 in Wuhan, the capital of China's Hubei province. It spread to China and the whole world in a short time and was declared a pandemic by the World Health Organization on March 11, 2020 (1). The disease, which causes symptoms such as high fever, cough, shortness of breath, loss of smell and taste, can seriously develop into pneumonia and even It can also cause death. The first death caused by Covid-19 occurred in China on January 9, 2020 (2,3).

The social, political, economic and psychological negative effects of the Covid-19 pandemic, which started in China and affected the whole world, are an undeniable fact. The Covid-19 pandemic threatens both physical and psychological health of people. The fact that it could not be taken under control, that all individuals in the world were potentially at risk, and that it could not be predicted when it would end, turned the epidemic into a global trauma in a short time (4).

As the incidence and death rate of infectious diseases increase, individuals' anxiety, worry, depression and anxiety levels also increase (5). Problems such as increasing depression, anxiety, health anxiety, loneliness, social isolation, economic problems, etc. are seen especially in healthcare workers who are under the greatest risk and stress (6,7,8). Studies have shown that healthcare workers struggling with the pandemic has faced a lot of stress professionally (9). This situation causes various mental and psychological problems, including anxiety, depressive symptoms, sleep problems, anxiety disorders, attention deficit, impaired decision-making ability and even post-traumatic stress disorder. (10,11) Studies show that the stress experienced by healthcare workers and the psychological symptoms that develop as a result vary depending on sociodemographic variables such as age, gender, marital status, profession, unit of work, etc. (12,13).

Research assistants in our country also provide important services in the fight against the Covid-19 pandemic. These physicians must be provided with protective materials and equipment regularly, they must be tested at regular intervals, they must receive psychological support if necessary, material and moral incentives must be provided, and inter-institutional communication problems must be resolved. Because research assistants are at risk as much as other healthcare professionals. For this reason, the importance of research assistants should not be forgotten during the fight against the pandemic.

In this study, we aimed to screen research assistants fighting the Covid-19 pandemic at Erciyes University Faculty of Medicine Hospital for post-traumatic stress disorder. We hope that this research will shed light on new studies and contribute to the literature as a data source.

2. Materials and Method

2.1. Ethics Committee Permission

This study was deemed scientifically and ethically appropriate by the Scientific Research Platform of the Ministry of Health of the Republic of Turkey and the Clinical Research Ethics Committee of Erciyes University Faculty of Medicine with the decision dated 24/11/2021 and numbered 2021/763. In addition, permission was

obtained from the Dean's Office of Erciyes University Faculty of Medicine to conduct research with Erciyes University Faculty of Medicine research assistants.

2.2. Type and Purpose of Research

The aim of this single-center, cross-sectional and descriptive study is to screen research assistants fighting the Covid-19 pandemic at Erciyes University Faculty of Medicine for post-traumatic stress disorder and to examine the relationship of these symptoms with sociodemographic variables.

2.3. Universe of Research

The population of this research consists of research assistants working at Erciyes University Faculty of Medicine Hospital. Data was collected between December 2021 and May 2022. The sample of the study was calculated with a 95% confidence interval of ± 5% margin of error, and a total of 387 research assistants were included in the study. First of all, the purpose of the research was explained to the research assistants and their written consent was obtained by signing an informed consent form.

2.4. Criteria for Inclusion in the Study

1. Consenting to Participate in the Study as a Result of Information

2. Working as a Research Assistant at Erciyes University Faculty of Medicine

3. Taking Part in the Fight Against the Covid 19 Pandemic

2.5. Exclusion Criteria from the Study

Refusal to Participate in the Study for Any Reason

2.6. Data Collection Tools

Informed consent form, sociodemographic data survey and DSM-5 post-traumatic stress disorder checklist were used in this study.

2.6.1. Informed Volunteer Consent Form (ANNEX-2)

A form containing the purpose of the study, who will conduct it, contact information, and a brief summary of the study was prepared, and the participants were asked to sign that they agreed to participate in the study with their own consent.

2.6.2. Sociodemographic Data Survey (ANNEX-3)

It was created by scanning the literature in order to evaluate the sociodemographic characteristics of the participants and its relationship with the subject under investigation.

DSM-5 Post-Traumatic Stress Disorder Checklist (ANNEX-4)

The post-traumatic stress disorder checklist is a self-report form consisting of twenty items (14). It was developed by Weathers et al. in 2013, taking into account the diagnostic criteria in DSM-5 (15). It was adapted into Turkish by Boysan et al. in 2017, and the internal consistency coefficient of the scale was calculated as 94 for clinical groups and 97 for control groups (16). The purposes of applying this list are to screen individuals for post-traumatic stress disorder, to provide a provisional diagnosis. and monitoring the change in symptoms before and after treatment. In other words, post-traumatic stress disorder cannot be diagnosed with this list and it is not the gold standard in this regard (17). It takes approximately 5 minutes to complete. The questions address the symptoms in the 4 symptom clusters of PTSD specified in DSM-5. The first 5 questions are related to unwanted memories and flashbacks, the 6th and 7th questions are related to avoiding situations that remind of the trauma, the questions 8-14 are related to negative changes in mood and cognition related to the trauma, and the questions 15-20 are related to the symptoms in the set of changes in reactivity and arousal state. The scores given to the 20 questions on the scale between 0 and 4 (0: not at all, 1: very little, 2: moderately, 3: quite a lot, 4: extremely) are

added up and a total score between 0 and 80 is obtained (18). If the aim is screening and possible cases are to be detected at the highest level, a lower cutoff score should be determined. However, if the aim is to make a provisional diagnosis, a higher cutoff score should be determined. When aiming to make a provisional diagnosis of PTSD, each item with a score of 2 or higher is considered a symptom. Then, if there is at least 1 symptom from the 1st and 2nd clusters and at least 2 symptoms from the 3rd and 4th clusters, a provisional diagnosis of PTSD is made. When used for screening purposes, a total score between 31-33 is considered as possible PTSD and is referred to a psychiatrist as additional research is needed (19).

Statistical Analysis

SPSS 28.0 package program was used to analyze the data. Percentage and frequency methods were used to determine the distribution of sociodemographic data of the participants. The skewness-kurtosis normality distribution test was used to determine whether the measurements were suitable for normal distribution. The fact that kurtosis and skewness values are between -1 and +1 is seen as evidence that the data is normally distributed. According to the skewness-kurtosis technique; PTSD scale scores were normally distributed. Student's t test and One way-ANOVA tests were used to evaluate whether the scale scores differed between groups. Pearson and Spearman tests were used in correlation analyses. As a result of statistical analysis, p values <0.05 were considered significant.

3. Results

The average age of the 387 research assistants included in the study was 29.6 ± 3.1 years (24-51 years) (Table 1).

52.5% (n=203) of the research assistants were women and 47.5% (n=184) were men.

70% (n=271) of the research assistants were assistants in internal medicine departments, 24.5% (n=95) were assistants in surgical medical sciences, and 5.4% (n=21) were assistants in basic medicine departments.

37.2% of the research assistants' tenure in medicine was between 3-5 years, and 37% was more than 5 years. The assistantship duration of 33.6% of the research assistants was between 2-3 years, and 24.3% was between 3-4 years. 81.9% of the research assistants were on duty, and the number of shifts per month for 51.4% of those on duty was between 7-10 (Table 2).

85.3% (n=330) of the research assistants stated that they liked their profession, and 14.7% (n=57) stated that they did not like their profession. Additionally, 82.4% (n=319) stated that they were satisfied with their department, and 17.6% (n=68) stated that they were not satisfied with their department. 87.9% of the participants (n=340) evaluated their mood as good or normal (Table 3).

84.8% (n=328) of the research assistants stated that they did not have any chronic disease and 91% (n=352) stated that they did not use medication constantly. Additionally, 58.7% (n=227) stated that they had never smoked and 68.7% (n=266) stated that they had never consumed alcohol (Table 4).

83.7% (n=324) of research assistants stated that they were actively working in pandemic units. The working period of 72.9% (n=182) of the participants in pandemic units was between 0-6 months (Table 5).

78.8% (n=305) of the participants said they had followed a Covid-19 positive patient, 84.5% (n=327) said they had Covid-19, and 98.2% (n=380) said they had Covid-19. He stated that he had 19 vaccinations. However, it was determined that 81.9% of the participants (n = 317) had received 3 or 4 doses of vaccine.

89.9% (n=348) of research assistants thought that fighting the pandemic was a source of stress for them.

Table 1. Sociodemographic Characteristics of Research Assistants

Property		Value
Age	Mean ± SD	29,6 ± 3,1
Gender		n (%)
	Female	203 (52,5)
	Male	184 (47,5)
Marital status		n (%)
	Single/Divorced	187 (48,3)
	Married	200 (51,7)
Having children		n (%)
	Yes	86 (22,2)
	No	301 (77,8)
Number of children		n (%)
	1	67 (17,3)
	2	15 (3,9)
	3	3 (1)
Living environment		n (%)
	Alone	90 (23,3)
	With mother/father	77 (19,9)
	With spouse/child	201 (51,9)
	With friend	19 (4,9)
Income		n (%)
	Income>expense	123 (31,8)
	Income=expense	209 (54)
	Income<expense	55 (14,2)

In the reliability analysis conducted for the Post-Traumatic Stress Disorder Checklist used in the study, Cronbach's alpha coefficient was found to be 0.884 and the scale was found to be consistent and reliable.

As a result of the analysis of the research assistants' PTSD Checklist scores, it was seen that the average score of the participants was 20.28±9.24, the lowest score was 0 and the highest score was 43. Since the purpose of the study was screening, the cut-off value was determined as 31 points, and the number of participants with a scale score of 31 and above was 49 (12.66%) (Table 6).

Spearman Correlation Analysis was performed between the age of the research assistants and the total score of the PTSD Checklist, and a negative correlation was observed, but it was not found to be statistically significant (p = 0.164).

4. Discussion

In this study, it was aimed to screen research assistants working at Erciyes University Faculty of Medicine for post-traumatic stress disorder, taking into account the psychological/psychiatric pressures brought about by the fight against the Covid-19 pandemic, and to reveal its relationship with sociodemographic variables.

The average age of 387 research assistants included in the study was 29.6 ± 3.1 years; 52.5% (n=203) were women and 47.5% (n=184) were men. The average score of the participants on the PTSD Checklist was calculated as 20.28±9.24. In the PTSD Checklist used for screening purposes, the cut-off value was accepted as 31, and accordingly, the number of participants who scored 31 and above was 49. In other words, in our study, the rate of people showing symptoms of possible post-traumatic stress disorder is 12.66%. The prevalence of PTSD among healthcare workers, both in past epidemics and in the ongoing Covid-19 pandemic, varies between 7-52% (20). During this pandemic period, the rate of healthcare workers developing PTSD symptoms may vary significantly according to research. For example, in a study conducted in our country in 2021, post-traumatic stress disorder levels ranging from 26-55% were reported among healthcare workers during the Covid-19 epidemic (21). Likewise, in a study conducted in Italy, this rate varies between 11-74.4% among healthcare workers (22). In a study conducted in China with 317 participants in 2021, the rate of those showing symptoms of PTSD was found to be 10.7%. The rate in our study is close to this value. In this study, as in our study, data were collected with the PTSD Checklist, but the cut-off value was accepted as 33. The small difference may be due to the fact that the cut-off value was accepted as 31 in our study (23). Even if the same scales and tests are used during the data collection phase, changing procedures, methodology and the use of different classifications may

yield different results regarding the prevalence of PTSD symptoms as a result of the research (24).

Table 2. Research assistants' duty periods and on duty status

Property	n	(%)
Years as doctor		
0-1 years	29	7,5
1-3 years	71	18,3
3-5 years	144	37,2
5 years and more	143	37
Years as research assistant		
0-1 years	67	17,3
1-2 years	67	17,3
2-3 years	130	33,6
3-4 years	94	24,3
4 years and more	29	7,5
On duty status		
Present	317	81,9
Absent	70	18,1
Number of on duty days		
0-5	67	21,1
5-7	60	18,9
7-10	163	51,4
10 and more	27	8,5

In our study, a negative correlation was observed between the age of the participants and the total score of the PTSD checklist, but it was not found to be statistically significant. In other words, although it was not statistically significant, the scale score of the younger ones was found to be higher. A meta-analysis conducted in 2020 on the effects of the Covid-19 pandemic on the psychology of healthcare professionals stated that being younger is associated with higher levels of depression, anxiety and PTSD (25). Again, in a study conducted in Spain in 2020, it was observed that younger healthcare workers had significantly higher PTSD scores than older ones (26). In another study conducted in the same year with 14,825 doctors from 31 different cities in China, it was observed that the PTSD score of younger participants was significantly higher (27).

In our study, there was a significant relationship between the gender of the participants and the total score of the PTSD checklist. We found that the total score of female participants was higher than the total score of male participants. Being a woman has also been shown among the risk factors in studies conducted with healthcare workers in previous pandemics (28). In a study conducted in Bolu province in our country in 2021, it was stated that depression, anxiety and post-traumatic stress symptoms were higher in female health workers (29). Again, in a cross-sectional study published in our country in September 2022, it was reported that female gender was the leading risk factor for PTSD during the pandemic (30). Although rare, there are also studies reporting that male healthcare workers have higher PTSD scores. For example, in a study conducted in Australia in 2022, it was stated that male participants showed higher levels of post-traumatic stress symptoms than female participants (31). However, when the literature is reviewed in general, the prevailing information is that PTSD scores are higher in women. The result of our study is also compatible with the literature. The emergence of this situation is due to the greater workload of women in daily life and at home, the fact that women take care of children more in addition to doing their jobs, in other words, the dual roles of women in society culturally (32).

Table 3. Research Assistants' Job Satisfaction and Mood

Property	n	(%)
Like the job		
Yes	330	85,3
No	57	14,7
Department satisfaction		
Yes	319	82,4
No	68	17,6
Mood		
Very good	12	3,1
Good	166	42,9
Normal	174	45
Poor	31	8
Very bad	4	1

Additionally, a number of studies have reported that many other mental disorders

are more common in women (33.34). In fact, in a study conducted in 2020, male gender was independently associated with a reduced prevalence of traumatic symptoms (35). In our study, no significant relationship was found between the marital status of the participants and the total score of the PTSD checklist, but the scores of those who were single or divorced were higher than those who were married. In a study conducted in our country in 2021, it was observed that post-traumatic stress symptoms were significantly higher in single healthcare workers than in married ones (36). In another study conducted in China, being single or divorced rather than married was associated with increased PTSD symptoms (37).

In these studies, the reason why married people showed lower PTSD symptoms may be that they felt less loneliness. Additionally, single people may be discriminated against because they cannot meet social expectations because they are not married yet (38). Contrary to these results, there are also studies in the literature reporting higher levels of PTSD in married healthcare professionals. For example, in a study conducted with 300 healthcare professionals in our country in October 2022, the PTSD levels of those who were married and did not live alone despite being single were found to be higher than those who were single and lived alone (39). Likewise, in a study conducted in Ethiopia in early 2022, it was stated that married health workers had higher levels of post-traumatic stress symptoms than single people (40). These results can be attributed to the fact that healthcare workers who are fighting the pandemic on the front lines worry about their families as well as themselves and are afraid of transmitting the infection to the families, relatives and friends they live with (41). When viewed from a broad perspective, it has been seen that different results have been obtained in many studies. This situation is probably due to personal and environmental variables such as healthcare professionals' living environments, family characteristics, and the conditions of the institutions they work in.

In our research, no significant relationship was found between the income status of the participants and the total score of the PTSD checklist. In a study conducted in Singapore in 2020, no relationship was found between income status and PTSD symptom levels (42). This result coincides with our study.

Table 4. Background and habits of research assistants

Property	n	(%)
Chronic Disease		
Yes	59	15.2
No	328	84.8
Regular Medication Use		
Yes	35	9.0
No	352	91.0
Smoking		
Regular	58	15.0
Occasionally	60	15.5
Rarely	22	5.7
Quit	20	5.2
Never	227	58.7
Alcohol Consumption		
Regular	3	0.8
Occasionally	81	20.9
Rarely	21	5.4
Quit	16	4.1
Never	266	68.7

5. Conclusion

In this study, research assistants working at Erciyes University Faculty of Medicine Hospital were screened for symptoms of post-traumatic stress disorder that may develop during the fight against the Covid-19 pandemic. As a result of the analysis of the research assistants' PTSD Checklist scores, the rate of those showing possible post-traumatic stress disorder symptoms was found to be 12.66%. In accordance with the literature, those who are younger, women, singles, those with little professional experience, those who are on duty, those who do not like their profession, those who are not satisfied with their branch, those who have a chronic disease, those who use alcohol, those who work in pandemic units, those who work in intensive care, those who

are not vaccinated against Covid-19. It was determined that those who received 3 or fewer doses of Covid-19 vaccine and those who saw the fight against the pandemic as a source of stress had a higher post-traumatic stress disorder checklist score.

Table 5. Research Assistants' Work Status and Duration in Pandemic Units

Property	n	(%)
Worked During Pandemic		
Yes	324	83.7
No	63	16.3
Pandemic Units Worked In		
Ward	208	53.7
Intensive Care	97	25.1
Outpatient Clinic	172	44.4
Emergency	57	14.7
Contact Tracing	24	6.2
Duration of Work in Pandemic Units		
0–3 months	195	50.4
3–6 months	87	22.5
6–9 months	17	4.4
9–12 months	16	4.1
More than 12 months	9	2.3

Table 6. Distribution of PTSD Checklist Scores of Research Assistants

Statistic	PTSD Checklist Score
Mean	20.28
Standard Deviation	9.242
Minimum	0
Maximum	43
Number (%) above cut-off value (31)	49 (12.66%)
Skewness	-0.188
Kurtosis	-0.402

Our study revealed how psychologically worn out research assistants were during the pandemic process. It has been shown that the pandemic not only threatens physical health but can also disrupt mental health. Therefore, precautions should be taken to protect and improve the mental health of research assistants. Research assistants should have easy access to psychiatric support and treatment. This process should be sustainable and continuous, taking into account that the Covid-19 pandemic may flare up again. Research assistants working in pandemic units should be monitored regularly for PTSD.

Counseling and psychosocial support can be provided by the hospital via telemedicine. It may be beneficial for research assistants with little professional experience to be supported by more experienced ones. In addition, it may be beneficial to reduce the workload of research assistants, to have after-shift leave, and to improve their personnel rights.

Conflict of interest

The authors declare no conflict of interest.

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