Determination of Secondary Traumatic Stress Levels of Healthcare Workers*

Gamze ÖZTÜRK**, Canan DEMİR BARUTCU***

Abstract

Aim: Due to reasons such as excessive workloads of health workers and the insufficient number of employees, severe working conditions, shift work systems and long shift hours, working people have a high risk of suffering mental trauma. The study was conducted to determine the secondary traumatic stress levels of health workers.

Method: This cross-sectional and descriptive study was conducted with 212 healthcare professionals. The "Sociodemographic Characteristics Form" and "Secondary Traumatic Stress Scale" were used as data collection tools.

Results: It was found that the secondary traumatic stress levels of health workers, the total score and the average score of the personnel working in internal units in all sub-dimensions were higher than the average of the medical personnel working in surgical units.

Conclusion: As a result, secondary traumatic stress levels of healthcare workers were found to be higher than average in our study. The unit of work, regardless of the level of health personnel is high secondary traumatic stress, and secondary traumatic stress symptoms, to prevent employees reduce stress, indirect initiatives to minimize trauma reactions are needed. It is also proposed to conduct new research that will determine these initiatives.

Keywords: Healthcare workers, secondary traumatic stress, hospital.

Özgün Araştırma Makalesi (Original Research Article)
Geliş / Received: 01.09.2021 **& Kabul / Accepted:** 07.04.2022
DOI: https://doi.org/10.38079/igusabder.989618
* This article was produced in Gamze ÖZTÜRK's Master of Science thesis titled "Evaluation of secondary traumatic stress according to the unit of health workers" performed at the Burdur State Hospital in 2018. Gamze ÖZTÜRK graduated from Burdur Mehmet Akif Ersoy University, Institute of Health Sciences, Department of Health and Biomedical Sciences in 2019.
** Msc, RN., Burdur State Hospital, Department of Emergency, Burdur, Turkey. E-posta: gamzeozturk357@gmail.com
ORCID https://orcid.org/0000-0002-4834-5687
*** Corresponding Author, Assoc. Prof., PhD, RN., Department of Internal Medicine Nursing, Mehmet Akif Ersoy University, Faculty of Health Sciences, Burdur, Turkey. E-posta: cdemir@mehmetakif.edu.tr
ORCID https://orcid.org/0000-0002-8430-5287

ETHICAL STATEMENT: Written permission from Mehmet Akif Ersoy University Ethical Committee (GO 2018/43) and the Burdur State Hospital (03/04/2018- 23286918/806.02.02) was also obtained. The objective of the research was explained to the participants and written permission was received from those agreeing to participate in the research.

Sağlık Çalışanlarının İkincil Travmatik Stres Düzeyinin Belirlenmesi

Öz

Amaç: Sağlık çalışanlarının iş yüklerinin fazla, çalışan sayısının yetersiz olması; çalışma koşullarının ağır olması, vardiyalı çalışma sistemleri ve uzun vardiya saatleri gibi nedenlerden dolayı çalışan bireylerin ruhsal travmaya uğrama riski yüksektir. Çalışma, sağlık çalışanlarının ikincil travmatik stres düzeylerinin belirlenmesi amacıyla yapılmıştır.

Yöntem: Kesitsel ve tanımlayıcı nitelikteki bu çalışma 212 sağlık çalışanı ile yapılmıştır. Veri toplama aracı olarak "Sosyodemografik Özellikler Formu" ve "İkincil Travmatik Stres Ölçeği" kullanılmıştır.

Bulgular: Sağlık çalışanlarının ikincil travmatik stres düzeyleri, toplam puan ve tüm alt boyutlarda dâhili birimlerde çalışan personelinin puan ortalamasının cerrahi birimlerde çalışan sağlık personeline göre daha yüksek olduğu bulunmuştur.

Sonuç: Sonuç olarak çalışmamızda sağlık çalışanların ikincil travmatik stres düzeyleri ortalamanın üzerinde bulunmuştur. Çalıştığı birim ne olursa olsun sağlık personelinin ikincil travmatik stres düzeyinin yüksek olduğu ve ikincil travmatik strese bağlı semptomların ortaya çıkmaması için çalışanların yaşadığı stresi azaltacak, dolaylı travma reaksiyonlarını en aza indirgeyecek girişimlere ihtiyaç duyulmaktadır. Ayrıca bu girişimleri belirleyecek yeni araştırmalar yapılması önerilmektedir.

Anahtar Kelimeler: Sağlık çalışanı, ikincil travmatik stres, hastane.

Introduction

Among the main problems that health workers are facing, we can speak of long working hours and workload, a low number of employees, a shift working system, long shift hours, work without rotation working, and continuous training needs[1]. There is a high risk of physical and psychological trauma for health workers, first aid personnel and especially for workers in emergency services[2].

Trauma refers to any kind of physical and spiritual experience that damages the existence of individuals. In cases where individuals are incapable of coping with these stimuli, they may have mental disorders such as substance use, anxiety, depression, personality disorders and post-traumatic stress disorder[3]. Behavior and emotions derived from intention to help the traumatized individuals compose secondary traumatic stress. In this respect, health workers who are in direct contact with individuals who experience traumatic cases are at risk for secondary traumatic stress[4]. Individuals exposed to secondary trauma may have difficulty maintaining their daily routine and may have symptoms similar to those of the individual who experienced trauma, such as avoidance, increased stimulation, or reanimation of events[5].

Studies undertaken indicate that health workers are subject to secondary trauma and have symptoms of secondary trauma[3,6,7]. In the study examining the level of secondary traumatic stress according to sociodemographic features, It was found that increasing the duration of professional experience also increased the level of secondary traumatic stress, and workers subject to the traumatic events had more secondary traumatic stress symptoms than workers who had not experienced[5]. When secondary traumatic stress levels were compared subject to occupational groups, it was determined that psychologists could be at less risk than lawyers, social workers, and ambulance officers[8]. In another study, a relationship was found between age and secondary traumatic stress exposure[2]. Another variable affecting traumatic stress levels was determined as the number of professional events experienced. When age and education groups were examined separately, it was found that the frightening events faced by health workers affected more negatively the young people, those with low education levels and those who had less experience in the profession[2]. In the study considering gender, it was found that women showed higher levels of posttraumatic stress symptoms than men[9]. In the study examining the relation of secondary traumatic stress with occupation, it was determined that 67.7% of physicians, 59.3% of emergency medical technicians, 30% of nurses, 53.8% of paramedics, 62.5% of health officers and 80% of anesthesia technicians were affected by a trauma that the individual they had established an assistance relation was subject to[3]. Studies carried out indicated that emergency service workers were exposed to secondary traumatic stress more than polyclinic workers and they had higher stress levels[9,10].

Secondary traumatic stress has been studied in various occupational groups such as emergency services, mental health workers, search and rescue workers, and social workers. However, there are no signs of studies on secondary traumatic stress levels experienced by the staff for the unit they are working at. Based on this determination, this study was conducted to compare secondary traumatic stress levels according to the unit where health workers work. This study was conducted in order to determine if secondary traumatic stress levels of health workers differed according to the unit they were working in.

Material and Method

Study Design

A cross-sectional and descriptive design was used.

Setting and Sample

This study was conducted in a state hospital in Burdur, Turkey. Convenience sampling methods were used. Fifteen health workers refused to participate because of limited time (7 %). The study

sample consisted of 212 health workers. The sample included those who volunteered to participate in the study.

Ethical Considerations

Written permission from Mehmet Akif Ersoy University Ethical Committee (GO 2018/43) and the Burdur State Hospital (03/04/2018- 23286918/806.02.02) was also obtained. The objective of the research was explained to the participants and written permission was received from those agreeing to participate in the research.

Data Collection Tools

Demographic Characteristics

This form is comprised of 13 questions regarding health workers' socio-demographic characteristics: age, gender, marital status, educational level, economic condition, profession, selecting willingly profession, total service year, child status, weekly working hours, night shift, affected by trauma and exposure to trauma.

Secondary Traumatic Stress Scale

The Secondary Traumatic Stress Scale (STSS)[11] is an easy to administer 17-item self-reported measure of secondary trauma. Respondents are instructed to read each item and indicate how frequently the item was true for them in the past 7 days using a five-choice, Likert-type response format ranging from 1 (never) to 5 (very often). The STSS is comprised of three subscales: intrusion (items 2, 3, 6, 10, 13), avoidance (items 1, 5, 7, 9, 12, 14, 17), and arousal (items 4, 8, 11, 15, 16). Scores for the full STSS (all items) and each subscale are obtained by summing the items assigned to each. The secondary traumatic stress level increases as the score increases. The STSS was reported to have high levels of internal consistency reliability and indicated evidence of convergent, discriminant, and factorial validity. Full STSS (α = .94), Intrusion (α = .83), Avoidance (α = .89), and Arousal (α = .85). (Bride et al, 2004). The reliability and validity of the Turkish version of the scale were conducted by Yıldırım et al.[12]. In this study, the reliability coefficient of the scale was determined as 0.87, Intrusion (α = .76), Avoidance (α = .69), and Arousal (α = .76).

Data Collection

The data was acquired by the researcher between April 2018 and February 2019 in a face-to-face interview method, explaining the aim of the research to the health workers who were part of the research sampling in the state hospital where the research was carried out. The inclusion criteria for health workers were that they were people who voluntarily accepted the research and were literate in Turkish.

Our study is based on an evaluation of data gathered from the institution's internal units (emergency medicine, infectious diseases, child diseases, dermatology, internal diseases, endocrinology and metabolism, physical therapy, gastroenterology, chest diseases, cardiology, neurology, psychiatry, child and adolescent mental health, radiology, pathology and family medicine), surgical units (anesthesia and reanimation, urology, pediatric surgery, brain surgery, plastic and reconstructive and aesthetic surgery, chest surgery, eye diseases, general surgery, otorhinolaryngology, gynecology and childbirth, cardiovascular surgery and orthopedics). For this reason, the unit where health workers work was assessed within the scope of these categories.

Data Analysis

Analysis was conducted using descriptive statistics tests using the Statistical Package for the Social Services SPSS 22.0 (SPSS Inc., Chicago, IL). A test of the hypothesis with p-value of <0.05 was considered significant. The Kolmogorov-Smirnov and Shapiro Wilk-W tests were used to determine whether the data had a normal distribution, and the data's normal distribution was examined. In the comparison of quantitative data, t independent test was conducted between two independent groups where the data were numerical. Mean and standard deviation values for descriptive statistics were used.

Results

It was determined that the average age of the health workers who participated in the study was 37.13 ± 8.91, 60.4% were women, 57.1% were married, 49.5% had bachelor's degree, 44.3% had equal income and expenses, 54.2% did not have children, and 70.3% were working as nurses. It was stated that 73,1% of health workers intentionally chose their professions, 79,2% worked 25-49 hours per week, 81.6% were participating in night shifts, 69.3% were affected by traumas patients were exposed to, 65.6% were not subject to any trauma and 51.4% of health workers were working in surgical units and their average year of working was 15.90 ± 9.22 years (Table 1)

Table 1. Demographic characteristics of health workers (n:212)

Demographic Characteristics	**$\bar{x}$ ± SD**	
Age (minimum: 21 – maximum: 65)	37.13±8.91	
Working year (minimum:1- maximum: 37)	15.90 ±9.22	
	n	**%**
Gender		
Female	128	60.4
Male	84	39.6
Marital status		
Married	121	57.1
Single	91	42.9
Educational level		
High School	24	11.3
Prebachelor	68	32.1
Bachelor	105	49.5

Master/Doctored	15	7.1
Economic status		
Income > expense	58	27.4
Income=expense	94	44.3
Income < expense	60	28.3
Child		
Have	97	45.8
Have not	115	54.2
Profession		
Nurse	149	70.3
Doctor	21	9.9
Radiology technician	34	16.0
Other	8	3.8
Selecting willingly Profession		
Yes	155	73.1
No	57	26.9
Weekly working hours		
1-24	7	3.3
25-49	168	79.2
50-70	34	16.0
71 and above	3	1.4
Do you keep the night shift?		
Yes	173	81.6
No	39	18.4
Have you been affected by the trauma your patients suffered?		
Yes	147	69.3
No	65	30.7
Have you been exposed to a trauma yourself?		
Yes	73	34.4
No	139	65.6
The unit you are working on?		
Internal Units	103	48.6
Surgical Units	109	51.4
Total	212	100

X̄: mean, SD: standard deviation

Of health workers taken within the scope of the study, the total score of the secondary trauma stress scale was determined as 44.07 ± 10.55, subscale averages respectively were determined as 12.39 ± 3.40 unintentionally being effected sub-dimension average, 18.01 ± 4.88 for avoiding sub-dimension average and 13.66 ± 4.12 for stimulation sub-dimension average (Table 2).

Table 2. Scores of secondary traumatic stress level

Secondary Traumatic Stress Level	Minimum	Maximum	$\bar{x}$ ±SD
Intrusion (Items 2, 3, 6, 10, 13)	5	25	12.39 ± 3.40
Avoidance (Items 1, 5, 7, 9, 12, 14, 17)	7	31	18.01 ± 4.88
Arousal (Items 4, 8, 11, 15, 16)	5	25	13.66 ± 4.12
Total	17	79	44.07±10.55

X̄: mean, SD: standard deviation

According to the internal and surgical units, where the health workers were employed within the scope of the study, a statistically significant difference was found in terms of gender, education level, child status, and duty ($p<0.05$), whereas in terms of the marital status, economic situation, the situation of choosing the status of the profession voluntarily, weekly working hours, the situation of being on night guard duty, and the situation of getting affected by the traumas the patients were exposed to, there was no statistically significant difference ($p > 0.05$) (Table 3). There was no significant difference in terms of the average age group of the health workers ($p > 0.05$), but when evaluated in terms of the study year, it was found that the working year of the medical staff working in the surgical units was higher than the health workers working in the internal units, and the difference was statistically significant ($p<0.05$) (Table 3).

When the average scores of the secondary traumatic stress scale total score and sub-dimension scores of the health workers were compared, there was a significant difference between the two groups in terms of the avoidance and arousal sub-dimensions and total score averages ($p <0.05$), whereas there was no significant difference in the involuntary affection sub-dimension. ($p >0.05$). It was found that the average score of the workers working in the internal units was higher in the total score and all sub-dimensions (Table 3).

Table 3. Demographic characteristics and scores of secondary traumatic stress level according to the different units

Demographic characteristics	**Internal Units (n=103)**	**Surgical Units (n=109)**	**Statistical Analysis**
	n %	**n %**	
Gender			
Female	48(22.6)	80(37.7)	χ^2=15.891
Male	55(25.9)	29(13.7)	p=.000
Marital status			
Married	52(24.5)	69(32.5)	χ^2=3.551
Single	51(24.1)	40(18.9)	p=.071
Educational level			
High School	9(4.2)	15(7.1)	
Prebachelor	24(11.3)	44(20.8)	χ^2=10.573*
Bachelor	61(28.8)	44(20.8)	p=.014
Master/Doctored	9(4.2)	6(2.8)	
Economic status			
Income > expense	29(13.7)	29(13.7)	χ^2=0.67
Income=expense	45(21.2)	49(23.1)	p=.967
Income < expense	29(13.7)	31(14.6)	
Child			
Have	33(15.6)	64(30.2)	χ^2=15.184
Have not	70(33.0)	45(21.2)	p=.000
Profession			
Nurse	73(34.4)	76(35.8)	
Doctor	16(7.5)	5(2.4)	p=.014**
Radiology technician	12(5.7)	22(10.4)	
Other	2(0.9)	6(2.8)	
Selecting willingly Profession			
Yes	70(33.0)	85(40.1)	χ^2=2.705*

No		33(15.6)	24(11.3)	p=.121
Weekly working hours 1-24 25-49 50-70 71 and above		 4(1.9) 77(36.3) 19(9.0) 3(1.4)	 3(1.4) 91(42.9) 15(7.1) 0(0.0)	 p=.202**
Do you keep the night shift? Yes No		 86(40.6) 17(8.9)	 87(41.0) 22(10.4)	χ^2=.477* p=.595
Have you been affected by the trauma your patients suffered? Yes No		 71(33.5) 32(15.1)	 76(35.8) 33(15.6)	χ^2=.016 p=1.000
Have you been exposed to a trauma yourself? Yes No		 40(18.9) 63(29.7)	 33(15.6) 76(35.8)	χ^2=1.719 p=.197
		Internal Units (n=103)	**Surgical Units (n=109)**	**Statistical Analysis**
		$\bar{X}$ **±SD**	$\bar{X}$ **±SD**	
Age		36.01±9.00	38.19±8.74	t=-1.783 p=.076
Years of service (years)		14.31±9.66	17.40±8.55	t=-2.470 **p=.014*** **
Secondary Traumatic Stress Scale	**Intrusion**	12.51±3.58	12.28±3.24	t=.491 p=.624
	Avoidance	18.91±5.03	17.16±4.60	t=2.639 **p=.009*** **
	Arousal	14.25±4.34	13.11±3.84	t=2.029 **p=.044*** **
	Total	45.67±11.32	42.55±9.58	t=2.169 **p=.031*** **

* Yates correction was made because the number is under 25. ** Corrected Fisher χ2 was used for that number expected under 5. ***p < 0.05, χ^2: chi-square test, t: Independent-Samples T Test

Discussion

When the total score and sub-dimension average scores of the secondary traumatic stress scale of health workers were compared with respect to the unit they work, a significant difference was found between the two groups in terms of avoidance and arousal sub-dimension and total score ($p < 0.05$), whereas there was no significant difference between the health workers working in internal and surgical units in the involuntary affection sub-dimension ($p > 0.05$). As a result, the total score and all sub-dimension averages of the workers working in the internal units were found to be higher. In summary, it is thought that the health workers working in the internal units are more affected by secondary traumas and this may be due to the fact that they spend more time with patients who are applying to the internal units, internalizing the situation and being affected more.

When the studies were examined, it was seen that the variables that determined the secondary traumatic stress level were gender, exposure to trauma, daily working hours, conditions of the workplace, working time in the profession, socioeconomic status, education level, age, social support perception, coping strategies and similar variables[3,9,10,13-15]. When our study is evaluated in terms of these variables, according to the internal and surgical units, where the health workers work, there is a statistically significant difference in terms of gender, education level, child status and duty, whereas in terms of the marital status, economic situation, the situation of choosing the status of the profession voluntarily, weekly working hours, the situation of being on night guard duty, the situation of getting affected by the traumas the patients expose and exposed to trauma, there was no statistically significant difference. When the result of our study is compared with the literature, they are similar in terms of gender, education level, duty, etc., in terms of effecting secondary traumatic stress level[3,14,15], but it differs in terms of the variables like age, marital status, economic situation, the choice of the status of the profession voluntarily, weekly working hours not affecting the secondary traumatic stress. However, there are studies showing that variables such as age, time spent working, and time of work with trauma victims have no significant relationship with secondary traumatic stress[4,8]. It is thought that these differences can be derived from different sample groups.

When the health workers were evaluated in terms of the average age, there was no significant difference in terms of the unit they were working in ($p > 0.05$), but when evaluated in terms of the working year, it was found that the working year of the medical staff working in the surgical units was higher than the health workers working in internal units and the difference was statistically significant ($p < 0.05$). In our study, although the health workers working in the surgical units were more than the ones working in the internal units, the secondary traumatic stress levels were lower in the total score and sub-dimensions. It is thought that the reason for this is that due to the high number of years of work, they learn the mechanisms of coping with stress over time and they are more likely to adapt because they encounter more cases, them getting affected less by the traumas patients experience, or they are more desensitized. It is thought that observing that the patients recovered after the emergency intervention in the surgical units may be a criterion that will reduce the secondary traumatic stress levels of the health workers, therefore the workers working in the surgical units will experience less traumatic stress.

In our study, it was found that 34.4% of the employees had been exposed to trauma. When evaluated according to the unit they are working in, it was thought that 18.9% of the employees working in the internal units were exposed to trauma and 15.6% of those working in the surgical units were exposed to trauma. It is thought that health workers working in internal units may be exposed to more trauma because the patient's condition does not require an urgent surgical procedure, so they have more communication with the patients and their relatives, and

internalization because they spend more time with the trauma they experienced. Studies that the workers were evaluated according to the unit they work in could not be reached, but in terms of secondary traumatic stress, firefighters, police officers, child protection service workers, emergency rescue teams, emergency services, and ambulance personnel were found to be in the risk group due to their profession.[15-17]. Kahil[4], in his study with professional and voluntary aid workers, found that professional help workers experienced more traumatic stress symptoms than volunteer workers. Besides, traumatic stress symptoms of the participants who have been working in their profession for 11-15 years have been found to be higher than those of the participants who have been continuing their profession for 1-5 years. Traumatic stress symptoms of patients who experienced traumatic events were found to be higher than those who did not experience a traumatic life event[4]. In a study performed with child protection service workers, 37% of the employees experienced clinically significant secondary traumatic stress symptoms. Moreover, it was found that the stress levels of the workers who were working with children who had been attacked during working hours were higher and those with long working hours experienced more secondary traumatic stress[18]. In the study, no relationship was found between secondary traumatic stress and a history of past trauma. Despite these findings, there were negative cognitive changes in individuals due to trauma exposure. After psychological debriefing sessions, secondary traumatic stress reactions were eliminated within one week and negative changes were observed in follow-up interviews after six weeks[13]. In Turkey, Karakaya et al.[19] in their research conducted after three and a half years after the Marmara earthquake, no difference was found between children exposed to the earthquake and children who hadn't been exposed to an earthquake but witnessed it via television in terms of the severity of secondary traumatic stress symptoms[9]. In our study, it was found that 69.3% of the health workers were affected by the trauma that the patients were exposed to, nevertheless, 65.6% of them were not exposed to any trauma. There was no difference in terms of getting affected by trauma or getting exposed when evaluated in terms of the working unit they work in. The fact that health workers exposing to any trauma by patients or their relatives is quite unfortunate, although the 34.4% exposure rate is quite sad. On the other hand, since the rate of being affected by the traumas experienced by the patients is 69.3%, the reason for remaining workers not getting affected and inspecting their methods of coping can be another research topic.

In the studies conducted in the literature, the average scores of secondary traumatic stress levels were found to be similar to the results of our study (44.07 ± 10.55). Accordingly, Brida & Kintzle[15] in their study on consultants working with drug addicts, found that the average score of secondary traumatic stress level is 31.2 (12.3), Shah et al.[20] in their study on help workers, found that the average score of secondary traumatic stress level is 41.44 (7.10), Kahil[4], in his study with professional and voluntary help workers found that the average score of secondary traumatic

stress level is 35.35 (13.25). In the study, it was found that professional help workers had higher averages than volunteer workers. The reason for this is interpreted as the fact that the professionals intervened when the traumatic experience of the individual just occurred (like an ambulance worker intervening in a traffic accident at the scene or a professional search and rescue worker rescuing an injured person under a wreck)[4]. This result explains why the average of the health professionals is high in our study.

In our study, in terms of the effect of socio-demographic variables on secondary traumatic stress level, there was no difference in terms of marital status, being on night guard duty, getting affected by the traumas the patients were exposed to, financial situation, working hours. While it was found that there was a difference between the total score and avoidance from traumatic stress sub-dimensions and arousal sub-dimension groups according to having a child, there was no difference in the size of the involuntary effect dimension. The reason for this is that the individual has internalized the trauma, has empathy, and is more affected by the state of having a child. Although there were differences between the groups in the sub-dimensions of the total score, avoidance, and arousal in the voluntary profession selection sub-dimension, there were no differences between the groups in the sub-dimension of involuntary affection, and there was no difference between the sub-dimensions, although there was a difference between the average of the total score among the groups when evaluated in terms of education level. When evaluated in terms of profession, there were no differences between the groups in terms of the total score, avoidance, and arousal sub-dimensions, but only differences were found in the involuntary sub-dimension among the sub-dimensions.

According to the result of the study conducted by Devilly et al.[21] where they evaluated secondary traumatic stress in health professionals and found that exposure of the patient to trauma did not affect the secondary traumatic stress level of health workers. In our study, which is different from the results of the study and compatible with the literature, the average secondary traumatic stress score was found to be high despite the low number of health workers exposed to trauma. The difference between health workers who were exposed to trauma and not exposed to trauma in total score, involuntary affection, and arousal sub-dimension was found to be statistically significant. When the content of the matters in sub-dimensions was inspected, it was found that the health workers who had a high average score were affected by the experiences of the patient, perceived them as if they are again experiencing the trauma that they had experienced, felt nervousness, experienced concentration problems, and were scared of experiencing bad things. All of these adverse events are thought to adversely affect secondary traumatic stress levels of health workers. It is known that the health workers, who intervene in the lives of the traumatized, give care, and are exposed to the traumatic stories of the patients are negatively affected on the psychological, emotional, and cognitive sides[,22-24].

Conclusion

Having a traumatic life in an individual can affect not only the individual who is directly exposed to the experience but also the individuals that whom the individual communicates. This study aims to examine the secondary traumatic stress levels experienced by professionals who intervene with the individuals who have had traumatic lives during or after the trauma according to the units they are working in. In conclusion, in our study, secondary traumatic stress levels of health workers were found to be higher than the average. The secondary traumatic stress levels of those working in internal units were higher than those working in surgical units. Regardless of the unit, the secondary traumatic stress level of the health workers is high and it is thought that attempts that will reduce the stress experienced by the employees in order to prevent the symptoms related to secondary traumatic stress, will minimize the indirect trauma reactions, are needed and new studies that will determine these attempts should be conducted.

REFERENCES

1. Ardahan M, Alp FY. Patient safety and patient safety role in ensuring the health of workers and managers. *Acıbadem University Journal of Health Sciences*. 2015;6(2):85-88.
2. Kılıç C, İnci F. Traumatic stress in emergency medical technicians: protective role of age and education. *Turkish Journal of Psychiatry*. 2015;26(4):236-241.
3. Pak MD, Özcan E, Çoban Aİ. Secondary traumatic stress level and psychological resilience of emergency service staff. *Journal of International Social Research*. 2017;10(52): 629-644.
4. Kahil A. An Assessment of Secondary Traumatic Stress in Those Who Engage in a Helping Behavior With People Who Have Traumatic Life Events [master's thesis]. İstanbul, Türkiye: Ufuk University Institute of Social Sciences; 2016.
5. Kahil A, Palabıyıkoğlu NR. Secondary traumatıc stress. *Current Approaches in Psychiatry*. 2018;10(1):59-70.
6. Zara A, İçöz FJ. Secondary traumatic stress in mental health workers in Turkey. *Clinical Psychiatry*. 2015;18:15-23.
7. Morrison LE, Joy JP. Secondary traumatic stress in the emergency department. *Journal of Advanced Nursing*. 2016;72(11):2894-2906.

8. Gürdil G. Üstlenilmiş Travma ve İkincil Travmatik Stresin Travmatik Yaşantılara Müdahale Eden Bir Grup Üzerinde Gestalt Temas Biçimleri Çerçevesinde Değerlendirilmesi [doctoral thesis]. Ankara, Türkiye: Ankara University Institute of Social Sciences; 2014.

9. Haksal P. The Investigation of Secondary Traumatic Stress Levels Observed in Emergency Service Personnel in Terms of Dissociation Level, Perceived Social Support and Coping Strategies [doctoral thesis]. Ankara, Türkiye: Hacettepe University Institute of Social Sciences; 2007.

10. Oflaz F, Hatipoğlu S, Aydin H. Effectiveness of psychoeducation intervention on post-traumatic stress disorder and coping styles of earthquake survivors. J*ournal of Clinical Nursing*. 2008;17(5):677-687.

11. Bride BE, Robinson MM, Yegidis B, Figley CR. Development and validation of the secondary traumatic stress scale. *Research on Social Work Practice*. 2004;14(1):27-35.

12. Yıldırım G, Kıdak LB, Yurdabakan İ. Secondary traumatıc stress scale. *Psychiatry*. 2018;19(1):45-51.

13. Ortlepp K, Friedman M. Prevalence and correlates of secondary traumatic stress in workplace lay trauma counselors. *Journal of Traumatic Stress*. 2002;15(3):213-222.

14. Büyükbodur AŞ. Examining of Psychological Resilience and Secondary Traumatic Stress on Social Workers [doctoral thesis]. Ankara, Türkiye: Yıldırım Beyazıt University Institute of Health Sciences; 2018.

15. Bride B, Kintzle S. Secondary traumatic stress, job satisfaction, and occupational commitment in substance abuse counselors. *Traumatology*. 2011;17(1):22–28.

16. Regehr C, Hemsworth D, Hill J. Individual predictors of posttraumatic distress: A structural equation model. *Canadian Journal of Psychiatry*. 2001;46(2):74-79.

17. Roy-Byrne P, Smith WR, Goldberg J, Afari N, Buchwald D. Post-traumatic stress disorder among patients with chronic pain and chronic fatigue. *Psychological Medicine*. 2004;34:363-368.

18. Cornille TA, Meyers TW. Secondary traumatic stress among child protective service workers: prevalence, severity and predictive factors. *Traumatology*. 1999;5(1):15-31.

19. Karakaya I, Ağaoğlu B, Coskun A, Şişmanlar ŞG, Yıldız Ö. The Symptoms of PTSD, depression and anxiety in adolescent students three and a half years after the Marmara Earthquake. *Turkish Journal of Psychiatry*. 2004;15(4):257-263.

20. Shah A, Garland E, Katz C. Secondary traumatic stress: Prevalence in humanitarian aid workers in India Siddharth. *Traumatology*. 2007;13(1):59-70.

21. Devilly GJ, Wright R, Varker T. Vicarious trauma, secondary traumatic stress or simply burnout? Effect of trauma therapy on mental health professionals. *Australian and New Zealand Journal of Psychiatry*. 2009;43(4):373-85.

22. Bercier ML, Maynard BR. Interventions for secondary traumatic stress with mental health workers: A systematic review. *Research on Social Work Practice*. 2015;25(1):81-89.

23. Bride B. Prevalence of secondary traumatic stress amongst social workers. *Soc Work*. 2007;52(1):63–70.

24. Sodeke-Gregson EA, Holttum S, Billings J. Compassion satisfaction, burnout, and secondary traumatic stress in UK therapists who work with adult trauma clients. *Eur J Psychotraumatol*. 2013;4:1-10.