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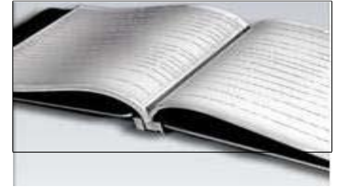

A FORECAST ON THE POST-TRAUMATIC DEVELOPMENT OF HEALTHCARE WORKERS

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Abstract

Traumatic events refer cases in which people come across with fear, helplessness, weakness, vulnerability. Along with traumatic events, a person experiences fear and helplessness in the extreme. During a traumatic event, the person may be irresistibly helpless. Some occupational groups are constantly confronted with traumatic events as a result of their work. Health workers, police officers, firefighters, civil defense forces and other some occupational groups encounter traumatic events because of their works. The purpose of this study is to determine the psychological problems experienced by emergency health workers and how they cope with these problems. For this purpose, "Hopelessness Scale, Locus of Control Scale, Problem Solving Inventory, Perceived Social Support Scale, Post-Traumatic Growth Scale, Peritraumatic Dissociative Experiences Questionnaire, Post-Traumatic Stress Diagnostic Scale, Beck Depression Inventory" were used to determine psychological statements. The research was conducted in Erzincan city, which covers the employees of Mengücek Gazi Education-Research Hospital and Emergency Health Services Directorate of Private Neon Hospital. The sample was selected among the teams serving in the ambulances from the Emergency Health Services Branch Directorate. The scales sent to the stations were applied to a total of 400 emergency health workers.

Keywords: Trauma, Traumatic Stress, Post-traumatic growth, Healthcare workers

SAĞLIK ÇALIŞANLARININ TRAVMA SONRASI GELİŞİMLERİ ÜZERİNE BİR YORDAMA

Öz

Travmatik olaylar, insanların korkuları, çaresizlikleri, güçsüzlükleri, kırılganlıklarıyla yüzleştikleri olaylardır. Travmatik olaylar kişiye uç noktada korku ve çaresizlik yaşatır. Travmatik olay sırasında kişi karşı konulamaz bir güç tarafından çaresiz bırakılır. Bazı meslek grupları işleri gereği travmatik yaşantılarla sürekli yüz yüze gelmektedirler. Sağlık çalışanları, polisler, itfaiye çalışanları, sivil savunma ekipleri ve diğer meslek grupları meslekleri gereği travmatik olaylarla karşılaşan meslek gruplarıdır. Bu çalışmada, acil sağlık çalışanlarının yaşamış oldukları ruhsal sorunlar ve bu sorunlarla nasıl baş ettiklerini ortaya çıkarmak amaçlanmaktadır. Bu amaçla ruhsal belirtileri saptamak için "Umutsuzluk Ölçeği, Kontrol Odağı Ölçeği, Problem Çözme Envanteri, Algılanan Sosyal Destek Ölçeği, Travma Sonrası Büyüme Ölçeği, Travma Sonrası Disosiyatif Yaşantı Ölçeği-R, Travma Sonrası Stres Tanı Ölçeği, Beck Depresyon Envanteri" kullanılmıştır. Erzincan ili, Mengücek Gazı Eğitim ve Araştırma Hastanesi ve Özel Neon Hastanesi, Acil Sağlık Hizmetleri Şube Müdürlüğü çalışanlarını kapsayan bir araştırma yürütülmüştür. Örneklem, Acil Sağlık Hizmetleri Şube Müdürlüğü çalışanları arasında, ambulanslarda görevli ekiplerden seçilmiştir. İstasyonlara gönderilen ölçeklerden toplam 400 acil sağlık çalışanına uygulanmıştır.

Anahtar Kelimeler: Travma, Travmatik Stres, Travma sonrası büyüme, Sağlık çalışanları

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1. INTRODUCTION

Traumatic events refer cases in which people come across with fear, helplessness, weakness, vulnerability. DSM 5 and APA (2013) describe trauma as: "Death, serious injury or sexual violence or exposure to threats through one of the following ways: (1) Experiencing directly traumatic events. (2) Witnessing the harm of other people. (3) Learning that a close family member or a close friend experience traumatic events. For this, if a family member or a friend is in danger of death, the events must be violent or the result of an accident. (4) Repetitive or extreme exposure to disturbing details of traumatic events. (e.g., people who are present in first aid and who collect human remains and police officers who are repeatedly exposed to the details of child abuse). (Note: A4 does not include exposure through electronic media, television, movies, and pictures unless this is the case at work). While this description is useful, the condition that trauma is limited to "death, serious injury or exposure to sexual violence or threats" has been criticized on account of the fact that many events may be traumatic, even if they do not involve death or injury. Previous DSM III-R (APA, 1987) described threats to psychological integrity as the valid form of trauma. Since DSM V does not define events, which are very shocking and but do not threaten life, as traumatic -for example, excessive emotional abuse, significant losses or separations, humiliation or abasement, sexual experiences (not due to physical violence) that occur through coercion -, it undoubtedly reduces the prevalence of the real trauma in the general population. Also, since A Criteria is a prerequisite for the diagnosis of Post-Traumatic Stress Disorder (PTSD) and Acute Stress Disorder (ASD), some people with significant post-traumatic stress are less likely to be diagnosed with stress disorder (Briere and Scott, 2016, pp. 3-4).

Traumatic events cause fear and desperation in the extremities. During a traumatic event, the person is remained helpless by an irresistible force. The traumatic event causes the control sensation of the person, the ability to make the connection and to interpret events to fail (Türksoy, 2003). The person with paralyzed ability to cope with events begins living with the problem of adaptation to the normal life. Normal responses to the unusual situation in the first period are described as efforts to adapt to this situation. The person might be experienced or witnessed a real death or death threat. In this case, the person becomes overly fearful, helpless or terrified. Repeated remembrance of the traumatic event results in permanent avoidance from the stimuli accompanied traumatic event and reduction in the overall response to these stimuli. Significant arousal signs occur after the traumatic event. If it lasts at least two days and up to four weeks, it can be defined as acute stress disorder. Symptoms that last longer than one month refer to Post-traumatic Stress Disorder. Symptoms lasting longer than three months are the sign of Chronic Post-traumatic Stress Disorder. If it is initiated after six months, it can be defined as Delayed Post-Traumatic Stress Disorder (DSM V, 2013).

Some occupational groups are constantly facing traumatic experiences due to their work. The firefighters (Beaton et al., 1999), mental health specialists (Hesse, 2002), police officers (Alexander ve Wells, 1991), physicians (Lundin and Bodegard, 1993) and search and rescue workers (Chang, Lee, Connor ve Davidson, 2003) face traumatic events due to their jobs.

Ambulance workers are the first to intervene to the people whose lives are threatened and transfer them to the nearest health facility. The most frequently encountered traumatic events are child deaths, social tragedies, human-induced attacks such as rape and torture, seeing a dead body or body part, and removing broken limbs or bodies from the accident site. While interfering with such events, health workers who witness to traumatic events also become more susceptible to problems such as Acute Stress Disorder, Post-Traumatic Stress Disorder, Major Depression, psychosomatic disorders and substance abuse (Erkaya, 2003).

Even if they are not directly exposed to the traumatic events, it is thought that health personnel who are in emergency medical service, which is one of the groups involved in aid efforts, may show signs of anxiety and depression towards death following such incidents. The high likelihood of people threats in aid efforts, being directly and continually witnessing the traumatic events and effects, exposure to the life-threatening events, interventions to save the lives of the victims, taking part in the rescue of severely injured and inanimate bodies increase traumatic stress symptoms in healthcare workers who provide emergency medical service (Fullerton, Ursano and Wang, 2004; North et al., 2002). The perception of the severity of the threat to which the individual or others is exposed is an essential determinant of the possible responses that are expected to emerge later. The more people perceive the situation as threatening, the more intense anxiety they will experience.

Emergency rescue teams often face traumatic deaths during emergency rescue operations, helping people who suffer a disaster and experience life threats. These events can cause a variety of psychological and psychosocial stress reactions for many emergency rescue staff. Studies show that psychiatric disorders such as physical and psychosomatic disturbances, depression, substance abuse can occur after such traumatic stress-generating events, also show that alcohol and substance use rates in these people are higher than the general population and that in some cases post-traumatic stress disorder develops and thus, exhaustion may be initiated. Especially the healthcare staff working in the emergency medical service where the traumatic deaths are mostly seen and the first interventions are performed may be affected adversely by anxiety and depressive mood caused by deaths and also these traumas may make their working life inefficient. These states were reported to cause the decrease of the interest of the health personnel towards their occupation (Erkaya, 2003; Sönmez, 2006).

Taking all this into consideration, this study aimed to reveal the psychological problems experienced by emergency health workers and how they cope with these issues. It was also aimed to reveal the prevalence of traumatic occupational events arising from working conditions of the emergency medical team, frequency of encountering traumatic circumstances throughout life, witnessing to traumatic events and problems originated from work life.

2. METHODS AND FINDINGS

The research was conducted in Erzincan city, which covers the employees of Mengücek Gazi Education-Research Hospital and Emergency Health Services Directorate of Private Neon Hospital. In the following sections, methods and findings related to this work are reported.

2.1. USED SCALES

Within the scope of this study, various psychological scales were used to measure the psychological variables explained in the above sections. In this research, diagnostic categories such as Acute Stress Disorder, Post-Traumatic Stress Disorder, Dissociative Disorder were utilized. Various symptoms emerging after trauma are measured as continuous variables through scales. Therefore, participants who showed post-traumatic stress symptoms were investigated regarding how they reacted to stress, but not examined if they showed any psychological disorder. Psychological variables and scores measured by the scales are shown in Table 1.

Table 1. Psychological Variables Measured by Scales and Aspects of Scoring

Scale	Measured Psychological Variable	What Does Increasing Ranks Mean?
Event Severity Subscale	Severity of traumatic event	Too much violence
Event Effect Subscale	The effect of traumatic event on life	Too much influence
Post-Traumatic Stress Symptoms Subscale	The level of post-traumatic stress symptoms	Symptom level is high
Hopelessness Scale	Negative expectations for the future	Level of hopelessness is high
Locus of Control Scale	The position of the generalized control expectations on the internality-externality dimension	Person is orientated by external control center
Problem Solving Inventory	Self-perception on the problem-solving skills	Person perceives himself as negative
Perceived Social Support Scale	Social support from family, friends and	The level of perceived social support is high

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	private individual	
Beck Depression Inventory	Depressive mood level	The level of depressive mood is high
Post-Traumatic Growth Scale	Post-traumatic growth	High level of growth
Peritraumatic Dissociative Experiences Questionnaire	Level of dissociation when event occurs	High level of dissociation

Psychological variables measured by the scales and the average points taken by all scales are presented in Table 2.

Table 2. Points taken by Participants from Scales

Scale	*Average (SD) Ranj (N=400)*	*Possible Highest Score*
Event Severity Subscale	2.48 (1.54) 0-6	6
Event Effect Subscale	2.34 (2.48) 0-9	9
Post-traumatic Growth	37.57 (25.45) 0-105	105
Dissociation	6.11 (6.57) 0-32	32
Hopelessness	4.15 (4.11) 0-20	20
Social support	66.80 (12.38) 12-84	84
Post-Traumatic Symptoms	8.18 (8.87) 0-51	51
Locus of Control	9.89 (3.34) 2-21	23
Problem solving	84.29 (19.96) 37-154	210
Beck Depression Inventory	8.24 (7.71) 0-53	63

2.1.1. Hopelessness Scale

The Hopelessness Scale is a 20-item self-report scale developed by Beck, Lesker, and Trexler (1974) to measure the negative future expectations of people. It can be applied to both adolescents and adults. People can answer the questions that are appropriate for them with "yes" and inappropriate questions with "no." "Yes" response for 11 of the items (2, 4, 7, 9, 11, 12, 14, 16, 17, , 19) and "no" answer for 9 of the items (1, 3, 5, 6, 8, 10, 13, 15) are 1 point. The score of the scale ranged from 0 to 20. The high score indicates that the level of hopelessness is high. The internal consistency coefficient of the original scale was reported as α = .93 (KR-20 method) (Beck, Lesker and Trexler, 1974). It was reported that for the participants' hopelessness evaluations, the scale had a correlation of 0.74 for the hospital sample and 0.72 for the suicide attempt patients and in the factor analysis, three sub-dimensions (emotional, motivational and cognitive aspects of hopelessness) were reported (Beck, Lesker ve Trexler, 1974).

The adaptation work of the scale for Turkey was carried out by various researchers (Durak, 1994; Seber, 1991). The researchers report internal consistency (Cronbach Alfa) at the level α = .86 and α = .83 (Durak, 1994, Seber, Dilbaz, Kaptanoglu and Tekin, 1993). It is seen that sufficient work has been done about the validity of the scale. Seber (1991) reported that the correlation coefficient of Beck Depression Inventory was .65, and Durak (1994) reported .69. For more detailed information on the various psychometric properties of the scale and its use in Turkey, see Savaş and Şahin (1997).

2.1.2. Locus of Contol Scale

The Rotter's Internal-External Locus of Control Scale developed by Rotter (1966) is used to determine the position of the individual's control expectations on the internality-externality dimension. It was investigated whether people perceive events that they encounter as a result of own behavior or as a result of external forces. It is stated that it is appropriate to apply it to people over 17 years of age. 6 of 29 items of the scale are not scored because they are filling material (1, 8, 14, 19, 24, 27). There are clauses in each item, which form the "a" and "b" options. In some items (2, 6, 7, 9, 16, 17, 18, 20, 21, 23, 25, 29), option "a"; in some items (3,4, 5, 10, 11, 12, 13, 15, 22, 26, 28), option "b" is 1 point. The total score range of the scale is between 0-23. The rising total points indicate that the person has an external control focus. The internal consistency coefficient of the original scale was reported as α= .77 and that consistency of the two-half test was changed between .65 and .79 (Rotter, 1966). In the researches using the test re-test method, it was indicated that the reliability coefficient changed between .49 and .83 (Savaşır and Şahin, 1997). It was emphasized that in the studies about the validity of the scale, the factor structure was formed to represent two dimensions. It was reported that the correlation coefficients vary between .25 and .55 with different locus of control scales (Savaşır and Şahin, 1997). The adaptation of the Locus of Control Scale to the Turkish language was made by Dağ (1991). The coefficient of internal consistency of the scale was determined as α= .71. When the test-retest method was used, it was reported that the

reliability coefficient was .83. It was reported that the results of the factor analysis give similar results to the original scale. In studies using various methods to determine the criterion-related validity of the scale, the correlation coefficients were reported as -.29 (Rosenbaum's Learned Resourcefulness Scale), .21 (with the overall symptom score of SCL-90-R) and .69 (with the rating form on a semi-structured interview). For more detailed information on the psychometric properties of the scale, see Sahin and Savaşır (1997).

2.1.3. Problem Solving Inventory

Problem Solving Inventory, Form-A is a scale that was developed by Heppner and Petersen (1982) to measure self perception of individual's problem solving ability. It is known to be appropriate for applying to the adolescents and the adult. The scale consisting of 35 items is a Likert type, scored as 1-6. People are asked how often they behave like in the scale items. Each question is between 1 and 6 points. Some items (9, 22, 29) are not scored and some items are scored inversely (1, 2, 3, 4, 11, 13, 14, 15, 17, 21, 25, 26, 30, 34). The score range for the scale is 32-192. The high score indicates that the person perceives himself or herself insufficient in terms of problem solving skills. The internal consistency coefficient, was reported as α=.90 in the original study of the scale. According to the test-retest method, it was pointed out that the reliability coefficients of subtests of the scale change between .83 and .89 and the total score of the scale was correlated to the problem solving at the level of -.46. and also correlated to the level of satisfaction from problem-solving skills at the level of -42. In the factor analysis, three sub-dimensions were identified: confidence in problem-solving ability, approach-avoidance and personal control. Internal consistencies of these subfactors were reported to be .85, .84 and .72, respectively (Heppner and Petersen, 1982). Adaptation of Problem Solving Inventory to Turkey was done by Şahin, Şahin and Heppner (1993). It was noticed that the internal consistency coefficient of the scale was found as α=.88 and that the split-half reliability was .81. It was reported that there was a correlation of .33 between Beck Depression Inventory and the scale and .45 between the total score of State-Trait Anxiety Inventory-Trait Anxiety Sub-Test (STAI-T) and the scale. The scale distinguishes between dysphoric and non-dysphoric groups and anxious and non-anxious groups at the rate of 90% and 80%, respectively. Six sub-factors were reported in the factor analysis: hasty approach, thinking approach, avoidant approach, estimator approach, self-confident approach and planned approach. The internal consistencies of these subfactors were respectively α = .78, α = .76, α = .74, α = .69, α = .64 and α = .59. For more detailed information on the psychometric properties of the scale, see Sahin and Savaşır (1997).

2.1.4. Perceived Social Support Scale

Multidimensional Scale of Perceived Social Support developed by Zimet, Dahlen, Zimet and Farley (1988) to measure perceived social support, which consists of 12 items and is in Likert form. Individuals respond the items of social support which are perceived to be taken from three different sources (family, friends, special someone) with scores of 1 to 7. The high score indicates that the person perceives the received social support as sufficient. Arkar and Eker (1995) state that the original scale is satisfactory in terms of both validity and reliability. The

adaptation of the scale to Turkish was done by Arkar and Eker (1995). The authors reported that the internal consistency coefficient of the scale changed between α = .77 and α = .88 in their study conducted in different sample groups. Internal consistency coefficient of the subscales ranged from α = .78 to α = .91. The factor structure of the scale is similar to that of the original. As in the original scale, items 1, 2, 5, 10 refer to a special person, items 3, 4, 8, 11 refer to family members, and items 6, 7, 9, 12 12 refer to friend subfactor. Beck Depression Inventory, State-Trait Anxiety Inventory (STAI) and correlation coefficients belonging to the total scores obtained from different sample groups indicate that the scale-related validity is sufficient. For more detailed information on the Perceived Social Support Scale, see Arkar and Eker (1995).

2.1.5. Post-traumatic Growth Inventory

Post-traumatic Growth Inventory developed by Tedeschi and Calhoun (1996) is a 21-item scale. Scale is a Likert type, scored between 0 and 5. The range of the scale is 0-5. The high score indicates that person has experienced a high level of the growth after traumatic experience. In the study in which the original scale was developed (Tedeschi and Calhoun, 1996), the internal consistency was reported as α = .90. The internal consistency of the subscales ranged from α = .67 and α = .85. In the test-retest reliability study, the correlation coefficient was reported as .71. It is stated that the scale had a positive correlation with variables such as optimism, religious participation, extroversion, openness to experience, compatibility and conscientiousness. In the factor analysis, five sub-dimensions were identified: positiveness in interpersonal relationships, changes in self-perception, understanding of life's value, recognition of new options, development in belief system. The scale was carried out by Dürü (2006). The reliability of the Post-Traumatic Growth Inventory was assessed by the Cronbach Alpha method. The internal consistency coefficient was calculated as α = .93. In the preliminary study, the correlation coefficient was found to be .23 between Traumatic Growth Inventory and Peritraumatic Dissociative Experiences Questionnaire and .26 between Traumatic Growth Inventory and Impact of Event Scale. In addition, in this study, the correlation coefficient for the post-traumatic stress symptoms subscale that is discussed in section 2.2.7 is .21 and this coefficient is almost meaningful (p = .06). The validity of the structure of the scale was examined by factor analysis method. In a five-factor solution, which was understood to be the most appropriate among the various solutions, 15 of the 21 items were loaded into the specified factors on the original scale. This five-factor solution accounts for 67.84% of the variance.

2.1.6. Peritraumatic Dissociative Experiences Questionnaire

The first form of the Peritraumatic Dissociative Experiences Questionnaire was developed by Marmar, Weiss and Metzler (1997). However, it is noted that it has been re-examined and reduced to eight items due to some of the problems with its use in practice (Marshall, Orlando, Jaycox, Foy and Belzberg, 2002). The scale includes the severity of the experience of decomposition in the course of traumatic event, impaired time perception, and experience of depersonalization and derealisation. It is expected that individuals should respond to what

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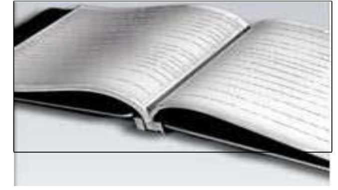

level they live the experience defined in each of the items on a 5-point Likert-type scale (I have never lived - I have absolutely lived). It was reported that the original scale had a high internal consistency (α = .80); and it has acceptable validity criterion and decomposition power. The test-retest reliability coefficient for revised form was .85 and the internal consistency coefficient was also reported as α = .85 (Marshall, Orlando, Jaycox, Foy and Belzberg, 2002).

The adaptation of the scale to the Turkish was carried out by Dürü (2006). The coefficient of internal consistency calculated for all scales reported as α = 0.84; the item-total test correlation coefficients calculated for the scale items observed to be changed between 0.49 and 0.61. The correlation between the scale and some of the other scales was looked at to find out validity of the scale. There is a correlation between the scale and Beck's Anxiety Inventory , Beck Depression Inventory and Brief Symptom Inventory as .34, .43, .50, respectively. The fact that all the coefficients are statistically significant and in the expected direction is considered important supporting findings regarding the validity of the scale.

2.1.7. The Post-traumatic Diagnostic Scale

The Post-traumatic Diagnostic Scale (Foa, Cashman, Jaycox, and Perry, 1997), which consists of a fifty item self-report scale (The Post-traumatic Diagnostic Scale) was developed to identify the post-traumatic stress disorder. The structure and content of the scale were determined based on DSM-IV diagnostic criteria. With the aid of the scale, it is possible to determine the persons who can be diagnosed with PTSD and to measure the severity of their symptoms. The scale can be applied to individuals in the 18-65 age groups. The original scale consists of four parts. The first part aims to determine the type of traumatic event (natural disaster, accident, war, rape etc.) that the person experienced and this section was also adapted to this study. In the second part, if there is more than one traumatic event, the most affecting experience is determined. There were also six questions to be answered as yes-no to determine the severity of the traumatic event. These six questions to determine the severity of the traumatic event were also used to determine the severity of the event within the scope of this study and were called the Event Severity Subscale. If the "yes" answer is too much, it shows that the violence is excessive. In the third part of the scale, there is a subscale consisting of 17 items evaluating post-traumatic symptoms. Within the scope of this thesis, these 17 items were named as Post-traumatic Diagnostic Subscale and they were used to measure the level of trauma symptoms. Post-traumatic Diagnostic Subscale is a Likert type scale scored between 0-3. The items were prepared based on Post-traumatic Diagnostic Scale DSM-IV (APA, 1994). The range of the subscale is 0-51. The high score indicates that the person was adversely affected by event and shows post-traumatic stress symptoms. In the fourth and final part of the scale, there are 9 questions answered in the way of yes/no to determine the effect of a traumatic event on participant's life. These 9 questions were also used in this study to determine the effect of the event and were called Event Impact Subscale. The participant's more "yes" suggests that he/she was negatively affected in various stages of his/her life. In this study, it was reported that the original form of 17 items scale (Post-

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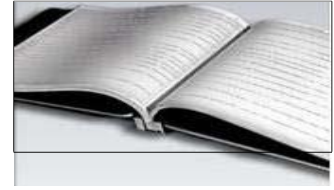

traumatic Diagnostic Subscale) aiming to measure the severity of the trauma indications had high internal consistency (α = 0.92), and the test-retest reliability coefficient obtained for these items was reported to be .83 (Foa, Cashman, Jaycox, and Perry, 1997). It is stated that with another criterion (Structured Clinical Interview for DSM, SCID) of the scale, 82% of the persons with PTSD and 76% of those without PTSD can be distinguished and also reported that it had an acceptable correlation coefficients with some scales used as scale criterion (Foa, Cashman, Jaycox and Perry, 1997). This scale was adapted by Dürü (2006) and used in this study. For scale reliability, the internal consistency of a total of 17 items aimed at measuring the symptom level was examined. The Cronbach's alpha coefficient calculated for all items is seen as α=.93; item-total test correlation coefficients are also seen to vary between 0.39 and 0.82. The validity of the 17 item Post-Traumatic Stress Symptoms Subscale was questioned in two different ways. It is known that the scale is questioning the severity of the discomfort created by the Post-Traumatic Stress Disorder and that was designed to correspond to the B (rehabilitation), C (avoidance) and D (overstimulation) diagnostic criteria of Post-traumatic Diagnostic Scale DSM-IV (APA, 1994). In short, it is thought that theoretically, the scale has 3 subfactors. Whether the test items were loaded with these three known factors were questioned using Principal Axis Factoring and Varimax rotation. As a result of this analysis, it was observed that all the items except the 2 items (items 6 and 7) were loaded under the theoretically required factors. These two items seem to be loaded with "excessive startle" while they need to be loaded on the "regenerate" factor. These three factors account for 59% of the variance. In order to question the validity of the scale with a second method, the correlation coefficients between the test scores obtained from the scale and other scale scores used in the preliminary study were calculated. As a result of the analysis, there was a correlation between the Post-Traumatic Stress Symptoms Subscale and Brief Symptom Inventory, Beck Depression Scale, Beck Anxiety Scale at the level of .70, .60, and .63, respectively.

2.1.8. Beck Depression Inventory

The Beck Depression Inventory which person himself is asked to fill and developed by Beck et al. (1961) was designed to assess the severity of one's depressive symptoms within the last week. It consists of 21 sentence groups and is based on clinical observations and data, not on the basis of any theoretical viewpoint. Questions collected under 20 title are evaluated between 0-3 points. The score of scale indicates the severity of the depression. The Turkish version of the test and validity, reliability studies were made by Hisli (1988, 1989). The scale was often used in many studies in Turkey.

2.2. SAMPLING PROPERTIES

The participants were selected from the staff of ambulance teams of the Emergency Health Services Directorate. 400 of the scales sent to the stations returned back to us. Table 3 shows various information related to the sampling.

Table 3. Various Demographic Characteristics Related to the Sample

Variable	*Frequency (N=400)*	*Percent (%)*
Gender		
Women	185	46.3
Male	191	47.8
Not told	24	6.1
Education level		
only literate	2	0.5
Graduated from Primary school	12	3.0
Graduated from Secondary school	24	6.0
Graduated from High school	108	27.0
Graduated from a Universty	204	51.0
Master/Ph. D.	23	5.8
Not told	27	6.7
Marital status		
Single	106	26.5
Married	255	63.7
Widow	4	1.0
Divorced	15	3.8
Not told	20	5.0
Occupation		
Physician	121	31.9
Nurse	80	21.1
Midwife	17	4.5
Health officer	43	11.3
Paramedic	22	5.8
ATT	32	8.0
Driver	57	14.3
Not told	28	7.1
Monthly Income		
1-400 TL	2	0.5
401-700 TL	55	13.8
701-999 TL	106	26.5
1.000 TL and over	214	53.4
Not told	23	5.8
Total	400	100
	Mean (N=364)	*Standard deviation*
Age	33.53 (Range: 21-53)	7.13

3. FINDINGS AND ANALYSIS RESULTS

Considering the variables described above, a total of six regression analyses were performed for each of the three dependent variables, separately for each gender, to question how the workers were affected by traumatic events. These findings are presented below.

3.3.1. Results of the First and Second Regression Analysis of Post-Traumatic Stress Symptoms Subscale as Dependent Variables

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In the first and second regression analyzes, in which the Post-Traumatic Stress Symptoms Subscale was a dependent variable, Event Effect Subscale, Event Severity Subscale, Peritraumatic Dissociative Experiences Questionnaire, Desperation Scale, Problem Solving Inventory, Locus of Control Scale and Perceived Social Support Scale became independent variables. The first regression analysis was conducted for women and the second regression analysis was conducted for men. R=.556 (F (7, 177)=11.320, p <.001) were calculated in the first regression analyzes run for women, in which the Post-Traumatic Stress Symptoms was a dependent variable. After all variables analyzed as a block, it was found that event effect (t = 2.907, p <.01), dissociation (t = 3.939, p <.001) and hopelessness (t = 3.186, p <.01) evaluated the Post-traumatic stress symptoms as positive. There was no significant relationship between other variables and post-traumatic stress symptoms. The results of the first regression analysis are shown in Table 4.

Table 4. The first regression analyzes results for women, in which the Post-Traumatic Stress Symptoms was a dependent variable

Model	*Variable*	*Beta*	*t*
1	Event severity	.080	1.127
	Event effect	.209	2.907*
	Dissociation	.276	3.939**
	Hopelessness	.233	3.186*
	Locus of Control	.001	.014
	Problem solving	.021	.294
	Social support	-.092	-1.132

*p<.01, **p<.001

In the second regression analyzes run for men, in which the Post-Traumatic Stress Symptoms was a dependent variable, after all variables analyzed as a block, R=.599 (F(7,183)=14.602, p<.001) were calculated. Post-traumatic stress symptoms were positively evaluated by event effect (t = 3.941, p <.001), dissociation (t = 4.172, p <.001); and negatively evaluated by social support (t = -4.002, p <.001).

Table 5. The second regression analyzes results for men, in which the Post-Traumatic Stress Symptoms was a dependent variable

Model	*Variable*	*Beta*	*t*
1	Event severity	-.064	-.989
	Event effect	.279	.3.941*
	Dissociation	.284	4.172*
	Hopelessness	.023	.332
	Locus of Control	.063	.962
	Problem solving	.021	.328
	Social support	-.263	-4.002*

* p<.001

There was no significant relationship between other variables and post-traumatic stress symptoms. The results of the second regression analysis are shown in Table 5

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3.3.2. The Third and Fourth regression analyzes results, in which the Beck Depression Inventory was a dependent variable

In the third and fourth regression analyzes in which Beck Depression Inventory was the dependent variable, the Event Effect Subscale, Event Severity Subscale, Peritraumatic Dissociative Experiences Questionnaire, Post-Traumatic Stress Symptoms Subscale, Hopelessness Scale, Problem Solving Inventory, Locus of Control Scale, Perceived Social Support Scale became the independent variable. The third regression analysis was conducted for women, and the fourth regression analysis was conducted for men. In the first regression analysis, which was conducted for women and depressive mood level was a dependent variable, R = .603 (F (8, 176) = 12.561, p <.001) was calculated after all variables were analyzed as a block. Expression level were positively evaluated by hopelessness (t = 3.654, p <.001), post-traumatic stress symptoms (t = 2.866, p <.001); and negatively evaluated by social support (t=-3.866, p<.001). No significant relationship was observed between the other variables and depression level. The results of the third regression analysis are shown in Table 6.

Tablo 6. The third regression analyzes results for women, in which the level of depression was a dependent variable

Model	*Variable*	*Beta*	*t*
1	Event severity	-.033	-.481
	Event effect	.061	.867
	Dissociation	-.001	-.021
	Hopelessness	.265	3.654**
	Locus of Control	.028	.395
	Problem solving	.077	1.106
	Social support	-.263	-3.866**
	Post-traumatic stress	.207	2.866*

*p<.01, **p<.001

In the fourth regression analysis, which was performed for males and in which depression level was a dependent variable, R = .608 (F (8,182) = 13.318, p <.001) was calculated after all variables were analyzed as a block. Hopelessness (t = 6.591, p <.001) and post-traumatic stress symptoms (t = 2.239, p <.05) were found to evaluate depression level positively. It was observed that the effect of social support was in the negative direction and approached to a significant level (p = .055).

Table 7. The fourth regression analyzes results for men, in which the level of depression was a dependent variable

Model	***Variable***	***Beta***	***t***
1	Event severity	.000	.007
	Event effect	-.031	-.417
	Dissociation	.052	.727
	Hopelessness	.459	6.591**
	Locus of Control	-.072	-1.101
	Problem solving	.079	1.253
	Social support	-.132	-1.934
	Post-traumatic stress	.165	2.239*

*p<.05, **p<.001

No significant relationship was observed between the other variables and depression level. The results of the fourth regression analysis are shown in Table 7.

3.3.3. The Fifth and Sixth Regression Analysis Results, in which the Post-Traumatic Growth Scale was a dependent variable

In the fifth and sixth regression analyzes in which post-traumatic Growth Scale was the dependent variable, the Event Effect Subscale, Event Severity Subscale, Peritraumatic Dissociative Experiences Questionnaire, Hopelessness Scale, Problem Solving Inventory, Locus of Control Scale, Perceived Social Support Scale became the independent variable. The fifth regression analysis was conducted for women, and the sixth regression analysis was conducted for men. In the fifth regression analysis, which was performed for women and in which post-traumatized growth was a dependent variable, R=.359 (F (7, 177) = 3.734, p <.01) was determined after all variables were analyzed as a block. In the fifth regression analysis, the event effect (t = 2.655, p <.01) was found to evaluate post-traumatic growth as positive.

Table 8. The Fifth Regression Analysis Results for women, in which the Post-TraumaticGrowth Scale was a dependent variable

Model	*Variable*	*Beta*	*t*
1	Event severity	.060	.752
	Event effect	.214*	2.655
	Dissociation	.137	1.744
	Hopelessness	.-100	-.1.213
	Locus of Control	.020	.240
	Problem solving	.123	1.527
	Social support	.-025	-.315

*p<.01

No significant relationship was observed between the other variables and depression level. The results of the fifth regression analysis are shown in Table 8.

In the sixth regression analysis, which was performed for men and post-traumatized growth was a dependent variable, R= .396 (F(7,183)=4.876, p<.001) was calculated after all variables were analyzed as a block. In the sixth regression analysis, the event effect (t=4.266, p<.001) was found to evaluate post-traumatic growth positively.

Table 9. The Sixth Regression Analysis Results for men, in which the Post-Traumatic Growth Scale was a dependent variable

Model	*Variable*	*Beta*	*t*
1	Event severity	-.132	-.132
	Event effect	.346*	4.266
	Dissociation	.107	1.370
	Hopelessness	.010	.128
	Locus of Control	-.073	-.973
	Problem solving	.033	.447
	Social support	-.020	-.266

*p<.001

There was no significant relationship between post-traumatic growth and other variables. The results of the sixth regression analysis are presented in Table 9.

Based on the research data, it can be said that health workers face many traumatic experiences due to their work and they continuously witness traumatic experiences. Experiencing at the primary level of the traumatic incidents and witnessing the traumatic events, the intensity of the work, the uncertainty of the job roles, the expectations of the employees and the inadequacy of job opportunities cause the health workers to be exhausted.

Emergency workers are faced with many problems arising from the nature of their work and work orders. Excessive pain, suffering, and fear of the patients they interfere with may cause them to feel similar pain and fear, or cause the employee to remember something similar in the past (Sabin-Farrell and Turpin, 2003).

Alexander and Klein (2001) found that approximately one-third of the ambulance workers had a higher level of general psychopathology, post-traumatic stress reactions, and exhaustion symptoms.

Hyman (2004) investigated the effects of social support perceived by emergency workers and traumatic stress symptoms and found a correlation between the level of intrusiveness and the presence of trauma backgrounds in the last five years.

Jonsson et al. (2008) investigated post-traumatic stress disorder in ambulance workers. 62% of them stated that they had a traumatic experience before.

Cohen, Gagin, and Peled-Avram (2006) found that 48.2% of social workers had higher secondary traumatic stress symptoms, in their research conducted for social service specialists in Israel.

Bride (2007) evaluated the prevalence of post-traumatic stress disorder among participants who were exposed to secondary trauma, in his study about the prevalence of secondary traumatic stress in social workers, and found that 45.4% of the participants had experienced intrusive thinking. It was found that 25.2% of the participants indicated avoidance, 25.2% had overstimulation symptoms, 20.2% had intrusive and avoidance symptoms, 21.6% had intrusive and overstimulation symptoms, 17.4% had avoidance and overstimulation symptoms, 15.2% were found to show signs of intrusive, avoidance and overstimulation.

In a study about traumatic stress on emergency nurses caused by their works, Jonsson and Halabi (2006) found that the most distressing events they experienced were a child death, followed by threat/disturbance by supervisor and death or sickness of one member of the family, respectively.

4. CONCLUSION AND RECOMMENDATIONS

Emergency Health Care workers show post-traumatic stress symptoms and depressive symptoms, even at low levels. The levels of these symptoms, of course, vary from person to person. The impression got from the group works is that there is a tendency to "ignore" the

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symptoms and troubles that most of the employees are experiencing. However, some participants filled all the scales to indicate that they did not have any symptoms. Moreover, because of the work they do, the occurrence of a certain level of distress is considered normal and even healthy.

In regression analyses, hopelessness, negative impacts of events on life, social support and dissociation were found to be related to stress symptoms and depressive mood levels. These findings seem compatible with the literature (Dürü, 2006). What is important is that the protection efforts that take these variables into account should be implemented for Emergency Health Care workers. A vital attempt has been initiated in this regard with the ongoing group work.

It is also observed that employees are not only negatively affected by the traumatic events they experience, but also symptoms are being grown after the trauma. However, according to regression analyses, it seems unusual that the protective variables such as problem-solving skills and social support are not related to growth. Protection efforts should aim to understand the function of these variables better and to transform these tasks into positive. It is intended to activate especially social support mechanisms, in the group activities currently underway. The development of various programs for enhancing of problem-solving skills should be taken into consideration.

Emotional problems caused by the work of emergency health workers are an expected state. The health worker experiences psychological distress immediately after the events but does not have enough information about the distress he suffered. They are sometimes afraid to share the problem or don't share the suffering in order not to affect the mental health of teammate. In this context, it would be useful to establish psycho-social support units in emergency health services and to continue psycho-educational studies on stress, traumatic stress, post-traumatic stress disorder and other problems. It would also be useful to inform employees about the traumatic events they experienced in their professional lives, how they affect their lives, and what they should do about this effect.

When the positions of the employees working in emergency health services are taken into consideration, it is seen that the command center employees show more traumatic stress and depression than the other units. Staffs at the command center quickly assess and direct incoming notices. This process is sometimes extraordinarily stressful and traumatizing according to the nature of the event. Because, if command center staffs cannot evaluate the situation effectively, they may receive negative feedback from both patients and their relatives and from team members who are working in the field. The negative feedbacks reduce the motivation of employees. In this way, it may be useful to make psychoeducative works for command center employees to cope with the difficult situations. It is observed that the frequency of encountering traumatic events is high in health workers. From this finding, it can be said that Turkey is a country where psychological traumas and related problems are widespread. The development of national mental health policies, the spread of preventive mental health services, the prevention of traumatic experiences will be beneficial for early

intervention with traumatic experiences. It will be useful to develop psychoeducation studies and train health workers in this regard. For this reason, specialist mental health workers should be educated in the field of mental trauma.

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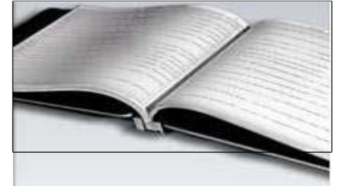

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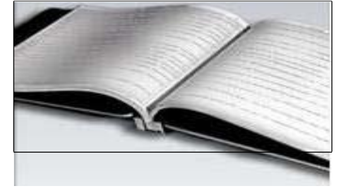

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