**Original article**

# The effect of trauma type on the severity of Post-Traumatic Stress Disorder (PTSD) symptoms

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## Abstract

**Objective:** The high prevalence of trauma exposure calls for detailed research on how trauma type affects the development of Post-Traumatic Stress Disorder (PTSD). Therefore, the aim of our study was to investigate the effects of the type of trauma on the severity of symptoms, anxiety, depression, and dissociative experiences in the PTSD patient population. **Method:** The sample of the study consists of 80 volunteer PTSD patients (20 sexual trauma, 20 work accidents, 20 traffic accidents and 20 combat related trauma). Once the severity of symptoms was determined in all subjects by the Clinician-Administered PTSD Scale (CAPS), Beck Depression Inventory, Beck Anxiety Inventory and Dissociative Experiences Scale (DES) were applied. **Results:** A statistically significant difference were found between trauma types with regard to age, time without treatment, and the total and subscale scores obtained in DES and CAPS. It was found that in the group that has PTSD diagnosis related to sexual trauma, the length of the time without treatment, DES and CAPS scores. **Conclusion:** The study we conducted showed that PTSD continued more severe and resistant after a sexual trauma. Moreover, specific type of trauma was significant in PTSD patients.

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**Keywords:** Post-Traumatic Stress Disorder (PTSD), trauma type, severity, sexual trauma.

## Introduction

In the general population, lifelong trauma exposure shows a high prevalence of 70-89%[1-3]. Nevertheless, trauma-induced psychopathologies such as Post-Traumatic Stress Disorder (PTSD) are reported at a much lower rate of about 8.3%[2]. The development of PTSD is associated with the meaning of the victim assigns to the trauma and individual differences[4,5]. While most PTSD patients recover in a few months without any intervention, some patients have to deal with symptoms for years[6]. As the clinical prognosis of PTSD very variable, researchers decided to investigate the clinical presentation of the type and number of traumas; whether these had any effect on the diagnosis of PTSD[7]. Given the evidence, traumatic events could lead to other psychiatric disorders, such as depression and anxiety in addition to PTSD. These were important to clarify the relation of traumatic experiences and symptoms of the PTSD[5,7,8]. Furthermore, it was required to investigate the types of trauma affected the severity of the symptoms such as depression, anxiety and dissociative experiences in PTSD patients.. In a study conducted with a sample of 602 people in 2018, Guina *et al.* compared the trauma types with PTSD severity. The same study identified more severe symptoms in PTSD cases due to post war period and sexual traumas[9]. Smith *et al.* also compared severity of trauma types with PTSD symptoms, as well as comorbid anxiety and depression. They found that symptom severity and comorbid psychiatric disorders were higher in PTSD patients who experienced sexual trauma. In Turkey, the relationship between the trauma types and symptom severity was studied in PTSD patients and the comparison of PTSD patient groups with sexual and non-sexual traumas, showed more severe symptoms in the former group[10]. This study investigated the hypothesis that the type of trauma would have an impact on the severity and variety of psychiatric symptoms. Then, the population of PTSD patients was screened to identify any relation between the trauma types and symptom severity, as well as comorbid psychiatric symptoms (anxiety, depression and dissociative experiences).

## Method

### Sample

Study sample consisted of 80 PTSD patients who were treated and followed-up in the Gülhane Training and Research Hospital from May 2017 through July 2018. The diagnosis of PTSD was made by two experienced psychiatrists according to the diagnostic criteria of the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5)[11]. In accordance with the hypothesis of the study, the first 20 patients with inclusion criteria for each type of trauma were included in the study. The study included 20 cases of PTSD developed due to sexual trauma, 20 cases developed after work accidents, 20 after traffic accidents, and a final 20 related to traumas developed in military conflict. Only patients who applied psychiatry for the first time, having no treatment and therefore diagnosed as PTSD for the first time were included in the study. The primary psychopathology of all subjects were PTSD. All subjects participated voluntarily and they were all above 18 years old, none of them having psychotic and/or affective disorders diagnosis, mental retardation, head trauma, or organic psychiatric disorders and whole patients displayed the cognitive functions required to complete the study. The study started with the approval of local ethics committee. All rights of the study subjects and all stages of the study are protected under the Declaration of Helsinki.

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### Study Design

All subjects were duly informed about the study and their signed consents were obtained. Psychiatrists cross-referenced patients for a reconciliation of diagnoses with DSM-5 criteria. Subjects were included in the study only when both psychiatrists accepted the diagnosis. Detailed histories of trauma were obtained through interviews and the clinician applied the PTSD scale. Moreover, all subjects completed a sociodemographic data sheet, in addition to Beck Depression Inventory (BDI), Beck Anxiety Inventory (BAI) and Dissociative Experiences Scale (DES). All data were analyzed under the appropriate data set.

### Data collection tools

**Sociodemographic Data Sheet:** Sociodemographic data of all study subjects, such as age, gender, marital status, employment status, socioeconomic status and education are recorded in this sheet.

**Clinician-Administered PTSD Scale (CAPS)** is a scale developed by Blake *et al.* in 1990 to be applied by clinicians in order to determine the frequency and severity of PTSD symptoms[12]. Tamer *et al.* validated the Turkish version in 1999[13]. The scale comprises 17 questions designed to evaluate PTSD symptoms and 8 to evaluate the symptoms accompanying PTSD. It is a scale between 0-136, with scores increasing in number as the severity of PTSD increases. Furthermore, it has subscales of 're-experiencing,' 'avoidance and blunting' and 'hyper-arousal.'

**DES** is a self-report questionnaire with 28 items developed by Bernstain and Putnam to measure the frequency of dissociative experiences[14]. Each question is scored on a scale of 0-100 and an average score is obtained. A score of 30 or above suggests the presence of a dissociative disorder. The Turkish validity and reliability were confirmed by Şar *et al.* [15].

**BDI** was developed by Beck *et al.* in 1988 to assess the severity of depressive symptoms[16]. It is a Likert type self-reporting questionnaire consisting of 21 items to be scored on a scale of 0-63. The score increases with the severity of depression. It investigates the symptoms of depression related to cognitive, emotional, physical, and motor functions. The Turkish validity and reliability study was conducted by Hisli *et al.* [17].

**BAI** was developed by Beck *et al.* to assess the severity of anxiety[18]. It is a self-reporting questionnaire consisting of 21 items to be scored on a scale of 0-63. Each item is scored between from 0-3 in the Likert type. High scores indicate an increased severity of anxiety. The Turkish validity and reliability study was performed by Ulusoy *et al.* in 1993[19].

### Statistical Analysis

The descriptive statistics of the sociodemographic datas were obtained from patients shown as mean ± standard deviation in number (percentage). Chi-square analysis was used to compare categorical data between groups. After checking the consistency of continuous variables for normal distribution, two continuous variables were compared using the Mann-Withney U test for those meeting the non-parametric analysis criteria and Kruskall-Walls Test was used for comparison where there were more than two continuous variables. Statistical analysis was performed with the software SPSS 20.0 for Windows and ≤0.05 was taken as a statistically significant value.

## Results

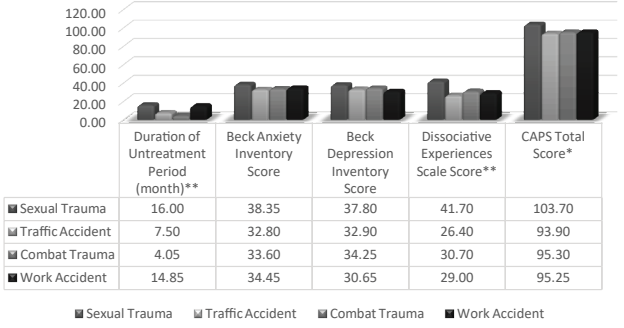
Descriptive sociodemographic datas of study subjects were presented in Table 1. The mean age of the subjects were 33.61 ± 7.01 years and 37 (46.3%) were female. Approximately half were married (42, 52.5%) and again half were in employment (43, 53.8%).

Table 2 shows the average and compared values of the clinical scales according to the types of traumas that the study subjects had experienced. According to this, there are statistically significant differences between the groups in terms of age, time without treatment, DES, and the total and subscale scores of PTSD-T (p values are 0.041, <0.001, <0.001, 0.029, 0.019, 0.006 and 0.016, respectively). Figure 1 is a graphical representation of mean values.

PTSD patients with a history of sexual trauma scored statistically higher in BDI, DES, CAPS avoidance/blunting, CAPS hyper-arousal and CAPS total than the subjects who developed PTSD following a work accident (p values are 0.013, <0.001, 0.020, 0.001, and 0.017, respectively). PTSD patients with history of sexual trauma scored statistically higher in DES, CAPS re-experiencing, CAPS avoidance/blunting, CAPS hyper-arousal and CAPS total compared to subjects who developed PTSD following a traffic accident (p values are <0.001, 0.023, 0.020, 0.002, and 0.001, respectively). PTSD patients with history of sexual trauma scored statistically higher in DES, CAPS avoidance/blunting and CAPS total than those who developed PTSD following a military trauma (p values are <0.001, 0.012, and 0.045, respectively). Subjects who developed PTSD following a work accident scored statistically higher in CAPS re-experiencing than those who developed PTSD following a traffic accident (p value is 0.004). Subjects who developed PTSD following a military trauma and those following a traffic accident showed no difference in BDI, BAI, DES and CAPS scores.

## Discussion

The main aim of this study was to determine how the type of trauma affected PTSD symptoms, anxiety, depression, and dissociative experiences. The most important result of the study were that symptom severity, time without treatment, and dissociative experiences that were found, significantly higher in PTSD patients with a history of sexual trauma in accordance with the existing literature[7,10,20,21]. As for the severity of anxiety and depression, no significant difference were found according to the type of trauma. Our study is also considering that research is rather limited in Turkey on the relations between the types of trauma inducing PTSD




| | Duration of Untreatment Period (month)** | Beck Anxiety Inventory Score | Beck Depression Inventory Score | Dissociative Experiences Scale Score** | CAPS Total Score* |
|---|---|---|---|---|---|
| Sexual Trauma | 16.00 | 38.35 | 37.80 | 41.70 | 103.70 |
| Traffic Accident | 7.50 | 32.80 | 32.90 | 26.40 | 93.90 |
| Combat Trauma | 4.05 | 33.60 | 34.25 | 30.70 | 95.30 |
| Work Accident | 14.85 | 34.45 | 30.65 | 29.00 | 95.25 |

**Figure 1.** Graphic representation of the time without treatment, Beck Depression Inventory, Beck Anxiety Inventory, Dissociative Experiences Scale and CAPS scale according to types of trauma

Table 1: Descriptive sociodemographic data on the study subjects

| Variable | Mean ± SS/ n (%) |
|---|---|
| Age (years) | 33.61 ± 7.01 |
| Gender | |
| Female | 37 (46.3) |
| Male | 43 (53.8) |
| Marital Status | |
| Married | 42 (52.5) |
| Single | 26 (32.5) |
| Separated/Divorced | 12 (15) |
| Employment Status | |
| Employed | 43 (53.8) |
| Unemployed | 37 (46.2) |
| Body Mass Index (kg/m2) | 23.80 ± 2.79 |
| Smoking | |
| Yes | 28 (35.0) |
| No | 52 (65.0) |
| Alcohol | |
| Yes | 23 (28.8) |
| No | 57 (71.2) |
| Substance | |
| Yes | 11 (13.8) |
| No | 69 (86.2) |

Table 2: Average and compared values of the clinical scales according to the types of trauma the study subjects experienced

| Variable | | Sexual Trauma (n:20) Mean ± SS | Traffic Accident (n:20) Mean ± SS | Combat Trauma (n:20) Mean ± SS | Work Accident (n:20) Mean ± SS | X2 | p |
|---|---|---|---|---|---|---|---|
| Age (years) | | 30.35 ± 6.22 | 34.20 ± 7.49 | 33.40 ± 7.83 | 36.50 ± 5.95 | 8.232 | 0.041* |
| Body Mass Index (kg/m2) | | 22.60 ± 3.21 | 24.40 ± 2.77 | 23.70 ± 2.93 | 24.50 ± 1.82 | 5.001 | 0.172 |
| Time without treatment after trauma (months) | | 16.00 ± 11.75 | 7.50 ± 8.54 | 4.05 ± 2.41 | 14.85 ± 16.38 | 26.344 | <0.001** |
| Beck Anxiety Inventory Score | | 38.35 ± 12.73 | 32.80 ± 10.61 | 33.60 ± 10.03 | 34.45 ± 7.19 | 3.805 | .283 |
| Beck Depression Inventory Score | | 37.80 ± 9.20 | 32.90 ± 8.29 | 34.25 ± 9.45 | 30.65 ± 4.42 | 5.802 | .122 |
| Dissociative Experiences Scale Score | | 41.70 ± 6.47 | 26.40 ± 13.67 | 30.70 ± 12.23 | 29.00 ± 7.32 | 23.571 | <0.001** |
| CAPS | Re-experiencing | 30.60 ± 3.70 | 27.00 ± 4.03 | 28.95 ± 4.46 | 31.00 ± 4.16 | 9.214 | 0.027* |
| | Avoidance/Blunting | 38.90 ± 2.26 | 36.70 ± 5.26 | 34.95 ± 5.20 | 34.65 ± 6.78 | 9.966 | 0.019* |
| | Hyper-arousal | 34.20 ± 3.10 | 30.20 ± 4.61 | 31.40 ± 5.49 | 29.60 ± 4.09 | 12.477 | 0.006** |
| | Total | 103.70 ± 6.03 | 93.90 ± 10.89 | 95.30 ± 12.11 | 95.25 ± 12.66 | 10.331 | 0.016* |

CAPS: The PTSD scale applied by a clinician:* p≤0.05, **: p≤0.01

Table 3: Paired comparison of the Beck Depression Inventory, Beck Anxiety Inventory, Dissociative Experiences Scale and CAPS according to types of trauma.

| | | Sexual Trauma vs. Work Accident | | Sexual Trauma vs. Traffic Accident | | Sexual Trauma vs. Combat Trauma | | Work Accident vs. Traffic Accident | | Work Accident vs. Combat Trauma | | Traffic Accident vs. Combat Trauma | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | z | p | z | p | z | p | z | p | z | p | z | p |
| Beck Anxiety Inventory Score | | -1.572 | 0.116 | -1.625 | 0.104 | -1.381 | 0.167 | -0.353 | 0.724 | -0.881 | 0.378 | -0.081 | 0.935 |
| Beck Depression Inventory Score | | -2.472 | 0.013* | -1.576 | 0.115 | -0.992 | 0.321 | -1.158 | 0.247 | -0.885 | 0.376 | -0.122 | 0.903 |
| Dissociative Experiences Scale Score | | -4.348 | 0.001** | -3.729 | <0.001** | -3.575 | <0.001** | -0.746 | 0.456 | -0.313 | 0.754 | -1.193 | 0.233 |
| CAPS | Re-experiencing | -0.777 | 0.437 | -2.276 | 0.023* | -0.885 | 0.376 | -2.873 | 0.004** | -1.338 | 0.181 | -1.296 | 0.195 |
| | Avoidance/Blunting | -2.322 | 0.020* | -2.330 | 0.020* | -2.514 | 0.012* | -1.713 | 0.087 | -0.707 | 0.480 | -0.561 | 0.575 |
| | Hyper-arousal | -3.240 | 0.001** | -3.042 | 0.002** | -1.622 | 0.105 | -0.435 | 0.664 | -1.387 | 0.165 | -0.696 | 0.487 |
| | Total | -2.397 | 0.017* | -3.278 | 0.001** | -2.007 | 0.045* | -0.149 | 0.881 | -0.014 | 0.989 | -0.691 | 0.489 |

p≤0.05, **: p≤0.01

and the severity of symptoms, anxiety, depression, and dissociative experiences.

In line with the existing literature, our study showed that the symptom severity of re-experiencing, avoidance/blunting, hyperarousal and dissociative experiences in PTSD patients with a history of sexual trauma was higher than other types of trauma[7,20,21]. In a recent study with a sample size of 2463, Jacop *et al.* found that sexual trauma had a greater risk of PTSD and a higher symptom severity[22]. Similarly, Kelley *et al.* and Smith *et al.* showed that PTSD following a sexual trauma was associated with a higher symptom severity[7,20]. On the other hand, Müller *et al.* concluded that remission took more time and effort in PTSD patients with a history of sexual trauma[23]. In Turkey, the study by Çoban *et al.* also shows that PTSD related to sexual trauma displayed more severe symptoms[10]. The primary reason for this higher severity in symptoms of PTSD induced by sexual trauma might be that the trauma is directly related to the person in such cases. This suggests a difference in terms of meaning between a trauma experienced accidentally and a pre-meditated one targeting a specific person. Moreover, it is perpetrated against the sexual existence of the person which cannot be modified and/or fortified. In other words, in another type of trauma it is possible to change or control traumatic risk factors afterwards, whereas this is not the case following a sexual trauma. Another possible cause is the existence of a certain risk at all times in the circumstances where other types of trauma (e.g. work accidents, traffic accidents, etc.) develop. On the contrary, sexual trauma is unexpected and unprepared for, regardless of the environment and this is a possible factor contributing to a cognition of helplessness. This increases the risk and severity of PTSD after a sexual trauma. Another factor is the possibility of other types of trauma (e.g. physical violence, restriction, humiliation) accompanying the sexual trauma experienced, which would contribute to the cumulative effect to increase the severity of the disorder[24]. Finally, it is shown that peritraumatic reactions in sexual traumatic events play an important role in the risk for development and worse response to treatment. The peritraumatic reaction involving tonic immobility is much more common in sexual trauma victims and could mediate the association with greater severity of symptoms[25]. The fact that no statistical difference in symptom severity was identified in patients experiencing PTSD for reasons other than sexual trauma lends more weight to the possible causes discussed above.

Another important finding in our study was that the time without treatment was higher in PTSD patients with a history of sexual trauma[26]. We suggest that the most probable cause is that patients do not seek treatment for a long time out of fear of shaming and stigmatization. However, factors such as threat and possible harm should not be discarded. Moreover, as the age of sexual trauma patients is relatively young may indicate a hesitation about how to proceed in the search for treatment. Delay in treatment, however, will make the disorder and its symptoms more resistant. In addition, in our study, we found that PTSD patients with sexual trauma were younger than other trauma types, in accordance with the literature[10]. This may be a reason for patients having more severe symptomatology. Because, even in mentally healthy individuals, the effects of early traumas have been shown to leave deeper traces on the individual[27]. Considering the fact that the group with sexual trauma is young and the duration of without treatment is long, it may suggest that it is associated with gruesome and associated with worse symptomatology[10,26].

The findings of our study should be evaluated with some reservations. First of all, premorbid factors likely to affect the development and severity of PTSD were not taken into consideration. It should be noted that these factors can affect the severity of trauma. Another limitation is that other possible traumas accompanying the sexual trauma were not studied. Furthermore, the fact that the types of trauma were not evaluated according to being incidental or personal adds another limitation to the study results. The study was sectional, cases were not controlled for duration of treatment. It could be a confounding variable. Finally, it is worth remembering that the sample size was limited and some scales were based on self-reporting.

## Conclusion

In conclusion, our study conducted with a group of PTSD patients in Turkey showed that PTSD related to sexual trauma was more severe and resistant. It also suggests that patients with sexual trauma are younger and have longer treatment time. The findings of the study were discussed in line with the existing literature on the subject. We think that with our study, we draw attention to the type of trauma and the importance of the time spent without treatment in PTSD patients. The study have shown that these features may be associated with worse symptomatology. We hope that our study will contribute to the future studies aimed at reducing the long-term non-treatment duration and related to the type of trauma, in PTSD patients with sexual trauma.

## Disclosure

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