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ANALYSIS OF SOCIODEMOGRAPHIC AND CLINICAL FEATURES OF EARTHQUAKE SURVIVORS SEEKING TREATMENT AT THE PSYCHIATRY OUTPATIENT CLINIC FOLLOWING THE KAHRAMANMARAŞ EARTHQUAKES ON FEBRUARY 6, 2023

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Abstract

Objectives: The aim of this study is to examine the clinical-sociodemographic characteristics of people who came to Ankara and applied to our hospital the earthquakes of Kahramanmaraş on February 6, 2023, and to examine the factors affecting early psychopathology and treatment initiation.

Materials and Methods: The data of earthquake victims who applied to Ankara City Hospital Adult Psychiatry Clinic as outpatients within one month after the earthquake were retrospectively scanned, and the obtained data were examined with descriptive statistics.

Results: Within a one-month period, 309 outpatients who were affected by the earthquake and applied to our hospital were identified, and the average age of the participants was 41.7±15. 69.3% of the participants were women, 69.3% were married. 55.3%(n=174) had their first psychiatric application, 37.5% had current psychiatric follow-up, 26.9% had other medical comorbidities, all with an acute stress reaction. When the groups in which treatment started and not started were evaluated in terms of sociodemographic clinical characteristics and earthquake damage, a difference was found between the two groups only in terms of psychiatric history, and those with a psychiatric history were found to have a lower rate of starting treatment($p<0.05$).

Conclusion: The findings of this study once again demonstrated the relationship between the magnitude of the trauma and post-traumatic stress symptoms and showed that treatment may be protective in terms of exacerbation of symptoms and acute stress symptoms in individuals with psychiatric diseases. Longitudinal follow-up studies are needed to examine the course of these early effects associated with the earthquake.

Keywords: Earthquakes, trauma and stressor related disorders, acute stress disorders, psychiatric disorders.

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Introduction

Natural disasters are life events that can have both immediate and long-term effects.[1,2] The enormous destruction caused by earthquakes causes loss of life, homes, and infrastructure. The impact of natural disasters on mental health depends on several pre-, peri-, and post-disaster factors.[3] Post-earthquake studies show that many victims have high rates of clinically significant symptoms as a result of exposure to stressful events, magnitude of loss, social disorganization, and lack of social support. Disaster psychiatry has regained importance after major earthquakes. It has been investigated what types of disorders are associated with the impact of the disaster, whether post-disaster psychopathology is temporary or long-lasting, and whether post-disaster psychological responses are universal in nature or whether they depend on social, cultural, and economic factors.

There are several studies about psychiatric morbidity and prevalence studies conducted after the earthquakes. The number of studies assessing the frequency of psychiatric disorders in the first month after the earthquake is limited. It was reported that in community-based studies, developing a psychiatric disorder among those who experience a disaster varies between 10-30% and, that 4-12 after an earthquake in Turkey months, the post-traumatic stress disorder (PTSD) rate was 25%.[4]

Studies focusing on post-earthquake psychopathology and epidemiological perspectives have suggested that early psychiatric intervention, including pharmacological treatment for the pathological acute stress response, is indicated in the early stages following a major earthquake.[5] The acute period after the disaster is the period when people are just confronting the traumatic event, different psychological reactions are observed against environmental and social changes due to the disruption of the flow of life, and society is just beginning to experience the long-term negative effects of the disaster. Including those affected by the disaster in the health system, determining their psychological needs, providing the necessary psychoeducation, and ensuring their adaptation to life and society are among the targeted goals during this period. A traumatic event, trauma-focused cognitive behavioral therapy is used when acute stress disorder develops, and in cases of psychiatric comorbidity, necessary psychopharmacological treatment is used. Although not recommended, one of the most commonly used agents in the early period after trauma is benzodiazepines. Depending on the symptoms, propranolol, sedative antidepressants, and other psychotropic drugs are also used. In cases of comorbidity, pharmacotherapy appropriate to the disorder is used. For example, antidepressants may be used in conditions where anxiety or depressive symptoms are prominent, antipsychotic agents or mood stabilizers may be used in mood disorders or antipsychotics are used in psychotic disorders. There are various factors affecting the course of these conditions, including the acute stress response that occurs in the early post-traumatic period.[6,7,8] Some studies have shown that, with interventions, the duration of the normal posttraumatic response can be shortened, PTSD symptoms can be reduced, the development of chronic PTSD can be

prevented, functionality can be regained, and impairment in functionality can be reduced.[9] Therefore, identifying risk groups in the acute post-traumatic period and understanding people's psychological complaints and needs can facilitate rapid and planned interventions in possible crises.

On 06.02.2023, two earthquakes of magnitude 7.7, centered in Pazarcık, and magnitude 7.6, centered in Elbistan, occurred in Kahramanmaraş province. After the earthquakes, around 33591 aftershocks occurred. According to the latest information received, 50783 people lost their lives.[10]

As the evacuation efforts of the region accelerated in the days following the earthquake, many earthquake victims were brought to Ankara by their means and through government agencies. During this period, there was a significant increase in the number of patients applying to Ankara Bilkent City Hospital Psychiatry outpatient clinic, and although some of this increase was due to acute exacerbations of existing follow-up patients, most of it was due to earthquake victims coming to the city. The number of studies on mental distress experienced after an earthquake with such large-scale effects is limited. Therefore, this study aimed to retrospectively examine the sociodemographic characteristics and trauma-related psychiatric symptoms of patients who directly experienced the February 6, 2023 Earthquakes and voluntarily applied to our hospital's psychiatry outpatient clinic in the acute period due to psychiatric complaints after the event.

Materials and Methods

Adults over the age of 18 who applied to Bilkent City Hospital Psychiatry Outpatient Clinic within a month after the February 6, 2023 Earthquake, who were in the earthquake zone during the earthquakes, and who were directly affected by the event were included in the study. The electronic records of the participants were examined by the researchers. Information regarding their sociodemographic information, past psychiatric illnesses and treatments, history of additional medical illnesses, situations of being trapped among the rubble and injuries during the earthquake, property and relatives' losses, and acute stress findings were evaluated retrospectively.

Analyses were made with IBM SPSS Statistics 26 for the Windows package program. Numerical descriptive statistics are expressed as mean and standard deviation and categorical variables are expressed as number and percentage, and simple descriptive statistical methods are used for these variables. Comparative analyses between groups were made with the Student-t test.

The ethics committee permission for the research was obtained from Bilkent City Hospital Ethics Committee No. 2 (Number: E2-23-4729).

Results

According to hospital records, 309 people who directly experienced the earthquake and had psychological complaints applied to the psychiatric outpatient clinics of our hospital within one month. The average age of the participants was 41.7±15. It was determined that 69.3% of the applicants were women and 69.3% (n=214) were married. The sociodemographic data of the participants are summarized in Table 1.

Psychiatric diagnosis and treatment history in the participants' histories were evaluated and it was found that 55.3% (n=174) had their first psychiatric application and 37.5% had a current psychiatric follow-up. Additionally, 26.9% of the participants were found to have another medical comorbidity (Table 1).

Material damage and physical injuries caused by the earthquake were examined: It was seen that there was no information on this subject in the records in 66.6% of the cases. It was determined that 28.8% (n=89) had material damage at home or work, 3.9% (n=12) had injuries, and two people (0.6%) had a history of inpatient treatment.

One of the applicants applied to obtain a medical report to obtain a shotgun license, one of them applied to get treatment (methylphenidate) for the diagnosis of Attention Deficit Hyperactivity Disorder, and the psychiatric evaluation of the other applicants showed that all of them had symptoms of acute stress reaction and outpatient clinic follow-ups were recommended.

It was determined that 20.4% (n=63) of the participants received only supportive psychotherapeutic interviews and psychoeducation, and no psychotropic treatment was initiated, 21.7% (n=67) were advised to continue using the psychotropic treatments they were using (38 only antidepressant, 11 antidepressant+additional medication, 10 mood-stabilizing treatments and additional medications, 3 methylphenidate±antidepressant/trazodone, 2 antipsychotic, 1 low dose antipsychotic+benzodiazepine), a new pharmacotherapy was started in 57.9% (n=179).

It was determined that of the people for whom a new drug treatment was recommended, 27.8% were given antidepressant drugs, 22.3% were given sedative doses of antidepressants (low dose mirtazapine or trazone), 4.9% were given antipsychotics, 0.6% were given benzodiazepines, 1.3% were given antidepressants+antipsychotics, 0.9% were given other drugs (antihistamine, mood stabilizer (lithium, aripiprazole), methylphenidate).

Table 1. Sociodemographic and Clinical Characteristics of Participants

		number (%)
Mean age (year±SD)*		41.7±15
Gender		
	Female	214 (%69.3 %)
	Male	95 (%30.7 %)
Marital Status		
	Married	214 (69.3 %)
	Unmarried	95 (30.7 %)
Educational Status		
	Uneducated	5 (1.6%)
	Primary education	21 (6.8%)
	High school	53 (17.2%)
	University	64 (20.7%)
	Associate degree	1 (0.3%)
	No information	165 (53.4%)
Working Status		
	Student	33 (10.7%)
	Housewife	33 (10.7%)
	Unemployed	22 (7.1%)
	Retired	17 (5.5%)
	Working	99 (32.0%)
	No information	105 (34.0%)
History of Previous Psychiatric Diagnosis		
	No	171 (55.3%)
	Yes	116 (37.5%)
	No information	22 (7.1%)
History of Chronic Medical Disease		
	No	76 (24.6%)
	Yes	83 (26.9%)
	No information	150 (48.5%)

*year±SD: year±standart deviation

Table 2. Medications used by participants

	number (n)	percent (%)
No medication was given	63	20.4
The current medication was continued	67	21.7
antidepressant	38	12.3
antidepressant+antipsychotic/other	12	3.9
mood stabilizer (+antipsychotic/other)	10	3.2
methylphenidate	4	1.3
antipsychotic	2	0.7
low dose antipsychotic + benzodiazepine	1	0.3
A new medication was recommended	179	57.9
antidepressant	86	27.9
sedative dose of antidepressant	69	22.3
antipsychotic	15	4.9
antidepressant+antipsychotic	4	1.3
benzodiazepine	2	0.6
antihistamine	1	0.3
other	2	0.6

The relationship between the applicants' treatment initiation status and their sociodemographic characteristics and trauma-related factors was examined. Accordingly, no statistically significant relationship was detected between the initiation of pharmacotherapy and marital status, loss of a relative, physical injury, or comorbidity ($p>0.05$). There was a difference between the treatment and non-treatment groups in terms of previous psychiatric illness and treatment history ($p > 0.05$); It was observed that 68.7% of those who started treatment had their first psychiatric application, and 26.9% had a history of a psychiatric diagnosis in their medical history. The comparison of the groups in which treatment was started and those that were not started in terms of sociodemographic and trauma-related factors is presented in Table 3.

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Table 3. Comparison of groups in which medication was started and not started

	medication not started		medication started		p
	number (n)	percent (%)	number (n)	percent (%)	
age (mean±SD)	40.4 ±15		42.7±16		0.195
gender					0.994
female	90	69,2	124	69,3	
male	40	30,8	55	30,7	
marital status					0.132
unmarried	46	35,4	49	27,4	
married	84	64,6	130	72,6	
educational status					0.82
above high school	25	19,2	39	21,8	
high school and below	34	26,2	48	26,8	
no information	71	54,6	92	51,4	
working status					0.189
working	35	26,9	64	35,8	
not working	46	35,4	62	34,6	
no information	49	37,7	53	29,6	
psychiatric follow-up					**0.000**
yes	**69**[a]	**53,1**[a]	**47**[b]	**26,9**[b]	
no	**48**[a]	**36,9**[a]	**123**[b]	**68,7**[b]	
no information	13	4,2	9	2,9	
non-psychiatric medical illness					0.214
yes	29	22,3	54	30,2	
no	31	23,8	45	25,1	
no information	70	53,8	80	44,7	
İnjury					0.315
yes	6	4,6	6	3,4	
no	74	56,9	117	65,4	
no information	50	38,5	56	31,3	
loss of any close relative					0.996
yes	29	22,3	40	22,3	
no	12	9,2	16	8,9	
no information	89	68,5	123	68,7	
home/workplace damage					0.745
yes	40	30,8	49	27,4	
no	5	3,8	9	5	
no information	85	65,4	121	67,6	

*Independent Samples-t test, Chi-square analysis, and Bonferroni correction were used.

Discussion

This is a comprehensive study that retrospectively screens acute stress disorder and related conditions in people who came to Ankara after two consecutive major earthquake disasters that affected 11 provinces in Turkey and applied to one of the state's major health institutions to seek psychiatric help. Although Ankara, the city where the study was conducted, was not a city directly affected by the earthquake, the high number of outpatient clinic applications in the first month following the earthquake shows how high the effects of the earthquake were in this early period. Although this study used only the data of outpatients, not patients referred to our hospital for inpatient treatment, the fact that there were 309 earthquake survivors in one month may give an idea about how big this impact is. The reasons for this impact include the negative impact of housing opportunities in the region due to the earthquake, hospitals being damaged in the earthquake, hospital employees being affected by the earthquake, and hospital employees in the region having housing problems and not being able to work. For these reasons, those living in the earthquake zone may not have received adequate health care.[11,12,13] Due to ongoing aftershocks, earthquake survivors may have migrated or settled in Ankara, a city they thought was safer, both to ensure their safety and for the feelings of fear and insecurity that emerged after the trauma.[11,14]

Although the findings of the study are difficult to compare with the results of community-based epidemiological studies, useful observations can be made regarding the psychological profile of help seekers. Identification of this profile is expected to be important for the early detection of acute stress reactions and the assessment of their severity by healthcare professionals. This may facilitate adequate case management, a prerequisite for the prevention of chronic stress-related disorders.

From a sociodemographic perspective, the findings obtained from our study are similar to previous findings. Various studies have reported that women seek help more than men.[15,16] It could be suggested that this may be because anxiety disorders and acute stress disorder are detected more frequently in women than in men and that men deny their problems more often than women or are reluctant to seek help. It is also claimed that women know their problems better and therefore benefit from all health services more than men.[17-19]

It has been observed that most of those who applied to the psychiatric outpatient clinic after the traumatic event were married. Although most studies on trauma victims report that being married is generally associated with lower psychosocial stressors,[20] there are also findings to the contrary.[21] Some studies in the literature have emphasized that acute stress symptoms may cause individuals with high responsibilities to seek help,[22] which may be why married people seek psychiatric help more often. Considering the average age of the applicants, another possibility is that the proportion of married people in the sample is similar to the population average.

All participants included in the study had acute stress symptoms. This gives an idea about the magnitude of the earthquake's impact and suggests that individuals with mental problems can evaluate their current situation or that they are noticed by their environment and apply it to psychiatry. Institutions and associations that emphasized the effects of trauma on mental health from the early period of the earthquake and organized assistance may have played an important role in this awareness. It is known that individuals with acute stress symptoms receive adequate social support and access to mental health services in the early period and benefit from the necessary treatment or intervention studies, reducing the traumatic effects of the event and psychopathologies that may occur in the long term.[23-24]. It is important to provide traumatized individuals with the opportunity to process the event in the early post-trauma period, to normalize post-trauma psychological reactions, to provide a safe environment that allows strong emotions to be expressed, to develop understanding, and to provide a safe environment where the experience can be made meaningful. [25]

The fact that 55.3% of the patients had their first psychiatric admission showed that the earthquake was a strong stressor in causing acute stress symptoms. When we look at the treatment initiation rates, it was seen that 58% of them started a new treatment, which is a very high rate compared to previous post-traumatic studies. It has been observed that the rate of treatment initiation is higher in those who first applied to psychiatry. The severity of symptoms may be higher in those who present to psychiatry for the first time with symptoms of acute stress disorder. In the screening and intervention study conducted after the 1999 earthquake among rural people in Taiwan, it was determined that the people of the region had no previous psychiatric history, but all patients required treatment.[5] It has been shown that the risk of suicide in individuals with chronic mental health diseases increases after traumatic events and their current illness worsens.[26] When considered together with these findings, acute stress symptoms may have occurred at a milder level in those who were under psychiatric treatment and continued treatment in our sample, and these patients under treatment may have been protected from exacerbation of their chronic psychiatric disease.

When the treatments applied in our clinic were reviewed, it was seen that slightly more than one-third of the patients were started on medication with a long-term treatment plan. It is known that the severity of trauma is associated with trauma-related disorders. Considering the severity and destructiveness of the Kahramanmaraş earthquakes, it is not surprising that people experience severe acute stress symptoms and that this is reflected in treatment initiation rates. Nevertheless, it was observed that sixty percent of the patients evaluated in our clinic received supportive psychotherapeutic interviews and psychoeducation, no changes were made to their current treatments, or a sedative dose of medication was recommended and they were called for a follow-up. These approaches are similar to intervention studies after similar disasters and traumas. Previous studies show trauma-focused cognitive behavioral therapy within 3 months after trauma as the most effective treatment method in the early post-traumatic period.[27] Psychological interventions, such as single-session psychoeducation and psychological first aid, are routinely recommended immediately after major traumatic

events and disasters, despite limited evidence of benefit.[27,28] According to the findings of this study, it was seen that the practice in our clinic was to provide psychoeducation and supportive psychotherapeutic interviews with patients at their first admission, to start temporary sedative treatment, and to start long-term treatment in about one-third of the patients and that the practice in our clinic was carried out in accordance with the recommendations in the literature.

It is known that studies focusing on psychopathology and epidemiological perspectives indicate that early psychiatric intervention for pathological acute stress response - including pharmacological treatment - is indicated in the early stages following a major earthquake.[5] When examined in terms of drug selection; It was observed that the majority of the applicants were prescribed antidepressants (Selective Serotonin Reuptake Inhibitors, serotonin-norepinephrine reuptake inhibitors) or drugs such as low-dose noradrenergic and selective serotonergic antidepressants, tricyclic antidepressants to benefit from their sedative effects, and only two patients were prescribed benzodiazepines. In the Practice Guidelines for the Treatment of Patients with Acute Stress Disorder and Post-Traumatic Stress Disorder, SSRIs have been among the drugs of choice because SSRI administration is advantageous in terms of effectiveness and tolerability. It is effective in the treatment of core symptoms such as hyperarousal, avoidance, anhedonia, and re-experiencing, and in the treatment of comorbid anxiety disorders and depression. It has been reported that these drugs increase the social and occupational functionality of patients and contribute to an improvement in their quality of life in the long term.[29] However, there are studies in the literature indicating that early and long-term use of benzodiazepines after trauma may increase the risk of developing PTSD,[30] and in our study, it was observed that benzodiazepines were prescribed to a very small number of patients. This has shown that medication use in our clinic is carried out in accordance with the principles of rational prescribing.

When we looked at the people for whom psychotherapy and pharmacotherapy were recommended, it was determined that demographic characteristics and losses related to the traumatic event didn't affect the status of receiving treatment. In addition, it was found that the patients for whom treatment was recommended had a statistically significantly less psychiatric history in their medical history than the group for which treatment was not recommended, and they had a first psychiatric admission. One of the reasons for this may be that people who have clinical psychological complaints for the first time need more treatment, such as their symptoms being more severe. Patients with a history of psychiatric treatment may be knowledgeable about symptoms such as acute stress symptoms, coping methods, and possible interventions due to their previous treatment experiences. For this reason, they may not have requested treatment interventions at an early stage. Patients who continue their treatment may have experienced milder symptoms due to the protective effect of the treatments they use. As a result, there may have been less need for treatment for those with psychiatric illnesses.

In conclusion, this study is a retrospective review study that aims to evaluate survivors from the Kahramanmaraş earthquakes who applied to the outpatient clinic of a city hospital in Ankara, a city that was not directly affected by this earthquake, in terms of acute stress symptoms, treatments started, and factors that led to the initiation of treatment in the acute period. As a result of this study, it was observed that all earthquake victims who applied had acute stress symptoms, that treatment initiation rates were lower in those with a psychiatric history and treatment, that psychiatric treatment may be protective against acute stress symptoms, and that rational drug use is common in our clinical practice. However, follow-up studies are needed to examine the longitudinal effects of the earthquake.

Study Limitations

This study has some limitations. First of all, the study was conducted in a single center and retrospectively. Another limitation is that the severity of the applicants' acute stress symptoms was not evaluated with any scale. In addition, the subject of this study is the patients admitted to the outpatient clinic; it does not provide information about the condition of injured patients referred to other services of the hospital for surgery or inpatient treatment. Nevertheless, the fact that the early psychiatric effects of a disaster that affected most of our country and the early clinical management of the applicants were evaluated with a relatively good number of participants can be considered as the prominent aspects of the study. Another limitation is that the study was cross-sectional and the effect of the trauma caused by the earthquake could not be evaluated longitudinally, and follow-up studies are needed in this respect.

Ethical Considerations: The ethics committee permission for the research was obtained from Ankara Bilkent City Hospital Ethics Committee No. 2 (Number: E2-23-4729).

Conflict of Interest: The authors declare no conflict of interest.

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