

PREVALANCE OF PSYCHIATRIC DISORDERS DUE TO DISASTER*

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ÖZET

FELAKET SONRASI PSİKİYATRİK MORBİDİTE

1993 Nisan'ında, Ümraniye çöp depolama bölgesinde, birikmiş çöpte patlama olmuş ve çöp kaymıştır. Bu bölgede gecekonduda yaşayan kişiler felakati yaşamışlardır. Yaklaşık 10 ev yıkılmış, 39 kişi hayatını kaybetmiştir. Çalışma, felaketten yaklaşık bir yıl sonra felaketi yaşayan kişilerin ruh sağlığını değerlendirmek, felaket sonrası çıkabilecek ruhsal sorunları tanıyarak koruyucu ruh sağlığı hizmetlerine katkıda bulunabilmek amacıyla planlandı. Çalışmaya DSM-III-R'a göre TSSB A ölçütünü karşılayan 45 kişi alındı. Yakın bir bölgede olaya direkt maruz kalmamış, sosyodemografik özellikleri uygun 45 kişi de kontrol grubu olarak alındı. Olgular, yarı yapılandırılmış görüşme formu ve SCID uygulanarak değerlendirildiler. SCL-90-R, GSA-12, Hamilton Ansiyete Ölçeği, Hamilton Depresyon Ölçeği kullanıldı. Felaket sonrası TSSB en sık psikiyatrik tanı olarak saptandı. TSSB'un felakete uğramış grupta, felaketi takiben oranının % 60 olduğu ve birinci yıl sonunda % 40'a düştüğü görüldü. Diğer psikiyatrik tanılar felaket geçiren grupta genel olarak daha yüksek oranda saptanmasına rağmen, her iki grup da yükliydi.

Araştırmanın ikinci bölümü olarak TSSB oluşumundaki kırılabilirlik etkenleri araştırıldı. Ailede psikiyatrik hastalık olması, geçmişinde önemli hastalık veya ameliyat geçirme ve halen hasta olma oranı, önceki travmatik yaşantılar açısından yükünlük, TSSB grubunda anlamlı derecede yüksek bulundu.

Sonuç olarak, felaketten bir yıl sonra yapılan araştırmada ruh sağlığı sorunlarının bu denli yüksek saptanması, erken dönemde ruhsal değerlendirmenin yapılması ve psikososyal yardım ve tedavi götürülmesi lehine önemli bir kanıt olarak değerlendirildi.

Anahtar Sözcükler: Felaket, travma sonrası stres bozukluğu, psikiyatrik tanı sıklığı

SUMMARY

During the spring of 1993, at the garbage storage area in Ümraniye, İstanbul, the stored garbage exploded and set off a land slide. The people living in shanty town houses around this dump, were directly exposed to the disaster. Nearly ten houses were demolished, 39 people died. This study was done to evaluate the psychiatric morbidity of the survivors one year after the disaster. The survivors who had the stressor fulfilling the A criterion of PTSD according to DSM-III-R were included in this study. Sociodemographically matched people from the same district but not directly exposed, were taken as a control group. Each group consisted of 45 people. They were interviewed with a semi-structured intake form and SCID. They were required to fill SCL-90-R, GHQ-12, Hamilton Anxiety Scale and Hamilton Depression Scale. Post-Traumatic stress disorder happened to be the most common psychiatric disorder after the disaster, the incidence of which was 60% in the study group that faced the disaster. After a year, the percentage of PTSD decreased to be 40%. All the other psychiatric disorders were most common in the study group, but was high in both groups. As the second part of the study, the vulnerability factors of PTSD were evaluated. Family psychiatric history, medical history and post traumatic experiences were found significantly more in PTSD group. As a result we can say that the high psychiatric morbidity one year after the disaster proved that the psychiatric evaluation at the acute period must be done, and psychosocial help and treatment must be given to the survivors.

Key words: Disaster, posttraumatic stress disorder, psychiatric morbidity

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* This research is reported at the 10th World Psychiatry Congress, Spain, 1986 and at the 4th European Conference on Traumatic Stress, Paris, 1995.

Eventhough the majority of disasters occur in underdeveloped or developing countries (United States Agency or International Development, 1986), most of the studies done concerning the mental status problems of the victims are reported from the industrialized western countries. The related studies from the developing countries are not systematic and are comprised basically of those cases refered and treated in psychiatric clinics, not of the field studies. Studying the psychiatric aspects of disasters focus mainly on the theory of stress. The disorders occurring after the disasters give us an idea of the reactions and the adjustment in such a major situation. Most of all these studies will give us an idea to detect vulnerable people in such situations and to care in the most positive way for the victims themselves and the families of the victims.

The aim of this study was to detect and define the type and the prevalence of the morbidity of psychiatric disorders, among a population exposed to a disaster in which huge amount of garbage exploded killing dozens of people and erasing the homes of many families.

METHOD

SETTING

During the spring of 1993, an explosion of the stored garbage, because of pressurized methane gas, at the garbage storage area in Umraniye, Istanbul, where mainly unemployed people resided unofficially, caused a land slide off. As a result, the stream bed was filled with garbage. There was a tremendous damage. 39 people were reportedly dead. The homes of many families were buried in the garbage. All the survivors were settled down in tents for a short time.

MEASUREMENTS

The study was done nearly a year after the disaster. 45 survivors who had the stressor fulfilling the A criterion of post-traumatic stress disorder according to DSM-III-R were included in this study. They were visited in their homes and recruited in this study. None refused to participate. People in our study group were exposed to primary stressors, as Green et al. (1990) have described it, like witnessing the death and suffering of others, objective risk to life, and having to make difficult choices between escape and

rescue. They were also traumatized by collecting the dead bodies many of which were torn into pieces, while burned bodies had yet to be recovered.

Sociodemographically matched 45 people from the same district, but far away from the disaster area and not exposed to it, were chosen as the control group.

All the people in study and control groups were interviewed with SCID and a semi-structured interview form, questioning sociodemographical variables, family history, impact responses, support systems, etc. They were required to fill SCL-90, Hamilton Anxiety Scale, Hamilton Depression Scale, and GHQ-12, as well.

RESULTS

There were not any statistically significant differences between the study group and the control group pertaining to their sociodemographic characteristics (Table 1).

Both groups consisted of 30 females and 15 males. The mean age of the subjects in the study group was 37, in the control group it was 37.5. 78 % of the subjects in the study group, 85 % of the subjects in the control group were married. In both groups, 56 % of the subjects have had only primary school education. 63 % of the study group and 73 % of the control group were unemployed.

68 % of the study group and 73 % of the control group were born in villages, grown up in rural areas, and had imigrated to Istanbul in recent years. 62 % of the study group and 53 % of the control group had low (below the middle class standart) income.

Each subject was evaluated if there had occurred any previous stresing traumatic life events. There happened to be no statistically significant differences in the two groups relating to events such as the loss of the loved ones, severe somatic damage by either accident or disease.

As to the prevalence of psychiatric disorders in the two groups, 32% of the subjects of the study group and 69% of the control group did not define any psychiatric morbidity. This was statistically significant. In all items of psychiatric disorders, the study group demonstrated higher levels of morbidity. In the control group, nobody defined present PTSD, only two cases mentioned past PTSD episode. Among the study group, the most prevalent psychi-

Table 1: Sociodemographic characteristics

	Study Group		Control Group		X ²	P
	N	%	N	%		
SEX					0	NS
1.Female	30	66	30	66		
2.Male	15	34	15	34		
MARITAL STATUS					5.2	NS
1.Married	35	77.6	38	84.4		
2.Never Married	3	66.6	3	6.6		
3.Widowed	7	15.5	3	6.6		
4.Divorced	0	0	1	2.2		
EDUCATION					4.13	NS
1.None	18	39.9	14	31		
2.Primary School	25	55.5	25	55.5		
5.High School	2	4.4	6	13.5		
OCCUPATION					6.4	NS
1.Unemployed	28	66.2	33	73		
2.Unskilled	7	15.5	3	6.6		
4.Tradesman	3	6.6	5	11.1		
5.Student	1	2.2	0	0		
6.Temporary Work	6	13.3	3	6.6		
7.Retired	0	0	1	2.2		
BIRTH PLACE					3.5	NS
1.Village	39	86	33	2		
2.Small Town	5	11	9	20		
3.Big Town	1	2	3	6		
INCOME					6.83	NS
1.Low	28	62	24	53		
2.Medium	17	37	21	46		

atric morbidity happened to be PTSD. 27 subjects of the study group defined PTSD due to the disaster. 18 of them were chronic cases (Table 2).

Concerning the psychometric evaluation only Hamilton anxiety score showed significant difference between the two groups (Table 3).

Table 2: Prevalance of psychiatric disorders

DSM III-R Disorders	Study Group		Study Group		X ²	P
	N	%	N	%		
Panic	2	4	0	0	2.04	NS
OCD	3	6	1	2	1.04	NS
Gen. Anx. Dis.	5	11	6	13	0.1	NS
Simple Phobia	2	4	1	2	0.34	NS
M. D. (Pres.)	7	15	5	11	0.32	NS
M. D. (Past)	2	4	3	6	0.21	NS
Somat	2	4	1	2	0.34	NS
Dystymia	2	4	3	6	0.21	NS
PTSD (Past)	9	20	2	4	5.07	0.02
PTSD (Pres.)	18	40	0	0	22.5	0
No Diagnosis	14	31.1	30	68.9	11.38	0.0007

Table 3: The scores of GHQ-12, Hamilton depression, Hamilton anxiety scales

Questionnaire	Study Group	Control Group	T	P
GHQ	1.23+/-0.56	1.11+/-0.52	0.007	NS
Hamilton Depression	9.28+/-7.24	7.28+/-5.9	1.036	NS
Hamilton Anxiety	15+/-12.32	12.91+/-9.68	4.573	0.035

Table 4: The scores of SCL-90-R Subscales

SCL Subscales	Study Group	Control Group	T	P
Somatisation	1.34+/-0.95	1.16+/-0.86	1.69	NS
Obsession-Compulsion	1.1+/-0.88	0.91+/-0.7	3.12	.08
Intersensitivity	1.01+/-0.82	0.87+/-0.66	2.72	NS
Depression	1.14+/-0.76	0.94+/-0.56	4.31	.04
Anxiety	1.13+/-0.76	0.96+/-0.7	0.33	NS
Hostility	1.06+/-0.96	0.96+/-0.74	3.31	.07
Phobic Anxiety	0.77+/-0.77	0.72+/-0.62	1.3	NS
Paranoid Ideation	0.8+/-0.85	0.67+/-0.72	0.35	NS
Psychotism	0.59+/-0.83	0.5+/-0.51	5.28	.02
GSI	1.02+/-0.74	0.86+/-0.55	3.61	.06
PSI	39.33+/-21	38.73+/-20.56	0.005	NS
PSDI	2.18+/-0.68	1.86+/-0.73	0.007	NS

Table 5: Previous history of trauma

	PTSD		NON PTSD		X ²	P
	N	%	N	%		
Parental Loss	17	62	8	44	1.5	NS
Sibling Loss	3	11	2	11	0	NS
Sudden Injury/Severe Disease	4	11	1	5	0.93	NS
Mate Loss	3	11	1	5	0.41	NS
Child Loss	1	3	1	5	1.64	NS
Severe Accident	7	25	0	0	5.52	0.03
Other	4	14	3	16	0.02	NS
None	4	14	8	28	4.84	0.02

Subscale scores of the study group were greater than the control group. Depression and global severity index scores of the study group and the control group showed significant difference (Table 4).

When we evaluate the differences between the PTSD and non-PTSD cases within the study group, no statistically differences were found among the two groups pertaining to sex, marital status, education, occupation and level of income.

However in evaluating the previous history of trauma, there were significant differences between the two groups. Having been in severe accident was found statistically significantly frequent in the PTSD group (Table 5). At the same time positive medical history and family history of psychiatric disorder

Table 6: Medical and psychiatric history

	PTSD		NON PTSD		X ²	P
	N	%	N	%		
Medical history					10.8	0.002
1.None	9	33	15	83		
2.Previous severe illness V Operation	13	48	2	11		
3.Already ill	5	18	1	5		
History of Psychiatric Disorders					3.06	0.07
1.None	20	74	17	94		
2.Neurotic	7	25	1	5		
Family Psychiatric History						
1.Mother	0	0	0	0		
2.Father	0	0	0	0		
3.Sibling	5	18	0	0	3.75	0.05
4.Other	1	0	0	0	0.7	NS

Table 7: The scores of GHQ-12, Hamilton depression, Hamilton anxiety scales

Questionnaire	PTSD	NON PTSD	X ²	P
GHQ	1.35+/-0.68	1.14+/-0.45	4.64	0.03
Hamilton Depression	12.38+/-7.87	7.22+/-6.09	1.06	NS
Hamilton Anxiety	21.38+/-11.36	10.74+/-11.19	0.16	NS

showed significant association with PTSD. Past personal history of psychiatric disorders also showed nearly significant association with PTSD (Table 6).

The scores of GHQ-12, Hamilton depression and anxiety scales were all higher in the PTSD group. The GHQ score showed significant difference between the two groups (Table 7). The scores of SCL-90-R were all higher in the PTSD group compared with the non-PTSD group, but not statistically significant.

DISCUSSION

Studies of Weisaeth (1989), Shore et al. (1986), Green et al. (1982) have revealed psychiatric morbidity levels between 20% to 50% one year after disasters. Our data is consistent with those results of 50% morbidity rate.

Post-traumatic stress disorder and depression were the most frequent diagnoses in subjects who were survivors of a sudden unexpected disaster, which is similar to that of Weisaeth's study. This study showed that, compared to control group, those people

who were exposed to disaster developed mainly PTSD. A year after the trauma, 40% of the cases still defined PTSD. It is understood that the prevalence of PTSD at the acute period was 60%. This study showed that 40% of post-traumatic stress disorder cases had chronic course. Our results at least considering post-traumatic stress disorder, show that psychopathology rates decrease among the disaster victims (Green et al., 1985; Mc Farlane, 1988 a,b)

In developing PTSD, sociodemographic factors did not play role, but previous experience of trauma made people more vulnerable to develop PTSD when exposed with a major trauma a second time. There happened to be a meaningful association between positive past personal medical and family history of psychiatric disorder in the development of PTSD when exposed to a disaster. These findings basically define risk factors that make people vulnerable in the development of PTSD.

The comorbidity of post-traumatic stress disorder with other psychiatric disorders is high. We found 55% of people having post-traumatic stress disorder had other psychiatric disorders, depression being the most frequent. The other studies also show the high rate of comorbidity of post-traumatic stress disorder. Heltzer et al. (1987) also, in their study with people having various traumatic experiences; have found the comorbidity rate of post-traumatic stress disorder as 80%.

There are numerous studies with inconsistent results, regarding the morbidity factors after being exposed to trauma. General opinion is that severe trauma can cause post-traumatic stress disorder without correlating with premorbid characteristics such as sociodemographic variables, previous traumatic experiences, personality type, etc.; whereas vulnerability factors play a major role in moderate trauma.

In our study, post-traumatic stress disorder was not correlated with age, civil status, and education were concerned.

Holen (1990) reported that, occupational dysfunction and distress in survivors of an oil rig disaster were more severe in subjects with a history of previous psychiatric problems. Our findings are similar to Holens'. The ones who had the history of mental illness showed nearly significant association with post-traumatic stress disorder. There happened to be an association between positive past medical history and development of PTSD.

Family history of psychiatric disorders (especially anxiety disorders, depression, and alcoholism) were said to be correlated with PTSD. Breslau et al. (1991) also showed a similar correlation.

Holmes and Rahe (1967), suggested that events had an additive effect. Thus, the experience of substantial adversity prior to a disaster, would have an additive effect to that of the disaster. We have also found that, having an accident or having a severe disease before the disaster showed significant association with post-traumatic stress disorder.

CONCLUSION

Life events' researchers generally accept that "disasters show that when psychological stress is sufficiently severe, virtually everyone decompensates, and becomes demoralized, dependent and identifiable as a psychiatric case" (Shore, 1989; Gastpar, 1986; Grel, 1991).

In this study there wasn't an intentionally made traumatic stress factor, yet the group of people included in the study were exposed to a sudden and unexpected traumatic stress and loss due to mismanagement and carelessness.

The high rate of psychiatric morbidity after a year is an important clue to make psychiatric intervention at the acute period after the disaster. So, if high risk groups can be identified and early treatment is given, prevention may be possible.

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