

PSYCHIATRIC MORBIDITY AMONG VICTIMS OF BOMB BLAST

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ABSTRACT

Thirty one victims of bomb blast in a bus caused by terrorist activity in Dausa district, Rajasthan on 22.5.96, were evaluated for psychological reactions 3 days & 2 weeks after the incident. All hospitalized & non hospitalised bomb blast victims were assessed within 3 days of injury by objective predictors (percent of burnt area, facial disfigurement, limb amputations, fractures etc.) and subjective predictors (emotional distress and perceived social support). Detailed history, physical and mental state examination of all patients was carried out and for those having scores more than 17 on GHQ-60 (Hindi version), IPIS was administered. Diagnosis was made by 3 senior consultant psychiatrists of Psychiatric Centre, Jaipur, on the basis of ICD-10. At day 3 of 31 patients studied 11 (35.45%) had psychiatric morbidity. Out of which 6 (19.35%) had acute stress reaction, 3 (9.68%) had depression and 2 (6.45%) dissociative amnesia. Most commonly reported symptoms on IPIS were depersonalisation, derealisation, sleep disturbances specially generalised sleep loss, loss of appetite, nightmares, situational anxiety, depression, mental irritability, dulness of feelings, self blame, guilt, loss of interest, suicidal ideas, and worry about money, spouse, work and children. Most common physical injury was burns, followed by hearing disturbances, wounds received due to glass & metal pieces and non specific pains and aches. Findings of follow up have been discussed and battery of tests for evaluation of victims of acute trauma has been suggested.

Key Words : *Psychiatric morbidity, victims, bomb blast, post traumatic stress disorder*

The emotional aspects of trauma have been recognised since the inception of war. They are well detailed in the epic of Gilgamesh, Homer's Iliad, Cicero's letters to his friends, Shakespeare's writings and Samuel Pepy's reference in his diary following the great London fire in 1666. This disorder has been labelled with various names such as soldier's heart, combat neurosis, battle fatigue, Dacosta's syndrome, effort syndrome, railwayspine and compensation neurosis.

ICD-10 places this disorder under the heading, reaction to severe stress and adjustment disorders (F 43), acute stress reaction (F 43.0) and post-traumatic stress disorder (F 43.1). In DSM-I this disorder was placed under gross stress reaction and DSM-II

altogether deleted this category. The term post traumatic stress disorder (PTSD) was used for the first time in DSM-III which gave explicit criteria for its diagnosis.

A metaanalysis of 52 studies done by Rubonis et al. (1991) showed that rate of psychopathology was 17% higher in groups that experienced a disaster than in same groups before the disaster or in control groups. Higher impairment rates were found for groups that had experienced naturally caused disasters. Studies from developing countries have reported psychiatric morbidity ranging from 33% to 75% following a cyclone, earthquake or volcanic eruption as reported by Sharan et al. (1996). A bomb blast due to terrorist activity in a roadways bus near Mahuwe on Jaipur-Agra

national highway No. 11 killed 14 persons and injured 37 on 22nd May 1996. This brought a spate of casualties to accident-emergency services of SMS hospital, Jaipur. This group particularly interested the authors due to severity of disaster and the multiplicity and nature of psychiatric complaints as evident during the preliminary evaluation. The exclusivity of the sample prompted the authors to plan this short study with the aim- to find out the psychiatric morbidity, the symptomatology of disorders caused and their relationship to socio-demographic variables.

MATERIAL AND METHOD

In order to fulfil the above aim 35 bomb blast victims, who reported to the accidental emergency services of SMS hospital Jaipur, were examined. Out of these, only 31 entered the study. One patients refused, one died, one was discharged and one was in ICU. Out of the sample of 31, 25 victims were hospitalized for various injuries and 6 were treated on OPD basis for minor complaints.

Patients with history of head injury, fever, loss of consciousness, convulsions and other history suggestive of organicity were excluded from study. Informed verbal consent was taken from all the subjects. On the third day following the blast a socio-demographic data sheet enquiring about patient's name, age, sex, religion, marital, status, domicile, average family income, type of family, birth order, substance-abuse, illness characteristics, nature of the stressors as viewed by patient and informant, past and family history of mental illness and premorbid personality was filled up for each victim. Detailed mental state examination of each patient was carried out and Goldberg's general health questionnaire-60 item Hindi version (GHQ-60) was administered in all the subjects (Gautam *et al.*, 1977). Subjects with the score of 18 and above on GHQ were administered the Indian psychiatric interview schedule (IPIS) (Kapur *et al.*, 1974) and their symptoms were studied. A follow up

TABLE 1

A. Diagnostic break up at day 3 (ICD-10)		
ICD-10 diagnosis	N	%
Acute stress reaction (F43.0)	6	19.35
Depression (mild, moderate, severe, F 32.0, 1,2)	3	9.68
Dissociative amnesia (F44.0)	2	6.45
Total	11	35.45
B. Diagnostic break up at week 2 (ICD-10)		
ICD-10 diagnosis	N	%
PTSD (F43.1)*	4	12.90
Depression (F32.0, 1,2)*	3	9.68
Dissociative amnesia (F44.0)	2	6.45
Total	9	29.30

* 2 patients with PTSD had comorbid depression

at 2 weeks in positive cases (GHQ score of 18 and above) was done using the IPIS. The diagnosis were made by three senior consultant psychiatrists of psychiatric centre, Jaipur according to ICD-10. Findings at day 3 and that of at the end of week 2 are compared.

RESULTS & DISCUSSION

Sociodemographic variables : 58.06% were below 30 years of age, 19.35% between 31-40 years, 9.68% between 41-50 years and 9.68% above 50 years. Out of the total sample, 24 (77.41%) subjects were males and rest were females. Of the 11 who received any psychiatric diagnosis at 2 weeks, only 2 were females and rest 9 (29.03%) were males. 45.16% subjects had family income more than rupees 1000 per month but there was no correlation between lower socioeconomic group and level of psychopathology. 63.51% of subjects had a nuclear family and 11% had a joint family. 7 (22.58%) of patients who received a psychiatric diagnosis had nuclear family and rest had joint families. Social support provided by joint family acts as a buffer against a severe stressor. 22.58% subjects belonged to service class,

32.25% subjects belonged to labour and mechanical class. Housewives constituted 16.12% and students 19.35% of the total. 2 subjects were below the age of 3. 80-64% subjects were Hindus and 19.35% were Muslims. The preponderance of the Hindus in the group is a chance occurrence. 23 (74.19%) subjects were married. In subjects with psychiatric morbidity only 2 patients (with diagnosis of dissociative amnesia) were unmarried and rest were married.

11 (35.48%) subjects scored over 17 (the cut off score in this study) on the GHQ 60 scale rest 20 (64.52%) of subjects had scores between 0-17. 2 persons had scores between 12-17 (the probable psychiatric cases) but revealed no psychiatric abnormality on detailed mental state examination. Since we wanted to find the true incidence of PTSD, depression etc. we ruled out the subsyndromal cases by opting for the higher cut off score and this reduced the sample size studied.

Of the 31 subjects studied, 11 (35.45%) had psychiatric morbidity on the 3rd day following the blast. Out of these 6 (19.35%) had acute stress reaction (F 32.0, 1,2) and 2 persons (6.45%) had dissociative amnesia (F 44.0) diagnosed according to ICD-10 (table -1).

At week 2 a total of 9 (29.03%) subjects had psychiatric morbidity. Out of these 4 (12.90%) had PTSD (F 43.1), 3 (9.68%) had depression and 2 subjects (6.45%) had dissociative amnesia.

The total psychiatric morbidity (29.03%) at week 2 reported in our study is less than as reported in other studies viz. 59% (Sharan et al., 1996), 75% (Patrick & Patrick, 1978), 55% (Lima et al., 1987) and 40% (Lima et al., 1989). This difference could be due to the smaller sample size studied and higher cut off scores used in our study.

In our sample two subjects had dissociative amnesia, which is different from as reported in other studies. Two (6.45%) subjects with PTSD also met criteria for depressive episode to merit 2 comorbid diagnoses.

Physical symptoms - most commonly reported physical complaints on day 3 were pain (N-11, 100%), numbness (N-10, 90.9%), palpitation (N-10, 90.9%), burning sensation (N-9, 81.8%), weakness (N-8, 72.72%), and dizziness (N- 5, 45.45%). In study by Sharan et al. (1996) autonomic symptoms were present in 61% subjects and aches and pains in 39% subjects.

At week 2, 3 (27.27%) subjects still reported of pains and aches, 5 (45.45%) had burning and numbness and other odd sensation in their limbs and other body parts. Only 3 (27.27%) subjects reported palpitation.

3 (27.27%) subjects had hearing problems due to loud noise of the blast on the 3rd day and 1 patient had ear discharge. At week 2 hearing of 2 persons had improved.

In the present study, nearly 82% subjects had sleep disturbances at day 3 and 63% at week 2 as compared to 75% subjects at 1 month in the study by Sharan et al. Delayed sleep was present in 27.27%, early awakening in 45.45%, generalized sleepless in 18.18% and oversleeping in 19.09% of the subjects on the 3rd day of blast.

Nightmares were present in 81.8% of subjects. Their contents were colourful and frightening images of the events which occurred at the time of accident. At the end of second week the nightmares persisted in 63.63% of subjects, 3 (27.27%) subjects reported delay in sleep onset while only 3 (27.27%) had early awakening and 2 persons had generalized sleepless, 6 (54.54%) subjects on day 3 and 5 (45.45%) at week 2 had loss of appetite.

At day 3, nearly 50% of subjects reported features of anxiety, which is slightly less than that as reported in study by Sharan et al.(1996) (61%) . 2 (18.18%) subjects had situational anxiety, 1 (9.09%) had free floating anxiety and 3 (27.27%) had panic symptoms but did not meet criteria for panic disorder Fugitive impulse was present in 2 (18.18%) subjects, muscular tension in 5 (45.45%) subjects and restlessness in 4 (36.36%). Nearly 50-60% subjects had worries about their spouses work.

children, money and other trivia. At week 2, 3 (27.27%) had muscular tension, 2 (18.18%) reported restlessness and 5 (45.45%) subjects remained worried.

At day 3, sadness (depression) was reported by 10 (90.9%) subjects, dullness or loss of feelings (90.9%), loss of interest (90.9%) feelings of inferiority (45.45%), forgetfulness (54.54%), poor attention and concentration (54.54%), mental irritability (45.45%), guilt feelings (45.45%), self blame (36.36%), suicidal ideas (18.18%) and abusiveness were related to the accident. The subjects thought that they were being punished for the crimes committed in their past lives (guilt was also present). The patients had difficulty in recalling certain aspects of trauma during interview and many reported that they had intrusive and recurrent memories of the incident which were painful. Patients with 25-40% burns felt that they were better off dead, rather than suffer so much pain. At week 2, sadness was present in 45.45%, dullness or loss of feeling in 54.54%, loss of interest in 63.63%, forgetfulness in 45.45%, poor attention and concentration in 27.27%, mental irritability in 9.09%, self blame and guilt in 18.18% and suicidal ideas in 9.09% subjects. At day 3, depersonalisation and derealisation were present in 6 (54.54%) subjects. All of these met the criteria for acute stress reaction. After week 2, 4 of the 6 subjects developed fullblown PTSD. Self injury was present in 11 (35.48%) subjects, 4 (12.9%) of whom had a psychiatric diagnosis.

25 (80.64%) subjects were hospitalized, out of which 7 (22.58%) were given a psychiatric diagnosis. 3 subjects had one injured relative, one of these subject, a young female, was having severe depression. Association between death of 1st degree relative and presence of major depression has been established in other studies. Burns were most common type of physical injury reported by 11 (35.48%) of subjects. The burns ranged from 10-40%. There was no correlation between severity of burns and development of PTSD at

week 2.

The limitations of present study are :

1. A proper followup was tried at 3 months, but was not possible , as most of the initial respondents were untraceable.
2. The small sample size yielded results which did not lend themselves easily to statistical analysis, so only percentages are given.
3. The instruments used in this study i.e. GHQ and IPIS do not assess the severity of the stressors and subjective response of the victim to the stressors (the criterion-A of DSM-IV for diagnosis of PTSD). Also the nature of dissociative phenomena (derealisation and depersonalisation) is not assessed. These are necessary symptoms for diagnosis of acute stress reaction in DSM-IV.
4. These instruments also do not assess the personality traits which predispose the subject to PTSD or the substance abuse which is a very common comorbid condition.

In conclusion, the findings of this study highlights the need to develop proper instruments to assess the severity of the stress or and subjective response of the subject to it. The instrument used in this study (IPIS & GHQ) fail in this regard. Impact of event scale (IES) (Horowitz *et al.*, 1979) is one such instrument.

Subscale based on MMPI, Million's clinical multiaxial inventory, Penn inventory etc. have been designed for this purpose. Structured interviews like CAPS, SCID also appear in the 'Kit of Tools' proposed by Allen (1994) to assess symptoms of PTSD.

A high percentage of dissociative complaints on IPIS by the subjects in this study are a pointer that peritraumatic hypnotic (dissociative) phenomena should be studied in detail as they may indicate later development of PTSD (Koopman *et al.*, 1994).

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