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The Association between Adult Mental Health Problems and Childhood Trauma: A Retrospective Community Based Study from Kashmir

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ABSTRACT: Background: *The association between retrospectively reported childhood adverse experiences and psychiatric morbidity in adulthood is documented in several community surveys and clinical samples. But the long term outcome studies from South Asian countries are almost non-existent even though the frequency and the extent of childhood traumatic experiences in this part of the world are considerably high. Methods:* It was a retrospective community-based study done in various areas of Kashmir Valley (Jammu and Kashmir, India) which were selected randomly. Those fitting criteria for the study were further evaluated using MINI International Neuropsychiatric Interview which is a well-validated short structured Diagnostic and Statistical Manual – Text Revision (DSM IV-TR) based diagnostic interview. **Results:** 18.2% (572 of 3137) of total sample population had suffered a traumatic event between age 5 to 17 years (M>F). A considerable number (42.6%) of the traumatized cases had a DSM IV diagnosis in the long-term follow-up (F>M), out of whom 47.4% had a significant morbidity at >5 yrs and 38.7% at >10 yrs (p<0.007). Post-traumatic Stress Disorder (PTSD) & Major Depressive Disorder (MDD) formed the majority of diagnosis (24.4% & 15.3% respectively). Both PTSD and MDD were seen 10 years after trauma and beyond. **Conclusion:** Post trauma morbidity is significantly chronic and long-lasting. MDD and PTSD form the majority of the morbidities present. Both MDD and PTSD may develop very late after the traumatic event. People with trauma may need long-term psychiatric screening, care and help.

Key words: Post-traumatic stress disorder, trauma, morbidity, childhood, mini, major depressive disorder

INTRODUCTION

In the context of current political instability prevalent worldwide, no age group is immune from exposure to trauma, and its consequences (Khan & Margoob, 2006). It has been long known that pathological stress response syndromes can result from exposure to war, sexual assault and other types of trauma (Lerner, Volpe, & Liddell, 2003). Evidence for post-traumatic reactions dates back as far as the Sixth century B.C.; early documentation typically involved the reactions of soldiers in combat (Lerner, Volpe, & Liddell, 2003; Holmes, 1986).

Since children form a significant population worldwide, recognition of psychiatric problems in children is important (Margoob et al., 2004). Approximately, 20 percent of individuals exposed to a significant traumatic event will develop psychiatric morbidity and children may be at an even higher risk (Breslau et al., 1998; Apolone, Mosconi, & La Vecchia, 2002). Studies suggest that specific disorders are linked to traumatic events that occur in childhood rather than later in life (Yen et al., 2002; Pole et al., 2007).

The global burden of trauma is enormous. Over the last three decades, Asia and Africa regions have witnessed the fastest increase in the incidence of traumatic events and natural disasters. India alone reported 18 major natural disasters in 2007 excluding numerous regional disasters which escaped world attention (Ferris & Petz, 2012; EM-DAT).

Kashmir has been witness to both manmade and natural traumas. After the Partition of India in 1947, the long dispute between India and Pakistan for control of Kashmir has led to an armed conflict between India and Kashmiri militants, causing deaths, disappearances, human sufferings and traumas in the Indian part of Kashmir (Schofield, 2000). A community survey done by Médecins Sans Frontières in 2005 found high levels of ongoing violence across the region, with civilians caught in the middle. The majority of people surveyed stated having been exposed to crossfire (86%) and round-up raids (83%). High numbers of people reported being subjected to maltreatment (44%), forced labour (33%), kidnapping (17%), torture (13%) and sexual violence (12%) (De Jong, 2008). Beyond this manmade disaster, Kashmir has been frequently affected by natural disasters, causing heavy economic and psychological damage (Halvorson, & Parker Hamilton, 2010).

The total lifetime prevalence for any traumatic experience in the community in Kashmir was 58.69% in 2006 (Margoob & Ahmad, 2006). Data reveal that in the prevailing conflict situation over the past thirty years in Kashmir, there has been a phenomenal increase in psychiatric morbidity, including stress related disorders (Margoob, 1995). The effects of trauma in this region are better understood in the case of adults, but in the case of children they have only recently begun to be understood (Khan & Margoob, 2006). Margoob et al. during the longitudinal follow up of snow storm children survivors found that 34% suffered from disorders including PTSD, MDD, conversion and panic disorder as in agreement with other reported studies from other parts of the world, although the follow up was not more than one year (Margoob et al., 2006).

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There are no studies on the long-term outcome of childhood traumas in this region (Kashmir, India), although the trauma prevalence is quite high. The association between childhood trauma and adult mental health problems has not been studied so far. This study is an attempt to examine the long-term effect of childhood trauma.

METHODOLOGY

Study Design

The study was carried as a part of community outreach programme of Department of Psychiatry, Government Medical College Srinagar, Jammu & Kashmir, India by holding door to door surveys. Six districts of Kashmir valley of Jammu & Kashmir State (India) covering a population of 5,453,209 individuals were studied (Census of India, 2001). These districts were Srinagar, Anantnag, Baramulla, Pulwama, Budgam and Kupwara. Participants were selected from all the six districts of Kashmir valley. These areas were delineated as per the census report of 2001 available at the start of the study in March 2011 (Census of India, 2001). Three villages/localities were taken from each district and the care was taken to take the population of six districts proportionately. Convenience method was applied to choose the localities and the number the household was limited by availability of hilly topography, manpower, time and other resources. The study was reviewed and approved by departmental ethical committee.

Sample

Every 7th household of each village/locality was surveyed. All the family members of the identified household, selected as per the study criteria were interviewed for history of trauma at the age of 5–17 years. In each case of traumatic event respondent was asked if the trauma had happened, was witnessed, learned about, not sure, or does not apply, as per Life Event Checklist (Blake et al., 1995). Only events judged severe in intensity, according to DSM-IV-TR criteria, were included (American Psychiatric Association, 2000).

“The person has been exposed to a traumatic event in which both of the following were present:

1. The person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others
2. The person's response involved intense fear, helplessness, or horror.
Note: In children, this may be expressed instead by disorganized or agitated behaviour”.

Those persons who had suffered trauma between 5 to 17 years of age, irrespective of sex and present age were included in the study. Persons with a psychiatric morbidity prior to trauma or severe medical morbidity or serious physical disability were not included. A proper informed consent was taken from all the participants of the study. Confidentiality was maintained and wherever need was felt, professional help and advice was offered to the participants. No monetary compensation was given to the participants.

Method

Those individuals who met the criteria for trauma and the age for traumatic exposure as above were further interviewed for their course after the event. A semi-structured interview schedule specifically prepared for the study was used to collect the information. The schedule was delineated as per the epidemiological studies related to conflict as well as the earlier used tools for community based studies in the Department of Psychiatry, Government Medical College Srinagar. Participants were also subjected to Mini International

Neuropsychiatric interview (MINI) which has high validity and reliability scores for DSM-IV based diagnoses and have been used in a series of earlier studies among the local population (Margoob et al., 2006; Sheehan, Lecrubier, & Sheehan, 1998). Interview was carried by a member of the community outreach programme team after having received the necessary formal training for instituting MINI and the semi-structured schedule. The members included trained/trainee psychiatrists. Diagnoses were confirmed by a consultant psychiatrist. Participants with a current psychiatric diagnosis were given appropriate treatment as required.

Data Analysis

The data was framed in an appropriate master chart and the morbidity along the different socio-demographic variables was analysed using SPSS 20.0 package. The variables were categorical and binary and hence were subjected to chi-square tests. The results with probability <0.05 were considered to show the statistical significance. The values of Chi-square, degrees of freedom and P are reported as appropriate.

RESULTS

Sample Population

A total of 18 localities/villages, comprising 2436 households were surveyed and the response rate was approximately 79%. A proportion (342) of these households was sampled which amounted to 3137 individuals, irrespective of sex and age, among them 1829(58.30%) were males and 1308(41.70%) were females. Five hundred seventy two (18.24%) persons had suffered trauma in childhood (5-17 yrs) and met the criteria for inclusion and detailed interviews were administered to this population. The sample characteristics are given in Table 1. The total males and females in sample population were 354(61.89%) and 218(38.11%) respectively. 42.65% (244 of 572) developed morbidity after the trauma. Among the sample, there was a higher rate of morbidity in females than in males following trauma (45.87% vs. 40.68% respectively). Sample age ranged from 5 years to 77 years. Maximum number of cases with trauma and subsequent morbidity belonged to 20-40 year age group i.e. 360(62.94%) and 208(57.78%) respectively (P <0.001).

The morbidity was slightly higher in rural than the urban population, 47.91% (N = 172) vs. 33.80% (N = 72) (P<0.001). Nuclear families showed more morbidity. The majority of those exposed to trauma in childhood were unemployed and unemployed people exposed to trauma in childhood were also more likely to experience morbidity. A statistically significant high morbidity was seen in upper-lower and lower socioeconomic class, 59.61% and 50.77% respectively in each subgroup (p<0.001).

Morbidity included the overall diagnosed cases regardless of the duration since the trauma (42.65%). Overall posttraumatic stress disorder formed the largest group with 24.47% (N = 140) followed by major depressive disorder with 15.38% (N = 88). Rest included panic disorder, dysthymia, substance use disorder and others. Other disorders present included Generalised Anxiety Disorder (GAD), social phobia, psychotic disorder and Anti-Social Personality Disorder (ASPD) (Table 2).

The trauma types were delineated as per Life Event Checklist (Blake et al., 1995). The maximum number of the traumatic events were related to combat/armed-conflict related events and death of someone close, N = 252(44.05%) and N = 184(32.16%) respectively. Mostly these events were related to conflict situations. Others were explosions (11.18%), natural disasters (5.59%), accidents (2.79%), and sexual abuse (1.39%). Cases with sexual abuse had a higher psychiatric morbidity i.e. 7 out of 8 (87.5%). This was followed by

Table 1.
Sample Characteristics and Psychiatric Morbidity in relation to different variables.

Variables	Total Sample (N = 572)		Proportion with morbidity (N = 244)		Percentage of morbidity in the group	Significance
	n ₁	%	n ₂	%	n ₂ /n ₁ %	
Gender						
Male	354	61.89	144	59.01	40.68	CS = 1.283, DF = 1, P = 0.257
Female	218	38.11	100	40.99	45.68	
Age Categories in Years						
5-20	145	25.35	32	13.12	22.07	CS = 95.833, DF = 3, P<0.001
20-40	360	62.94	208	85.24	57.78	
40-60	56	9.80	04	1.64	7.14	
>60	11	1.91	0	0	0	
Family Type						
Nuclear	236	41.26	112	45.90	47.45	CS = 3.458, DF = 1, P = 0.063
Joint	336	58.74	132	54.09	39.28	
Place of Dwelling						
Urban	213	37.24	72	29.50	33.80	CS = 10.309, DF = 1, P<0.001
Rural	359	62.76	172	70.50	47.91	
Occupation						
Employed	236	41.26	84	34.42	35.59	CS = 7.712, DF = 1, P = 0.005
Non-Employed	336	58.74	160	65.58	47.62	
Socioeconomic Status						
Upper	126	22.03	36	14.75	28.57	CS = 20.115, DF = 4, P<0.001
Upper Middle	201	35.15	82	33.61	40.80	
Lower Middle	128	22.38	62	24.41	48.43	
Upper Lower	52	9.09	31	12.71	59.61	
Lower	65	11.36	33	13.52	50.77	
Trauma type						
Explosions	64	11.18	16	6.56	25.0	CS = 32.755, DF = 6, P<0.001
Combat related	252	44.05	128	52.46	50.80	
Accidents (transport n others)	16	2.79	08	3.28	50.0	
Death of someone close	184	32.16	72	29.50	39.13	
Sexual abuse	8	1.39	07	2.86	87.50	
Natural disasters	32	5.59	05	2.05	15.62	
Others	16	2.79	08	3.79	50	
Duration since Trauma (years)						
1-5 years	120	20.98	38	15.57	31.67	CS = 9.864, DF = 2, P = 0.007
>5-10 years	354	61.89	168	68.86	47.45	
>10 years	98	17.13	38	15.57	38.77	

CS: Chi Square; DF: Degrees of Freedom; P: Probability

Table 2.
Percentage of different Diagnosis

Diagnosis	Number	Percentage of Total Morbidity (N = 244)	Percentage of Total Cases(N = 572)
Major Depressive Disorder	88	36.06	15.38
Dysthymia	4	1.64	0.7
Panic Disorder	4	1.64	0.7
Social Phobia	1	0.41	0.17
Post-Traumatic Stress Disorder	140	57.38	24.47
Non-Alcohol Psychoactive Substance Use Disorders	4	1.64	0.7
Psychotic Disorders And Mood Disorders with Psychotic Features	1	0.41	0.17
Generalised Anxiety Disorder	1	0.41	0.17
Antisocial Personality Disorder	1	0.41	0.17

cases that had a combat/armed conflict related event (128/252 or 50.8%) and by accidents (8/16 or 50%). In total, events related to combat/armed-conflict, accidents, death of a close one and sexual abuse had a major contribution to PTSD group, 28.96% (N = 73), 50% (N = 8), 25% (N = 46) and 75% (N = 06) respectively. These results were statistically significant (p<0.001) (Table 3).

Most cases had suffered a trauma 5 to 10 years before the survey, N = 354(61.89%), however, the duration ranged from 1 year to more than 15 years. It was seen that initially morbidity increased with time from trauma but it later declined again, 38(31.67%) vs. 168(47.45%) vs. 38(38.77%). Morbidity remained high 10-years after the traumatic event 38.77% (p<0.007). The burden of PTSD

was more than MDD in 5-10 year group, N = 105(29.66%) vs. N = 56(15.81%). At more than 10 years although both the disorders decreased but the overall morbidity was high.

DISCUSSION

Traumatic experiences are common both at individual and community level and different people react differently depending on different variables including socio- cultural and biological factors (Margoob & Ahmad, 2006). Main aim of our study, therefore, was to study the delayed response to the traumatic events in the shape of psychiatric/ psychological morbidity.

Table 3.
Morbidity in relation to Trauma type and Duration

Variables (N)	MDD	PTSD	Panic disorder	Dysthymia	Substance use	Others	
Trauma type							
Explosions(64)	09(14.06%)	01(1.56%)	02(3.12%)	2(3.12%)	02(3.12%)	-	CS = 58.529, DF = 12, P<0.001
Combat related(252)	54(21.42%)	73(28.96%)	01(0.39%)	-	-	-	
Accidents (transport n others) (16)	-	08 (50%)	-	-	-	-	
Death of someone close(184)	17(9.23%)	46(25%)	01(0.54%)	02(1.08%)	02(1.08%)	04(2.16%)	
Sexual abuse(8)	01(12.5%)	06(75%)	-	-	-	-	
Natural disasters(32)	03(9.37%)	02(6.25%)	-	-	-	-	
Others(16)	04(25%)	04(25%)	-	-	-	-	
Duration since Trauma							
1-5years(120)	14(11.67%)	20(16.67%)	02(1.67%)	-	01(0.84%)	01(0.84%)	CS = 9.642, DF = 4, P = 0.047
>5-10years(354)	56(15.81%)	105(29.66%)	01(0.28%)	02(0.56%)	02(0.56%)	02(0.56%)	
>10 years(98)	18(18.36%)	15(15.30%)	01(1.02%)	02(2.04%)	01(1.02%)	01(1.02%)	

CS: Chi Square; DF: Degrees of Freedom; P: Probability

The sample size was in limitation to resource, topography, manpower and time. Moreover, the extreme seasonal variations further limited the total time and reach of the study. Care was taken to take an approximate population based proportion from each district. The male preponderance in the sample could be due to the gender discrepancy in the population and lesser social inhibitions over participation among males (Census of India, 2001). There have been similar observations by other researchers as well (Margoob & Ahmad, 2006).

The Trauma Prevalence

The trauma prevalence was 18.42% which was lower than reported by researchers earlier in this part of world and elsewhere (Khan & Margoob, 2006; Kessler et al., 1995; Breslau et al., 1991; Norris, 1992). The lower prevalence of traumatic exposure in our sample could be due to the fact that the traumatic events only during childhood and adolescent period were counted, whereas others had considered the overall lifetime prevalence of trauma. Other factor could be that it was a long-term retrospective interview and suffer from recall bias. It is also likely that the people who had no severe sequelae of a traumatic event may have neglected that event and thus negating any traumatic history latter in the course of time.

Traumatic Events

Among the traumatic events, combat/armed-conflict (exposure to conflict zone, including assaults, tortures, injuries, and severe sufferings) and death of someone close (witnessed, heard-about) formed the major group of traumatic events in our sample, 44.05% and 32.16% respectively. This was in unison to the fact that our sample was taken from a population which is dwelling in a chronic conflict zone, with mass trauma exposure of the whole community, in contrast to the sample of National Co morbidity Survey which was done in a population where this type of trauma was almost absent (Schofield, 2000; Kessler et al., 1995). As was expected the rate of reported sexual events was less because of the inhibition towards the topic. Natural disasters formed 5.59% of the total, which is a lesser proportion due to the fact that these events have been in focal areas and our sampling was quite scattered to concentrate these cases. The rates of these traumatic events were almost similar to what has been observed by an earlier researcher (Margoob & Ahmad, 2006).

Psychiatric Morbidity

Consequences of the extensive amount of trauma on our sample population seem to have resulted in high prevalence of psychiatric disorders. In spite of the fact that study was carried out many years after the trauma, the research estimated high psychiatric morbidity (42.65%). This is in agreement with the observations by McFarlane et al. for 26 months in Australia (McFarlane, Policansky, & Irwin et al., 1987). Similar high rates of PTSD, depressive disorder, and

their co-occurrence were reported among victims residing in the two heavily impacted cities one and a half years after the 1988 earthquake in Armenia (Goenjian et al., 1995). This is also similar to a study by Kar and Bastia after a natural disaster in Orissa (cyclone) who found 37.9% of adolescents with a diagnosis (Kar & Bastia, 2006). Similarly Margoob et al. (2006) found that 34.39% of the cohort had a psychiatric disorder at the end of one year after a snowstorm disaster in Kashmir (Margoob et al., 2006). Other studies yielded results in the range of 12% to 70% in terms of total psychiatric morbidity (McDermott & Palmer, 1999; Gul, Kashmiri, & Sabir, 2007; Hoven et al., 2005; Math et al., 2008). However, some studies have not observed any long-term increase in psychiatric morbidity following a traumatic incident (Winje & Ulvik, 1998).

The high morbidity with increase in duration since trauma carries more significance in the light of the fact that our sample had traumatic events at different points of time, those were of different intensity and quality in a heterogeneous population. This paper studied the effect of trauma for a long duration, up to more than 15 years in some cases. The increase in psychiatric morbidity over time is also reported by earlier studies that studied the effects of trauma over/of a shorter duration (Margoob, 1995; McFarlane, Policansky, & Irwin et al., 1987; Swenson et al., 1996; Green et al., 1991).

The major group of the morbidity came from combat related cases, which could be due to the assumption that it was a 'trauma in trauma', an ongoing situation, which was traumatising over majority of the times. Although the prevalence in the natural disaster group was least but it was still high over a baseline average and formed a significant proportion.

PTSD was the commonest individual diagnosis in our study 24.47% (N = 140). Studies have shown PTSD prevalence after disaster from as high as 72% to as low as 8%. However, these were done immediately or within a few months after the disaster. Bockszczanin et al. found that 18% of children to be suffering from PTSD 2.5 years after a flood in Poland (Bockszczanin, 2007). Yule noted that 15% of adolescents had symptoms of PTSD seven years after the incident of war in Bosnia (Yule, 2000). An earlier study reported a prevalence of 18.51% one year after trauma in the same region (Margoob & Ahmad, 2006). Thus our result of 24.47% is in trend with the previous results from the area, although we are first time studying the effects of a long time.

The observed higher prevalence of PTSD in females was also reported by Hoven et al. who found higher rates of PTSD and other anxiety disorders in females after the attack on World Trade Centre (Hoven et al., 2005). Similar reports regarding gender variation were seen in other studies elsewhere (Swenson et al., 1996).

Most of these cases were of chronic PTSD. We also found that acute onset PTSD was more common in the sample population and peritraumatic dissociation and amnesia was also common. These could perhaps serve as the predictors of chronicity. However more severe symptoms were seen in cases where the onset of symptoms

was protracted or delayed, perhaps the reason being 'not giving a vent to the feelings' in the commoner terms. Sleep disturbances, avoidance, difficulty concentrating were the commonest symptom clusters of these patients, which has also been earlier reported (Norris, 2002).

MDD formed the second major individual diagnosis after PTSD, 15.38% (N = 88). Depression is known to occur with increase frequency subsequent to trauma. Kar, Bastia and Catani et al. found the prevalence of 13.5%, 17.6% and 19.6% in their studies respectively which was similar to our findings, the only factor being that these studies were conducted immediately after the trauma (Math et al., 2008; Kar & Bastia, 2006; Catani et al., 2008).

CONCLUSION

Post-trauma morbidity may be significantly chronic in nature and may need screening. MDD and PTSD form the majority of the morbidities present. Both MDD and PTSD may develop very late after the traumatic event. Post-trauma sequelae need to be recognized in our population in view of having a high prevalence of trauma and the mental health professionals and others need to be sensitised towards the same.

In prospect, we emphasize the need for further large scale, well controlled, prospective studies for longitudinal follow-up of traumatic experiences. There is also a need to study the personality changes post trauma as this may reveal different results than in western societies.

Competing interests: The authors declare that they have no competing interest.

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Conflict of Interest: None declared

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