

## Prevalence of Psychiatric Co morbidities in Traumatic Amputees-A cross sectional study from Kashmir (Indian Part)

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### ABSTRACT

**Background and objectives:** Loss of a limb for any a reason is a major event with profound implications on the psychological health of an individual involved. Due to prevailing sociopolitical disturbances in Kashmir Valley (Indian administered) and lack of epidemiological data, a study of amputation and its co-morbid psychiatric conditions seems crucial for planning care management for these patients. The aim of our current study was to study various socio-demographic variables of amputees and to find prevalence of psychiatric disorders in amputees from the out-patient population.

**Methods:** A total of 100 consecutive cases of amputation were studied. Patients who had an amputation were identified and diagnosed according to DSM-IV criteria for psychiatric co morbidities. Epidemiological and demographic data obtained from the interview of the subjects was analysed and simple percentages were obtained. Prevalence of psychiatric co-morbidities and indication for the amputation were calculated.

**Results:** In our study we found that, majority (45%) of the amputees were males in the age group of 15-30 years from rural areas (81%) with low literacy rates. Motor vehicle accident accounts for majority (53%) of amputations followed by 21% from ongoing sociopolitical disturbance (landmines, blast, firearms). The most common co-morbid psychiatric condition in our study was major depressive disorder (63%). 40% of patients were suffering from anxiety disorders which included 20% as PTSD (Post Traumatic Stress Disorder), 4% as ssPTSD (sub syndromal PTSD), 10% as GAD (Generalized Anxiety Disorder), and 6% as panic disorder.

**Conclusion:** Most of the patients with psychiatric co-morbidities were males of younger age group from rural areas. Major depressive disorder was the most common co-morbidity.

**Keywords:** Psychiatric co-morbidities, traumatic amputation, major depressive disorder, PTSD

### Background:

Loss of a limb for any a reason is a major event with profound implications on the psychological health of an individual involved. It has been seen that 20-60% of the amputees attending surgical or rehabilitation clinics are assessed as being clinically depressed<sup>1-3</sup>. Individuals suffering traumatic limb loss at any age are likely to suffer subsequent difficulties with their body image, but these relationships are more striking in the younger age groups who have experienced traumatic injuries. The psychological reactions to amputation are clearly diverse and range from severe disability at one extreme; determined and effective resumption of a full and active life at other end. Indeed, among adults the age at which an individual receives the amputation is also an important factor. The investigation of psycho-social adaptation to amputation has generated a plethora of clinical and empirical studies<sup>4-7</sup>. An amputation is typically equated with loss of once perception of wholeness<sup>8</sup>, loss of spouse<sup>9</sup>, symbolic castration and even death<sup>10, 11</sup>. The individual's response to a traumatic event is influenced by personality traits, psychiatric premorbid state, gender, peri-traumatic dissociation, prolonged disability of traumatic events, lack of social support and inadequate coping strategies<sup>12-15</sup>. Even though the previous research on consequences of amputation has focused primarily on relationships among demographic variables, coping mechanisms, and outcome

measures; there is lack of literature on prevalence of various specific psychiatric disorders post-amputation<sup>16, 17</sup>. Most of the literature and research on prevalence of specific psychiatric morbidity has largely focused on symptoms of depression<sup>18</sup>.

To the best of our knowledge there has been very little published about the psychiatric co-morbidity in the victims of amputation. In view of paucity of studies in this field, especially due to prevailing sociopolitical disturbances in Kashmir valley (Indian administered), study of amputation and its co morbid psychiatric conditions seems crucial for planning care management of these patients. Such a study seems justified for more than one reason, as the present state of affairs is in sharp contrast to the traditional circumstances that people of valley used to live in. The aim of our current study is:

1. To study various socio-demographic variables of amputees.
2. To find prevalence of psychiatric disorders in amputees from the out-patient population of the bones and joint surgery hospital, Srinagar which also has an artificial limb rehabilitation centre attached with it.

**Materials and methods:**

The study was conducted in the Post Graduate Department of Orthopaedics, Govt. Medical College, Srinagar. This 200 bedded hospital is the sole orthopaedic hospital in the Kashmir valley and Ladakh and caters to the needs of all districts of the valley and Ladakh region and some areas of Jammu province. It is affiliated to Govt. Medical College, Srinagar as the teaching hospital, for both under and post graduate studies. A total of 100 patients were studied. The sample comprised of 100 consecutive cases of amputation. Patients who had an amputation were identified and diagnosed according to DSM-IV<sup>19</sup> lead criteria for psychiatric co morbidity. After patient consent, a detailed history was taken, and a general physical examination was performed to identify any medical problems. A detailed semi structured interview with all relevant items from MINI<sup>20</sup> (mini international neuro psychiatric interview) was administered to all the cases included in the study. The cases were selected on the basis of inclusion and exclusion criterion.

**Inclusion criteria:**

1. Informed consent from the patients under study
2. Amputation of more than one year duration
3. Age more than 14 years and less than 60 years
4. Patients were included in the study irrespective of their sex

**Exclusion criteria:**

1. Those who do not give consent
2. Those persons who have history of any DSM-IV axis I or axis II disorder before the development of amputation.
3. Presence of disabling medical or neurological conditions like motor neuron disease, Parkinson disease, etc.
4. Age less than 14 years
5. Age more than 60 years

**Observations and results:**

The data was categorised according to age, sex, residential address, education etc. Data obtained from the interview of the subjects was analysed and simple percentages were obtained. Besides socio-demographic profile, prevalence of psychiatric co-morbidities and reason for amputations were calculated. Results are shown in tables 1-3.

**Table-1:** Socio-demographic characteristics of the amputees

Characteristic		Number (n)	Percentage
Age	15-30	45	45
	31-45	30	30
	46-60	25	25
Sex	Male	79	79
	Female	21	21
Education	Illiterate	61	61

	Literate	39	39
Marriage	Married	55	55
	Un-married	45	45
Residence	Rural	81	81
	Urban	19	19
Occupation	Domestic workers	42	42
	Unskilled laborers	19	19
	Students	17	17
	Businessmen	16	16
Religion	Govt. employees	06	06
	Islam	95	95
	Sikhism	03	03
	Hinduism	02	02

**Table-2:** Indication/cause of amputation

Indication/cause	Number (n)	Percentage
Motor vehicle accident	53	53
Blast	11	11
Land mine	06	06
Fire arm injury	04	04
Others*	26	26

\*The others include fall from tree, electrocution, machinery mishap, fall from hillock.

**Table-3:** Prevalence of psychiatric co-morbidities in amputees

Co morbidity	Number(n)	Percentage
Major depressive disorder	63	63
Post traumatic stress disorder	20	20
Impulse control disorder	19	19
Phantom limb phenomenon	14	14
Generalized anxiety disorder	10	10
Panic disorder	06	06
Sub syndromal PTSD	04	04
None	16	16

**Discussion**

**Socio-demographic profile:** In our study we found that males out-numbered females by approximately 4:1 ratio (79% males, 21% females). The majority (45%) of the amputees were males in the age group of 15-30 years, followed by 30% in the age group of 31-45 years and 25% in the age group of 46-60 years. The most likely explanation for this observation is that younger people are known to have higher exposure to the violence as

compared to older people. In addition younger patient readily seek help for their psychological problems in comparison to older people. The results are consistent with the study conducted by Ebrahimzadeh et al<sup>21</sup> and Shukla<sup>1</sup> et al. Male predominance could be derived from the reason that ours is a patriarchal type of society where the men are the bread earners of the family and the women usually prefer to stay at home. Another reason could be that men report for rehabilitation and also seek help for their psychological problems more readily. Similar findings have also been reported by Cavanagh et al where they reported 75% of patients were male<sup>22</sup>. 55% of our patients were married which could be due to the reason that majority of our sample were of adults in the marriageable age group. The findings of our study are consistent with the earlier reported studies by Margoob et al<sup>23</sup>. We also observed that majority (81%) of our cases were from rural areas with low literacy rates. Most likely explanation for this observation is that the majority (74.9%) of the population in our state is from rural back ground. Low literacy rates is explained on the basis that most of the people who visit government hospitals of our valley are from poor background where it is very difficult for people to achieve and afford formal education. The other reason could be that Jammu & Kashmir is one of the states of India where literacy rates are low (54.46%) than average in India (65.38%)<sup>24</sup>. Shukla et al in their study of amputees reported that majority of their patients were uneducated<sup>1</sup>. In our study majority of the patients (95%) were Muslim. This is explained by the demographic profiles of the valley of Kashmir-Muslims are the majority community and other communities like Hinduism, Sikhism form part of minority. The greater percentage of Muslims is also substantiated because of mass exodus of minority community in early nineties with start of armed conflict in Kashmir whereby non Muslims migrated amass to different parts of the country.

**Reason for amputation:** In our study motor vehicle accident account for majority (53%) of the amputations. Most plausible explanations include overwhelming increase of traffic with road being in dilapidated conditions, narrow lanes, lack of driving skills by the motorists, lack of road signs and poor judgment while crossing the road by the pedestrians across the valley<sup>25</sup>. The lawlessness and violence in valley also contribute to reckless driving and negligence of law enforcement agencies. The other collective percentage of 21% which includes 11% for blast injuries, 6% for land mine explosions and 4% for fire arm injury is significant by all means because of the ongoing sociopolitical disturbance in Kashmir since 1990s. The above findings are in accordance with high prevalence of traumatic events in Kashmir as observed by Margoob et al<sup>23</sup>. The study revealed that 59.51% of adult men and 57.39% of women have lifetime prevalence of exposure to traumatic events.

**Prevalence of psychiatric co-morbidities:** The most common co morbid psychiatric condition in our study was major depressive disorder. 63% of patients were suffering from it. Our results are in accordance with the study conducted by Shukla et al (70.2%). Similar findings have also been reported by Rendal et al<sup>3</sup> and Kashif et al<sup>26</sup>. In our study 40% of patients were suffering from anxiety disorders which included 20% as PTSD (Post Traumatic Stress Disorder), 4% as ssPTSD (sub syndromal PTSD), 10% as GAD (Generalized Anxiety Disorder), and 6% as panic disorder. The higher prevalence of PTSD in our study sample is because of higher rate of PTSD in this part of the world as reported in a series of studies by Margoob et al<sup>23</sup>. The results of our study are also in agreement with those reported by Fukunishi<sup>26</sup> (33.9%), and Grieger et al<sup>27</sup>. 19 % of patients in our study reported impulse control disorder in the form of crying spells and outbursts of anger. The lower prevalence of phantom phenomenon (14%) in our sample could be attributed to the fact that the time duration since amputation was variable and usually of longer duration. This is in agreement with the study by Ebrahimzadeh et al<sup>21</sup> where it is reported that 40% of the patients had phantom sensation and 32% were suffering from phantom pain. In another study by Lacorix et al<sup>29</sup>, 90% had phantom sensation and 29% had phantom pain. Our observation is further substantiated by Melzack<sup>30</sup>, Sherman et al<sup>31</sup>, and Pezzin Et al<sup>32</sup> who in their respective studies reported that phantom limb sensation and pain gradually decreases with time. In our study 16% of the patients reported to have no psychiatric co morbidity. This could be due to various coping strategies adopted by the patients with primarily religious and spiritual involvement and obedience to local clergy, Imams (person who leads daily worship services at mosques) and spiritual healers<sup>33</sup>. This observation is in agreement with the study by Margoob et al<sup>34</sup>. In another study Huda et al<sup>33</sup> and Margoob et al<sup>36</sup> found that resorting to religious practices happens to be most often used coping method for dealing with problems and intense emotions of trauma in Kashmiri society. Similar observations have been made by studies in internally displaced people of Chechnya by Jong Kde et al<sup>35</sup>.

In light of the above observations of our study, spreading awareness about the co-morbid psychiatric disorders in amputees can be very helpful in diagnosing and proper treatment of such cases and further to prevent chronic debilitating course associated with amputation. More intensive physical and psychiatric rehabilitation with the attention to the provision of prosthesis, retraining, and financial support packages may improve the quality of life of these patients.

Limitations of our study include a small sample size (100). Also results can't be generalised for rest of India or Asia because of socio-political and religious practice differences.

**Conclusion:**

Psychiatric co-morbidities are very common in amputees in our study. Most of the patients were married males of younger age group from rural areas. The majority of the sample population comprised of unemployed people and those less educated. Major depressive disorder is the most common co-morbidity followed by anxiety disorders in which PTSD subjects were predominant followed by impulse control disorder and phantom phenomenon respectively. A significant number reported no symptoms of mental health illness.

**Competing Interests**

None declared

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