Psychiatric Comorbidity in Amputees With Average Sociodemographic Status and the Role of Theologic and Family Support In A Conflict Zone

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Abstract

Aim: *The present study is aimed at assessing the various socio demographic variables of amputees in a conflict zone of South Asia with regard to psychiatric comorbidities in a productive age group.*

Materials and methods: A cohort of 100 amputees diagnosed and identified as per DSM-IV lead criteria for psychiatric comorbidity were included in the study. The data was categorized according to age, sex, residential address, socioeconomic status, education etc. Data obtained from the interview of the subjects was analyzed and simple percentages were obtained.

Results: *Maximum number of amputee patients 63% (n=63) had major depressive disorder (MDD) followed by Post Traumatic Stress Disorder (PTSD) 20% (n=20), impulse control disorder 19% (n=19), phantom limb phenomenon 14% (n=14), GAD 10% (n=10), panic disorder 6 %(n=6) and sub syndromal PTSD 4% (n=4). 16% (n=16) were patients having no psychiatric co morbidity. The comorbidity was present in 58% cases.*

Conclusion: *Major depressive disorder was the most common comorbidity followed by anxiety disorders in which PTSD subjects were majority followed by impulse control disorder and phantom phenomenon respectively. A significant number were having no symptoms of psychiatric illness in them. This subgroup is significant as they can provide an insight into defense mechanisms which promote healthy recovery and prevent chronic debilitating course associated with amputation.*

Keywords: Amputee; PTSD; Comorbidity; Theology; Defense

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Introduction:

The association of amputation with profound psychiatric comorbidity is well documented (Shukla et al., 1982, Kashani et al., 1983, Randall, Ewalt & Blair, 1945) some of which include major depressive disorder, Post Traumatic Stress Disorder (PTSD), impulse control disorder, phantom limb phenomenon, generalized anxiety disorder, panic disorder, syndromal PTSD and subsyndromal PTSD. Each disorder requires a different approach to treatment. This is more relevant in conflict and combat zones due to the higher incidence of firearm and road traffic accident related injuries in such areas where normal law and order authorities are rendered ineffective. In such cases, post operative rehabilitation, both physical and psychological, is the most important aspect of reintegration (English, 1989) and presents the greatest challenge to the patient, the family and the amputation team. It calls for a flexible approach addressed to the rapidly evolving needs of the amputee. Initially, the patient is concerned about safety, pain, and disfigurement. Later on, the emphasis shifts to social reintegration and vocational adjustment. 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. Older adults may not experience as extreme a reaction as younger adults because the amputation and resultant undesirable change in body image in the latter are complicated by uncomfortable prostheses which are perceived as relatively "on all the time" (Durance & O'Shea, 1988). The period between the surgery and the start of rehabilitation may last a matter of hours or days, depending, among other things, on the reason for the amputation, the extent and condition of the residual limb, and the kind of rehabilitation thought to be feasible. Psychological reactions noted in this phase are concerns about safety; fear of complications and pain, and in some instances, loss of alertness and orientation (Durance & O'Shea, 1988). In general, those who sustain the amputation after a period of preparation react more positively than do those who sustain it after trauma or accident since they are mentally ready to accept the loss of limb and the resultant changes to their activities of daily living. Most individuals are, to a certain degree, "numbed," partly as a result of the anesthesia and partly as a way of handling the trauma of loss. For those who have suffered considerable pain before the surgery, the amputation may bring much-needed relief. By all accounts, the amputee's return home can be a particularly taxing period because of loss of the familiar surroundings of the hospital and attenuation of the guidance and support provided by the rehabilitation team. Hence, the attitude of the family becomes a major determinant of the amputee's adaptation. Family members should be involved in all phases of the rehabilitative process. It is during this phase that the full impact of the loss becomes evident. A number of individuals experience a "second realization," with attendant sadness and grief. Some resent any pressure put upon them to resume normal functioning. Others may go to the other extreme and vehemently reject any suggestion that they might be disabled or require help in any way. An excessive show of sympathy generally fosters the notion that one is to be pitied. In this phase, three areas of concern come to the fore: return to gainful employment, social acceptance, and sexual adjustment. Of immense value in all of these matters is the availability of a relative or a significant other who can provide support without damaging self-esteem. A subtle but often overlooked issue is the ease with which the disability can be concealed in social settings which often determines the social reintegration of the patient. The investigation of psycho-social adaptation to amputation has generated plethora of clinical and empirical studies (Bradway et al., 1984). Amputation typically is equated with loss of one's perception of wholeness (Parkes, 1972), loss of spouse (Block & Ventura, 1963), symbolic castration (Block & Ventura, 1963) and even death (Goldberg, 1984). The individual response to a traumatic event is influenced by personality traits, psychiatric pre-morbidity, gender, peritraumatic dissociation, prolonged disability of traumatic events, lack of social support and inadequate copying strategies (Schnyder et al., 2001, Scragg, Jones & Fauvel, 2001, Richter et al., 2000, Pajonk et al., 2002). Amputated victim are prone to PTSD symptom (Cheung, Alvaro & Colotla, 2003). Severity of the PTSD symptoms and its progression depends on multiple factors including personality traits (for example neuroticism) level of physical function in secondary stress (for example work related stress due to amputation). The phantom limb phenomenon characteristically occurs after amputation of limbs and other body parts. The intensity, persistence and extent of distribution of phantom limbs sensations and the motility of phantom limb itself is directly proportionate to the patients' anxieties (Frederiks, 1963, Melzack & Loeser, 1978).

To the best of our knowledge there has been very less published or detailed studies on stress related disorders available so far from south Asia and the psychiatric co morbidity in the victims of amputation has not been reported so far. The paucity of the literature related to such a study and shortcomings have been time and again discussed both nationally and internationally.

In view of dearth of studies in the field and especially due to prevailing stressful conditions for the masses in general in Kashmir valley, owing to sociopolitical disturbances the study of amputation and its co morbid psychiatric conditions seems crucial for better understanding of the phenomenology of stress related disorders. 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 people are uncertain about future with a constant fear on their psyche in sharp contrast to old days when people used to roam freely, fearlessly celebrate different festivals with joy and fervor. This is borne out by the exponential increase in the number of patients seeking psychiatric help in the last two decades since the armed insurgency began. There is a profusion of different types of hitherto unexplored psychiatric comorbidities in amputees in this part of the

world that need proper evaluation and quantification so that early and effective therapy can be instituted to give some solace to an already battered population which, in effect, is the purpose of this study. We believe that the same principles apply to patients in conflict zones elsewhere and nowadays there is no dearth of such areas in the world.

Materials and methods

A total of 100 patients were studied. Sample comprised of 100 consecutive cases of amputation. Patients of amputation were identified and diagnosed according to DSM-IV (Diagnostic and statistical manual of mental disorders. 4thEd. APA,1994) lead criteria for psychiatric co morbidity after discussing with consultant. After consent was obtained from each participant, a detailed history was taken and a general physical examination performed, so as to identify any existing medical problems.

A detailed semi structured interview with all relevant items from MINI (Sheehan et al., 1998) (mini international neuro psychiatric interview) was administered to all the cases included in the study. It follows DSM-IV & ICD-10 criteria for psychiatric disorder. The cases were selected on the basis of the following inclusion criteria:

i. Informed consent obtained from the patients under study
ii. Amputation occurred at least one year prior to study
iii. Participant age more than 14 years and less than 60 years
iv. An absence of disabling medical or neurological conditions.
v. No history of DSM-IV axis I or axis II disorder prior to amputation

The data was categorized according to age, sex, residential address, socioeconomic status, education, marital status, occupation, indication for amputation, psychiatric comorbidity and addiction. Data obtained from the interview of the subjects was analyzed and simple percentages were obtained.

Discussion

Following amputation individuals are likely to experience number of difficulties that may potentially be ameliorated by health, social and rehabilitation services. The primary difficulties experienced by this population are reduced mobility and pain. However this group may also experience psychosocial difficulties. Reduced mobility varies depending on the quality and fit of the prosthetic limb and the extent to which it is used (Desmond & MacLachlan, 2006). During cultural and social upheavals including manmade environmental factors like war and violence, drastic change takes place in people's expectations, "the meaning of life" and values. The culture buffers its members from the impact of stressful experience by means of social support it provides, providing identities and supplying a shared vision of life. Trauma alters the basic perception not only of the individual but of the whole socio cultural society and may never be the same again. In this study, the various parameters which were used to evaluate the results have been elaborated in tables 1 and 2.

Majority of cases from younger age group (15-30) was on the basis that younger people are physically more active due to economic reasons. Also, youth in conflict zones are known to have higher exposure to the violence as compared to older people. The advent of militancy in Kashmir led to a "Che Guevara" like effect where youth romanticized the gun and took to violence. Another reason could be younger patients are readily seeking help for their psychological problems than older people. In Iran, from amputees of the Iran-Iraq war, Ebrahimzadeh and Fattahi (2004) and from India, Shukla et al (1982) in their study of amputees also reported that the commonest age group involved was 10-30 years.

Most of the patients seen were males (79%). This may be due to the fact that ours is a patriarchal type of society and the males in search of livelihood and doing manual labor (as in this study) are more prone to mishaps both natural and manmade. Shukla et al (1982) in their study of 72 amputees reported a male to female ratio of 17:1 showing the clear male preponderance. Similar findings have also been reported by Cavanaugh et al (2006) where they reported 75% of patients were male.

A majority of our sample was of adults in the culturally marriageable age group in our part of country. This is more pertinent in the rural milieu of Kashmir where marriages are conducted earlier(Margoob, Firdosi et al., 2006).

In our study majority (81%) of our cases were from rural areas and only 19% from urban areas. The reasons for this difference could be that majority of the population is from the rural milieu (Margoob, 1996) where less emphasis is laid on traffic rules or occupational safety. Also, violent incidents quite frequently take place in rural

areas which have less presence of the security forces, terrain more suited to guerilla warfare and implantation of land mines which accidentally take toll of civilian population of that area as well.

In our study majority (64%) of our cases belong to lower class followed by 36% from middle class with no patient from upper class. The reason for this could be that majority of the patients seeking facilities like prosthesis or limb replacement belong to lower class as the consultation services are free of cost with added incentive in the form of monetary aid from the government for such victims. The total absence of any case from upper class does not specify immunity to development of psychiatric comorbidity in that group. The reasons for such a finding in our study could be that patients from upper class feel stigmatized to be seen in such government centers and prefer to get treated in advanced centers outside the valley of Kashmir, away from the gaze of the common man. Such cases are seen occasionally in private centers but they are loath to take part in any study. Also, much of the elite class of the Vale of Kashmir migrated early on during the inception of militancy to other parts of India and abroad to insure themselves from the goings on. The findings of our study are consistent with other studies conducted in Kashmir and elsewhere in India where it was found that majority of cases were from lower socio economic background (Shukla et al, 1982, Wani & Margoob, 2006).

Table 1: Demographic data of the study

Participant demographic data	*n (%)*	*Comments*
Age range		Nearly half of the cohort was in the age group of 15-30 years.
15-30 years	45 (45%)	
31-45 years	30 (30%)	
46-60 years	25 (25%)	
Sex		More than three fourths of the patients were males.
Male	79 (79%)	
Female	21 (21%)	
Socio-economic profile		Two thirds of the cases were from the lower class and the rest from the middle class; no patient belonged to the upper class.(depending on education, occupation and income of the chief earner of the household)
Lower class	64 (64%)	
Middle class	36 (36%)	
Upper class	0 (0%)	
Education		Nearly two thirds of the sample was illiterate.
Illiterate	61 (61%)	
Literate	39 (39%)	
Marital status		More than half the cases were married.
Married	55 (55%)	
Unmarried	45 (45%)	
Residence		Predominantly rural population.
Rural	81 (81%)	
Urban	19 (19%)	
Addiction		Mostly nicotine.
Nicotine	20 (20%)	
Other	0 (0%)	
Occupation		Mostly household work or manual labor.
Domestic workers	42 (42%)	
Unskilled laborers	19 (19%)	
Students	17 (17%)	
Businessmen	16 (16%)	
Govt. employees	06 (06%)	
Religion		Predominantly Islam.
Islam	95 (95%)	
Sikhism	03 (3%)	
Hinduism	02 (2%)	
Indication/cause		Half of the cases were due to road traffic accidents and the rest due to firearm injuries of various types, fall from height and machinery injuries.
Vehicle Accident	53 (53%)	
Blast	11 (11%)	
Land mine	06 (6%)	
Fire arm injury	04 (4%)	
Others	26 (26%)	

Table 2: Psychiatric comorbidity

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

Maximum number of amputee patients 63% (n=63) had major depressive disorder (MDD) followed by Post Traumatic Stress Disorder (PTSD) 20% (n=20), impulse control disorder 19% (n=19), phantom limb phenomenon 14% (n=14), Generalized anxiety disorder (GAD) 10% (n=10), panic disorder 6 %(n=6) and sub syndromal PTSD 4% (n=4). 16% cases (n=16) had no psychiatric comorbidity. The comorbidity was present in 58%.

Most of the people who visit government hospitals of our valley for free treatment are illiterates from very poor background where it is very difficult for people to achieve and afford formal education. The other reason could be that, as per census of India (2001), Jammu and Kashmir (J&K) is one of the states of India where literacy rates are low (54.46%) than average in India (65.38%).

In our study the largest group of participants (42%) were either doing house hold work or were house wives, as females form 21% of our study. This is in keeping with cultural and social background of our state as majority of women look after their house activities rather than working outside. Another reason could be because of poverty and non affordability of going to school plus in general lack of employment policy in our state which is corroborated by the fact that out of total 25.2% working force in Jammu & Kashmir, only 41.3% males and 7.3% females are gainfully engaged as main workers while 63.4% are not working resulting in poor socio economic conditions (Census of India, 2001).

Kashmir is overwhelmingly inhabited by Muslims and other communities like Hinduism, Sikhism form part of minority (Census of India, 2001), hence the 95% incidence of Muslims in this study. The greater percentage of Muslims is also due to mass exodus of minorities in early nineties with start of armed conflict in Kashmir whereby non Muslims migrated amass to different parts of India.

In our study, motor vehicle accident account for majority (53%) of amputations. This could be because of overwhelming increase of traffic on the roads with road being in dilapidated conditions across the valley (Yatoo & Tabish, 2008). The facts are further substantiated by lawlessness and violence in valley which attribute 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 violent sociopolitical disturbance in Kashmir since 20 years. This is further aggravated by cross border shelling of neighboring country which sometimes hit the civilian population and may lead invariably to amputation. The above findings are in accordance with high prevalence of traumatic events in Kashmir as depicted by Margoob, Firdosi et al in a study in 2006 which reveals that 59.51% of adult men and 57.39% of women have lifetime prevalence of exposure to traumatic events.

In our study 20% of the patients were addicted to nicotine which is more than the incidence (15%) in the general population (Census of India, 2001). The reason for addiction could be that amputation brings about drastic life changes and requires major occupational, social and emotional adjustments. The reliable information about the harder substances was not revealed by the subjects in most of the cases. As it is a well known phenomenon that drug dependent subjects do not reveal the true information as is also reflected in one of the earlier studies in Kashmir by Margoob et al (2004) where it's reported 61.91% of suspected substance abusers deny any history of abuse at first contact with the investigating team. Garafalo (2000) in his study reported that readjusting to life after amputation is likely to be challenging for most people as a result a multitude of problems, including mal addicting coping behavior (drug /alcohol consumption) are present. Similar findings are reflected in other study by Kashani et al (1983) where they reported increased prevalence of addiction in amputation because of confounding trauma of amputation and comorbid depression.

Psychiatric co morbidity was not diagnosed initially in most of the cases as they were being dealt with for their orthopedic problems in an orthopedic hospital with no counseling facilities or any form of psychiatric help. It was only after the patients had been discharged from the orthopedic center that they slowly started consulting the psychiatric hospital for management of PTSD and related symptoms. This often happened after the treating orthopedic surgeon or family members felt the need to address their psychological trauma after the physical trauma had been dealt with and the former could not be

treated satisfactorily at the primary level. More the delay in referral, more severe were the symptoms. Better results were seen with patients who received early and vigorous physical and psychological rehabilitation. The psychiatric comorbidities encountered included the following:

Major Depressive Disorder

In our study we found that 63% of patients were suffering from major depressive disorder. This was diagnosed by DSM-IV based mini interviewing adult version (Sheehan et al., 1998). It formed the most common co morbid psychiatric condition in our study. Shukla et al (1982) in reported depression was the commonest presentation in 70.2% of 72 amputees. Kashani et al (1983) reported a 35% prevalence of major depressive disorders in 65 amputees evaluated in physical medicine and rehabilitation center. Similar findings have also been reported by Randall et al (1945) where they observed major depressive disorder to be the most common prevalent psychiatric co morbidity as a result of amputation. Kashif et al (2004) in their study of 40 patients with lower limb amputation also showed depression as highly prevalent in amputee population.

Anxiety Disorders

40% of patients were suffering from anxiety disorders which included 20% as PTSD, 4% as subsyndromal PTSD, 10% as GAD and 6% as panic disorder. The higher prevalence of PTSD in our study could be because of higher rate of PTSD in this part of the world (Margoob, Firdosi et al., 2006). Fukunishi et al (1996) who conducted a study on 26 patients with digital amputation reported PTSD rate of 33.9%. In a study conducted by Grieger et al (2006) to find the prevalence of PSTD and depression in battle injured soldiers reported that 12.2% patients had PTSD at 7 months. The findings of our study are in disagreement with those conducted by Cavangh et al (2006) where they reported the rate of PSTD was relatively low after amputation. The reason for disagreement could be reflected by the fact that the sample size in the above mentioned study was small only 26 patients were studied and the other reason could be that the reason of amputation was therapeutic. Studies by Schubert et al (1992), Frierson and Lippmann (1987) and Thompson and Haren (1983) reported significant level of anxiety among amputees in their respective studies. Cavanagh et al (2006) in their study found PTSD in only three of their twenty six subjects. However twenty three of them were therapeutic amputations only three were accident related amputations. In these three two had PTSD and one rated high on Clinician-Administered PTSD Scale (CAPS). This again proves greater PTSD is present in trauma related amputation cases.

Impulse Control Disorder

19 % of patients in our study reported impulse control disorder in the form of crying spells and outburst of anger. Similar findings were reported by Shukla et al (1982).

Phantom Limb Phenomenon

Lacroix et al (1992) in a study of 100 cases of upper extremity amputees of the Sierra Leone civil war 1990-1994 reported that 90% had phantom sensation and 29% had phantom pain. However, in our study the lower prevalence of phantom phenomenon (14%) could be attributed to the fact that the time duration since amputation was variable and usually of longer duration. As mentioned earlier, these amputees sought professional psychiatric help long after the initial trauma, by which time the phantom phenomenon had subsided considerably. Our observation is further substantiated by Melzack (1990), and Sherman et al (1980) who in their respective studies reported that phantom limb sensation and pain gradually decreases with time.

None (no psychiatric co morbidity)

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 and spiritual healers (Huda & Margoob (2006). Most of these patients were living in joint families with good family support that included spouses, parents, siblings and other near relations. Spiritual belief showed up as a positive factor in positive coping wherein the patients were more religious than before the trauma and were visiting the local clergy and mosques much more frequently. They were also trying to keep busy with their vocations and theology. Their families were also treating them like before and did not at any point of time let them feel different than previously. These people were also visiting the shrines of various Sufi saints and ascetics to achieve salvation and inner peace of mind. This observation is in agreement with the observation reported by Margoob, Khan et al (2006) in one year long longitudinal study of snow storm disaster survivors in Kashmir. The study reports that disasters adversely

affect and overwhelm stress coping mechanism of survivors. Appropriate psychological support by family, close friends and counselors can enhance the capacity to resolve problems, which is achieved by helping survivors to get back their cognitive skills which are of immense help in preventing future psychopathology and its disability. Spirituality is a strong tool to reinforce resilience among the survivors and cope with various difficulties in course of trauma. Pertinently, the eastern religions teach inevitability of fate which helps survivors to accept and live beyond trauma. Similar studies from Kashmir and Chechnya (Margoob, Firdosi et al., 2006, Huda & Margoob, 2006, Jong et al., 2004) reveal that resorting to religion happens to be most often used coping method for dealing with problems and intense emotions of trauma in our society. Further observations have also proved decrease in stress related response by above said measures in a study from Israel by Foa (2006). Spiritual involvement in the survivors of Waltengu, a Himalayan Village 60 kilometers south of Kashmir, which suffered extensive damage and loss of lives due to a snow storm in south Kashmir in 2005 also involved attachment to, and obedience of local clergy and spiritual leaders. Our study is further substantiated by study of Huda and Margoob (2006) in which they have reported that integrated spiritual components as an integral part of the psychosocial intervention was rewarding in the management of many patients with severe post disaster psychopathology. Drescher and Foy (1995) observed in their study that spiritual beliefs and practices along with social, emotional, physical and cognitive aspects are getting included in the current concepts of coping strategies. Further Russell D' Souza and Bruce Singh (2005) who in their study on post tsunami in Sri Lanka observed that the role of religion spirituality and rituals help to enhance resilience, coping understanding the meaning of trauma in a correct perspective.

Conclusion

Comorbidity was very common in amputees in our study. Most of the patient were of younger age group, were males, married and belonged to lower socioeconomic class with majority from rural areas. Majority of the sample comprised of unemployed doing household work and were illiterate. Major depressive disorder was the most common comorbidity followed by anxiety disorders in which PTSD subjects were majority followed by impulse control disorder and phantom phenomenon respectively. GAD and panic disorders were also reported by the patients though their percentage was less. A significant number of patient reported addiction to nicotine post amputation. It was almost exclusively seen in males. Most of the patients in our sample had duration of amputation running over years and came late to seek counseling. The ones who resorted to psychiatric help early on had better outcome of their comorbidity. A good number were having no symptoms of psychiatric illness in them. These were the ones who benefited most by strong family support and recourse to religious reawakening, accepted their disability with fortitude and moved on in life.

In light of above observations of our study, awareness about the co-morbid psychiatric disorders in amputation patients 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 attention to the provision of prosthesis, retraining, and financial support packages will improve the quality of life of these patients. In a close knit society like ours, with a tightly woven social fabric, the support of family members is invaluable to enable the amputee to overcome his physical and mental disability and lead a healthy, productive life. Guidance of local clergy and recourse to religion can accelerate this healing process and the same ought to be encouraged at all levels of treatment.

There are some limitations of this study. The DSM-IV is designed by the American Psychiatric Association and its application in a population in Kashmir which is predominantly illiterate may confound results. However, in the absence of a suitable alternative more relevant to our local populace, we are compelled to use the DSM-IV criteria. Since such a study has not been previously performed in Kashmir and there is a dearth of studies on stress related disorders available so far from south Asia, the DSM-IV has not been validated in our population. This is an attempt to use the DSM IV criteria as a tool for assessing psychiatric morbidity.

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