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Analysis of Psychiatric Morbidity with Socio Demographic Variables Related to Injury Patients

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Abstract: The objective of the study is to find out the possible association between psychiatric morbidity with Socio-demographic variables and factors related to injury of patients. It was a cross sectional, descriptive and analytical study conducted in the Center for the Rehabilitation of the Paralyzed, a specialized hospital for spinal cord injury patients; Saver, Dhaka. The target population for this study was the all male and female patients with history of spinal cord injury aged 18 years 60 years stabilized on treatment. The study was carried out during the period from July 2011 to June 2012. Samples that fulfilled the inclusion criteria were selected depending on availability during study period. A Total 53 caseswere included from both outpatient and inpatient department. The socio-demographic information of the patient was documented by using the structured questionnaire.The psychiatric diagnosis was established on the basis of a structured and validated instrument, Structured Clinical Interview for DSM-IV Axis-I disorder SCID-CV. Diagnosis was confirmed by consultant psychiatrist. There was no significant association between psychiatric morbidity with age, sex, habitat, religion, education and marital status and other related factors to injury ($p > 0.05$). Knowledge of factors influencing psychiatric morbidity may be valuable to study interventions aimed to promote SCI patient's wellbeing. This study provides relevant data concerning the psychiatric morbidity of patients with SCI pointing at potential targets for psychosocial interventions.
Keywords: Psychiatric morbidity, Socio-demographic variables, DSM-IV Axis-I disorder SCID-CV, SCI.

INTRODUCTION

The spinal cord is a long, thin, tubular bundle of nervous tissue and support cells that extends from the medulla oblongata in the brainstem to the lumbar region of the vertebral column. The brain and spinal cord together make up the central nervous system. A spinal cord injury usually begins with a sudden, traumatic blow to the spine that fractures or dislocates vertebrae [1]. The damage begins at the moment of injury when displaced bone fragments, disc material, or ligaments bruise or tear into spinal cord tissue. A spinal cord injury disrupts the signals. Spinal cord injuries usually begin with a blow that fractures or dislocates vertebrae, the bone disks that make up spine. The injury usually results in permanent paralysis of voluntary muscles and loss of sensation below the lesion, which is associated with reduced mobility and functional independence, impairment of social and vocational activities, as well as negative influences on the person's health and well-being.

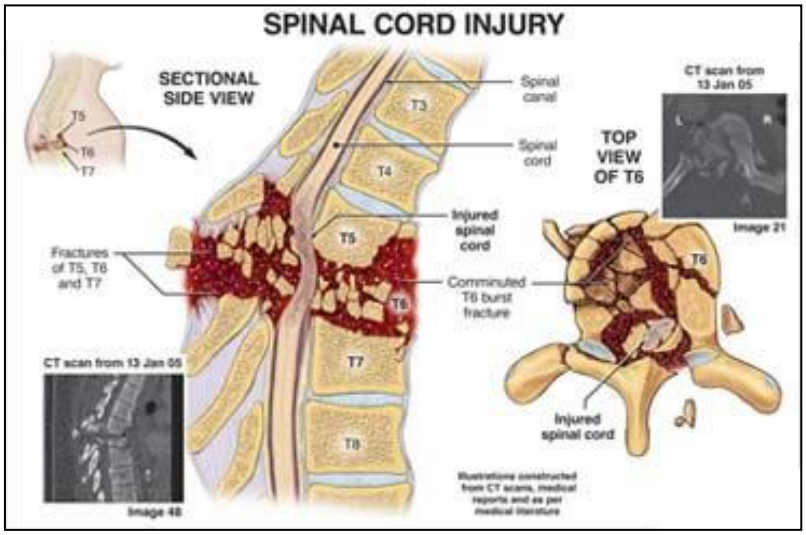

Fig-1: Spinal cord injury

In Bangladesh falling from the height is the most common cause of Spinal cord injury, accounting for 40.30%. Road traffic accident is the second most common cause of Cervical Spinal cord injury (23.9%) falling while carrying a heavy load on the head is another important cause (16.0%). Among the non-traumatic causes of Spinal cord injury, spinal tuberculosis is the most common cause 7.0 % [2]. Although it is possible to delimit aspects of people's lives which are affected by considering the functional, psychological, social and economic implications, these are clearly interrelated. For people of all ages, functional impairment due to spinal cord injury can lead to social withdrawal. A systemic review of literature concerning the nature of psychological morbidity in people with spinal cord injury, in Australia, represent that, approximately 30% of people with Spinal cord injury are at risk of having a depressive disorder during the first 6 to 8 months of injury, although in rehabilitation; and approximately 27% are at risk of having raised depressive symptoms when living in the community. The review also established that people with Spinal cord injury have higher comparative risks of anxiety disorder, elevated levels of anxiety, feelings of helplessness and poor quality of life (QOL) [3]. Another study in Nairobi, Kenya; among paraplegics undergoing rehabilitation at the National Spinal Injury Hospital, showed that 56.25% were diagnosed with psychiatric morbidity. Among them 23.4% was post-traumatic stress disorder, 17.2% were depression, alcohol dependence 1.6%, generalized anxiety disorder 5%, cannabis abuse 8% and somatization disorder in 7.5% in the patients [4].

A study in New Zealand suggests that, underlying psychological factors may confer a greater risk than spinal cord injury itself for the development of subsequent psychiatric disorder. These are educational level attained, previous psychiatric history, history of substance abuse, history of impulsiveness, parental separation, family psychiatric history, length of stay and persistent pain[5]. Hopefully this study will then lead to formulation of comprehensive treatment modality of patients with Spinal Cord Injury thereby alleviate everyday miseries and help to improve the quality of life of this group of patients

Objective of the study

The objective of the study is to find out the possible association between psychiatric morbidity with Socio-demographic variables and factors related to injury of patients.

MATERIALS AND METHODS

Type and place of the study

This was a cross sectional, descriptive and analytical study. The study was carried out in the Center for the Rehabilitation of the Paralyzed (CRP), Saver; Dhaka which is the only specialized hospital for the treatment of the paralyzed in Bangladesh. In Bangladesh the hospital at CRP-Savar is the specialised hospital that services the patients suffers from spinal cord injuries. The 100-bed hospital receives over 350 admissions as in-patients each year. Admissions are exclusively for the treatment of spinal injuries or illness affecting the spine. The above mentioned institution was chosen because it is a specialized hospital with all available facilities for the paralyzed. As Patients coming from all areas of Bangladesh, so at a glance we can have an idea about the whole community.

Inclusion criteria

- Both male and female patients who have significant neurological loss due to Spinal cord injury.
- Patients having age 18 years to 60 years.
- All the Spinal cord injuries were result of trauma.

- Only those patients with Spinal cord injury of more than six weeks duration after the injury (chronic phase) was included.

Exclusion criteria

- Patient who was mute, stuporous, non-communicable, non-cooperative and with serious medical condition from that he/she was unable to communicate with the researcher/interviewer.

Study population

All the patients who came for consultation to the Center for the Rehabilitation of the Paralyzed, Savar; Dhaka, during the study period, and who were fulfilled the inclusion criteria were taken for the study.

Sample size and sampling technique

Patients who suffer from Spinal Cord Injury, of both sexes who meet the inclusion criteria considered as sample from the Centre for the Rehabilitation of the Paralysed (CRP), Savar, Dhaka. Samples were selected purposefully and consecutively. Thetarget of sample size was 100. Some patients during the period of data collection were refused to give consent; some were exhausted due to pain or other physical discomfort. Total 53 samples (both male and female) were taken from inpatient and outpatient department of the study place depending on availability during study period.

Pre-testing

Prior to the study pre-testing of questionnaires were carried out among patients equivalent to 10% (ten patients) of total study population to test the applicability of the methodology including the research instruments. One of the research instrument 'structured questionnaire to identify the socio demographic characteristics and factors related to injury" was translated in Bengali prior to apply and some modification in the questions was done and was finalized.

Research instruments

- Pre-designed structured questionnaire for the study of "Psychiatric morbidity among Patients following Spinal Cord Injury". It includes socio demographic variables such as, age, sex, educational level, residence, marital status, family type, monthly family income, severity of injury, duration of injury etc. of the patient. Researcher was collected data by this questionnaire from the patients by face to face interview. During interview, researcher used Bengali version of the questionnaire.
- Diagnostic and Statistical Manual of Mental Disorder (DSM-IV) criteria was used for diagnosis psychiatric disorder. It is a new version incorporating minor revisions of the explanatory text- DSM-IV Text Revision (DSM-IV-TR) was published in 2000 and is referred to as DSM-IV-TR to distinguish it from the originally published in 1994. It contains a small number of textual changes and updates the classification as an educational tool, but contain no significant alterations to the diagnostic criteria [6].
- SCID-CV (Structured Clinical Interview for DSM-IV Axis-I Disorder- Clinician Version) -

The structured clinical interview for DSM-IV Axis-I disorder (SCID-I) is a structured interview for making the major DSM-IV Axis-I diagnosis. Structured interviewing have been developed to increase diagnostic reliability through standardization of the assessment process and to increase diagnostic validity by facilitating the application of the DSM-IV diagnostic criteria and by systematically probing for symptoms that might otherwise be overlooked [7]. SCID is available in two versions: Clinician Version and Research Version. In this study researcher used Clinician Version for diagnosis of Axis-I disorder. The SCID- Clinician Version is divided into six modules. Module A: Mood Episodes, Module B: Psychotic Symptoms, Module C: Psychotic Disorder, Module D: Mood Disorder, Module E: Substance Use Disorder, Module F: Anxiety and Other Disorder.

Procedure of the data collection

After the selection of the patient, he/she was informed about the purpose of the study and ethical issues were also informed to them. Then after taking the written consent, data collection procedure was initiated by the researcher herself. After selecting the patient the socio-demographic information of the patient from himself/herself was documented by using the structured questionnaire to identify the socio-demographic characteristics and factors related to injury. This information was collected by face to face interview. Then SCID-CV was applied to the patient by the researcher to generate DSM-IV Axis-I diagnosis. Total interview took on an average 40-45 minutes for each patient.

Data processing and analysis

After collecting the data it was checked and data analysis was performed by statistical package for social science (SPSS). After cleaning the data it was edited, coded and entered into the computer. Then the prevalence of psychiatric morbidity of patients with Spinal cord injury was estimated and appropriate test of significance was applied. Result was presented as text, tables, and figures.

RESULTS

A total number of 53 patients with history of Spinal Cord Injury were included in the study and were evaluated with using SCID-CV. Among the participants 77.4% patients were found to have psychiatric morbidity in Axis–I diagnosis of DSM-IV.

Specific psychiatric morbidity in this group was shown in table and figure.

Table-1: Socio-demographic characteristics of the patients (n=53)

Age in years	N	%
18-27	17	32.1
28-37	18	34.0
38-47	10	18.9
48-57	4	7.5
58-60	4	7.5
Total	53	100.0
Gender	N	%
Male	46	86.8
Female	7	13.2
Total	53	100.0
Habitat	N	%
Rural	40	75.5
Urban	13	24.5
Total	53	100.0
Religion	N	%
Islam	48	90.6
Hindu	3	5.7
Christian	2	3.8
Total	53	100.0
Education	N	%
Illiterate	15	28.3
Primary	21	39.6
SSC	8	15.1
HSC	6	11.3
Graduate & above	3	5.7
Total	53	100.0
Employment	N	%
Service holder	3	5.7
Business	7	13.2
Student	4	7.5
Labor	16	30.2
Farmer	14	26.4
Housewife	4	7.5
Other	5	9.4
Total	53	100.0
Main earning member of family	N	%
Yes	31	58.5
No	22	41.5
Total	53	100.0
Marital status	N	%
Married	34	64.2
Unmarried	18	34.0
Widow	1	1.9
Total	53	100.0
Type of family	N	%
Joint	21	39.6
Nuclear	32	60.4
Total	53	100
Monthly family income (tk)	N	%
< 10000	44	83.0
10001-20000	8	15.1
20001-30000	1	1.9
Total	53	100.0

Table 1 shows most of the patients (34.0%) were within 28-37 years of age and next within 18-27 years of age (32.0%). Among the patients 86.8% were male and 13.2% were female. Most of the patients were Muslim (90.6%) and were of rural background (75.5%). Regarding educational qualification 11.3% passed higher secondary level, 15.1% unto secondary, 39.6 % studied up to primary level, 5.7% completed graduation or post graduate level of education and 28.3% were illiterate. Regarding the marital status 64.2% were married, 34.0% were unmarried and 1.9% was widow (err). Most of their family type was nuclear (60.4%).

Table 2 shows most of the patients (34.0%) were within 28-37 years of age and next within 18-27 years of age (32.0%). Regarding the morbidity level, the highest psychiatric morbidity (88.2%) was among patients of 18-27 years age group.

Table-2: Distribution of Psychiatric morbidity according to age of patients (n=53)

Variables	Psychiatric morbidity						p-value
	Without psychiatric morbidity		With psychiatric morbidity		Total		
Age (Years)	N	%	N	%	N	%	
18-27	2	11.8	15	88.2	17	32.1	.528
28-37	4	22.2	14	77.8	18	34.0	
38-47	3	30.0	7	70.0	10	18.9	
48-57	1	25.0	3	75.0	4	7.5	
58-60	2	50.0	2	50.0	4	7.5	
Total	12	22.6	41	77.4	53	100.0	

P value reached from chi-square test, p>0.05 =not significant

Table-3: Distribution of psychiatric morbidity according to severity of Injury

Variables	Psychiatric morbidity						p-value
	Without psychiatric morbidity		With psychiatric morbidity		Total		
Types of injury	N	%	n	%	n	%	
Paraplegia	11	22.9	37	77.1	48	100	.882
Tetraplegia	1	20.0	4	80.0	5	100	
Total	12	22.6	41	77.4	53	100	

Data were analyzed by Pearson Chi-square test, P>.05= not significant
* Significance

Table 3 shows the severity of injury of the patient and its association. It was found that among total 53 patient 90.5% was paraplegic (77.1% had psychiatric morbidity, 22.9% had no psychiatric morbidity). 9.4% patients were Tetraplegic (80.0% had psychiatric morbidity, 20.0% had no psychiatric morbidity).

Table-4: Distribution of patients by monthly family income

Variables	Psychiatric morbidity						p-value
	Without psychiatric morbidity		With psychiatric morbidity		Total		
	N	%	N	%	N	%	
Monthly family income (tk)							
< 10000	8	18.2	36	81.8	44	83.2	.122
10001-20000	4	50.0	4	50.0	8	15	
20001-30000	0	.0	1	100.0	1	1.8	
Total	12	22.6	41	77.4	53	100	

P value reached from chi-square test, p>0.05 =not significant

Table 4 shows most of the patients (83.2%) were lies within below average income group (<10000 tk.) and next within 10001-20000 tk. per month group (15.0%). Regarding the morbidity level, the highest psychiatric morbidity (83.2%) was among patients of <10000 tk. per month income group.

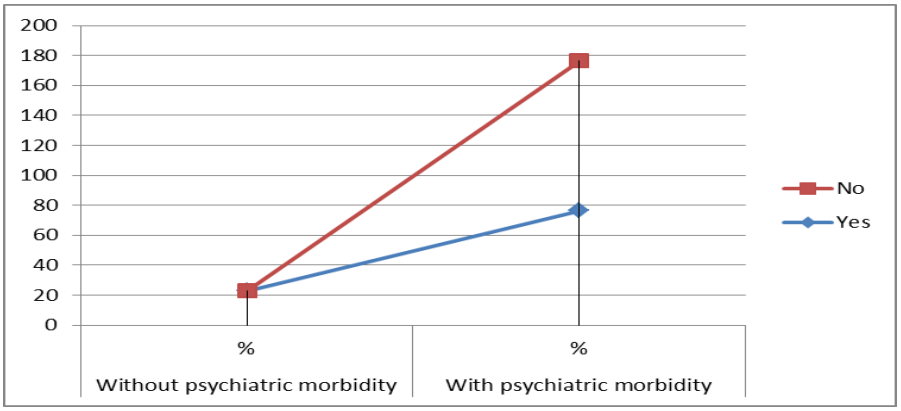

Fig-3: Distribution of psychiatric morbidity according to Unemployment due to injury

P>.05= not significant

* Significance shows 76.5% were unemployed and had psychiatric disorder.

DISCUSSION

This was a descriptive cross sectional and analytical study which was conducted in the outpatient and inpatient department of the Center for the Rehabilitation of the Paralyzed (CRP), Saver; Dhaka on patients with Spinal Cord Injury. In current study shows 77.4% of patients with Spinal Cord Injury had psychiatric morbidity and 22.6% had no psychiatric morbidity.

Socio demographic characteristics of patients

This study found that most of the patients (34.0%) were within 28-37 years of age and next within 18-27 years of age (32.0%). Regarding the morbidity level, the highest psychiatric morbidity (88.2%) was among patients of 18-27 years. This study found that 34.00% patients were within age group 28-37 years and 32.1% within 18-27 years. Next 77.8% patients were within age group 28-37 years and 75.0% within 48-57 years. A previous study in Bangladesh found maximum cases were age ranges 26-35 years which was consistence to the study result [8]. Another study in India by Banerjea *et al*. found 53% of the patients belong to the age group 25-34 years which was nearly similar to our study [9]. Probably the people of younger age are more vulnerable to injury.Regarding the gender 86.8 % patients were male and rest 13.2% was female. Uddin *et al*. studied on Need Assessment of Psychologically Hurt Young Spinal Injured patients in National Institute of Traumatology and Orthopaedic Rehabilitation (NITOR), Dhaka; 87.43% were male and 12.57% were female [8]. In a community survey on mental health in Bangladesh found that prevalence of psychiatric morbidity is higher (19.0%) in female than male (12.9%) [10]. After consider these previous data we can infer that, though the females are suffered more in psychiatric illness than male in community [11], but they attended less than male in tertiary care hospital for treatment. In this study found that most of the respondents (75.5%) came from rural area and 24.5% patients (46.0%) hailed from the urban area. This also reflects that the patients from the rural area are more vulnerable group for accidental injury. Bangladesh is mainly Muslim inhabited country (BBS, 2001) and the distribution of the patients according to their religion also reflects the fact.

In present study most of the patients (39.6%) studied up to any level of primary education. That means the patients within these groups completed 5-6 years of education in average. This finding is similar to previous study done by Uddin *et al*. in present study 28.3% patient was found illiterate [8].

Regarding the marital status 64.2.0% were married and it was consistent with previous study where they found 73.5% were married [8]. Psychiatric morbidity found more in unmarried (83.3%) in our study. This difference may be due to difference in methodology and study design.There was no significant association between psychiatric disorder with age, sex, habitat, religion, education, marital status etc. ($p > 0.05$).

Analysis of objectives in response to other associated factors related to injury of patients

Analysis of response to other items of structured questionnaire showed that factors related to injury, family history of psychiatric illness, severity of injury, duration of injury ; unemployment due to injury, found no association with psychiatric morbidity (p>.05).

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CONCLUSION

From the above discussion it was found that the hypothesis was partially established, that is psychiatric morbidity among individuals with Spinal

Cord Injury is significantly higher than general population. Longitudinal study on a large sample with considering the psychopathology morbidity estimated by the SCID generated DSM-IV diagnosis. The study found the positive relationship with the psychiatric morbidity and other related factors. Socio-demographic variables found no statistical significant association with the psychiatric morbidity. As well as it is also found that some social measure can limit the psychiatric morbidity like family.

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