Pattern of paralysis among the indoor patients in centre for the rehabilitation of the paralyzed (crp) in bangladesh.

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Abstract

Paralysis is the loss of muscle function in part the body. It normally happens when something goes wrong with the way messages pass between the brain and muscles. This condition can occur on one or both sides of the body and can also be complete or partial. The study aimed to identify the pattern of paralysis among the patients in centre for the rehabilitation of the paralyzed (CRP). This study was a cross sectional and a total of 103 patients were selected purposively. The data was analyzed using SPSS version 24. In this study little below nine-tenths (89.3%) of the respondents were male and the mean age of the participants was 33.8 years. About 73.8% of the participants were from rural area and most of them (38.8%) had primary level of education. Based on traumatic causes of injury, 39.8% of them were victims of falling from height, 35.0% road traffic, 19.4% fall of over loading, 1.9% motor vehicle and 3.9% non-traumatic spine. The findings reveal that the majority of the patients had had cervical injury, about 48.0% of them were classified in ASIA A and the majority of the patients had complete paraplegia. There is need to create more awareness and proper steps so as to reduce the factors causing paralysis in Bangladesh as a whole.

Keywords: Paralysis, Patients, Injury, CRP, Bangladesh.

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Introduction

Paralysis is the central nervous system disorder resulting in difficulty or inability to move the upper or lower extremities. The Center for Disease Control and Prevention (CDC) in the year 2013 used a standardized definition of paralysis developed by an expert panel and funded the Paralysis Prevalence & Health Disparities Survey (PPHDS). The goal was to estimate paralysis prevalence, causes, and health effects among the US population. However the public health professionals are frequently challenged when estimating prevalence for people with functional limitations (such as paralysis) characterizing their disability. The United States alone has an estimated 5.5 million people living with paralysis. Paralysis often affects multiple body systems in a single person, and the result of this paralysis has a significant impact on their independence and quality of life. The manifestations of paralysis include loss of voluntary movement, undesired movements such as spasticity and spasm, loss of sensation leading to skin breakdown and loss of perception, and pain [1-3].

In Bangladesh there is only one non-government Centre for the Rehabilitation of the Paralyzed, and which has been conducting a rehabilitation program for the last 32 years through which the patients can improve their life style [4]. In this country it is important to know the epidemiology of paralysis so as to develop healthcare and social services; most of the village people in Bangladesh are suffering from an injury. Nowadays spinal cord injury is most commonly occurring disabling condition in all developing and developed countries in the world and it will be increasing day by day due to lack of awareness. Injuries that are affecting the spinal cord and complicated by physical damage are an important health problem in Bangladesh as they carry a high rate of morbidity and mortality. Despite multiple published studies in this field, yet in Bangladesh there is few researches regarding this issue. The study aimed to identify the pattern of paralysis among the patients in centre for the rehabilitation of the paralyzed (CRP) in Bangladesh.

Methodology

Study design, area and period

This study was a descriptive cross sectional-study conducted in the paralysis unit of the Centre for the Rehabilitation of the Paralyzed (CRP) in Bangladesh and it was aimed to identify the pattern of paralysis among the admitted patients. The study was conducted for a period of 5 months (August 2018-January 2019).

Study population, selection criteria and sample size

The participants were selected using purposive sampling technique from the Centre for the Rehabilitation of the Paralyzed (CRP) situated in Savar, Dhaka, Bangladesh. CRP provides medical treatment, rehabilitation and support services focusing on physical, emotional, social, psychological and economic aspects in Bangladesh. CRP also raises awareness on disability issues nationally, regionally and internationally. The study population composed of the paralysis patients who were admitted at CRP during the period of this study. A total of 103 patients were selected in this study. The paralysis patients who were admitted at CRP and interested to participate in this study were included. However those who were not interested to participate due to some reasons were excluded.

Data collection tools, processing and analysis

The data was collected using a close-ended semi-structured questionnaire. The questionnaire involved the socio-demographic variables section and a section that contains the injury related information. The ASIA impairment scale was used to collect the information on the neurological level of injury. Data was collected using face to face interview technique and some information was collected directly from the medical information of the patients available in CRP. During the data collection, a Bengali version of the questionnaire was used. After the data collection; all the collected information was translated to English for easier data entry. The data was analyzed using Statistical Package for Social Sciences (SPSS) version 24.

Ethical consideration

The permission was initially taken from Department of Public Health, ASA University before conducting the study. The consent and approval was taken from the concern committee of CRP and permission was granted to do this research. Verbal inform consent was taken from the participants before starting the data collection. The study was approved by Ethics committee Department of Public Health, ASA University, Bangladesh.

Results

Table 1 shows that little below nine-tenths (89.3%) of the participants were male and the rest of them were female (10.7%). In this study the mean age of the participants was 33.8 years and most (60.2%) of the respondents were in the age group 25-35 years. Most (73.8%) of the participants were from rural area and the rest (26.2%) of them were from urban area. About 26.2% of the respondents were service holders, followed by 21.4% who were farmers, 15.5% were drivers, 11.7% were day laborers, 9.7% were business holders and the rest (9.7%) were doing other jobs. Most of the participants (38.8%) had primary level of education, followed by 24.3% who had higher secondary level of education, 18.4% had bachelor's degree, 13.6% had secondary level of education and the rest (4.9%) had other qualifications. Little above two-fifths (41.7%) were married, 29.1% were widowed, 27.2% were unmarried and the rest (2%) were divorced.

Table 1. *Distribution of the Respondents according to Socio-demographic Characteristics (n-=103).*

Socio-demographic variables	Frequency	Percentage
Sex		
Male	92	89.3
Female	11	10.7
Age (years)		
23-35	62	60.2
36-46	23	22.3
≥ 47	18	17.5
Mean ± SD	33.8 ± 7.2	
Residence		
Rural	76	73.8
Urban	27	26.2
Occupation		
Business holder	10	9.7
Service holder	27	26.2
Day laborer	12	11.7
Driver	16	15.5
Farmer	22	21.4
Student	6	5.8
Others	10	9.7
Educational qualification		
Primary	40	38.8
Secondary	14	13.6
Higher Secondary	25	24.3
Bachelor's Degree	19	18.4
Others	5	4.9
Marital status		
Married	43	41.7
Unmarried	28	27.2
Widowed	30	29.1
Divorced	2	2.0

Table 2 shows that based on skeletal level of injury, close to half (44.7%) of the participants had cervical injury, followed by lumber (30.1%), thoracic (24.3%) and the rest had no specific level of skeletal injury (0.9%). The participants were also classified based on the neurological level of injury which was assessed using the ASIA

impairment scale. Out of 103 patients (participants) about 48.0% of them were classified in ASIA A, followed by 27.0% who were in ASIA B, 14.0% were in ASIA C, 5% of them were in ASIA D, 1% were in ASIA E and the rest (5%) were classified as Normal. Based on type of injury; about 31.1% of the patients had complete paraplegia, 29.1% had incomplete paraplegia, 26.2% had complete tetraplegia, and 13.6% had incomplete tetraplegia. Based on traumatic causes of injury, 39.8% of them were victims of falling from height, followed by road traffic (35.0%), fall of over loading (19.4%) and motor vehicle (1.9%). However the non-traumatic spine was 3.9%.

Table 2. *Pattern of Paralysis among the Patients in Centre for the Rehabilitation of the Paralyzed (CRP) (n=103).*

Variables	Frequency	Percentage
Skeletal level of injury		
Cervical	46	44.7
Thoracic	25	24.3
Lumber	31	30.1
No	1	0.9
Neurological level of injury (ASIA Impairment Scale)		
ASIA scale: A	49	48.0
ASIA scale: B	28	27.0
ASIA scale: C	15	14.0
ASIA scale: D	5	5.0
ASIA scale: E	1	1.0
Normal	5	5.0
Type of injury		
Complete paraplegia	32	31.1
Incomplete paraplegia Complete tetraplegia	30	29.1
Incomplete tetraplegia	27	26.2
	14	13.6
Causes of injury		
Fall from height	41	39.8
Fall of over loading	20	19.4
Road traffic	36	35.0
Motor vehicle	2	1.9
Non-traumatic	4	3.9

Discussion

This study aimed to identify the pattern of paralysis patients who were admitted in the Centre for the Rehabilitation of the Paralyzed (CRP) in Bangladesh. There's no specific report regarding the total number of paralyzed patients in Bangladesh. In this study the mean age of the patients was 33.8 years and most (60.2%) of the respondents were in the age group 25-35 years. A similar study conducted in India reported the mean age of 34.3 years and a study conducted in USA found the mean age of 29.7 years [5,6]. Our finding also shows that little below nine-tenths (89.3%) of the patients were male and the rest of them were female (10.7%). In a study conducted in Brazil, USA and India more males were also reported than females [6-8]. However another study conducted in Pakistan found that the majority (57.2%) of the victims were female [9]. The study reported that among 103 patients most of them were from rural area and the rest (26.2%) were from urban area. This is consistent with the finding of another study conducted in India which found most of the patients were from rural area [5]. Above one-fifths (26.2%) of the patients were service holders, 21.4% were farmers, 15.5% were drivers, 11.7% were day laborers, 9.7% were business holders and others. In China a study showed that farmers were 57.2%, 13.3% laborers, 2.6% students, 3.4% service holders and others 12.4% [10]. In a study conducted in Nigeria 20.0% were students, 12.9% were farmers and 14.0% were service holders [11].

According to the skeletal level of injury, close to half (44.7%) of the participants had cervical injury, 30.1% lumber, 24.3% thoracic and the rest had no specific level of skeletal injury. A study conducted In China found that most of the skeletal injury was cervical injury (46.3%), lumber injury (33.3%) and thoracic injury (20.4%) [10]. Based on type of injury; about 31.1% of the patients had complete paraplegia, 29.1% had incomplete paraplegia, 26.2% had complete tetraplegia, and 13.6% had incomplete tetraplegia. The patients were also classified based on the neurological level of injury which was assessed using the ASIA impairment scale. Out of 103 patients about 48.0% of them were classified as ASIA A, followed by 27.0% who were in ASIA B, 14.0% were in ASIA C, 5% of them were in ASIA D, 1% were in ASIA E and the rest (5%) were classified as Normal. In a study conducted In Pakistan ASIA A was not reported, however 46.0% were in ASIA B, 41.0% were in ASIA C and 8.0% were in ASIA D [9].

According to traumatic causes of injury, 39.8% of them were victims of falling from height, followed by road traffic (35.0%), fall of over loading (19.4%) and motor vehicle (1.9%). However the non-traumatic spine was 3.9%. A similar study conducted in England reported that traffic accident was 46.8%, and for fall was 25.7%. In Nigeria a study reported that road traffic accident was 55.3%, fall from height 23.5%. In this study the traumatic cause was 96.1% and non-traumatic cause was 3.9%. A study conducted in Netherlands found 75.0% traumatic cause and in Fiji about 53.6% traumatic cause was reported and 46.4% non-traumatic cause [11-13].

Conclusion and Recommendation

In Bangladesh the number of paralysis patients is increasing day by day. Paralysis is one of the most serious injuries across the globe. There are many paralyzed patients in Bangladesh; however there is lack of information regarding this problem in the whole country. Our study finding reveals that males are predominantly more affected than females. Most of the patients had low level of education and were living in rural areas. This reason can make it to be more difficult to stop the factors causing paralysis. The findings reveal that majority

of the patients had cervical injury, about 48.0% of them were classified in ASIA A and the majority of the patients had complete paraplegia. The process of the paralysis management and rehabilitation normally tales time; so it is important to create awareness and proper steps so as to reduce the factors causing paralysis in Bangladesh as well as to improve healthy life style. The study was conducted among few patients; we recommended another study on overall population of Bangladesh.

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