EDUCATION, RECREATION AND EMPLOYMENT FOLLOWING SCI WHO HAVE COMPLETED REHABILITATION FROM CRP

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We the undersigned certify that we have carefully read and recommended to the Faculty of Medicine, University of Dhaka, for the acceptance of this dissertation entitled

EDUCATION, RECREATION AND EMPLOYMENT FOLLOWING SCI WHO HAVE COMPLETED REHABILITATION FROM CRP

Submitted by **Mahmuda Akter** for partial fulfillment of the requirements for the degree of Bachelor of Science in Physiotherapy (B. Sc. PT).

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DECLERATION

I declare that the work presented here is my own. All sources used have been cited appropriately. Any mistakes or inaccuracies are my own. I also decline that for any publication, presentation or dissemination of information of the study. I would bound to take written consent from the Department of Physiotherapy, Bangladesh Health Professions Institute (BHPI).

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ACRONYMS

ADL : Activity of Daily Living

ASIA : American Spinal Cord Injury Association

BHPI : Bangladesh Health Professions Institute

BMRC : Bangladesh Medical and Research Council

CBR : Community Based Rehabilitation

CRP : Centre for the Rehabilitation of the Paralysed

IRB : Institutional Review Board

SCI : Spinal Cord Injury

SPSS : Statistical Package for the Social Science

UK : United Kingdom

WHO : World Health Organization

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ABSTRACT

Purpose: The purpose of the study was to identify the level of participation of education, recreation & employment of a spinal cord injury (SCI) patient after successful rehabilitation. Objectives: To find out the level of participation of education, recreation & employment of a spinal cord injury (SCI) patient after successful rehabilitation. Methodology: This is a cross sectional quantitative study where 102 SCI patients are purposively selected who completed successful rehabilitation from Centre for the Rehabilitation of the Paralysed (CRP) at spinal cord injury (SCI) inpatient unit. Data was collected from the patients through phone calls. Result: Result shows that the majority of the patients (57.8%) 59 were belonged to the age group 21-40 years & their mean age was 34.76. The SD of participant's age was 0.702. Among 102 participants 46 (45.1%) injury are occurred due to fall from height. Among all the participants 41 (40.2%) had primary education before SCI & after rehabilitation 99 (97.1%) participants are not involved with education. Rest 3 (2.9%) are continuing their study after rehabilitation. Most of the participants of this study 37 (36.3%) were watched TV for their recreation before SCI & 49% participants are not involved with recreation after injury. 26% of the SCI were involved with self-business before SCI. Among the 102 participants 27 (26.5%) were taken vocational training from CRP. Conclusion: Spinal cord injury medically complex but preventable, modifiable disease. It can affect ones mental and psychological health. It is a devastating condition for an individual who have poor economic condition. In this research it was aimed to find out the level of participation of education, recreation & employment of a spinal cord injury (SCI) patient after successful rehabilitation.

Keywords: Education, Recreation, Employment, Spinal Cord Injury, Rehabilitation.

CHAPTER –I INTRODUCTION

1.1 Background

Bangladesh a poor densely populated country in south Asia, tried to achieving health related Millennium Development Goals (MDG) (Arafat, 2017). The growth rate of population in Bangladesh was 1.59% per year which includes 27% in urban area and 73% in rural. The literacy rate of people in Bangladesh is about 61.0% among the age of 15 years and above (Masud et al., 2017). Bangladesh has many health related problems among them Spinal cord injury (SCI) is one of the most devastating and debilitating critical condition. Spinal cord injury (SCI) is a major public health problem for the society that causes non-progressive motor loss, sensory impairment and autonomic dysfunction for the person with Spinal cord injury (SCI) (Noreau et al., 2000). Spinal cord injury (SCI) is the damage to the spinal cord that causes changes in its function, either temporary or permanent. These changes also cause loss of muscle function, sensation, autonomic function, limitations to perform Activities of Daily Living (ADLs) below the level of the lesion (Clin Rehabil, 2011). The incidence of Spinal cord injury (SCI) is increasing day by day. Now it is a major cause of disability throughout the Asia as well as in Bangladesh (Islam et al., 2011). The incidence of spinal cord injury (SCI) is increasing at an annual rate of 15-40 cases per million people (Quadir et al., 2017). Among the developed countries only in the U.S.A. approximately 12000 new cases of spinal cord injuries (SCI) are found every year according to the report of national spinal cord injury statistical center (NSCISC) (Ottomanelli and Lind, 2009). The number 0f spinal cord injury (SCI) patients are approximately 262.000 in the United States in 2009 (National SCI Statistical Center, 2010). Male are more predominant to spinal cord injury (SCI) and these commonly affect the low-socio economic group (Quadir et al., 2017). The ratio 0f male & female spinal cord injury (SCI) patients were 7.5:1 (Haque, 1999). Young age and middle age adults are most commonly affect by spinal cord injury (SCI). The recovery rate of spinal cord injury (SCI) depends on the type and severity of lesion, rehabilitation time, and individual performance of activity of daily living (Westgren & Levi, 1998). Generally, trauma is the main cause of spinal cord injury (SCI) such as- fall

from height, road traffic accident, gunshot injury, sports injury are the leading cause of injury around the world (Sridharan et al., 2015). Among them 43% are caused due to fall from height such as a tree, 20% were associated with falling while carrying a heavy load on the head (a common practice in Bangladesh), 18% were resulted from a road traffic accident and 5% formed a very diverse group which included assault, stab injury, sports injury, and bull attack. In traumatic causes 60% patients were presented paraplegia and 40% were tetraplegia (Haque, 1999). Spinal cord injury (SCI) may also occur due to non-traumatic cause. The non-traumatic cause of spinal cord injury (SCI) includes- spinal tumor, tuberculosis (TB), transverse myelitis (TM) (Ning et al., 2012). Among 28% of non-traumatic spinal cord injury (SCI) the main causes were pott`s disease, 21% due to spinal tumor, 10% causes due to transverse myelitis (TM), 6% resulting from gulliaen barre syndrome (GBS) and 1% occur due to cervical spondylitis. From all non-traumatic cases 84% patients were paraplegic and 16% patients were tetraplegic. In other countries statistics are also similar; in Japan 43% of traumatic spinal cord injury (SCI) are caused by fall from a height and 18% occur by road traffic accident. In India these rate are 55% caused by fall from a height and 13% are resulting from road traffic accident, and in Thailand the rate of spinal cord injury (SCI) are 43% caused by fall from a height (Haque, 1999). In our country there is one government hospital whom they care about rehabilitation of Spinal cord injury (SCI) and one specialized non-government non profitable organization for the treatment and rehabilitation of Spinal cord injury (SCI) patients named Centre for the Rehabilitation of the Paralysed (CRP) (Annual report of CRP, 2013-14). The spinal cord injury (SCI) patients have high risk of developing an inactive or hypoactive lifestyle (Bussmann et al., 2008). Spinal cord injury (SCI) patients are usually suffered from different types of secondary complications. These complications are includes pressure sore, urinary complications, sexual dysfunctions and bowel bladder problems are main. Among the secondary complications some are preventable and some are need re-hospitalization. These complications eventually, leads to a great deal of disability, morbidity, degree of dependence, and mortality (Quadir et al., 2017). In developing and developed country different study has been conducted to find the causes and characteristics of spinal cord injury (SCI). The cause and characteristics of spinal cord injury (SCI) depends on geographic area and socio

economic status of the individual country. The expectancy of life after spinal cord injury (SCI) is markedly reduced due to secondary complication, severity of injury, social deprivation, and lack of proper rehabilitation (Goel et al., 2018). People with spinal cord injury (SCI) face many challenges and barriers to participate in any physical activity (Wolfe et al., 2008). For spinal cord injury (SCI), patient reintegration in work, leisure activities and sports are considered as a significant goal of rehabilitation. Active involvement in daily living activities and roles are strongly related to health and wellbeing & a high level of social activities (Pentland et al., 1999). Recreation is an important modality for the rehabilitation of an individual with a spinal cord injury (SCI) (Wade, 2003). The main aim of recreation activities for spinal cord injury (SCI) person is to improve their physical condition as well as perfection of wheelchair skills. Participation in sports by wheelchair users help to improve their rehabilitation outcome, help to adjust with their disability, increase their independence, give them self-confidence, improve their quality of life and give them aspirations for their further development (Tasiemski, et al., 2000). It is accepted that meaningful employment is a basis of achieving self-efficacy and a sense of purpose into adulthood (Anneken et al., 2010). Return to employment after spinal cord injury (SCI) is very difficult for the patients & it is a critical object of life satisfaction & also positive quality-of life (Leduc et al., 2002). Paraplegic persons are more likely to return to work than those with tetraplegia (Krause, 2012).

1.2 Rationale

Currently Bangladesh is passing through an epidemiological transition, where communicable diseases have already markedly declined due to various successful communicable disease control programs. On the contrary, non-communicable ailments and health-related events including injuries are gradually on the rise. The country thus, bears a double burden of diseases and health events. Spinal cord injury (SCI) is one of the most common communicable disease now a day.

Centre for the Rehabilitation of the Paralysed (CRP) plays a vital role in providing successful rehabilitation for the spinal cord injury (SCI) patient. Therapists use different types of techniques to provide intervention for the patient. It takes long time to complete the rehabilitation program. In Centre for the Rehabilitation of the Paralysed (CRP), spinal cord injury (SCI) patients have some opportunity to participate in different type of leisure activities such as- gardening, sports etc. But this sports are different type of sports participate by the spinal cord injury (SCI) patients as a leisure activity. Sports for the SCI patients includes Table Tennis, Wheelchair Basketball, Volleyball, Ring posting, Golf throwing etc. All sports are trying to inclusive for all patients. Participate in new experience that may changes their mind & increase the expectation of life.

Return to work is regarded as one of the most important outcomes of reintegration in society following a spinal cord injury (SCI). It gives people a social status of life and makes them more financially independent (Schonherr et al., 2004). The study will explore the challenges & effects of sports, recreation & employment experienced by the persons with spinal cord injury (SCI) after successful rehabilitation in Bangladeshi context. The result of the study will assist the population to be informed about the common challenges & effects related to education, recreation & employment earlier. Besides, they can pre-determinedly take some steps and receive consultancy from appropriate professionals minimizing these effects. Identification of the effects and adopting appropriate measures against these are of great significance for the persons with spinal cord injury (SCI).

1.3 Research question

What are the level of participation in education, recreation & employment of a spinal cord injury (SCI) patient before & after successful rehabilitation?

1.4 Aim of the study

Find out the level of participation of education, recreation & employment of a spinal cord injury (SCI) patient after successful rehabilitation.

1.5 Objectives

1.5.1 General objective

To figure out the level of participation of education, recreation & employment of a spinal cord injury (SCI) patient after successful rehabilitation.

1.5.2 Specific objective

1. To find out the educational level before spinal cord injury (SCI).
2. To find out the educational level after rehabilitation.
3. To find out the participation of recreation before spinal cord injury (SCI).
4. To find out the participation of recreation rehabilitation.
5. To find out the participation of employment before spinal cord injury (SCI).
6. To find out the participation of employment after rehabilitation.

1.6 Operational Definition

Education

Education is the process of facilitating learning, or the acquisition of knowledge, skills, values, beliefs, and habits.

It is the act of imparting or acquiring general knowledge, developing the powers of reasoning and judgment, and generally of preparing oneself or others intellectually for mature life.

Recreation

Recreation is any type of activity done for enjoyment when one is not working. It is an activity of leisure time. Recreation consists of things that you do in your spare time to relax.

Recreation is about activities, pastimes, and experiences which are freely chosen. They are usually undertaken in free time and produce feelings of wellbeing, fulfilment, enjoyment, relaxation and satisfaction. They are opportunities to express creativity, achieve and master new things and feel good about doing so.

Employment

Employment is a relationship between two parties, usually based on a contract where work is paid for, where one party is employer & other is employee.

Employees work in return for payment, which may be in the form of an hourly wage, by piecework or an annual salary, depending on the type of work an employee does or which sector she or he is working in.

Spinal Cord Injury (SCI)

A spinal cord injury (SCI) is damage to the spinal cord that causes changes in its function, either temporary or permanent.

It is the damage to any part of the spinal cord or nerves at the end of the spinal canal (cauda equina), often causes permanent changes in strength, sensation and other body functions below the site of the injury.

Rehabilitation

Rehabilitation is the process of helping an individual achieve the highest level of function, independence, and quality of life possible. Rehabilitation does not reverse or undo the damage caused by disease or trauma, but rather helps restore the individual to optimal health, functioning, and well-being.

CHAPTER –II LITERATURE REVIEW

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 (L1 or L2) of the vertebral column. In human body it is the major reflex center and it is the conduction pathway between the body and brain. The shape of spinal cord is cylindrical and slightly flattened in anterior and posterior areas. The location of spinal cord is within the vertebral foramen. Another name of vertebral foramen is vertebral canal. The border of the cord is interiorly the vertebral bodies. The posterior and lateral border of spinal cord is the vertebral arch. There are 31 pairs of spinal nerve in human body. They are 8 cervical, 12 thoracic, 5 lumber, 5 sacral and 8 coccygeal pairs of spinal nerve. Every spinal nerve consists of a dorsal and a ventral root that arise from a single spinal cord segment. C1 spinal nerves exit the spinal column between the foramen magnum and the C1 vertebra; C2 nerves exit between the posterior arch of the C1 vertebra and the lamina of C2; C3–C8 spinal nerves pass through the intervertebral foramen (IVF) above their corresponding cervical vertebrae, with the exception of the C8 pair which exit between the C7 and T1 vertebrae (Somers, 2002).

A spinal cord injury (SCI) is typically defined as damage or trauma to the spinal cord that results in a loss or impairment of function resulting in reduced mobility or feeling. It occurs due to an acute traumatic lesion of neural elements in the spinal canal (spinal cord and cauda equina), which resulting in temporary or permanent sensory and/or motor deficit. Clinically spinal cord injury is known as the excludation of intervertebral disc disease, vertebral injuries without spinal cord injury, nerve root avulsions and injuries to nerve roots and peripheral nerves outside the spinal canal, cancer, spinal cord vascular disease, and other non-traumatic spinal cord diseases. (National spinal cord injury statistical center, 2011). Paralysis of certain areas of the body, along with the corresponding loss of sensation is the result of lesion in the spinal cord. (Disabled world, 2007). Spinal cord injury is mainly the damage to the spinal cord which may result from direct injury to the cord itself or indirectly from damage to surrounding bones, tissues, or blood vessels (Zieve & Hoch, 2010).

ASIA impairment scale

A = Complete: No motor or sensory function is preserved in the sacral segments S4-S5.

B = Incomplete: Sensory but not motor function is preserved bellow the neurological level and includes the sacral segments S4-S5.

C = Incomplete: Motor function is preserved below the neurological level, and more than half of key muscles below the neurological level have a muscle grade less than 3.

D = Incomplete: Motor function is preserved below the neurological level, and at least half of key muscles below the neurological level have a muscle grade of 3 or more.

E = Normal: motor and sensory fuxnction are normal (American spinal cord injury association, 2011).

There are mainly two types of lesions associated with a spinal cord injury (SCI).Spinal cord injury (SCI) can be complete or incomplete (Crepeau, 2003). A complete type of injury means the spinal cord is damaged completely & in a "complete" spinal injury, all functions below the injured area are lost (National Institute of Neurological Disorders and Stroke, eds. 2013). Whereas an incomplete injury means only part of the spinal cord is damaged. A person with an incomplete injury may have sensation below their lesion but no movement. An "incomplete" spinal cord injury involves preservation of motor or sensory function below the level of injury in the spinal cord. To be classed as incomplete, there must be some preservation of sensation or motion in the areas innervated by S4 to S5 (Wuermser et al., 2007). The following classification is also used in terms of spinal cord injury-

Tetraplegia, also known as quadriplegia, is paralysis caused by illness or injury of spinal cord that results in the partial or total loss of use of all four limbs. It refers to impairment or loss of motor and /or sensory function of the upper limb & lower limb of the body which is supplied by the cervical segments of the spinal cord due to damage or neural elements within the spinal canal (Kirshblum et al,. 2011). Injury to the spinal cord in the cervical region is associated with loss of muscle strength in all four extremities.

Paraplegia is an impairment in motor or sensory function of the lower extremities. This term refers to impairment or loss of motor and /or sensory function in the thoracic, lumber or sacral segments of the spinal cord, secondary to damage of neural elements within the spinal column (Kirshblum et al., 2011).

In Bangladesh the most common cause of spinal cord injury (SCI) is fall from height. People while climbing tree or while performing constructive work on building can face this trauma. In our country it is a common practice to carry heavy load on the head. Most of the spinal cord injuries (SCI) take place due to accidental fall while carrying such load and it is a public problem (Hoque et al., 2012). In Bangladesh during harvesting season the farmers and laborers carry their products on their head and transport them from harvesting areas to local store houses or from one vehicle to another. The coolies (Labours who undertake heavy load) of Bangladesh frequently carry a load between 50-100 kg. The common causes of spinal cord injury in Bangladesh are fall while carrying heavy load on head, road traffic accidents, falling from a height, fall of a heavy object onto the head or neck, bull attack and diving into shallow water (Hoque et al., 2012) & (Razzak et al., 2011). The large number of falls in Bangladesh is a result of food harvesting which is an important part of our largely agricultural economy. Among the spinal cord injuries caused by road traffic accidents, mostly involve passengers of 'three wheel vehicles' like baby, taxis and rickshaws.

Signs, symptoms, and functional outcomes for complete lesions with tetraplegia

Level of injury- C1 - C4

Sign and symptom

- Loss of all motor and sensory function from the neck down
- Retention of reflexes in the biceps
- Loss of involuntary and voluntary respiratory function
- Loss of bladder and bowel control

Functional outcome

Requires a ventilator, a tracheostomy, electric wheelchair with head support, home adaptations, and home care upon discharge.

Level of injury- C5

Sign and symptom

- Loss of all motor and sensory function below the upper shoulders.
- Loss of voluntary respiratory function, bowel and bladder control.

Functional outcome

Can achieve some control of upper limbs and use some adaptive devices with head and mouth controls.

Requires an electric wheelchair with hand controls, dependent transfers, and home adaptations.

Level of injury- C6

Sign and symptom

- Loss of all motor function below the shoulders and upper arms
- Loss of sensory function below the clavicle, except arm and thumb sensation
- Loss of voluntary respiratory function, bladder and bowel control.

Functional outcome

May achieve independent feeding, dressing, and grooming with assistive devices, but needs an electric wheelchair and assistance in chair, bed, and toilet transfers.

Level of injury- C7

Sign and symptom

- Loss of motor and sensory function in portions of the arms and hands
- Retention of reflexes in the triceps

- Loss of voluntary respiratory function, bladder and bowel control.

Functional outcome

Can perform some activities of daily living (ADLs) and, with assistive devices, induce finger flexion, push a wheelchair, and drive a specially equipped car.

Level of injury- C8

Sign and symptom

- Loss of motor function in portions of the arms and hands
- Loss of sensation below the chest and in portions of the hands
- Loss of voluntary respiratory function, bowel and bladder control.

Functional outcome

Can do pushups in a wheelchair and achieve some sitting tolerance

Can grasp and release hands voluntarily and achieve independence in most ADLs, catheterization, and rectal stimulation for bowel movements (Crepeau, 2003).

Bangladesh is a densely over populated country in the world. The literacy rate in Bangladesh is about 61.0% among the age of 15 years and above (Quadir, 2017).

To remove mental stress while maximizing fun the best way is to provide enjoyable recreation and sport activities. It includes the activities and other events for all people to reduce stress, motivating the work, and making fun and it is also helpful for all the people to appreciate the importance of leisure in modern lifestyles (Clin Rehabil, 2011). So, recreation is very important for all people with disable. Because it reduces stress level, may changes their mind, expectation of life.

In 2010; Nicole Wandell, Pacific University conduct a research for SCI patients. This research has systematically examined the relationship between specific dimensions of recreation participation and depressive behavior (Caldwell et al., 2008). For clients with SCI, intervention may include re-introduction to recreation activities and social participation and exploration of programs built around adaptations for SCI (The Effect of

Social Participation on Adults with Spinal Cord Injuries, 2010). Sport and Recreation and Links to Leisure Program in the Eurobodalla provide access to community recreational activities for people with a disability. Fun is the main focus of the Disability Trust‟s Sport and Recreation Services, which provides opportunities for people of all ages with disabilities to participate in and enjoy physical and creative activities (Sport and Recreation-Links to Leisure, 2014).

Recreation has been shown to be an important factor in quality of life. General population studies have shown that recreation is a chief determinant of life satisfaction above job, health and financial resources (Jones, 2007). Furthermore, physical activity has been found to decrease mortality and reduce risk of cardiovascular disease, hypertension, obesity, and several cancers. Despite these documented benefits, only 22% of Americans participate in sustained and regular physical activity (US Dept. of Health and Human Services, 2015). People with disability are even more likely to be sedentary as are people in certain ethnic minority groups and those with lower income. People with disabilities who remain active not only enjoy physical and emotional health benefits but are also found to have improved overall functional status (US Dept. of Health and Human Services, 2012). Sports is a form of recreation which has an immense therapeutic value and plays a great part in physical, psychological and social rehabilitation (Sports activities for disabled people, 2006). There are different aspects of sports- Recreational, Therapeutic, Competitive. Sport can play a key role in the lives and communities of person's with a disability, the same as their peers without a disability (Houwen, 2010).

The benefits of sports and recreation for patients with SCI are poorly studied. However, Krause indicates participation in physical activity likely increases life expectancy. Sports has an immense therapeutic value and plays a great part in physical improvement for the person with disability. Rehabilitation professionals recognize the importance of sports and recreation in successful rehabilitation of individuals with disabilities. When first faced with the reality of a disability, many experience a loss of confidence depression and believe their lives have ended. Many sporting activities that can be used for rehabilitation have become possible for disable people. Sport is increasingly being used as treatment complementing the conventional methods of physiotherapy (Houwen, 2010). It helps to

develop strength, coordination, endurance, and respiratory fitness. Some medical conditions may prevent people participating in a particular sport. For example, people with low cardio respiratory endurance, retinal detachment or hernias are preclude from strenuous activities (Sports activities for disable people, 2006). The ongoing prospective study documents several predictors of mortality after injury including: decreased social vocational activities, increased time in bed, lower perceived quality of life, and lack of employment or involvement in education. Furthermore, the study indicates high levels of fitness correlate with decreased time in bed, increased social interaction and overall improved life satisfaction (Heath and Fentem, 2007).

One of the most important goals of any rehabilitation program is return to gainful employment. Any trade, economic activity and profession in the organized as well as unorganized sector or any occupation by which a person earns their living is known as employment (Schonherr et al., 2005). According to Centre for Services and Information on Disability, 2002, In Bangladesh, about 68% of the employed people with disabilities were not able to make any savings at the end of a working month; all of their income usually spent for meeting different needs. 28% were used for disability related expenses like assistive device maintenances, therapeutic services, medicine, supportive hands and special modes of travel. Compared with non-disabled persons, persons with paraplegia were more likely to consider work as a source of personal fulfillment and social recognition. In addition, persons with paraplegia are less likely to positively value the fact of non-working. From a social point of view, return to work following SCI is regarded as one of the most important outcomes of reintegration in society (Noreau et al., 2000). It gives people a social status and meaning to life, and enables them to be financially independent. From other studies we know that the chances to resume work are restricted for patients with chronic diseases and disabilities (Schoppen et al., 2001). Working rates for people with SCI vary from 31% to 48% in recent studies (Tomassen et al., 2000).

Several predictive factors influencing the return to gainful employment have been identified. Educational history was found to be one of the most important positive predictive factor for employment after SCI (Krause et al., 2003). In addition, younger

age, younger age at injury and time since injury were found to be correlated with employment status (Krause et al., 2012). Paraplegic person are more likely to return to work than tetraplegic person. Completeness of injury (Krause and Anson, 2011), gender, impairment type, study since injury, motivation to work (Athanasou and Murphy, 2003), social support, and the ability to drive a car6 have also been described as predictive factors. In contrast, level of SCI does not appear to be an important predictor for re-employment (McShane and Karp, 2003).

Although many studies have found an association between severity and employment, one study found that considering the functional interaction between level of injury and degree of completeness enhances the ability to predict return to work, with those individuals who had greater physical abilities being more likely to be employed. A study found that the persons with paraplegia are employed 2.0 to 2.2 times higher than the persons with tetraplegia (Ottomanelli and Lind, 2009).The higher the level and the more complete the injury it would be more likely to loss of muscle function and strength and functional disability in SCI. However, previous studies have reported conflicting results on the association between level and completeness of injury and health related quality of life. Some studies have reported a significant association between higher level and more complete injury and a lower health related quality of life. It is argued that complete motor lesions may lead to the occurrence of pressure ulcers and other complications by limiting the patient to bed or a wheelchair, so they might be associated with poorer health related quality of life than patients with incomplete SCI. It is argued that since many individuals with incomplete injuries also use wheelchairs and are at high risk for pressure ulcers. Thus the completeness of injury as a single reason could not justify these differences and there is need to find out more specific reasons (Saadat et al., 2010).

Unemployment can have psychological and social consequences, as well as causing financial problems and stress (Ottomanelli and Lind, 2009). Being out of work may have an impact on a person's physical and mental health, as well as affecting their family. Employment marks a return to a productive lifestyle that brings both extrinsic and intrinsic rewards. The loss of income among people who do not return to work after a disability is a significant stressor to the economic well-being of individuals and their

families (Krause et al., 2011). The financial stress of unemployment can result in emotional distress. High unemployment rate create a social burden (Yasuda et al., 2002). Social support and network decreases as a consequence of unemployment. When social supports and networks are not available and a person does not have support from their friends and family, their recovery may be delayed. Returning the person to work is a valid goal of treatment (Hasan et al., 2009). Employment after SCI is associated with life satisfaction, quality of life and relatively greater in those individuals involved in productive activities such as work. As persons with SCI transition from unemployment to employment, adjustment increases and if they transition from employment to unemployment, adjustment decreases. Benefits of employment after SCI include mental stimulation, social contact, a sense of purpose, and personal growth (Schonherr et al., 2005). The sooner an injured person can return to work in some capacity, the more likely he /she is to make a full recovery both physically and emotionally.

Community reintegration with the best possible functional independence and a return to one's previous lifestyle is one of the long term goal of rehabilitation of persons who experience spinal cord injury (Anderson et al., 2007). Return to a gainful employment after spinal cord injury for any individual it took an average of 3.8 years. Time until employment for individuals with SCI was examined by Berkowitz among a sample of 500 participants (Krause, 2003).

'Most people with spinal cord injury lives in the rural areas In Bangladesh. The confidence to acquire education and involve in financially gainful contributing activities enabling them as effective contributors has found in a majority of the people with disabilities, including those with a severe level of disability (Lidal, 2007). Most of the SCI patients who are within the normal working ages (between 18–64) feel capable of working, are motivated to work, and do not see disincentives as significant barriers to employment. First, over 70% of the participants felt they had sufficient education or training to be employed, and 55% reported they had all the necessary resources to maintain a regular job e.g. transportation and assistants. (Krause et al., 2011). From the study we can see that individuals with SCI who have had a previous job were re-integrated back into employment successfully after completing rehabilitation (Krause et al., 2010).

After spinal cord injury the unemployment rate of SCI patient is about 31% to 87%. In a study it shows the coping patterns of SCI patient and found that role dissatisfaction was a commonly reported problem. (Chan, et al., 2005). One in six people who were or had been economically active experienced discrimination in a work related context In the UK (Meager, 1998). The employment situation of Bangladesh is not directly comparable with UK because few disabled people continue working in mainstream job market after their impairment (Momin, 2004).

Rehabilitation is the process of making an individual achieve & independent, help to perform the highest level of functioning, participation in activity of daily living (ADL) independently and achieve better quality of life possible. Rehabilitation is the process of enabling the spinal cord injury patient to access, maintain or return to employment or useful occupation. Rehabilitation reflects a wide variety of interventions, including meaningful occupations through voluntary work, sheltered work, supported employment and open employment opportunities (Desiron et al., 2011). By the process rehabilitation individuals can regain skills and abilities which they have been lost as a result of a serious injury, illness, disease, disorder or incarceration and which may recover slowly. Individuals may need to regain strength, relearn skills or find new ways of doing things that they did before. The long term goal of rehabilitation of individual who experience a spinal cord injury is community reintegration with the best possible functional independence and a return to their previous lifestyle (Anderson, 2007). Returning to employment is one of the main goal of rehabilitation after spinal cord injury. Employment is associated with both extrinsic economic rewards and intrinsic rewards, such as greater life satisfaction, higher level of activities, and better overall health (Krause et al., 2010). A spinal cord injury is just one example of a terrible injury that requires careful planning to ensure adequate support throughout the person's life. In addition to the physical impact of the injury, the patient and their family will make social, vocational, economic, and emotional adjustments following a spinal cord injury (Kreutz, 2002). According to the definition of rehabilitation, activities of daily living including the physical demands which deliberate structured activity to maintain or improve fitness, normal ambulation, play, sport and domestic chores. Today the model of fitness development includes play, sport, physical demands of employment involving large and

small muscles and daily chores for people with disabilities and able bodied people alike. By rehabilitation program flexibility, mobility and coordination can be improved (Sherrill & Rimmer, 2008).

CHAPTER –III METHODOLOGY

This research was a cross sectional study design to identify the effect of sports, recreation & employment of a spinal cord injury (SCI) patient after successful rehabilitation. The aim of the study was to make a sense about the participation of sports, recreation & employment of a spinal cord injury (SCI) patient.

3.1 Study design

This is a cross sectional quantitative study design. Quantitative research design focuses on the ordinary events of the natural settings. A cross-sectional study is a descriptive study in which disease and exposure status is measured simultaneously in a given population. Cross-sectional studies can be thought of as providing a "snapshot" of the frequency and characteristics of a disease in a population at a particular point in time (Environmental Health Investigations branch, 2009). All the measurements on each person are made at one point in time. The most important advantage of cross sectional studies is that in general they are quick and cheap. As there is no follow up, less resource is required to run the study. The quantitative methods are appropriate if the issue is known about relatively simple and unambiguous (Bailey, 1997).

3.2 Study settings

Data were collected from CRP admitted and rehab completed patients those who are stayed in their community. I have completed phone call to collect data from 102 patients. They lived in different districts of Bangladesh.

3.3 Study area

The study site was throughout the country. At first researcher was obtained information from CRP about the subjects those who are completed rehabilitation services from January 2015 to June 2017. Individual profile with SCI was considered from existing

database of CRP. Individual subject information also collected from Community based rehabilitation (CBR).

3.4 Study population

Sample of this study was selected by persons who completed his successful rehabilitation from Centre for the Rehabilitation of the Paralysed (CRP) at spinal cord injury (SCI) inpatient unit in the time from January 2015 to June 2017. According to CRP inpatient database it was mention that each year approximately 390 patients are rehabilitated and return to their community. From collected data I have found 580 people was completed rehabilitation from CRP among them 102 people I have chosen as my sample for data collection by phone call follow up.

3.5Sampling Technique

3.5.1Sampling: Individuals with spinal cord injuries who have completed rehabilitation from CRP and now live in community in-between January 2015 to June 2017.

3.5.2 Method: In this research sample was chosen by purposive sampling technique. The access of data is difficult to fulfill the objectives. Purposive sampling was used for easy to access a particular subset of people from large population.

3.6 Sample Size

Calculation: $\mathbf{n= z^2pq/d^2}$

n= Sample number

z= z-value of standard normal distribution, at 95% confidence level: z= 1.96

p=0.4(Expected prevalence 40%)

q= 1-p

d= Allowable error: 5%

n= $(1.96)^2\times 0.4\times 0.6/(.05)$ =368.79

Though the sample calculation shows 368.79 but we have the time limitation of complete the academic research project. For this reason, my sample size was 102 SCI subject who have completed successful rehabilitation from CRP and now live in community.

3.7 Inclusion criteria

- People who have spinal cord injury (SCI).
- Spinal cord injury (SCI) patients who admitted at Centre for the Rehabilitation of the Paralyzed (CRP).
- Spinal cord injuries people who have completed rehabilitation from CRP in-between January 2015 to June 2017.
- All type of injury included (Complete or Incomplete Traumatic, Non traumatic, Paraplegia or Tetraplegia)
- Spinal cord injury (SCI) patients who were student.
- Spinal cord injury (SCI) patients who engage with employment.
- Spinal cord injury (SCI) patients who completed their successful rehabilitation.
- Spinal cord injury (SCI) patients both male & female.

3.8 Exclusion Criteria

- People who doesn't have spinal cord injury (SCI).
- Spinal cord injury (SCI) patients who are unwilling to participate in this research.
- Spinal cord injury (SCI) patients who didn't complete their successful rehabilitation.
- Spinal cord injury (SCI) patients with psychological disturbances.

3.9 Data Processing:

3.9.1 Data Collection Tools

Data was collected using phone call follow up and with the help of structural questioner, Papers, Pen, Pencil, Diary, Computer and pen drive.

3.9.2 Data collection procedure

Structured questionnaire format was used for the survey.

Data was collected through phone call follow up.

3.9.3 Questionnaire Development

Researcher was developed a questionnaire for the study based on the literature review and discussion with supervisor. For linguistic validation of a questionnaire the questionnaire was translated into Bengali the following ways: The researcher was used a set of questionnaires with the demographic and socioeconomic information. The questionnaires were in the English therefore it will important to translate the questionnaires into Bengali to ensure the participant comprehended and understood the questions easily. Each questionnaire was translated from English to Bengali for 2 times by experienced translators. From the set two different copies of Bengali questionnaire was formed by taking easy and similar part of the questionnaire. This is known as forward translation. From the forward translation an English translation was done by a different translator who had experience in the field of translating. Finally the copy was compared with the main questionnaire. After checking and rechecking the formulation of final questionnaire was completed. A field test of the questionnaire was conducted to check the tools in the actual fields. The purpose of the field test was which information was collected is it appropriate with the objectives or not. Filed test was also important for identify the gaps and situation where improvement will be needed.

3.9.4 Data management and analysis

The data was collected using self – administered questionnaire. And for the analysis of descriptive statistics I have used SPSS. Use the graph technique for analyzing data, calculated as percentages, and presented this using bar, column, table and pie charts by SPSS software version 20.0. SPSS is a comprehensive and flexible statistical analysis and data management solution. SPSS can take data from almost any type of file and use them to generate tabulated reports, charts, and plots of distributions and trends, descriptive statistics, and conduct complex statistical analyses.

3.10 Ethical considerations

The proposal was submitted to the Institutional Review Board (IRB) of Bangladesh Health Professions Institute (BHPI) & approval was obtained from the board. The whole process of this research project was done by following the Bangladesh Medical Research Council (BMRC) guidelines and World Health Organization (WHO) Research guidelines. Verbal and written inform consent was taken from every participants. And ensure every participants that they can leave any time during data collection, & it was ensured that participants were not influenced by data collector. The researcher strictly maintained the confidentiality regarding participant's condition.. The study was conducted in a clean and systematic way. Every subject had the opportunity to discuss their problem with the senior authority or administration of CRP and have any questioned answer to their satisfaction.

3.11 Informed Consent

A written consent was given to all participants. Consent form was explained to the participants verbally. The researcher explained to the participants about his or her role in this study. The researcher received a written consent from every participants including signature. So the participant assured that they could understand about the consent form and their participation was on voluntary basis. The participants were informed clearly that their information would be kept confidential. The researcher assured the participants the study would not be harmful for them. It was explained that there might not a direct benefit from the study for the participants but in the future cases like them might got benefit from it. The participants have the right to withdraw consent at any time. Information from this study was anonymously coded to ensure confidentiality. They would not be embarrassed by the study.

CHAPTER –IV RESULTS

The aim of the study is to explore the challenges experienced by the SCI patients in their education, recreation & employment. In this section coding is used to understand the participants' statement and to generate the themes. The interview findings are given in each table below with coding. After completing data analysis, the researcher formulates general categories and themes. These are as follows-

In this study there were 102 participants. The analysis was done by the SPSS 20 version.

4.1 Socio-demographic Information

The demographic characteristics are shown in Table 1. Among the 102 participants (11.8%) 12 participants were between 1-20 years, (57.8%) 59 were between 21-40 years, (26.5%) 27 were between years 41-60 years and (3.9%) 4 were 61-80 years. Among the 102 participants who were included in this study and their mean age were 34.76 with standard deviation 0.702. In all, 88 (86.3%) subjects were male and 14 (13.7%) were female. Among them 77 (75.5%) participants are married, 18 (17.6%) participants are unmarried, 6 (5.9%) participants are divorced & 1 (1%) are widow.

Among the participants 60 (58.8%) lived in the rural community on the other hand 42 (41.2%) respectively lived in the urban areas. Regarding the geographical location of the participants, 35 (34.3%) from Dhaka, 15 (14.7%) from Chittagong, 15 (14.7%) from Khulna, 10 (9.8%) from Rajshahi division and rest 5.9% from Barisal, 7.8% from Rangpur, 3.9% from Sylhet and 8.8% from Mymensingh division.

Table 1: Distribution of socio-demographic characteristics

Demographics	**Numbers**	**Percentage**
Age Category (years)		
1-20	12	11.8
21-40	59	57.8
41-60	27	26.5
61-80	4	3.9
Sex		
Male	88	86.3%
Female	14	13.7%
Marital status		
Married	77	75.5%
Unmarried	18	17.6%
Divorced	6	5.9%
Widow	1	1%
Place of residence		
Rural	60	58.8%
Urban	42	41.2%
Geographical location of residence (Division)		
Dhaka	35	34.3
Chittagong	15	14.7
Rajshahi	10	9.8
Khulna	15	14.7
Barisal	6	5.9
Rangpur	8	7.8
Sylhet	4	3.9
Mymensingh	9	8.8

4.1.1 Main earning member of family

This figure demonstrates the main earning member of family of the participant. Among all the participants, there 32 (31.4%) who are the main earning member of family and the rest of the participants 68 (66.7%) are not the main earning member of family (Figure-1).

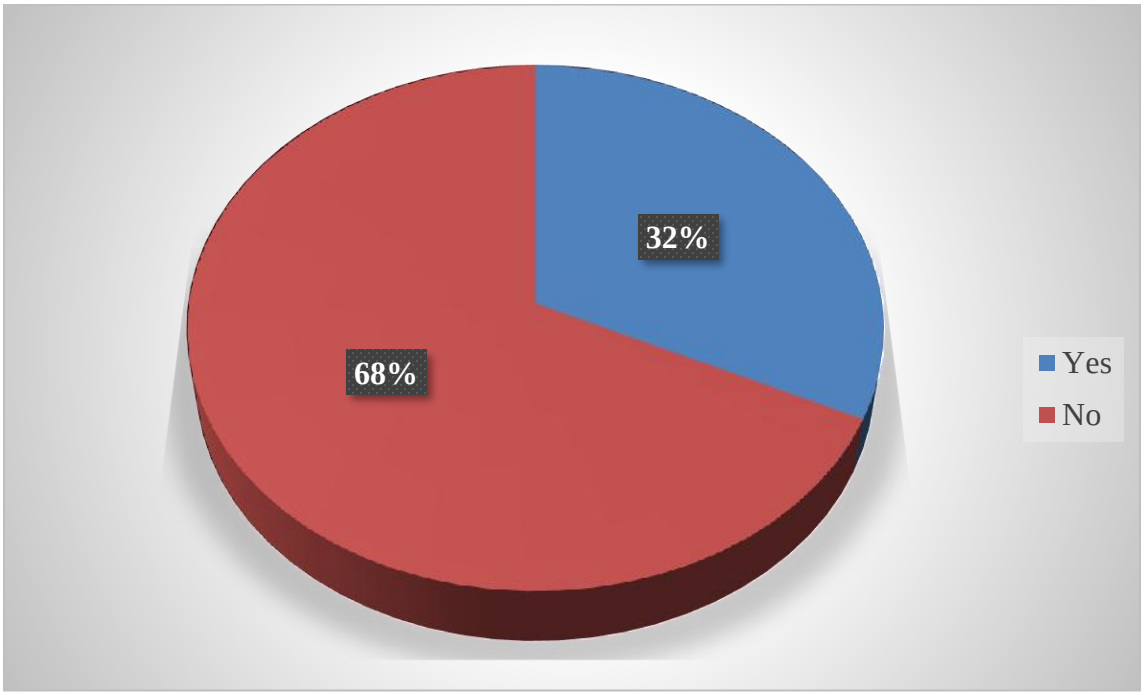

Figure-1: Main earning member of family

4.1.2 Monthly family income of the participants

Among the 102 participants (15.7%) 16 participant's family monthly income were between 1-10000 TK, (63.7%) 65 participant's family monthly income were between 11000-20000 TK & (15.7%) 16 participant's family monthly income between 21000-30000 TK (Figure-2).

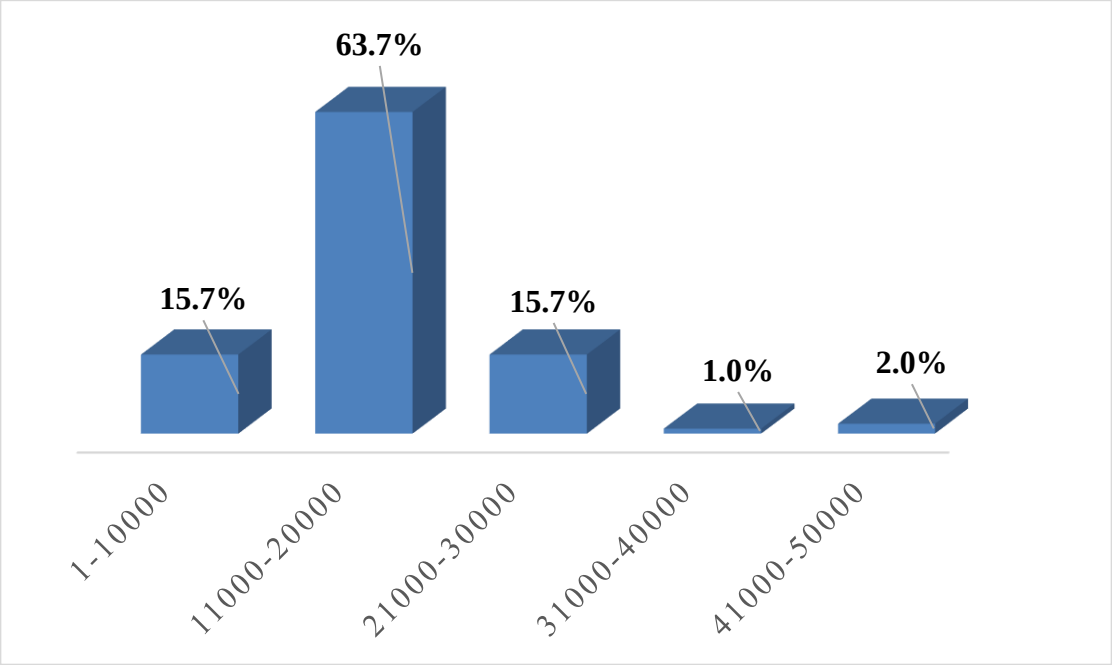

Figure-2: Monthly family income of the participants

4.1.3 Type of paralysis of the participants

The study identifies the 102 participants there are 45 (44.1%) participants who are diagnosed as tetraplegic patient, 54 (52.9%) of the participants diagnosed as paraplegia & 3 (2.9%) of the participants diagnosed as non-traumatic paraplegia (Figure-3)

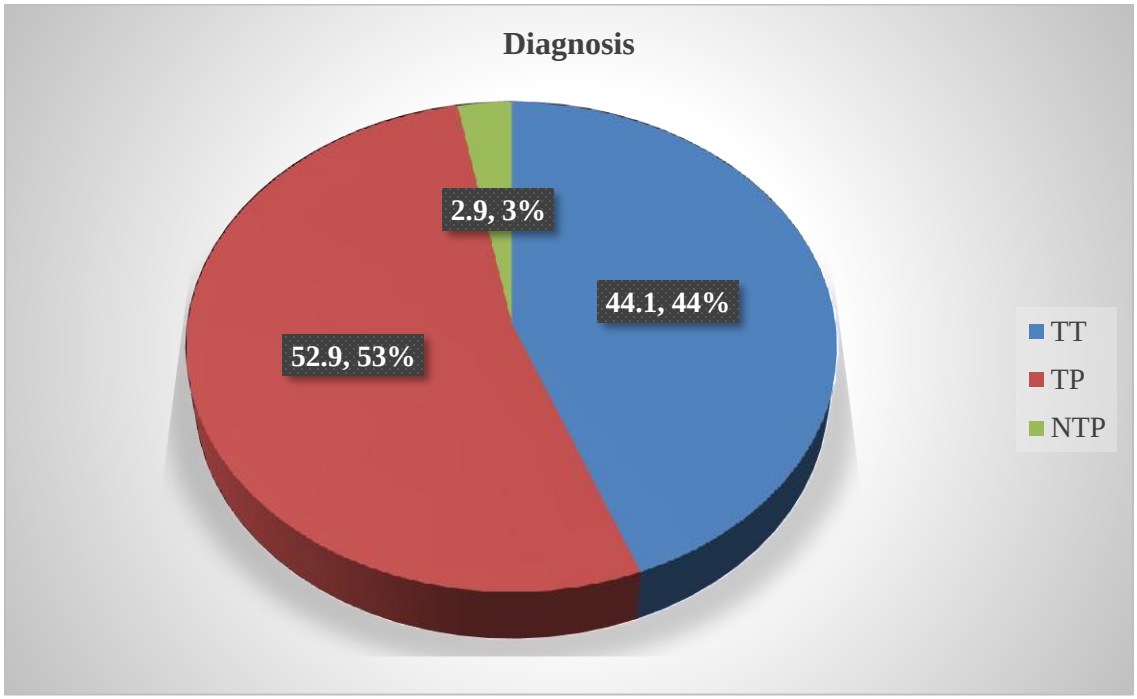

Figure-3: Type of paralysis of the participants

4.1.4 Cause of injury of the participants

This figure demonstrates the cause of injury of the participant. Among all the reason, 33 (32.4%) are due to road traffic accident, 46 (45.1%) are due to fall from height, 8 (7.8%) are due to physical assault, 2 (2%) are due to scarf injury & 6 (5.9%) are due to fall of heavy object overhead (Figure-4**).**

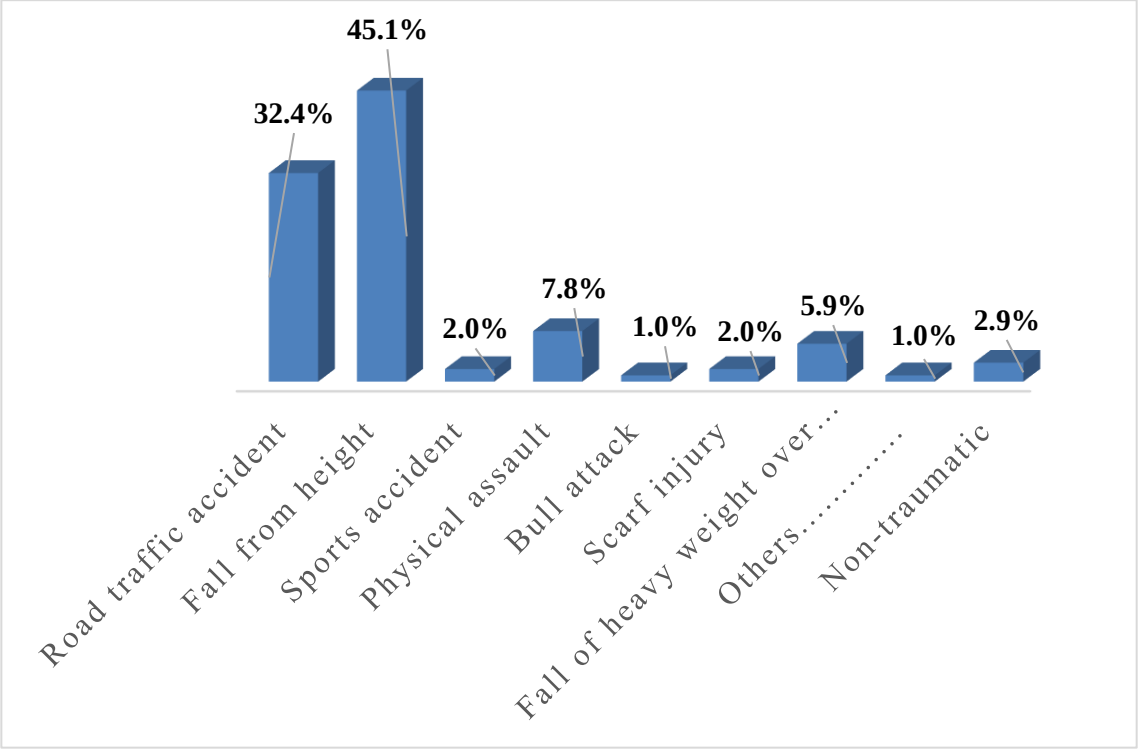

Figure-4: Cause of injury of the participants

4.1.5 Complications of the Participant

This table shows the complication of the participants. There 102 participants which are included in this study. Among them 29 (28.4%) participants have pressure sore, 20 (19.6%) participants have respiratory problem, 28 (27.5%) have bowel and bladder problem, 10 (9.8%) have urinary incontinence & rest of the participants have no complications.

Table2: Complications of the Participant

Complications	Frequency	Percent
Pressure sore	29	28.4
Respiratory problem	20	19.6
Bowel and bladder problem	28	27.5
Urinary incontinence	10	9.8
No complication	15	14.7

4.2 Education level before & after SCI:

This table demonstrates the education level before & after SCI of the participants. Among all the participants 21 (20.6%) were illiterate before SCI, 41 (40.2%) had primary educationbefore SCI, 24 (23.5%) had completed SSC before SCI, 9 (8.8%) had completed HSC before SCI, 4 (3.9%) had completed Honors before SCI. After rehabilitation 99 (97.1%) participants are not involved with education. Rest 3 (2.9%) are continuing their study after rehabilitation.

Table-3: Education level before & after SCI

Traits	Education before SCI		Education After SCI	
	Frequency	Percent	Frequency	Percent
Illiterate	21	20.6		
Primary Education	41	40.2		
SSC	24	23.5	1	1
HSC	9	8.8	1	1
Honors	4	3.9	1	1
Not involved	0	0	99	97.1

4.3.1 Recreation before SCI

This figure demonstrates the recreation of the prticipant before SCI. Among all the participants, there are 37 (36.3%) who were watched TV, 22 (21.6%) were participated in sports, 19 (18.6%) were enjoyed gardening and the rest of the participants were involved with other recreation activity.

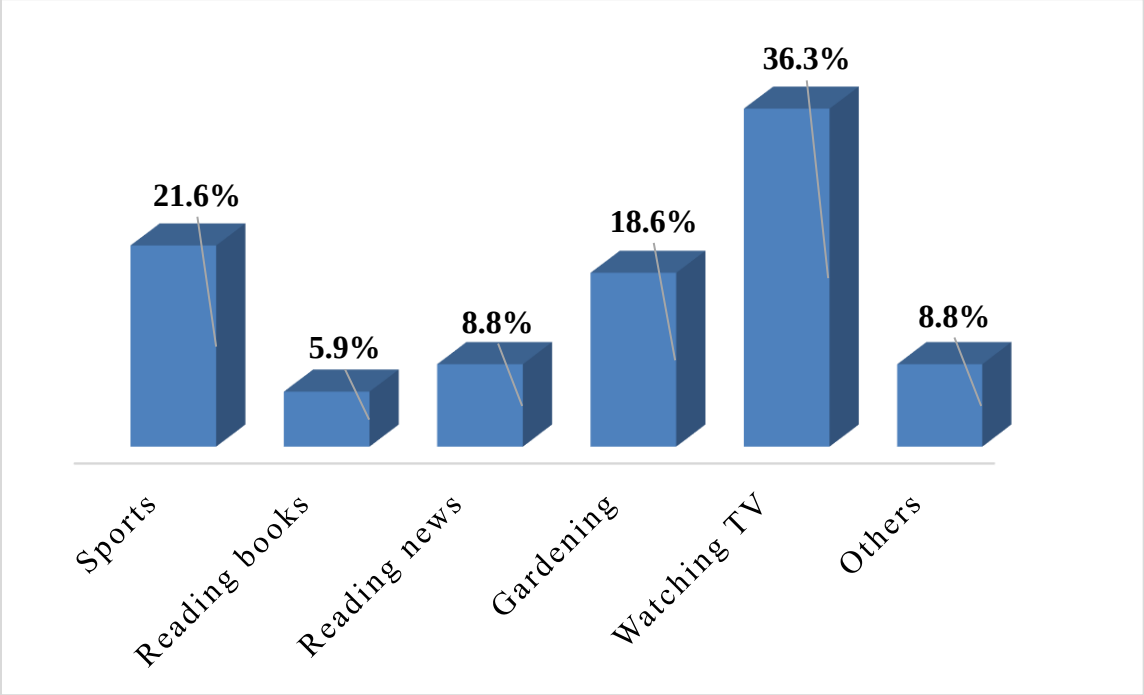

Figure-5: Recreation before SCI

4.3.2 Recreation after SCI

This figure demonstrates the recreation of the prticipant after SCI. Among all the participants, 49% perticipents are not involved with recreation. Rest 40 (39.2%) who watched TV, 7 (6.9%) are involve with reading books & 4 (3.9%) are reading newspaper.

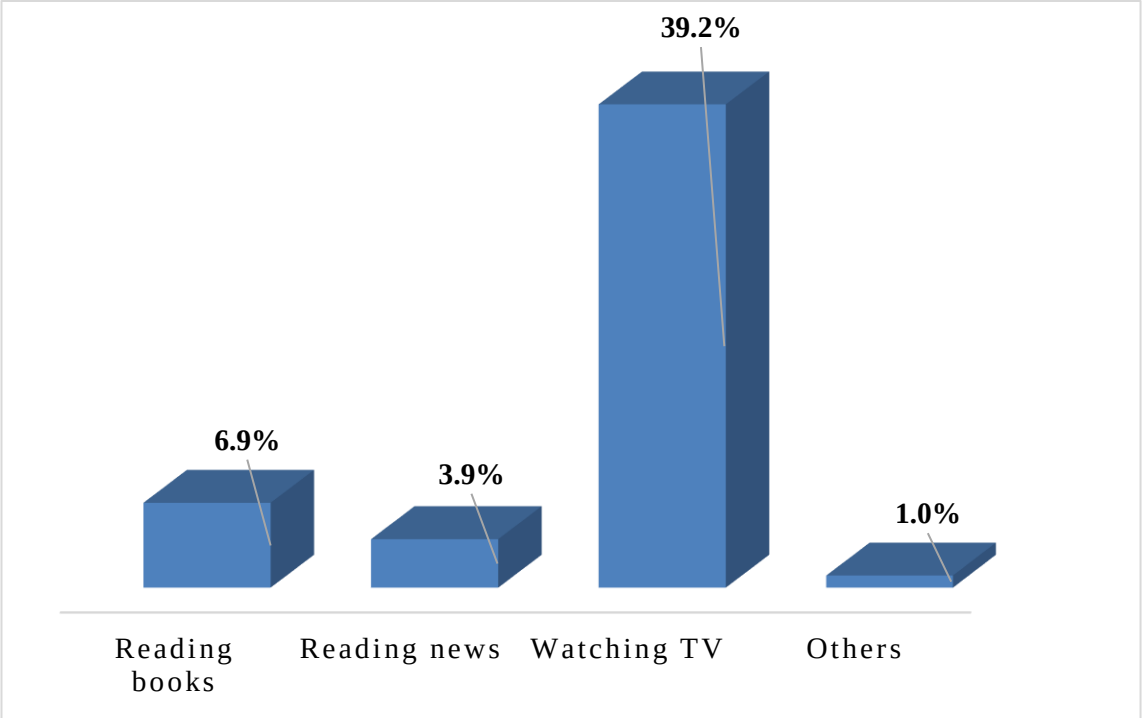

Figure-6: Recreation after SCI

4.3.3 Barrier of recreation

Most of the participants complained that Mental was common barrier for recreation. Severity of injury was another barrier of recreation. 26.5% are due to mental depression, 13.7% are due to severity of injury & rest are due to other resions.

Table-4: Barrier of recreation

Barrier of recreation	Frequency	Percent
Feel uneasy	6	5.9
Mental depression	27	26.5
Severity of injury	14	13.7
Neglect from the attendant	2	2.0
Decreasing social acceptability	1	1.0

4.4.1 Employment before SCI

This figure demonstrates the employment of the prticipant before SCI. Among all the participants, there are 16 (15.7%) who were involved with self business, 10 (9.8%) were student, 9 (8.8%) were worked in NGO, 9 (8.8%) were farmer, 9 (8.8%) were done household activity, 4 (3.9%) participants were Govt. employee and the rest of the participants were involved with other activity.

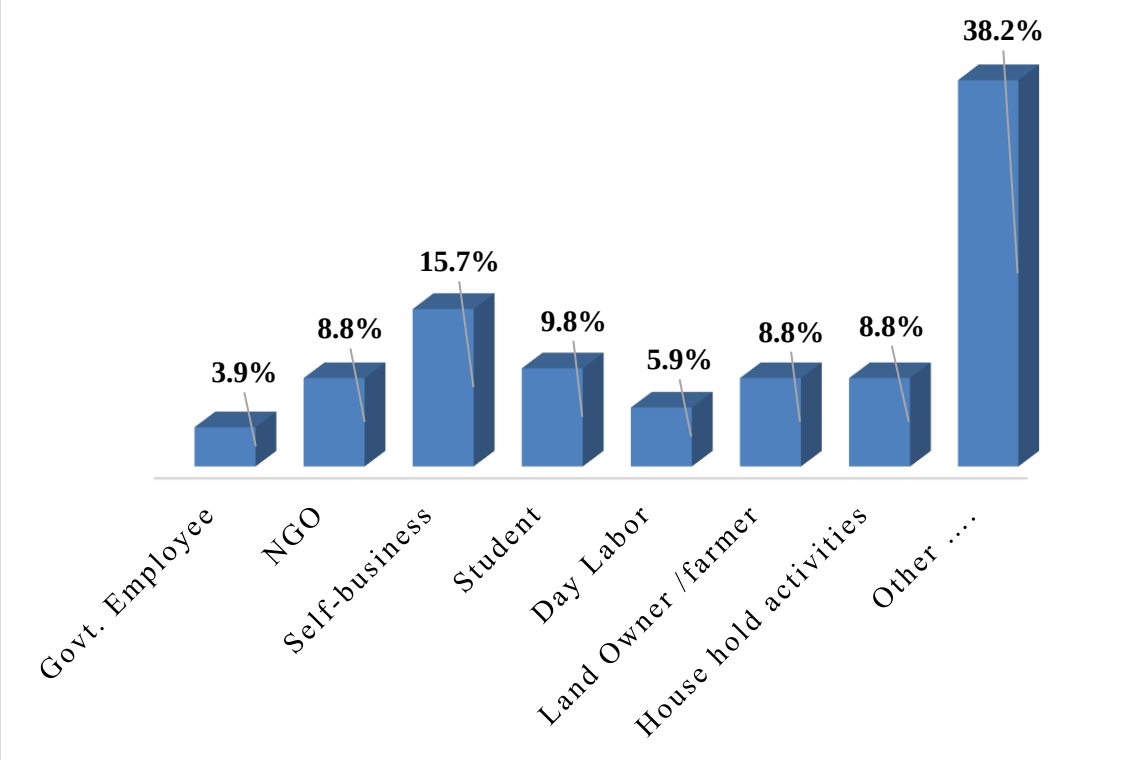

Figure-7: Employment before SCI

4.4.2 Employment after SCI

This figure demonstrates the employment level of the prticipant after SCI. Among all the participants, 50 (49.0%) perticipents are not involved with employment after SCI. 8 (7.8%) were involved with household activity, 5 (4.9%) were involved with self-business, 3 (2.9%) were students, 3 (2.9%) were Govt. employee & the rest of the participants were involved with other activity.

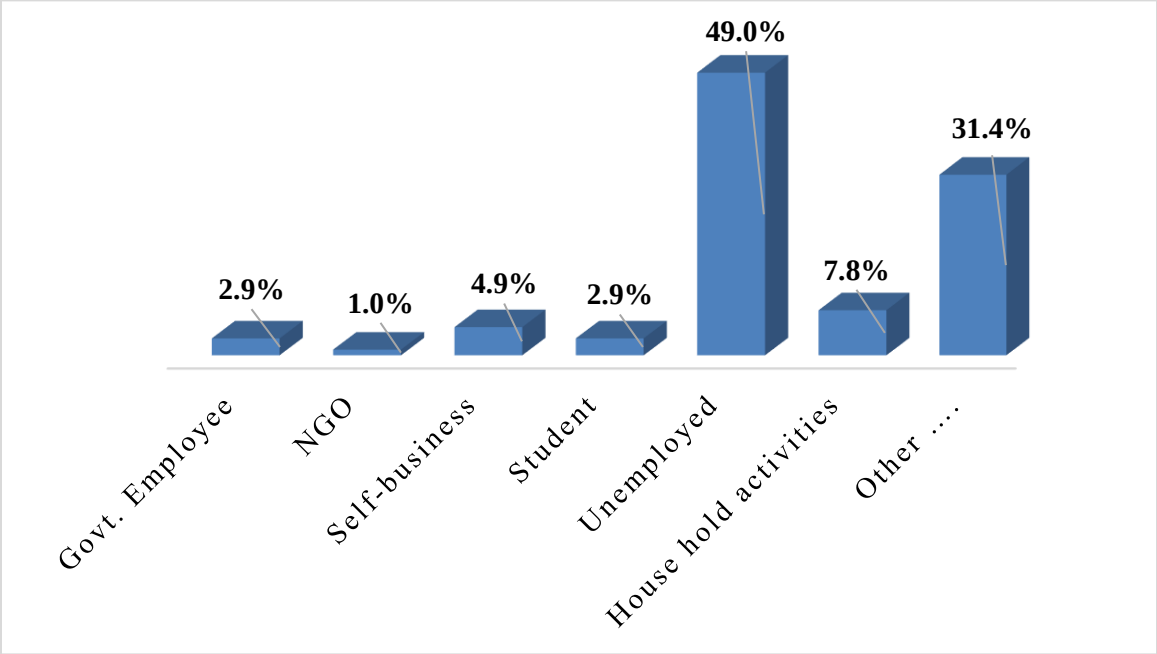

Figure-8: Employment after SCI

4.4.3 Vocational Training from CRP:

Among the 102 participants 27 (26.5%) were taken vocational traning from CRP & rest 74 (74.5%) didn't take any traning.

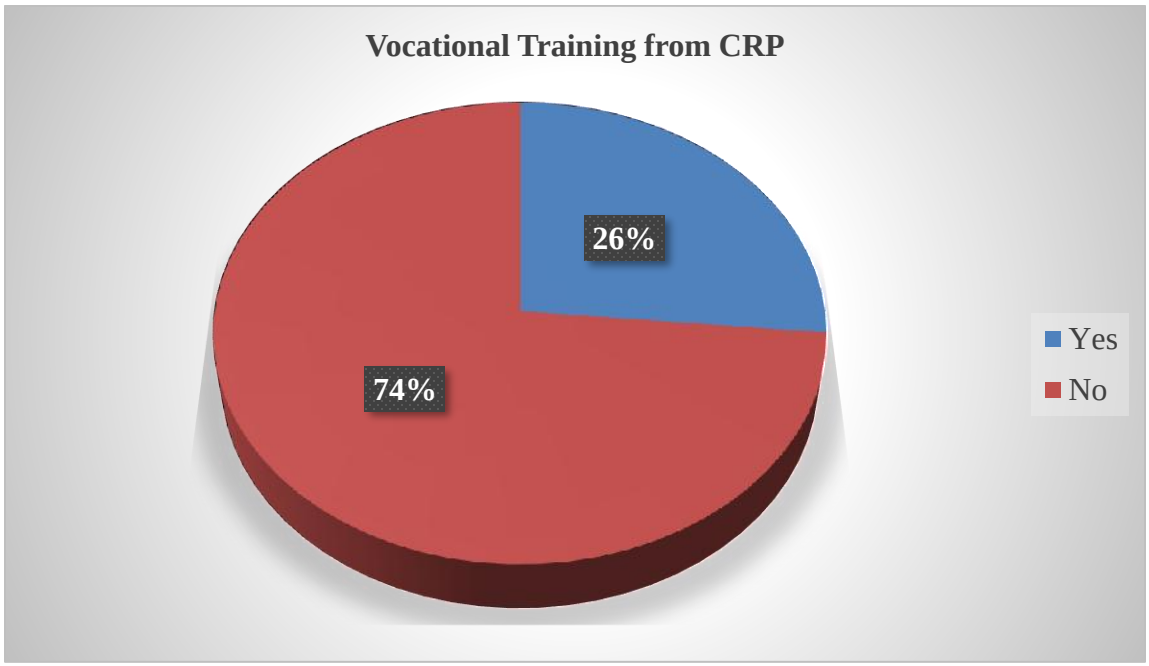

Figure-9: Vocational Training from CRP

4.4.4 Type of vocational training

Among the 27 participants 61% were taken vocational training on shop management, 19% on tailoring, 12% on electronics, 4% on computer & 4% on poultry farm.

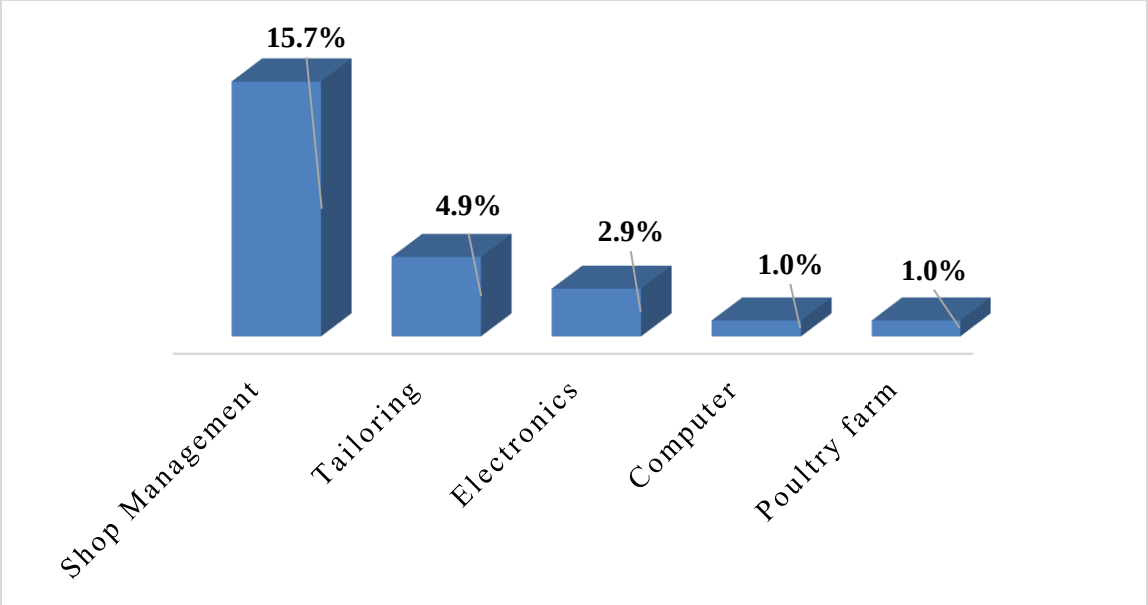

Figure-10: Type of vocational training

4.4.5 Barrier of employment

Most of the participants complained that physical or medical barrier of work place was common. Severity of injury was one of the main causes of unemployment. 46 percent faced barrier due to severity of injury, 28% medical barrier & 12% due to Difficulty to obtain appropriate work.

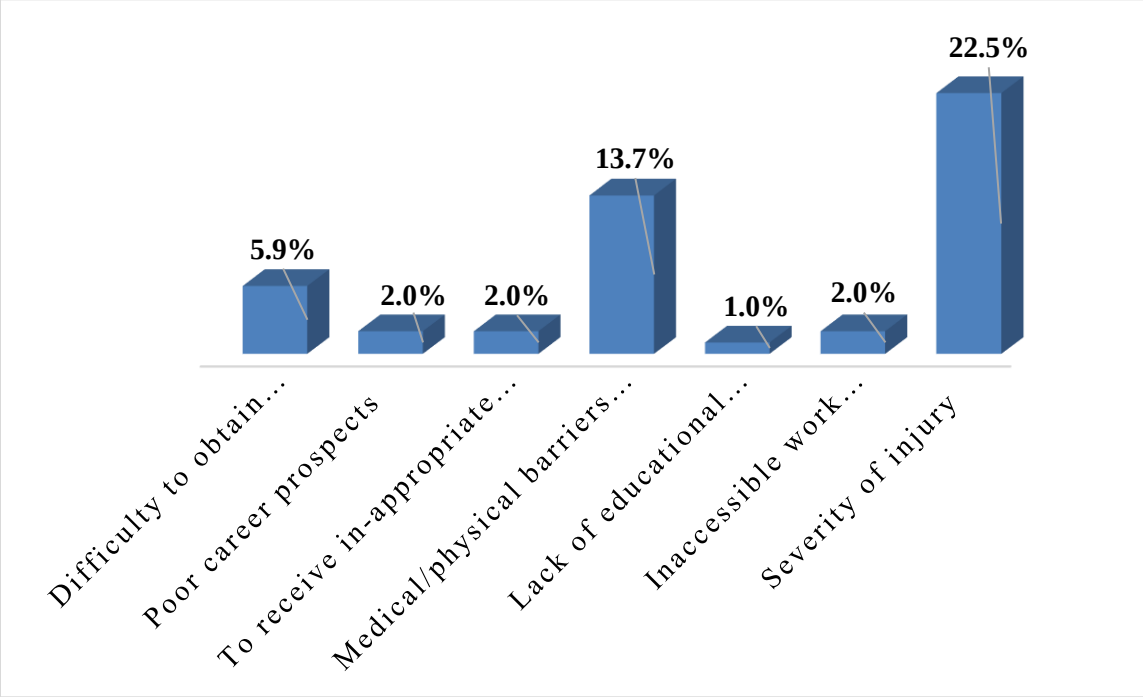

Figure-11: Barrier of employment

4.5.1 Distribution of participants by diagnosis & recreation before accident

This table shows that among 102 participants 9 traumatic tetraplegic (TT) & 13 traumatic paraplegic (TP) patients participate in sports for recreation before accident, 2 traumatic tetraplegic (TT) & 4 traumatic paraplegic (TP) patients read books for recreation before accident, 3 traumatic tetraplegic (TT) & 6 traumatic paraplegic (TP) patients read newspaper for recreation before accident, 8 traumatic tetraplegic (TT), 9 traumatic paraplegic (TP) & 2 non-traumatic paraplegic (NTP) patients do gardening for recreation before accident, 20 traumatic tetraplegic (TT) & 17 traumatic paraplegic (TP) patients watch TV for recreation before accident.

p-value between diagnosis and recreation before SCI is like traumatic tetraplegic (TT) p value P< 0.388, traumatic paraplegic (TP) p value P<0.404 and non-traumatic paraplegic (NTP) p value P< 0.983. This P value showed that means the result is not significance and there is no relationship between diagnosis and recreation before SCI the participants. The SD was 0.388.

Table-5: Distribution of participants by diagnosis & recreation before accident.

		What kind of activity you done for recreation (before accident)						P-Value	SD
		Sports	Reading books	Reading news	Gardening	Watching TV	Others		
Diagnosis	TT	9	2	3	8	20	3	0.388	0.388
	TP	13	4	6	9	17	5	0.404	
	NTP	0	0	0	2	0	1	0.938	
Total		22	6	9	19	37	9		102

4.5.2 Distribution of participants by diagnosis & recreation after SCI

This table shows that among all the participants 2 traumatic tetraplegic (TT) & 5 traumatic paraplegic (TP) patients read books for recreation after rehabilitation, 4 traumatic paraplegic (TP) patients read newspaper for recreation after rehabilitation, 17 traumatic tetraplegic (TT), 22 traumatic paraplegic (TP) & 1 non- traumatic paraplegic (NTP) patients watch TV for recreation after rehabilitation.

p-value between diagnosis and recreation before SCI is like traumatic tetraplegic (TT) p value P< 0.646, traumatic paraplegic (TP) p value P<0.414 and non-traumatic paraplegic (NTP) p value P< 0.503. This P value showed that means the result is not significance and there is no relationship between diagnosis and recreation before SCI the participants. The SD was 0.646.

Table-6: Distribution of participants by diagnosis & recreation after SCI.

		What kind of activity you done for recreation (after rehabilitation)				P-Value	Significance	SD
		Reading books	Reading news	Watching TV	Others			
Diagnosis	TT	2	0	17	0	0.646	Not Significant	0.646
	TP	5	4	22	1	0.414		
	NTP	0	0	1	0	0.503		
Total		7	4	40	1			52

CHAPTER –V DISCUSSION

The purpose of the study was to analyze the education, recreation & employment status of the people with spinal cord injury who have completed rehabilitation from the Centre for the Rehabilitation of the Paralysed (CRP). This study results recommended that among the participants 86.3% subjects were man and 13.7% were women. Other study conducted in Malaysia (Ramakrishnan, 2011) found that men were 83.3% and in India (Gupta, 2011) it was 84%. It indicates that the major portion of SCI victims in south-east Asia is man. From the results of this study it is revealed that two-third of the respondents was injured between 21-40 years. The mean age of CRP respondents was 34.76 years, which also similar of the study conducted by Momin (2004). Bangladesh Literacy Survey (BLS) report, 2010 shows that 57.53% population of Bangladesh are literate and that they can read and write. But in this study finding suggest that among all the participants 21 (20.6%) were illiterate before SCI, 41 (40.2%) had primary education before SCI, 24 (23.5%) had completed SSC before SCI, 9 (8.8%) had completed HSC before SCI, 4 (3.9%) had completed Honors before SCI. After rehabilitation 99 (97.1%) participants are not involved with education. Rest 3 (2.9%) are continuing their study after rehabilitation.

The current study also revealed that the devastating spinal cord injury mostly happening within the people who are living in the rural community which is 58.8% and only 41.2% living in urban areas. So it can be said the incidence of spinal cord injury among the rural community people is very high. Regarding the geographical location of the participant in the country, results showed that maximum 35 (34.3%) from Dhaka, the second highest 15 (14.7%) from Chittagong, 15 (14.7%) from Khulna, 10 (9.8%) from Rajshahi division and rest 5.9% from Barisal, 7.8% from Rangpur, 3.9% from Sylhet and 8.8% from Mymensingh division had taken rehabilitation services from CRP as the rehabilitation centre based on Savar, Dhaka.

The study identifies the 102 participants there are 45 (44.1%) participants who are diagnosed as tetraplegic patient, 54 (52.9%) of the participants diagnosed as paraplegia & 3 (2.9%) of the participants diagnosed as non-traumatic paraplegia.

In this study researcher found that, among all the participants, there are 37 (36.3%) who were watched TV, 22 (21.6%) were participated in sports, 19 (18.6%) were enjoyed gardening and the rest of the participants were involved with other recreation activity. But the recreation activity is redused by 49% after rehabilitation. After compliting rehabilitation from CRP as the rehabilitation centre based on Savar, Dhaka, participants try to involve with recreation. Among all the participants, 49% perticipents are not involved with recreation. Rest 40 (39.2%) who watched TV, 7 (6.9%) are involve with reading books & 4 (3.9%) are reading newspaper. The barrier for not involving with recreation are mental depression. Most of the participants complained that Mental was common barrier for recreation. Severity of injury was another barrier of recreation. 26.5% are due to mental depression, 13.7% are due to severity of injury & rest are due to other resions.

This study shows that among 102 participants 9 traumatic tetraplegic (TT) & 13 traumatic paraplegic (TP) patients participate in sports for recreation before accident, 2 traumatic tetraplegic (TT) & 4 traumatic paraplegic (TP) patients read books for recreation before accident, 3 traumatic tetraplegic (TT) & 6 traumatic paraplegic (TP) patients read newspaper for recreation before accident, 8 traumatic tetraplegic (TT), 9 traumatic paraplegic (TP) & 2 non-traumatic paraplegic (NTP) patients do gardening for recreation before accident, 20 traumatic tetraplegic (TT) & 17 traumatic paraplegic (TP) patients watch TV for recreation before accident. The SD was 0.388. but after rehabilitation about 49% perticipents are not involved with recreation rest 2 traumatic tetraplegic (TT) & 5 traumatic paraplegic (TP) patients read books for recreation after rehabilitation, 4 traumatic paraplegic (TP) patients read newspaper for recreation after rehabilitation, 17 traumatic tetraplegic (TT), 22 traumatic paraplegic (TP) & 1 non-traumatic paraplegic (NTP) patients watch TV for recreation after rehabilitation.

In this study researcher found that, among all the participants there are 16 (15.7%) who were involved with self business, 10 (9.8%) were student, 9 (8.8%) were worked in NGO, 9 (8.8%) were farmer, 9 (8.8%) were done household activity, 4 (3.9%) participants were Govt. employee and the rest of the participants were involved with other activity. This study results also showed that after the spinal cord injury and

rehabilitation job status has identified as the maximum of 50 (49.0%) perticipents are not involved with employment after SCI. 8 (7.8%) were involved with household activity, 5 (4.9%) were involved with self-business, 3 (2.9%) were students, 3 (2.9%) were Govt. employee & the rest of the participants were involved with other activity. After the injury and rehabilitation rate of un-productive persons has increased to 49%. Another study conducted Momin (2004) found that sixteen percent of CRP sample was involved in self-employment, thirty eight percent were involved in household work. After injury a higher number of CRP 32 sample were involved in household work and twenty two percent were students in contrast to before their injury. Krause (1992) found that 45% were gainfully employed; 14% engaged in unpaid productive activities (school, volunteering, or homemaking) but in this study results showed that 49% are not engaged employment after rehabilitation. Kruse found that 41% were not engaged in any productive activities. This study emphasized the need for comprehensive rehabilitation and the role of higher education in producing higher employment rates. Current study found that after the rehabilitation among the spinal cord injury people the employment rate is 51% and un-employment rate is 49% percent. A cross-sectional study conducted in Malayasia found that 47.4% participants with no income (un-employed) and (52.6%) persons who were working at the time of this study (Ramakrishnan, 2011). In India the employment rate of SCI is 41 percent (Gupta, 2011). According to Shankar RBG (2010) the post injury occupation status of the respondents after the injury reveals that 65% of them were in uncertain situation about their work life, 17.5% continued occupation in the same line, whereas 10% respondents gained new job and 7.5% are still unemployed. In this study we found that 51% were involved with job.

In this study 102 respondents have given their answer and identify the following reasons of un-employment. Most of the participants complained that severity of injury physical or medical barrier of work place was common. Physical or medical barrier of work place was one of the main causes of unemployment. 46 percent faced barrier due to severity of injury, 28% medical barrier & 12% due to Difficulty to obtain appropriate work. Individuals with SCI often face many barriers to community integration and activity participation including issues of accessibility, pain, lack of information, and psychological barriers (Martin et al., 2002).

In this study among 102 respondents only 27 participants had taken vocational training from CRP during or after rehabilitation. Type of vocational training included 61% were taken vocational training on shop management, 19% on tailoring, 12% on electronics, 4% on computer & 4% on poultry farm.

Limitations of the study:

- The sample size is too short.
- As it is a centre based study data were collected only from those people who have completed rehabilitation from Centre for the Rehabilitation of the Paralysed (CRP) but this research does not reach the people with SCI treated in other institutions.
- As it is an academic research and the researcher got only a couple of months to conduct the study also sample was taken purposively. Carrying out such a study on a national basis would provide a more general and acceptable result in context with Bangladesh.
- Another limitation of the study is that researcher could not conduct an in-depth study for find out the reason of unemployment and other psycho-social issues.

CHAPTER –VI CONCLUSION & RECOMMENDATION

6.1 Recommendation

- These results further demonstrated the importance of vocational training utilizing various trades to address treatment goals in SCI rehabilitation, so that there is a need for future research based on a large sample to examine outcomes that are associated with specific factors.
- It is also recommended that further study need to conduct to see the association and correlation between different variables in relation to jobs and unemployment.
- Further study may need to conduct with large sample size by including the other rehabilitation centers/organizations around the country.
- Local government also needs to pay attention for removing the barriers for getting jobs especially the accessibility in the community and work environment.

6.2 Conclusion

Spinal cord injury is associated with reduced quality of life and increased incidence of unemployment & decrease recreation level. It affects both an individual and his/ her family physically, psychologically, socially and economically. The purpose of this study was to identify the education, recreation & employment status of the people with spinal cord injury who have completed rehabilitation from the Centre for the Rehabilitation of the Paralysed (CRP) & of an individual participates in one year after sustaining a spinal cord injury. In this study researcher demonstrate the education lavel of the particiants before & after the accident, recreation activity before & after accident & their barrier to not involved with recreation. It also showed that the employment level of individual before & after injury. This study provides an exploration of challenges experienced by the spinal cord injury patient in their employment. After SCI people are still going on with their employment with various challenges. Some participants of the study have changed their pre injury employment due to having some limitations. After SCI they are

also in employment but different than previous. The barrier of unemployment, vocational traning from CRP are also demonstrated in this study.

REFERENCES

American spinal cord injury association 2011, Education, viewed 25 November 2011.

Anderson, D., Dumont, S., Azzaria, L., Bourdais, M. & Noreau, L., (2007). Determinants of return to work among spinal cord injury patients. Journal of Vocational Rehabilitation.

Anneken, V., Hanssen-Doose, A., Hirschfeld, S., Scheuer, T. and Thietje, R., (2010). Influence of physical exercise on quality of life in individuals with spinal cord injury. Spinal Cord, 48(5) : 393.

Athanasou, J.A. and Murphy, G.C., (2003). Employment rates for compensatable spinal injuries in Australia. International Journal of Rehabilitation Research, 16(2) : 151-156.

Annual Report of Centre for the Rehabilitation of the Paralysed (CRP): 2013-2014.

Arafat, S., Ahmed, S., Ahmed, F., Zaman, S., Andalib, A., (2017). Depression in spinal cord injury patients. J Behav Health, 6:1-4.

Bussmann, H., Vissers, M., Van den Berg-Emons, R., Sluis, T., Bergen, M. and Stam, H. (2008). Barriers to and facilitators of everyday physical activity in persons with a spinal cord injury after discharge from the rehabilitation centre. Journal of Rehabilitation Medicine, 40(6) : 461-467.

Chan, S. K. & Man, D. W., (2005). Barriers to returning to work for people with spinal cord injuries: a focus group study. Work (Reading, Mass.), 25(4) : 325-332.

Clin & Rehabil, (2011). Washington: The Board of Trustees of the University of Alabama, 200- 208.

Crepeau, E.B., (2003). Willard and Spackman's Occupational Therapy, Lippincott, Philadelphia.

Caldwell, L., Dattilo, J., Lee, Y. and Kleiber, D.A., (2008). Returning to the community with a spinal cord injury: Implications for therapeutic recreation specialists. Therapeutic Recreation Journal, 32(1) : 13.

Desiron, H.A.M., Rijk, A.d., Hoof, E.V. & Donceel, P., (2011). Occupational Therapy and return to work, BMC Public Health, 11 : 1-14.

Disabled world, 2007. What is Quadriplegia and Paraplegia.

Employment situation of people with disabilities in Bangladesh. Centre for Services and Information on Disability, (2002).

Goel, S.A., Modi, H.N., Dave, B.R., Patel, P.R., Patel, R., (2018). Socioeconomic impact of cervical spinal cord injury operated in patients with lower income group. Indian Spine J, 2018.

Gupta, N., Solomon, J. and Raja, K., (2011). Employment after paraplegia in India: a postal survey. Spinal Cord, 49 : 806–811.

Hoque, M.F., Grangeon, C. & Reed, k., (1999). Spinal cord lesion in Bangladesh: an epidemiological study 1994-1995. Spinal cord, 37 : 858-861.

Hoque, M.F., Hasan, Z., Razzak, A.T.M.A. & Helal, S.U., (2012). Cervical spinal cord injury due to fall while carrying heavy load on head: a problem in Bangladesh. Spinal Cord, 50 : 275-277.

Heath, G.W. and Fentem, P.H., (2007). Physical activity among persons with disabilities--a public health perspective. Exercise and sport sciences reviews, 25 ; 195-234.

Houwen, V.D., E.B., Baron, P., Veldhuizen, A.G., Burgerhof, J.G.M., Van Ooijen, P.M.A. and Verkerke, G.J., (2010). Geometry of the intervertebral volume and vertebral endplates of the human spine. Annals of biomedical engineering, 38(1) : 33-40.

Islam, M.S., Hafez, M.A. and Akter, M., (2011). Characterization of spinal cord lesion in patients attending a specialized rehabilitation center in Bangladesh. Spinal Cord :1-4.

Jones, K.J., Schwartz, D.M., Auerbach, J.D., Dormans, J.P., Flynn, J., Bowe, J.A., Laufer, S., Shah, S.A., Bowen, J.R., Pizzutillo, P.D., and Drummond, D.S., (2007). Neurophysiological detection of impending spinal cord injury during scoliosis surgery. JBJS, 89(11) : 2440-2449.

Kirshblum, S.C., Burns, S.P., Soren, F.B., Donovan, W., Graves, D.E., Jha, A., Johansen, M., Jones, L., Krassioukov, A., Mulcahey, M.J., Read, M.C. and Waring, W., (2011). International standards for neurological classification of spinal cord injury. The journal of Spinal Cord Medicine, 34 (06) ; 535-544.

Krause, J. S. & Reed, K. S., (2011). Barriers and facilitators to employment after spinal cord injury: underlying dimensions and their relationship to labor force participation. Spinal Cord, 49(2) : 285-291.

Krause, J. S., (2003). Years to employment after spinal cord injury. Archives of physical medicine and rehabilitation, 84(9) : 1282-1289.

Krause, J. S., Terza, J. V., Saunders, L. L. & Dismuke, C. E., (2010). Delayed entry into employment after spinal cord injury: factors related to time to first job. Spinal Cord, 48(6) : 487-491.

Krause, J.S., (2012). Employment after spinal cord injury. Archives of Physical Medicine Rehabilitation, 73, : 163–169.

Kirshblum, S.C., Burns, S.P., Biering-Sorensen, F., Donovan, W., Graves, D.E., Jha, A., Johansen, M., Jones, L., Krassioukov, A., Mulcahey, M.J. and Schmidt-Read, M., (2011). International standards for neurological classification of spinal cord injury. The journal of spinal cord medicine, 34(6) : 535-546.

Leduc, B.E. and Lepage, Y., (2002). Health-related quality of life after spinal cord injury. Disability and rehabilitation, 24(4) : 196-202.

Lidal, I. B., Huynh, T. K. & Biering-Sørensen, F., (2007). Return to work following spinal cord injury: a review. Disability and rehabilitation, 29(17) : 1341-1375.

Masud, A., Ahmed, M., Sultana M., Alam, S., Kabir, R., Arafat, S., (2017). Health problems and health care seeking behaviour of Rohingya refugees. J Med Res Innov; 1:21-9.

Meager, N., Bates, P., Dence, S., Honey, S., Williams, M., (1998). Employment of Disabled People.

McShane, S.L. and Karp, J., (2003). Employment following spinal cord injury: A covariance structure analysis. Rehabilitation Psychology, 38(1) : 27.

Momin, A. K. M., (2004). Impact of services for people with spinal cord lesion on economic participation. Asia Pacific Disability Rehabilitation Journal, 15(2) : 64-78.

Momin, A. K. M., (2004). Impact of services for people with spinal cord lesion on economic participation. Asia Pacific Disability Rehabilitation Journal, 15(2) ; 64-78

National spinal cord injury statistical center 2011, Definition and Eligibility Criteria 2006-2011.

Ning, G., Wu, Q., Li, Y. and Feng, S., (2012). Epidemiology of traumatic spinal cord injury in Asia: A systematic review. The Journal of Spinal Cord Medicine, 35(4) : 229-239.

Noreau, L., Shephard, R.J., (2000) Return to work after spinal cord injury: the potential contribution of physical tness. Paraplegia; 30: 563 ± 572.

Ottenbacher, K.J., Smith, P.M., Illig, S.B., Linn, R.T., Ostir, G.V. & Granger, C.V., (2004). Trends in length of stay, living setting, functional outcome, and mortality following medical rehabilitation. Journal of the American Medical Association, 14, pp.

Ottomaneli, L. & Lind, L., (2009). Review of critical factors related to spinal cord injury Implication for research and vocational services. The journal of Spinal Cord Medicine, 32 (5) : 503-531.

Pentland, W., Harvey, A.S., Smith, T. and Walker, J., (1999). The impact of spinal cord injury on men's time use. Spinal Cord, 37(11) : 786.

Quadir, M., Sen, K., Sultana, M., Ahmed, M., Taoheed, F., Andalib, A., (2017). Demography, diagnosis and complications of spinal cord injury patients in a rehabilitation center of Bangladesh. Int J Neurorehabil 2017.

Ramakrishnan, K., Loh, S. Y.& Omar, Z., (2011). Earnings among people with spinal cord injury. Spinal cord, 49(9) : 986-989.

Razzak, A.T.M.A., Helal, S.U. and Nuri, R.P., (2011). Life expectancy of persons with Spinal Cord Injury treated in a rehabilitation centre at Dhaka, Bangladesh, 22 (01) : 114-123.

Schönherr, M. C., Groothoff, J. W., Mulder, G. A. & Eisma, W. H., (2005). Participation and satisfaction after spinal cord injury: results of a vocational and leisure outcome study. Spinal cord, 43(4) : 241-248.

Shankar, R.B.G., (2010). A study on quality of life of persons with spinal cord injury, (unpublished), Centre of Research, Christ University, Bangalor.

Sherill, C. and Rimmer, J.H., (2008). Adapted Physical Activity and Sports, 5th edn, McGraw-Hill, Boston.

Somers, M.F., (2002). Spinal cord injury functional rehabilitation, Appleton & Lange, Norwalk.

Schoppen, T., Boonstra, A., Groothoff, J.W., de Vries, J., Göeken, L.N. and Eisma, W.H., (2001). Employment status, job characteristics, and work-related health experience of people with a lower limb amputation in The Netherlands. Archives of physical medicine and rehabilitation, 82(2) : 239-245.

Saadat, S., Javadi, M., Divshali, B.S., Tavakoli, A.H., Ghodsi, S.M., Montazeri, A. and Rahimi-Movaghar, V., (2010). Health-related quality of life among individuals with long-standing spinal cord injury: a comparative study of veterans and non-veterans. BMC Public Health, 10(1) : 6.

Sridharan, N., Uvaraj, N., Dhanagopal, M., Gopinath N., Anuswedha, A., (2015). Epidemiologic evidence of spinal cord injury in Tamil Nadu, India. Int J Res Med SCI.

Tasiemski, T., Bergström, E., Savic, G. and Gardner, B.P., (2000). Sports, recreation and employment following spinal cord injury–a pilot study. Spinal cord, 38(3) : 173.

Tomassen, P.C.D., Post, M.W.M. and Van Asbeck, F.W.A., (2000). Return to work after spinal cord injury. Spinal cord, 38(1) : 51.

Wade, N., Banovac, K., Gonzalez, F., and Bowker, J.J., (2003). Intravenous disodium etidronate therapy in spinal cord injury patients with heterotopic ossification. Spinal Cord, 31(10) : 660.

Wandell, N., (2010). The effect of social participation on adults with spinal cord injuries.

Wuermser, L.A., Ho, C.H., Priebe, M.M., Chiodo, A.E., Scelza, W.M. and Kirshblum, S.C., (2007). Spinal cord injury medicine. 1. Epidemiology and classification. Archives of physical medicine and rehabilitation, 88(3) : 49-54.

Westgren, N., Levi, R., (1998). Quality of life and traumatic spinal cord injury. Arch Phys Med Rehabil, 79:1433-9.

Wolfe, D.L., Hsieh, J.T.C., Miller, W.C. and Curt, A., (2008). Spasticity outcome measures in spinal cord injury: psychometric properties and clinical utility. Spinal cord, 46(2) : 86.

Yasuda, S., Wehman, P., Targett, P., Cifu, D.X. and West, M., (2002). Return to work after spinal cord injury: a review of recent research. NeuroRehabilitation, 17(3) :177-186.

Zieve, D. & Hoch, D.B., (2010). Spinal cord trauma, Pubmed health.

APPENDIX

1. IRB form
2. Permission letter
3. Informed Consent (Bangla)
4. Informed Consent (English)
5. Questionnaire (Bangla)
6. Questionnaire (English)

BANGLADESH HEALTH PROFESSIONS INSTITUTE

বাংলাদেশ হেল্‌থ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই)
Bangladesh Health Professions Institute (BHPI)
(The Academic Institute of CRP)

Ref. CRP-BHPI/IRB/10/18/1261

Date: 2-2-18/2018

To
Mahmuda Akter
B.Sc. in Physiotherapy
Session: 2013-2014 Student ID:112130216
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Subject: Approval of the thesis proposal **"Education, recreation and employment following spinal cord injury who have completed rehabilitation from CRP"** by ethics committee.

Dear Mahmuda Akter
Congratulations.
The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application to conduct the above mentioned dissertation, with yourself, as the Principal investigator. The Following documents have been reviewed and approved:

Sr. No.	Name of the Documents
1	Dissertation Proposal
2	Questionnaire (English version)
3	Information sheet & consent form.

The purpose of the study is to determine awareness about level of education, recreation and employment before and after injury. The study involves use of a self – administered questionnaire explore the result that may take 20 to 30 minutes to answer fill in the questionnaire, have no likelihood of any harm to the participants. The members of the Ethics committee have approved the study to be conducted in the presented form at the meeting held at 9.30 AM on 24th January 2018 at BHPI.

The institutional Ethics committee expects to be informed about the progress of the study, any changes occurring in the course of the study, any revision in the protocol and patient information or informed consent and ask to be provided a copy of the final report. This Ethics committee is working accordance to Nuremberg Code 1947, World Medical Association Declaration of Helsinki, 1964 - 2013 and other applicable regulation.

Best regards,

Muhammad Millat Hossain
Assistant Professor, Dept. of Rehabilitation Science
Member Secretary, Institutional Review Board (IRB)
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

সিআরপি-চাপাইন, সাভার, ঢাকা-১৩৪৩, বাংলাদেশ, ফোন ঃ ৭৭৪৫৪৬৪-৫, ৭৭৪১৪০৪ ফ্যাক্স ঃ ৭৭৪৫০৬৯
CRP-Chapain, Savar, Dhaka-1343, Tel : 7745464-5, 7741404, Fax : 7745069, E-mail : contact@crp-bangladesh.org, www.crp-bangladesh.org

Permission letter

July 21st, 2018

Assistant Manager,

Rehabilitation Wings,

Centre for the Rehabilitation of the Paralysed (CRP)

Chapain, Savar, Dhaka – 1343.

Through: Head of Physiotherapy department, BHPI.

Subject: Permission and support to collect data in order to conduct my research project.

Dear Sir,

With due respect and humble submission to state that I am Mahmuda Akter, student of 4th professional B.Sc. in physiotherapy at Bangladesh Health Professions Institute (BHPI). According to the course curriculum, I have to conduct a research project for the partial fulfillment to complete of the degree of B.Sc in Physiotherapy. The title of my research project is**"Education, recreation and employment following spinal cord injury who have completed rehabilitation from CRP"**. My research project will be conducted under the supervision of Md. Zahid Hossain, Lecturer, Department of Physiotherapy, BHPI, CRP. I want to collect data for my research project from the community with Spinal Cord Injury (SCI) Patients. So, I need permission for data collection from the community. I would like to assure that anything of my study will not be harmful for theparticipants.

I, therefore, pray & hope that you would be kind enough to grant my application & give me permission for data collection and oblige thereby.

Yours sincerely,

Mahmuda Akter

Mahmuda Akter

4th professional B.Sc. in physiotherapy

Roll- 21, Session: 2013-2014

Bangladesh health professions institute (BHPI)

(An academic institute of CRP)

CRP, Chapain, Savar, Dhaka-1343.

Forward to Asst. Manager

MD. ZAHID HOSSAIN 22/7/18
Lecturer
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Recommended
22/07/18
Prof. Md. Obaidul Haque
Head, Department of Physiotherapy
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CRP, Savar, Dhaka-1343

Forwarded to CBR
Field officer, CRP

25/7/18
SALIM RAYHAN
Assistant Manager
Rehabilitation Wing
CRP, Bangladesh

মৌখিক অনুমতিপত্র/সম্মতিপত্র

(অংশ গ্রহনকারী কে পড়ে শোনাতে হবে)
আসসালামুআলাইকুম/ নমস্কার,
আমার নাম মাহমুদা আক্তার, আমি এই গবেষণা প্রকল্পটি বাংলাদেশ হেলথ্ প্রফেশনস ইনষ্টিটিউট (বিএইচপিআই)-এ পরিচালনা করছি যা আমার ৪র্থ বর্ষ বিএসসি ইন ফিজিওথেরাপী কোর্সের অধিভুক্ত। আমার গবেষণার শিরোনাম হলু "মের"রজ্জুতে আঘাত প্রাপ্ত যে সমস্ড় রোগী পুনর্বাসন সম্পূর্ণ করেছেন তাদের ক্ষেত্রে শিক্ষা, বিনোদন এবং চাকুরীর প্রভাব"। আমি এক্ষেত্রে আপনাকে কিছু ব্যক্তিগত এবং আনুষঙ্গিক প্রশ্ন মেরুরজ্জু ক্ষতিগ্রস্থ সম্পর্কে করতে চাচ্ছি। এতে আনুমানিক ২০-২৫ মিনিট সময় নিবো।

আমি আপনাকে অনুগত করছি যে, এটা আমার অধ্যয়নের অংশ এবং যা অন্য কোন উদ্দেশ্যে ব্যবহৃত হবেনা। আপনি যে সব তথ্য প্রদান করবেন তার গোপনীয়তা বজায় থাকবে এবং আপনার প্রতিবেদনের ঘটনা প্রবাহে এটা নিশ্চিত করা হবে যে এই তথ্যের উৎস অপ্রকাশিত থাকবে।

এই অধ্যয়নে আপনার অংশগ্রহণ স্বেচ্ছাপ্রণোদীত এবং আপনি যে কোন সময় এই অধ্যয়ন থেকে কোন নেতিবাচক ফলাফল ছাড়াই নিজেকে প্রত্যাহার করতে পারবেন। এছাড়াও কোন নির্দিষ্ট প্রশ্ন অপছন্দ হলে উত্তর না দেয়ার এবং সাক্ষাৎকারের সময় কোন উত্তর না দিতে চাওয়ার অধিকার ও আপনার আছে।

এই অধ্যয়নে অংশগ্রহণকারী হিসেবে যদি আপনার কোন প্রশ্ন থাকে তাহলে আপনি আমাকে অথবা/এবং মোঃ জাহিদ হোসেন, প্রভাশক, ফিজিওথেরাপি বিভাগ, সিআরপি, সাভার, ঢাকা- ১৩৪৩ তে যোগাযোগ করতে পারেন।

আমি আপনার অনুমতি নিয়ে এই সাক্ষাৎকার শুরু করতে যাচ্ছি।

হ্যাঁ : ☐

না : ☐

১। অংশ গ্রহনকারীর স্বাক্ষর..... তারিখঃ

মোবাইল নাম্বারঃ

২। সাক্ষাৎ গ্রহনকারীর স্বাক্ষর..... তারিখঃ

মোবাইল নাম্বারঃ

Verbal Consent Statement

(Please read out to the participants)

Assalamualaikum/Namasker,

My name is Mahmuda Akter, I am conducting this study as a part of my academic work of B.Sc. in Physiotherapy under Bangladesh Health Professions Institute (BHPI), which is affiliated to University of Dhaka. My study title is "Education, recreation and employment following spinal cord injury who have completed rehabilitation from CRP". I would like to know about some personal and other related information regarding Spinal cord injury. You will need to answer some questions which are mentioned in this form. It will take approximately 20-25 minutes.

I would like to inform you that this is a purely academic study and will not be used for any other purpose. All information provided by you will keep in a locker as confidential and in the event of any report or publication it will be ensured that the source of information remains anonymous and also all information will be destroyed after completion of the study.

Your participation in this study is voluntary and you may withdraw yourself at any time during this study without any negative consequences. You also have the right not to answer a particular question that you don't like or do not want to answer during interview.

If you have any query about the study or your right as a participant, you may contact with me and/or Md. Zahid Hossain, Lecturer of Physiotherapy Department, Bangladesh Health Professions Institute (BHPI), Savar, Dhaka.

So, may I have your consent to proceed with the interview or work?

☐ **Yes:** **Date:**

☐ **No:** **Date:**

Signature of the Participant _____ Date:

Mobile No:

Signature of the Interviewer _____ Date:

Mobile No:

মের"রজ্জুতে আঘাতপ্রাপ্ত যে সমস্ড় রোগী পুনর্বাসন সম্পূর্ণ করেছেন তাদের ক্ষেত্রে শিক্ষা, বিনোদন এবং চাকুরীর প্রভাব।

ব্যক্তিগত তথ্যঃ		
সনাক্তকরণ নম্বর -		
কেস নম্বর -		
নাম-		
ঠিকানা -		
অনুমতি নেয়াহল-	হ্যাঁ	না

আর্থ-সামাজিক প্রেক্ষাপট

১.১ বয়স :	
১.২ লিঙ্গ :	১. পুরুষ ২. মহিলা
১.৩ বৈবাহিক অবস্থা :	১। বিবাহিত ২। অবিবাহিত ৩। তালাকপ্রাপ্ত ৪। বিধবা
১.৪ রোগীর ভৌগলিক অবস্থান (বিভাগ):	১. ঢাকা ২. চট্রগ্রাম ৩. রাজশাহী ৪. সিলেট

	৫. খুলনা ৬. বরিশাল ৭. রংপুর ৮. ময়মনসিংহ
১.৫ বাসস্থানের ধরন :	১. গ্রাম ২. শহর
১.৬ ধর্ম:	১. ইসলাম ২. হিন্দু ৩. বৌদ্ধ ৪. অন্যান্য
১.৭ শিক্ষাগত যোগ্যতা :	১. নিরক্ষর ২. প্রাথমিক ৩. মাধ্যমিক ৪. উচ্চমাধ্যমিক ৫. স্নাতক ৬. স্নাতকোত্তর ও এর উপরে
১.৮ পরিবারের উপার্জনক্ষম সদস্যের সংখ্যা:	.....
১.৯ আপনি কি পরিবারের প্রধান উপার্জনকারী?	১. হ্যাঁ ২. না
১.১০ মাসিক আয় :	টাকা
১.১১ পেশা:	১. সরকারী চাকুরি ২. বেসরকারী চাকুরি ৩. ছাত্র ৪. শিক্ষক

	৫. ব্যবসায়ী ৬. দোকানদার ৭. ড্রাইভার ৮. ছুতার ৯. ডাক্তার ১০. ইঞ্জিনিয়ার ১১. দিনমজুর ১২. হকার ১৩. কৃষক ১৪. কাঠমিস্ত্রী ১৫. গৃহিনী ১৬. অন্যান্য.
১.১২ আগের পেশাঃ	.....

চিকিৎসাবিষয়ক তথ্যঃ

২.১ রোগের ধরণ :	১. ট্রমাটিক টেট্রাপ্লেজিয়া ২. ট্রমাটিক পেরাপ্লেজিয়া ৩. নন-ট্রমাটিক টেট্রাপ্লেজিয়া ৪. নন-ট্রমাটিক পেরাপ্লেজিয়া
২.২ আঘাতের কারণ :	ক। ট্রমাটিক ১. মোটর যানের আঘাত ২. উপর থেকে পড়া

	৩. খেলাধুলার কারণে ৪. শারীরিক আঘাত ৫. ষাঁড়ের আক্রমণ ৬. স্কার্ফ ইনজুরি ৭. বন্দুকের আঘাত ৮. মাথার উপর ভারী ওজন পতন ৯. অন্যান্য..... খ। নন-ট্রমাটিক
২.৩ জটিলতা :	১. চাপজনিত ঘা ২. শ্বাসযন্ত্রের সমস্যা ৩. মলমূত্র বিষয়ক সমস্যা ৪. মূত্রসংক্রান্ত সমস্যা ৫. যৌন সমস্যা ৬. ডিপ ভেইন থ্রম্বসিস

শিক্ষা সম্পর্কিত প্রশ্নাবলী

৩.১ আপনি কি আপনার পড়ালেখা চালিয়ে যাচ্ছেন?	১. হ্যাঁ ২. না
৩.২ যদি হ্যাঁ হয়, আপনি কোন শ্রেণীতে পড়েন?	১. প্রাথমিক ২. মাধ্যমিক ৩. উচ্চমাধ্যমিক ৪. স্নাতক

	৫. স্নাতকোত্তর ও এর উপরে
৩.৩ যদি না হয়, তবে কারন কি?	১. আঘাতের তীব্রতা ২. আঘাতের স্তর ৩. তত্ত্বাবধায়কের মনোভাব ৪. স্কুলে প্রবেশগম্যতার সমস্যা ৫. যাতায়াত সমস্যা ৬. শিক্ষকের মনোভাব ৭. ছাত্রদের মনোভাব ৮. অন্যান্য.....

বিনোদন সম্পর্কিত প্রশ্নাবলী

৪.১ আপনি বিনোদন জন্য কি ধরনের কার্যকলাপ করতেন (দুর্ঘটনার আগে)	১. খেলাধুলা করা ২. বই পড়া ৩. পত্রিকা পড়া ৪. বাগান করা ৫. টেলিভিশন দেখা ৬. অন্যান্য
৪.২ আপনি বিনোদন জন্য কি ধরনের কার্যকলাপ করেন (পুনর্বাসনের পর)	১. খেলাধুলা করা ২. বই পড়া ৩. পত্রিকা পড়া ৪. বাগান করা ৫. টেলিভিশন দেখা

	৬. অন্যান্য
৪.৩ যদি আপনি কোন বিনোদন মূলক কাজ না করেন, তাহলে কারন কি?	১. অস্বস্ড়ি বোধকরা ২. মানসিক বিষণ্নতা ৩. আঘাতের তীব্রতা ৪. সাহায্য কারীর কাছ থেকে অবহেলা ৫. সামাজিক গ্রহণ যোগ্যতা হ্রাস পাওয়া ৬.আত্মীয়/প্রতিবেশী/কাজের সাথে জড়িতদের কাছ থেকে সহানুভূতি না পাওয়া

কর্মসংস্থান সম্পর্কিত প্রশ্নাবলী

৫.১ পূর্বের কাজ (দুর্ঘটনার পূর্বে):	১. সরকারী কর্মচারী ২. আধাসরকারী/ স্বায়ত্ত শাসিত ৩. ব্যবসায়ী ৪. ছাত্র/ছাত্রী ৫. দিনমজুর ৬. কৃষক ৭. বেকার ৮. গৃহস্থলির কাজকর্ম ৯. অন্যান্য
৫.২ বর্তমান কাজ (পুনর্বাসনের পর):	১. সরকারী কর্মচারী ২. আধাসরকারী/ স্বায়ত্ত শাসিত ৩. ব্যবসায়ী

	৪. ছাত্র/ছাত্রী ৫. দিনমজুর ৬. কৃষক ৭. বেকার ৮. গৃহস্থলির কাজকর্ম ৯. অন্যান্য
৫.৩ সিআরপি থেকে কারিগরি শিক্ষা গ্রহণ করেছেন কি:	১. হ্যাঁ ২. না
৫.৪ কারিগরি শিক্ষার ধরন :	১. দোকান ২. দর্জি ৩. ইলেক্ট্রনিক্স ৪. কম্পিউটার ৫. নার্সারি ৬. পোল্ট্রি ফার্ম ৭. অন্যান্য
৫.৫ পূর্বে বেকার ছিলেন বর্তমানে পুনর্বাসনের পর নতুন কাজ করছেন	১. হ্যাঁ ২. না
৫.৬ বেকারত্ব অথবা কাজ করতে না পারার বাঁধা গুলো কি কি হতে পাওে বলে আপনি মনে করেন?	১. কর্মকর্তা ও সহকারীদের আচরনের বৈষম্যতা ২. সঠিক ভাবে কাজটি করতে না পারা ৩. জীবনে প্রত্যাশার অভাব ৪. পর্যাপ্ত মুজুরি না পাওয়া ৫. কর্মসংস্থানে স্বাস্থ্যগত অথবা শারীরিক প্রতিবন্ধকতা

	৬. পর্যাপ্ত দক্ষতার অভাব ৭. শিক্ষাগত যোগ্যতার অভাব ৮. কাজের পরিবেশে অপ্রবেশগম্যতা ৯. পরিবহন ব্যবস্থার অপ্রবেশগম্যতা ১০.আঘাতের তীব্রতা ১১. অন্যান্য

সময় দেয়ার জন্য আপনাকে ধন্যবাদ।

Education, recreation and employment following SCI who have completed rehabilitation from CRP.

Personal details:		
Participant ID No:		
Case No:		
Name:		
Address:		
Consent form Taken	Yes	No

Socio-demographic Questionnaire:

1.1. Age:	
1.2. Sex:	1. Male 2. Female
1.3. Marrital status	1. Married 2. Unmarried 3. Divorced 4. Widowed 5. Separate
1.4. Geographical location of the patient (Division):	1 Dhaka 2. Chittagong 3. Rajshahi 4. Sylhet 5. Khulna 6. Barisal 7. Rangpur 8. Mymensingh
1.5. Place of residence:	1. Rural

	2. Urban 3. Semi/sub-urban
1.6. Religious:	1 Islam 2. Hindu 3. Vudho 4. Others……..
1.7. Education:	1 Illiterate 2. Primary Education 3. SSC 4. HSC 5. Honors 6. Masters and above
1.8. Number of earning family members:	……..
1.9. Are you the main earning member of your family?	1. Yes 2. No
1.10. Income:	……BDT/month
1.11. Occupation:	1. Govt. job 2. Non-Govt. job 3. Student 4.Teacher 5. Businessman 6. Shopkeeper 7. Driver 8. Carpenter 9. Doctor 10. Engineer 11. Day labor 12. Hawker 13. Farmer

	14. Wood cutter 15. Housewife 16. Others…….
1.12. Previous job:	……

Medical History:

2.1. Diagnosis:	1. TT 2. TP 3. NTP 4. NTT
2.2. Causes of injury:	A.Traumatic 1. Road traffic accident 2. Fall from height 3. Sports accident 4. Physical assault 5. Bull attack 6. Scarf injury 7. Gun shoot injury 8. Fall of heavy weight over head 9. Others..... B. Non-traumatic
2.3. Complications:	1. Pressure sore 2. Respiratory problem 3. Bowel and bladder problem 4. Urinary incontinence 5. Sexual problem 6. Deep venous thrombosis

Education Related Questionnaire

3.1 Have you contunuing your stuydy?	1. Yes 2. No
3.2 If yes. Waht is the level of your education?	1. Primary Education 2. SSC 3. HSC 4. Honors 5. Masters and above
3.3 If no, what are the reasons?	1. Severity of injury 2. Level of injury 3. Neglect from the attendant 4. Accessibility of school 5. Accessibility of road 6. Attitude of teacher 7. Attitude of student 8. Complication 9. Others

Recreation Related Questionnaire

4.1 What kind of activity you done for recreation (before accident)	1. Sports 2. Reading books 3. Reading news paper 4. Gardening 5. Watching TV 6. Others
4.2 What kind of activity you done for recreation (after rehabilitation)	1. Sports 2. Reading books

	3. Reading news paper 4. Gardening 5. Watching TV 6. Others
4.3 If you don't do any recreational activity, what are the reason?	1. Feel uneasy 2. Mental depression 3. Severity of injury 4. Complication 3. Neglect from the attendant 4. Decreasing social acceptability 5. Do not get sympathy from relatives / neighbors / colligue

Employment Related Questionnaire

5.1 Previous Job (before accident):	1. Govt. Employee 2. NGO 3. Self-business 4. Student 5. Day Labor 6. Land Owner /farmer 7. Unemployed 8. House hold activities 9. Other ….
5.2 Present Job (after rehabilitation):	1. Govt. Employee 2. NGO 3. Self-business 4. Student 5. Day Labor

	6. Land Owner /farmer 7. Unemployed 8. House hold activities 9. Other. …..
5.3 Vocational Training received from CRP:	1. Yes 2. No
5.4 Type of Vocational Training receive:	1. Shop Management 2. Tailoring 3. Electronics 4. Computer 5. Nursery 6. Poultry farm 7. Others
5.5 New job/employment offered to this person who was previously unemployed:	1. Yes 2. No
5.6 What do you think about the barriers of un-employment/getting job?	1. Discriminating attitude of employers andcolleagues 2. Difficulty to obtain appropriate work 3. Poor career prospects 4. To receive in-appropriate wages 5. Medical/physical barriers in job market 6. Lack of appropriate skills 7. Lack of educational qualification 8. Inaccessible work environment 9. Inaccessible transport systems 10. Sevearity of injury 11. Other

Thank you very much for your time!!