PERCEPTION OF SPINAL CORD INJURY PATIENTS ABOUT THEIR FUNCTIONAL INDEPENDENCE AT CRP IN BANGLADESH

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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

PERCEPTION OF SPINAL CORD INJURY PATIENTS ABOUT THEIR FUNCTIONAL INDEPENDENCE AT CRP IN BANGLADESH

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Declaration

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

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CONTENTS

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Acronyms

ASIA: American Spinal Cord Injury Association

BHPI: Bangladesh Health Professions Institute

BMRC: Bangladesh Medical Research Council

CRP: Centre for Rehabilitation for the Paralyzed

FIM: Functional independence measurement

IRB: Institutional Review Board

SCI: Spinal cord injury

WHO: world Health Organization

List of Table

Abstract

Purpose*:** To find out perceptions of SCI patients about their functional independence at CRP in Bangladesh.Objectives*:** To find out the perception about functional independence of spinal cord injury patients, their knowledge about injury, capability of doing functional activities independently, expectation about functional independence, their perception about barriers to perform functional activities independently&how Physiotherapy helps them to regain their functional independence. ***Methodology*:** A qualitative study design was used to conduct the study. Twelve subjects with spinal cord injury of SCI unit of Centre for the Rehabilitation of the paralyzed (CRP) inpatient physiotherapy department were interviewed in this study. The samples were selected by convenience sampling method. The data were collected by using an open ended questionnaire form and coded by six themes; finally data are analyzed and presented qualitative analysis. ***Result*:** Following themes have been emerged on the basis of data analysis: knowledge about injury, capability of doing self-care activities of daily living, Patients expectation of functional outcome in future, barriers to perform activities of daily living, role of physiotherapy to regain their functional ability, preferable profession after returning to the community.According to the themes the results are made. This includes not only educational level but also awareness about gaining knowledge is also important for the patients. Almost all the paraplegic patients are capable of doing their self-care activities properly after completing rehabilitation stage. In case of incomplete tetraplegic SCI patients there is a chance of being able to do self-care activities properly. But in case of complete paraplegic there is no or very few chance of being able to do their self-care activities. Muddy path, stairs, riding on vehicle etc. are their barriers. Their poor physical condition is also their barrier. Almost all the participants said that, physiotherapy helped them very much on regaining functional ability. Most of them wanted to join in their previous profession because they used to do that .Others said that, after taking vocational training they will involve in new jobs.

Keywords: Perception, SCI, Functional Independence

CHAPTER-I INTRODUCTION

1 .1 Background:

Spinal cord injuries (SCIs) are life-altering events. The results of conserving a spinal cord injury (SCI) can be destroying and can influence in various aspects of one's life. Bangladesh is an advancing nation of the third world. The rate of education is also low. Other than the government and non-government organization in health care segment is not bounty sufficient for the individuals living here. Now a days SCI has gotten to be a common issue in this nation and the amount is too expanding day by day.

Spinalcord injuries (SCIs) are caused bycontusion or bruising of the spinal cord that causes as a result of fracture or dislocation of the spine due to injury. SCI patient faces distinctive sorts of challenges.SCI patients experience paralysis, abnormal sensation, autonomic dysfunction and compromised bowel-bladder, sexual dysfunction and respiratory dysfunction at or below the level of injury. These impacts are ordinarily enduring since central nervous system has a limit capability to endogenous repair and axon recovery. SCI tends to influence individuals early dictate of life time. The average age at the time of damage, which is around 30–37 years old. (DeVivo&Chen, 2011).Spinal cord injury is an exceptionally extreme medical condition which also causes functional, financial and psychosomatic conditions. A patient with SCI suffers in different phases of life. Due to loss of motion ambulatory issue gets to be their fundamental trouble. Spinal line damage (SCI) impacts not as it were by loss of motion but also by various autonomic dysfunctions .That moreover comprises irregular cardiovascular control (Sidorov et al., 2008). Spinal cord injury is one of the foremost physically disabling medical conditions which can ended up front-runners to distinctive impedances in association in community reintegration (Ramakrishnan et al., 2011). This damage can be cause physical and emotional distress as well as also loss of earnings. The persons with spinal cord injury (SCI) faces several challenges on their functional activities, own lifestyle, social

events& also insexuality. Spinal cord injury patients also face omplications in coping up with society with their new incapacity. Because of Spinal cord Injury, important changes occur within an individual's physical and psychosocial relationship within their own society where they survive. Long term physical problems must lessens the person's involvement in works, education, social and community participations .Spinal cord injury patients experience poor health related quality life than normal persons(Ottomaneli & Lind, 2009).

Now a days globally numerous individuals are experiencing spinal cord injury almost every year. According to the statement of World Health Organization (WHO), between 20-40 individuals per million of population obtain spinal cord injury per year (Hansen et al., 2007). It is true that most of the spinal cord injuries occur in males. Many specialists accept that especially it happens due to men are more likely to employed in risk taking activities than females. Among the progressed nations like U.S.A, close around 12000 modern cases of spinal line wounds are found each year agreeing to the report of national spinal line harm measurable center (NSCISC). Approximately 60% of cases happened in individuals of 16-40 a long time of age, comparing to the formative period related with carrier development and establishment (Ottomanelli and Lind, 2009). Frequency rate of spinal cord injury is a smaller amount in case of those beneath 20 years of old and those above 50 years old (Razzak et al., 2011).Injuries and illness affecting the spinal cord are vital health related problem in Bangladesh. This also origins elevated rates of morbidity and mortality. Right now there is no national spinal cord injury registers organization in Bangladesh to outline the accessible literature and to deliver previous information from this country. So it is very challenging to know the approximation of whole number of patients with spinal cord injury in Bangladesh. Centre for the Rehabilitation of the Paralyzed (CRP) is the solitary non-government organization in Dhaka which involved in rehabilitation and management of patients with spinal cord injury for more than 30 years (Islam et al., 2011).

In recent years, scientific research enriches in functional outcomes in SCI.These made exceptionally much excitement. However, in any case now a days there has been discussion on clinical trials utilizing laboratory-based neuro-regenerative models and stem cell transplants which are a potential methodology for corrective treatment. There is no efficient curative therapy for human with SCI currently exists. From many years clinicians and professionals working in various types of rehabilitation settings. They continues to support patients in regaining their independence in activities of daily living, in returning to work, in participating in social activities, and also in improving their social and health related quality of life. FIM is a standardized and most frequently used method of assessing rehabilitation effectiveness in a clinical care setting. The FIM assesses the person's independence across a number of functional areas which include sself-care, sphincter control, mobility, locomotion, communication, and social cognition etc. (Kennedy et al., 2011).Directly vehicle crashes are the driving cause of damage, taken after by falls, acts of savagery like as primarily gunshot wounds, and sports & recreational exercises (White et al.,2016).

The utmost common cause of SCI between 2000 to2003 was motor vehicle accidents. The amount was 50.4% of all the causes for all the age groups during that time period, which was compared with a comparable rate of 48.7% between 1973 to 1979.However, the rates for falls have continuously expanded over the final 3 decades, from 16.5% in the 1970s to 23.8% between 2000 to 2003. Study of the other ponders of SCI appears that, the rates related with sports has decreased over the times, from14.4% between 1973 and 1979 to 9% between 2000 and 2003.Violence as an etiology that at first expanded the rate 13.3% between 1973 and 1979 to a top of 21.8% in the time of 1990. In any case, it has since weakened to 11.2% between 2000 and 2003. When compared with worldwide measurements, with the prevention of acts of violence as causes of SCI, the etiology of SCI were comparative in other nations counting Denmark, Taiwan, Spain etc. nations also (Wuermser et al., 2007).Even though falls were still the second most common cause of SCI among the all age crowds, it was the only cause which carries a large rate that has progressively increased over the last

3 decades. Different studies showed that, by age group, it seemed that falls were by far the most common cause of spinal cord injury in people over age 60 years old. Prevention should take to minimalize this condition. It might minimalize the frequency of SCI in this elderly population.

Traumatic SCI documented rates from minimum 50 to maximum 1,298 cases per million populations in all-inclusive. Evidence from the United States appraised that, prevalence rates vary from 50 to 906 people with traumatic SCI per million population. One study from Canada appraised that, prevalence is 1,298 per million Populations. In Sweden, Finland, Norway, and Iceland the prevalence rates of traumatic SCI were estimated about 227, 280, 419, and 526 individuals per million population .Finally, in Australia, recently acknowledged a prevalence rate of 681 individuals with traumatic SCI per million populations.Datas from Nepal and India, two Asian studies reported prevalence rates of traumatic SCI as 849.8 cases per million population in Nepal, and 236 cases per million population in India. In Iran, an incidence rate of 440 per million population was assessed. (Furlan et al., 2013).But there is not available statistics about Bangladesh.

Rendering to the International Standards for the Neurological Classification of SCI and the American Spinal Injuries Association Impairment Scale (AIS) Spinal cord injuries are characterized as or defined as complete or incomplete. This classification system was habituated in the year of 1982. Complete lesions are defined as AIS A and incomplete lesions are defined as AIS B, AIS C, AIS D and AIS E. In Frankel system, whereby a persons with SCI are classified as having an incomplete SCI, if they had any motor or sensory preservation more than three levels below the level of injury and according to the International Standards for the Neurological Classification of SCI distinguishes between complete and incomplete injuries, which are on the basis of sensory and motor preservation in the S4/5 segments. A lesion is classified as complete if a person has no voluntary anal contraction (indicate S4/5 motor preservation) and/or sensation in or around the anus (indicate S4/5 sensory preservation), associated to how much motor or

sensory task they conserved below the level of the lesion. Different types of incomplete lesions are based on a detailed motor and sensory assessment. Various definitions of distinctive types of SCIs are suddenly found exceptionally complicated and that moreover incorporates things to be examined.

1.2 Rationale

The purpose of the study is to find out the perceptions of SCI patients about their functional independence, after rehabilitation period prior to discharge from re-integration stage. Consistent and reproducible measurement of patients functional status is important in medical rehabilitation. Clinicians uses patients functional status to assess rehabilitation needs, to set goals, to set treatment plan and evaluate outcomes. Moreover, perception during admission and at discharge from rehabilitation has been providing as a basis standard for the rehabilitation center. Almost 60% of countries with rehabilitation facilities uses the Functional Independence Measure (FIM) Besides, a patient classification structure based on it, called the FIM-Function Related Groups (FIM-FRGs) is now being measured by the Health Care Financing Administration for development of a Medical care prospective payment system .As physical activity (PA) has imminent benefits after spinal cord injury (SCI), particularly in moving forward effectiveness and useful capability in exercises of day by day living. As of now, numerous who gets advantage from activities are play a part in related to their functional capacity. As functional independence is exceptionally domineering .So that as health professional we should know the perception of patients about their functional independenceAs physical activity (PA) has prospective benefits after spinal cord injury (SCI), especially in improving efficiency and functional capability in activities of daily living. Currently, many who gets benefit from activities are play a part related to their functional capacity. As functional independence is very important (Zehr, 2011).Communication and evidence transmission over care settings and as well as the collecting information approximately enhancement from the patient is essential for the rehabilitation professionals. Communication among care levels is highly appreciated by patients in general. Patients from various studies identified that there is a gap in communication and information transfer among different levels of healthcare .For e.g. many patients saw that specialists did not interact with the patients properly. That’s why, many health problems might not be under control or finded out. Many results suggests that

consistency of staffs positively influenced and making relationship between health professional & patients towards making a sense of attachment and higher quality of discussions . Continuing relationship upholds mutual understanding among them. It is also necessary in order to feel comfortable or to develop a genuine relationship .Patients also feels that their physician are prepared to pay attention to them , attentive and alert to their needs, knowledgeable or inspired confidence to address uncomfortable situations .This relationship also maintained by knowing their perceptions.(Waibel et al.,2012).

The investigator found that, as well as Conflicting information about improvement from different care providers prevented patients from making improvement. As a result, in patients mind there reduced confidence in professionals, increasing anxiety and feelings of not being valued them as individuals. To know patient's perception is the pathway that makes sure the continuity of treatment .It also provides flexibility that helps to identify the changes in an individual's necessities and circumstances, and therefore it highlights on individualized care plans by the health professionals. Knowing perception helps in the consistency of care and a smooth discharge process. A research also showed that, a better understanding of the positive outcomes that arise after SCI is important for informing clinical practice. Helping an individual to become conscious about the positive outcomes that may have arisen from the experience of trauma may improve self-esteem and self-efficacy as well as overall health (Kennedy et al., 2013). An effective release is defined as being able to operate well in their home environment after the move, including the receipt of support and preparation for the transition process (Waibel et al.,2012).So, a clearer understanding of insights of patients will enable physiotherapists working in SCI rehabilitation to more easily decide appropriate treatment plan and realistic rehabilitation goals set up for individual people with SCI. This will then assist in improving the efficiency and effectiveness of physiotherapy interventions provided in rehabilitation following SCI, and it will also enhance discharge planning and goal-setting processes. Knowing patient's perceptions are important to ensure that rehabilitation programs are meeting their desired aims with regard

to maximizing functional independence following SCI. Integrating the patients perception into a new care model may increase professionals awareness of patients needs and provide a useful beginning for making a personalized care plan. Moreover, if we know the perceptions of our patients, it will be easier to us to imply patient about their physical condition, recovery procedure, rehabilitation procedure, what will be their function after returning home and so on. If the physiotherapists know, what the patient will do after entering to the mainstream of the society, then as rehabilitation professional they will get a guideline about what they have to do.

Very few studies have observed perceptions of patient about their benefits, barriers and independence level by using standardized outcome measures among rehabilitation professionals (Jette et al., 2009).There are many studies according to FIM scale but there are not sufficient similarly relevant qualitative studies about perceptions of spinal cord injury patients about their functional independence. Now a days, SCI is a common problem in our nation and the rate is expanding day by day. Directly the frequency of spinal line damage is expanding in Bangladesh with increasing in population and social changes.. Still now there is no evidence that research has been done on this topic. So I become interested to select this topic.As most of the spinal cord injury patients of Bangladesh come at CRP for treatment,that’s why the researcher select the patients of Spinal Cord Injury(SCI) unit of CRP as sample population.

1.3 Research Question:

What are the perceptions of spinal cord injury patients about their functional independence after rehabilitation?

1.4 General objective:

To find out the perceptions of spinal cord injury patients about their functional independence in CRP.

1.5 Specific Objectives:

1. To find out patients knowledge about their injury.

2. To find out capability of independently doing functional activities prior to discharge.

3. To find out their expectation about functional independence prior to discharge.

4. To find out their perception about barriers to perform functional activities independently.

5. To find out their perception about how Physiotherapy helps them to regain their functional independence after rehabilitation

1.6 Operational Definion:

Perception:

Perception is the capacity to see, listen, or ended up mindful of something through the senses or the way in which something is respected, understood or interpreted**.**

Spinal Cord Injury (SCI):

When the spinal cord is injured by any reasons like trauma or disease that result sensory and motor loss is called spinal cord injury.

Tetraplegia:

This term refers to impairment or loss of motor and /or sensory function in the cervical segments of the spinal cord due to damage or neural elements within the spinal canal. Injury to the spinal cord in the cervical region is associated with loss of muscle strength in all four extremities.

Paraplegia:

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.

Functional independence:

The state or quality of being independent during functional events.

CHAPTER-II LITERATURE REVIEW

According to National spinal cord injury statistical center (2011), Spinal cord injury (SCI) is defined as an incidence of traumatic lesion of spinal cord origins in the spinal canal, which causes temporary or permanent sensory and/or motor deficit. .SCI has different non-traumatic and traumatic causes with changing degrees of coming about neurological damage.

The restorative definition of spinal cord injury except intervertebral disc disease, vertebral lesions in the lack of spinal cord injury, nerve root injuries and avulsions to nerve roots. The spinal cord is a portion of the central nervous system (CNS), which spreads caudally and it is endangered by the bony structures of the vertebral column. It is protected by the three membranes of the central nervous system. These are the dura mater, arachnoid and the innermost pia mater. It resides in utmost adult mammals only in the upper two-thirds of the vertebral canal as the development of the bones composing the vertebral column iscorrespondingly more rapid than that of the spinal cord. According to its position the spinal cord can be separated into four parts: cervical, thoracic, lumbar and sacral, two of these are marked by an upper or cervical and a lower or lumbar (Niggard & Vrobova, 2010). Spinal cord extends from the medulla oblongata just above the foramen magnum to the level of L1 or L2 vertebrae. It is placed within the vertebral foramen, which is also called vertebral canal. The cord is protected anteriorly by the vertebral bodies and posteriorly and laterally by the vertebral arch. There are 8 cervical, 12 thoracic, 5 lumber, 5 sacral and 8 coccygeal pairs of spinal nerve. Each spinal nerve consist of dorsal and a ventral root that arise from a single spinal cord segment. Spinal cord lesion (SCL) remains to be a major cause of disability all over Asia as well as in Bangladesh. Injury of the spinal cord causes paralysis of certain areas of the body & sometimes it also causes the consistent loss of sensation (Disabled world, 2007). Patients, who have SCI, are very often goes through different types life threatening complications (Islam et al., 2011). In US, the National Spinal Cord

Injury Statistical Center (NSCISC) described that, motor vehicle accident account for (42%) of detailed SCI cases. The other most common cause of SCI is falls (27.1%), taken after by acts of viciousness (basically gunfire wounds) (15.3%), and pointless wearing exercises (7.4%). In Pakistan falling down (FD) harm account for (57.85%) of TSCI, taken after by RTA (25.2%), and discharge (8.4%) (Rathore et al., 2008). All inclusive, SCI is a troubling condition for the wellbeing segment of created, creating and immature nations. In diverse considers, it has been seen that, the frequency of SCI changed from diverse measurements locales and societies. In the world, SCI rate is 13 to 33 cases per million populations per year.

The other most common cause of SCI is falls (27.1%), followed by acts of violence (primarily gunshot wounds) (15.3%), and frivolous sporting activities (7.4%). In Pakistan falling down (FD) injury account for (57.85%) of the SCI, followed by RTA (25.2%), and gunshot (8.4%) (Rathore et al., 2008).Globally, SCI is a distressing condition for the health sector of developed, developing and underdeveloped countries. In different studies, it has been seen that, the incidence of SCI varied from different dimensions regions and cultures. In the world, SCI incidence is 13 to 33 cases per million populations per year (Wyndaele &Wyndaele, 2006). In the United States (U.S.), the yearly occurrence of SCI is approximately 40 cases per million population (Jardin et al., 2000).The age adjusted incidence rate for SCI is estimated to be 14.5 cases per million of population in Australia . Incidence of SCI approximately 35 cases per million in Canada (Cammon &Ethans, 2011). Recent studies showed that, the frequency has been evaluated as 6 cases per million in Bangladesh (Momin, 2005). However, there is a very shortage of evidence so the real fact has not found in case of Bangladesh. By relating with the U.S., Australia and Canada, it has been seen that the incidence rate of SCI is low in Bangladesh but even so SCI continues to be a major cause of disability throughout Asia as well as in Bangladesh and the rate is aggregating day by day (Islam et al., 2011).

There are both traumatic and non traumatic causes of spinal cord injuries in Bangladesh. A study in Bangladesh aimed to discover life expectation of persons with SCI showed that, falling from height, either from trees, construction works, electric poles or roofs, was found to be the most common cause (40.30%) and falling while carrying a heavy load on the head was second most common cause (16.0%).Among the non traumatic cases of SCI, spinal tuberculosis was found to be the most common cause, comprising 7.0%. Other causes were road traffic accidents, fall of object on back, Guillain Barre Syndrome, and Transverse Myelitis (Razzak et al., 2011).

American spinal cord injury association categorized SCI as following types.ASIA Impairment Scale (AIS) 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 comprises 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 functions are normal (American Spinal Cord injury Association 2011).

SCI causes various impacts on physical, psychological, social, emotional and cultural aspects in individuals with spinal cord injuries. A person with SCI may be dependent on others for support to do many tasks of ADLs such as toileting, bathing, brushing dressing, grooming, eating, community access, and leisure activities. These changes as often as possible have obliging impacts on the spinal cord injury patient's social connections. The changes causes different sorts of long lasting impacts and impact in each and each angle in a person's life. As a result, the predominance of life of people with spinal cord injury gets to be problematical. They might feel inconsolable and frantic approximately their future and they do not need to ended up burdens for others with their sentiments (Sadat et al., 2010).

Several types of psychological problems or impacts may also happen from spinal cord injury. Like as depression. Depression is a psychological effect following SCI. Person with SCI would experience more depression than the person who is nondisabled. In one study, it was reported that during rehabilitation 60% of individuals with SCI suffers from residential depression and that depression persisted during the hospital admission for 33% of these persons. This study also establishes no differences in depression rates between persons with paraplegia and tetraplegia. Self-neglect is also measured as a pointer of adjustment with difficulties in the SCI people. When a person experiences a trauma or everlasting disability such as SCI, the ability to participate in daily performance can change radically. After injury a person may not be able to contribute to full-time paid employment or education as he or she did before the injury. Some of them expect that they will be cured one day and come back to a normal life, but when this does not occur they often lose their confidence and they becomes fully dependent on their families for their existence. We know that, leisure is the activity which people usually do in their free time for the reason that they want to do that for their own sake or for goals of their own choosing, but not for imbursement. Leisure is not only important for able-bodied individuals but also important for disables (Barclay et al., 2011).As a result of SCI, there is reduced capability to return to previous paid employment which outcomes in extra free time. The types of leisure concentration that the person with SCI previously occupied may not possible, therefore the person may have poor leisure approval (Barclay et al., 2011). Leisure is an important constituent in the lives of physically disables and it is often related with life satisfaction, self-esteem and depression. Sometimes as a result of disability arisen from spinal cord injury, these patients can not participate in the normal physical and leisure activities.

Adequate management very much important for the recovery of spinal cord injury. Acute medical management of people with SCI focuses on minimizing further neurological damage to the spinal cord and also on its recovery process. Stability of the spine is on the first urgency. This is done either conservatively with bed rest with or without traction or surgically which is typically with

decompression and fusion. When conservative management options have been ex-housed, then the surgical options provide a very potential benefit to appropriately screened and selected patients. Now a days, surgical management is more common than that of conservative management. Still now there are a lot of debates about the effectiveness of both approaches. Management of the spine is just one aspect of acute medical care. There are many other aspects which are related to maintaining like as: blood pressure, circulation, respiration, bladder and bowel care, nutrition and body temperature, and decreasing psychological distress for patients and their families. Worldwide, the concept of running individual with spinal cord injury is very important for rehabilitation following SCI is most competently undertaken by the multi-disciplinary team-based approach (Saulino,2012).The team members consist of doctor, nurse, physiotherapist, occupational therapist, speech and language therapist, social worker, psychologist, other allied professionals and counselors. Every medical and allied health professional provide collective and incorporated treatment for individuals with spinal cord injuries within a team (Saulino, 2012). Physiotherapy, in another termed as physical therapy. Physiotherapy provides services to people to develop maintain and restore maximum movement and functional ability throughout the lifespan (WCPT, 2012). A specialization in medications, physical therapy and physiotherapy occur during the second half of 19th century including various options like manipulation, message, hydrotherapy, balenotherapy, electrotherapy, light therapy, heat and cold (kumar, 2010).According to WHO, rehabilitation is a set of actions that assist individuals who understanding or are likely to experience disability to accomplish and maintain optimal functioning and communication with their environment (Barnes, 2011). The goal of rehabilitation is to support the person and to become autonomous with his/her ADLs as early as possible. Rehabilitation covers three disparate areas: physical, social and economic. Physical rehabilitation comprises health education provided to users and their family members for avoidance of further complications that are arises from SCI. Social rehabilitation is also carried out through home visits to provide support to person with SCI in order to integrate them into their family life, social activities,

health care and education. Economic rehabilitation is also provided through vocational training. Standardized instruments measuring various aspects of health status have been advocated for use by rehabilitation professionals for many years, and much has been written about the potential benefits and barriers to the use of such measures in practice. Additionally, many such instruments have been developed for use for patients with the various conditions managed by physical therapists. And different literature shows that in developing countries, due to lack of prevention programs and disorganized and unsuitable facilities and protocols for management of SCI are responsible for the very high morbidity and mortality rates of SCI patients. In developed countries the rates are steadily decreased during the past five decades. According to Wyndaele, 'life expectancy of the injured today approximately the same as in the normal population, if the SCI patient is properly treated' (Wyndaele, 2010).

According to distinctive level of damage the useful results are moreover changes. People with complete tetraplegia were, for the most portions, still subordinate on help or assistance from others in all FIM spaces. The most noteworthy levels of independence were for the things eating/drinking (35.4%), individual care (43.3%), and moving around (96.6% free in wheelchair). Almost half of all people with incomplete tetraplegia (46.4%-67.9%) were free on the four FIM domains. Checkup of the things uncovered that the rate of people being free was inside a near run of 64.2 and 71.5 percent on all things, but for washing (57.1%), dressing lower body (46.4%), and arranging stairs (46.4%). Of this gather, 32.1 percent were able to walk autonomously. People with total paraplegia were more often than not autonomous in self-care. Toileting was the most problematic thing (72% free). All were able to move around in a wheelchair freely, but as it were 4.4 percent were able to exchange stairs independently. Finally, persons with incomplete paraplegia were nearly all independent, except for negotiating stairs (35.5% independent) and controlling bladder and bowel. On this group, there were 36.7 percent people who were able to walk independently.Functional

independence is especially ability to drive and is strongly related with return to work (Ramakrishna et al., 2011).

Functional independence is the solid factor anticipating return to work. Hence, restoration must be centered on instruction, self-care capacity, community portability, professional preparing and natural adjustments that may offer assistance them construct up work after SCI. An examination of writing demonstrates that diverse key components are going with employability among people with SCI. These comprises instruction, sort of business, incapacity seriousness, age, time since harm, sex, conjugal status, social support, professional counseling and therapeutic issue related to SCI, manager part, environment, professional securities etc. (Ottomanelli& Lind,2009). Educational accomplishment works as the strongest predictors for a person with SCI to return to work (Ramkrishnan et al., 2011). N Gupta et al shows in their studies that the return to work rate was 46% (276/600) and the employment rate was 41% (114/276) (Gupta et al., 2011). Another evidence shows that, the return to work rate in their study was 57.1% (employed at the time of study). Patients need to be prepared to return to the community with sufficient information and good skills necessary for maintaining optimal health and well-being. The employment rate after SCI was 76.2% (worked at some point after injury). Those who were younger at time of injury (20 a long time of age), able to oversee a altered vehicle, self-governing in individual care and versatility were more unquestionably connected to being utilized. So, Components related with business, get to issues and financial demoralizations were habitually distinguished as obstructions to come back to business. One calculate reliably connected with victory is higher level of instruction .In a consider on work life after traumatic SCI found a more remarkable probability of benefit for those with less extreme incapacity, more noteworthy instruction and those who are in a steady marriage moreover. There are fourteen components which are closely connected with shifting degrees of business rank, to be specific, instruction, sort of work, seriousness of the injury, age, time since damage, sex, conjugal status (Anderson et al., 2007).In a study on an open questions regarding different items some participants reported that, a

huge number of barriers to functional independence can create in the existing situation and shortly after release. In that contemporary situation, the three most vital barriers were problems with the accessibility of stores and buildings, physical health problems and mental health problems .Problems with the accessibility of stores and buildings also had the largest prevalence. Shortly after discharge, the three most important obstacles were emotional distress, problems with self-care, and mental health problems. Problems with self-care had the largest prevalence. Emotional distress and mental health problems also had a moderately great impact on the level of everyday physical activity shortly after release (Maaike et al., 2008)

CHAPTER-III METHODOLOGY

3.1 Study design

The qualitative research design has used to explore the study. Qualitative research is the systematic scientific inquiry which seeks to build a holistic, largely narrative, description to inform the researcher's understanding about the social or cultural phenomenon .It is also conducted to gain an understanding of a situation. This method was selected for doing this research because qualitative methods help to explore the perceptions of participants .Ethnography is the study of social interactions, behaviors, and perceptions that occur within groups, teams, organizations, and communities. The qualitative study design was selected because qualitative methods also helps to explore the experience of participants. Qualitative study also helps to developed to study natural phenomena (Munsami & Venter, 2009). Qualitative research methods are valuable in providing rich descriptions of complex phenomenon. Qualitative research design focuses on ordinary events within a natural setting. So the researcher observes and conducts the interview with the individual in the own context.

Researcher used qualitative content analysis. The qualitative study design was selected because qualitative methods also help to explore the perceptions of participants. Qualitative study also helps to developed to study natural phenomena (Myers , 2009). It was selected qualitative approach to accomplish the objective of the research which helps to gain understanding and explore the feelings, attitudes, opinions, fears and behaviours SCI patients about their functional independence.

3.2 Study area

The study was conducted in the spinal cord injury unit of the Centre for the rehabilitation of the Paralyzed (CRP).

3.3 Study population

The population was the complete and incomplete paraplegic& tetraplegic patients of CRP.

3.4 Sample size

Sample size, n=12. Interview was taken from six male & six female SCI patients.

There were both complete & incomplete paraplegic and tetraplegic patients.

3.5 Sample/participant selection

Researcher selected the sample by purposive comprehensive sampling. It is generally used in qualitative research with small populations. Criteria for inclusions were identified before drawing the sample. The entire population is used as the sample. It is used when the population is very small. So, that patients who fulfill the inclusion, they are the sample of the study.

3.6 Inclusion criteria of the study

• Incomplete and complete paraplegic &tetraplegic spinal cord injury patients staying at CRP, Savar, Dhaka.

• Both sexes were of equal priority.

- The patients who had interest to participate in the interview.
- 15-65 age groups were selected.
- SCI patients after completing rehabilitation phage were selected.

3.7 Exclusion criteria of the study

- The patient who were in traction.
- The patient who were suffering from pressure sore.
- Subjects who had unwillingness to participate
- Subjects who had recent major accident or surgery in any part of body as they can have discomfort for this reason.

3.8 Method of data collection

The researcher took qualitative data with respect to the subject of the study. Face to Face interview by the researcher were held by providing a open ended questionnaire form. During the interview the researcher ensured the environment was quit for the participant so they felt comfortable to talk with the researcher.

3.9 Data collection tools and material

A phone recorder was used to record the interview of the participants. Pen, paper and clip board was used to write down observation notes. An information sheet and consent form was used for taking permission from the participants. A open ended question sheet was used to conduct the interview.

3.10 Data Analysis

Data analysis is the most complex and most vital aspect of qualitative research. The purpose of the data analysis was to find out the actual meaning of the information that is collected.

At first in data analysis, the researcher listened to the interviews several times from the tape recorder and then the interviewed data was transcripted in Bangla. The researcher checked the transcript to make sure that all the data was available in the transcript. The copies were made from the transcript and were given to two people for translation from Bangla to English. Data was analyzed by generating theme.

After that, the investigator read all data repeatedly to find out the actual meaning of the participants expressions of what they wanted to say and organized them. Then major themes were found from the interview questions. The researcher was arranging all the information according to the themes. Under these themes, the researcher arranged all the information from the interviewed transcript. At last, themes were identified and emerged as a process of interpretation.

3.11 Field test

After getting approval for conducting the research and before starting the final data collection, researcher accomplished the field test with a participant. Field test was necessary as it helped the investigator to develop a final question and to collect data from participants easily. This test was performed to find out the difficulties that exist in the question. By this test, the researcher re-arranged and modified the question as required for the participants, so they can understand the question clearly. Before beginning the final data collection, it was also necessary to carry out a field test that helped the researcher to refine the data collection plan. At first the researcher took the permission from the participants of the field test verbally. Before starting the interview, the researcher informed the participants

about the aims and objectives of the study. From the field test the researcher also could identify the area where most participants feel difficulty to understand. From the field test researcher was got an idea about the interview time, participant's responses and co-operating level and the environment of the interview place. This field test also helped the researcher to get confidence during interview. From field test researcher identified those two questions are difficult for participants to understand. Therefore the researcher modifies the questions were necessary. The results of the field test were helpful for the researcher to finalize the questionnaire which was developed in Bengali and English.

3.12 Ethical Consideration

The research proposal was submitted to the ethical committee of the Institutional Review Board (IRB) of Bangladesh Health Professions Institute (BHPI) and approval was obtained from the board. The guideline of Medical Research Council (BMRC) and World Health Organization (WHO) were also followed to conduct the study. The researcher maintained ethical consideration in all aspect of the study. The researcher took permission to conduct the research project from the supervisor and Head of the physiotherapy dept. and the head of the academic institute of CRP for data collection. Informed consent was used to take permission from all participants. Participants' rights and privileges were ensured. All the participants were aware about the aim and objectives of the study. Findings of the study were disseminated with the approval of regarding authority.

3.13 Rigor of the study

The rigorous manner was maintained to demeanor the study. This study was conducted in a systemic way by next the steps of research under supervision of an experienced supervisor. During the interview session and analyzing data, never tried to influence the process by own value, perception and biases. Be accepted the answer of the questions whether they were of positive or negative impression. The participant's information was checked by the supervisor to eliminate any possible errors. Try to keep all the participants' related information and documents confidential.

CHAPTER –IV RESULTS & DISCUSSION

In the study the number of subjects was 12 with spinal cord injuries. Among the participants there were 6 female and 6 male. The range is minimum age 16 years and maximum 55 years..There were 3 tetraplegic spinal cord injury patients and 9 paraplegic spinal cord injury patient. In this research the results of the study are discussed in relation to the research questions and objectives of the study. The discussion focused on dimensions of patient perception about their functional independence. The descriptions of the themes are according to the answer of the participants. Discussion according to the themes are also provided below.

Participant's details:

Gender	
Male	6
Female	6
Age range	16-55 years
Paraplegic	
Complete	4
Incomplete	5
Tetraplegic	
Complete	1
Incomplete	2
Educational level	
Primary	7
Secondary	3
HSC	2

A qualitative study results were analyzed by content analysis. By using this analysis process, the researcher organized collected data according to themes. The aim of the study is to explore the perception of SCI patients about their functional independence in CRP. Participants respond according to their perception. In this section participants statement are used to generate the themes.

Following themes are emerged on the basis of data analysis:

Theme 1: Knowledge about injury.

Theme 2: Capability of doing self-care activities of daily living.

Theme 3: Patients expectation of functional outcome in future.

Theme 4: Perception about their barrier to perform activities of daily living.

Theme 5: Perception of role of physiotherapy to regain their functional ability.

Theme 6: Preferable profession after returning to the community.

Theme 1: Patients knowledge about injury:

One of them said, "I know, my injury is spinal cord injury"

Another one stated "I fall into water in the pond & then I hurt my no.4 vertebrae in the spine''

The female participant with primary education said, "My bones of waist have broken .my injury is spinal cord injury".

Among twelve participants eight of them tells such like as, they have knowledge about their injury only but they do not have no knowledge about their neurological level.

A male patient said, "My injury is spinal cord injury C4".

According to another participant, “My injury is SCI and my injury level is T12”.

Three participants know about their injury with their injury level. And their educational level was primary. Although their educational levels were primary, they were aware and know about their injury level also.so, not only educational level but also awareness about gaining knowledge is also important for them. Acquisition of fundamental knowledge and information after the injury is exceptionally basic subject for people who have spinal cord damage. Individual’s individual mindfulness and learning after spinal line damage is one of the exceptionally critical substances in patient’s antagonistic vibe with resulting disabilities and adapting up with unused life style which eventually influences on their independence. Patients with persistent conditions got to be frustrated when they more than once have to clarify their predecessors to specialists, who had not educated themselves in progress. Comes about appear occasional data approximately patients understanding of picked up information. In general, patients anticipated from their health experts to assemble holistic information, instep of sole biomedical or problem-related information. And the all-encompassing data included their values and preferences, back up components and social settings (Waibel et al., 2012). To see and understand the disability with various eyes and with various understanding, themes which are linked to a sense of having a new understanding of injury, illness, or disability. It often related to people who have a new perspective of others with disabilities and an appreciation of what they had been through and what life was like for them (Kennedy et al., 2013).

Following the injury, the rehabilitation team starts their activities by informing the patient and his family about the disorder, although it as also, seems that sometimes in this stage helpful activities were not normally executed. This deficiency in turn reduces patient’s participation in treatment process and his willingness to the final cure. The patient and his family’s awareness about spinal cord injury and associated difficulties, in addition to the patient attempts to learning about the new situation are important factors in patient’s final

independence. In a study most of the patients declare that, having sufficient knowledge before the injury and getting adequate information after the injury is a fundamental key to individual's independence and adaption to the new situation. They even mentioned "knowledge" as the start point of their efforts (Boluky et al., 2014)

After completing rehabilitation stage during the reintrigration stage, prior to leave from CRP almost all the patients have at least slightest knowledge about their injury. Their knowledge also depends upon their educational level. Some less educated patients are also knew about their injury with their neurological level also. If they understand their level of injury, it would be beneficial for them to understand the physical improvement level according to the level of injury. Their expectation of improvement also depends upon this understanding level. The rehabilitation professionals should provide adequate knowledge and awareness about level of injury to the patient, thus they can expect relevant improvement level according to their level of injury. If there is any gap in knowledge and understanding, than it would not become a good outcome of rehabilitation. As biomedical ethics and the standard of informed consent for medical interventions, health-care professionals should provide required evidence-based support for the information they provide to patients and their families about the possibilities and opportunities spinal cord injury patients.

Theme 2: Capability of doing self-care activities of daily living:

One of the paraplegic participant said, "I wear my own cloth, wash them, take my bath, move into wheelchair, move myself in and out of the bed independently".

One of the incomplete paraplegic participant stated, "Everyday I eat, shower, wash my cloths, place myself on a bed, handle my sanitation on my own".

One tetraplegic patient said, "I can do slight work & I need support for doing maximum work.

Among eight paraplegic patients almost all the paraplegic patients are capable to do their self-care activities properly after completing rehabilitation stage.

One complete tetraplegic patient with C5-6 level of injury said, “Still now I can’t do any activities of my own by myself independently”

Another complete paraplegic patient said, “I can take shower, can eat, can transfer myself from bed to wheel chair, washing cloths etc. activities of my own, I can do myself”.

One incomplete tetraplegic patient with C4 neurological level said, “Now I can do my own work myself. I can wash my face, can go to toilet. Then think, I can change my wet cloths, can eat. Think, by the grace of almighty there is no problem. Process of movement has done.”

So, we can say that, in case of incomplete tetraplegic SCI patients there is a chance of being able to do self-care activities properly. But in case of complete paraplegic there is no or very few chance of being able to do their self-care activities. And when there is injury on or above C5 vertebra they can achieve some control of upper limbs and use some adaptive devices with head and mouth controls. And sometimes those who have injury on C6 or below this level can perform some activities of daily living (ADLs) and, with assistive devices, induce finger flexion and push a wheelchair. Maximum paraplegic patient can perform all the activities by using upper extremities. Those who usually walked with crutches or stick had a similar or lower health related quality of life on most domains compared with those using hand-propelled or motorized wheelchairs. Because most participants using crutches or sticks had lower SCI levels and incomplete injuries, we expected them to have a significantly more independent functional life than those using motorized or hand-propelled wheelchairs (who are weaker and have higher levels and more complete injuries).Nearly all individuals with SCI show a few recovery of motor function underneath the beginning ASIA damage level. In patients with motor complete lesions (AIS A and AIS B)the larger part of this useful return is likely to happen inside the zone of halfway

preservation(ZPP). In this way, a muscle group that has a few degree of minimal functions early after SCI has a higher likelihood of regaining functional independence. The unconstrained recuperation of engine work in individuals with motor-complete SCI is reasonably constrained and unsurprising, recuperation in inadequate SCI patients (AIS C and AIS D) is both more considerable and profoundly variable(Steeves et al.,2007).Patients with incomplete injuries are for the most part appears having higher by and large independence scores, showing way better useful results taking after recovery after SCI .Interests in spite of the fact that, members with deficient paraplegia were appeared to have more trouble with self-care exercises and sphincter control than any of the other subgroups considered, and those with total paraplegia moreover did not meet the anticipated results of maximal freedom in the exercises of dressing, bladder and bowel management, transportability and motion

Patients incomplete injuries are generally shows having higher overall independence scores, indicating better functional outcomes following rehabilitation after SCI .Interestingly though, participants with incomplete paraplegia were shown to have more difficulty with self-care activities and sphincter control than any of the other subgroups studied, and those with complete paraplegia also did not meet the expected outcomes of maximal independence in the activities of dressing, bladder and bowel management, mobility and locomotion(Hillier et al .,2011).

Different patients suffering from the same level of injury may perform the similar activity in different ways. So, we can say that, in incomplete tetraplegic patient there a miracle can be happen.in some cases they can return to home with walking capability also. But maximum complete / incomplete tetraplegic patients are bed bounded and can’t do any activities of daily living independently. Both complete and incomplete paraplegic patients are able to do almost every self-care activities, prior to leave from CRP.

Theme 3: Patients expectation of functional outcome in future:

One participant said, "After one year I may be able to walk with some support but sometimes I think I will never walk again. I will spend my whole life in a wheel chair"

Another participant said, "I think after 6 months I can able to walk better with support.

Another participant said, "Hopefully, I will be able to walk more perfectly within 2-3 months"

One tetraplegic patient said, "Still now I can't do any guess"

Eight participants said that, they hope that they will be capable to walk again within next six months. One participant said, he will be able to walk with support after one year & one said, she will be able to walk after two years .And two patients do not have any idea.

People with traumatic tetraplegia appear unmistakable designs of recuperation. Factors that recognize homogeneous subgroups of the test are: severity of injury (level of injury, completeness) at pattern and change from a total to an inadequate harm. The anticipated functional level of independence of a individual with SCI will reach is emphatically related with the level and completeness of harm. The SCI Rehab project showed that the impact of therapy on functional change became more evident when analyzing injury groups of similar neurological level. Consistent with this, our results appeared a more grounded impact of hours of treatment on engine FIM alter in the damage gather of AIS D than the whole persistent populace. The test estimate of patients with AIS D was adequate to show as a partitioned bunch but that of the other AIS levels (A, B, C) was not. Expansive varieties still existed in terms of useful capacities as well as the hours of treatment gotten inside the AIS D group (Truchon et al., 2017).

People with all levels of SCI shows some dissatisfaction with life following injury arises primarily from social disadvantage. Almost all the patients of complete or

incomplete both paraplegic and tetraplegic patients of CRP wishes and hopes that ,they could be regain their walking capability within next few months or years. But it is true that almost all the SCI do not become independent ambulators .But still they didn't gain any idea about their progress. The rehabilitation of persons with SCI should involve with multiple health professions, that be initiated in the acute phase and that should be continued with specialized inpatient services. Inpatient rehabilitation after SCI incorporates different therapeutic approaches. The rehabilitation professional should provide appropriate information to them about their maximum functional outcome according to their level of injury. But it is also true that, improvement not only must consider the traditionally measured impairments in body function (e.g., range of motion, strength and force-generating capacity) but also should consider patients' points of view and preferences for daily activities and life participation.

Theme 4: Perception about their barrier to perform activities of daily living:

"There are four stairs to pass to get inside of my home and I find it difficult"

Another one stated that, "The gate of our house is placed a little bit higher than usual, I find it difficult to overcome".

Another one said, "I guess I am not able to ride on vehicle just like-buses or rickshaws, I can't and it will be hard to go far."

Seven participants said that, muddy path, stairs, riding vehicle etc. are their barriers

One of the participant said," I think my physical weakness is my main obstacle.

Four participants said like this that, their physical weakness is their barrier.

And the rest one participant said, “In sha Allah, by the grace of almighty I have no barrier. I don’t even think anything”.

Larger part of the participants expressed physical impediment as a challenge for their functional independence. As of now, the most vital barriers are issues with availability of stores, buildings, vehicles, physical wellbeing issues and mental wellbeing issues. In no time after release, the most vital boundaries are enthusiastic trouble, issues with self-care, and mental health issues. The most habitually specified facilitators were arrangement in the restoration center with regard to daily activities and social activities and stimulation to be physically active (Vissers et al., 2008).Another study shows that, five major barriers are: caregiver burnout, funding and funding policies, accessibility, physical limitations and secondary complications, and negative outlook or mood or lack of self-advocacy (Munce et al., 2014).

The top five environmental barriers reported by people with SCI in our study (in descending order of product scores) are as follows: barriers in the natural environment, transportation, access to health care, attitude of people at home and help at home (Sekaran et al., 2010).Shortly after discharge, the most important barriers are emotional distress, problems with self-care, and mental health problems. The most frequently mentioned facilitators were preparation in the rehabilitation center with respect to daily activities and social activities and stimulation to be physically active. Persons with a spinal cord injury experience important barriers to physical activity, particularly on the health related component of body functions and structure.

According to the patient’s statements riding on vehicle, stairs, muddy and broken paths, physical weakness etc. are barriers to perform activities of daily living.So importance should be given on educating wheel chair skill by the rehabilitation professionals. The urban areas should undertake well-planned architectural and environmental design to accommodate people with disabilities. And these urban areas also should have programs such as Independent Living Services to facilitate and promote community reintegration.

Theme 5: Perception of role of physiotherapy to regain their functional ability:

One of the participant stated, "I could not sit earlier, but with the help of physiotherapy my balance has improved & muscle power has increased"

Another one stated, "After taking physiotherapy my strength has increased my balance has improved & I can also move around with my wheel chair".

Another one said, "I couldn't move my right hand before but now I can move both of my hands .My hands are getting improved."

Almost all the participants said that, physiotherapy increased their muscle power and improved their balance which helped those few or more on regaining functional ability.

After the primary and secondary damage to the spinal cord, different endogenous processes may nourish axonal reconnection and animal studies show that some of these processes can be improved or decreased by external applications of drugs to diminish repulsive barriers. To increase regeneration and/or sprouting of axons. Cellular replacement is also envisaged to enhance beneficial immunological mechanisms and remyelinated axons .Some of these treatments can be envisaged to be applied concurrently with neurosurgical approaches themselves needed (decompression) to diminish secondary damages. Finally, rehabilitative approaches based on the presence of functional networks below the lesion combined with some neurobiological approaches, which may produce significant recovery of some functions such as locomotion by allowing an optimal new dynamical configuration between new or regenerated circuits with endogenous spinal mechanisms. More work is needed on all fronts, but already the results offer great hope for some functional recovery after SCI based therapies emerging from clinical neuroscience research emerging from studies in animal experiments.so role of physiotherapy is important for these processes (Rossignil et al., 2007). WCPT 2012, Formally described physical therapy as providing services to people and populations to develop, maintain and restore maximum

movement and functional ability throughout the lifespan .And one of the most important rehabilitation approaches, especially for re-gaining locomotors function, is physiotherapy. The main limitations of over-ground locomotion ability for patients with SCI are reduced coordination, leg paresis and impaired balance, Physiotherapists work on these limitations and provide support in standing (Mehrholz et al., 2008).Physical therapists help patients in developing muscular potential and regain locomotor function. Sometimes patients are also referred to kinesiologists by the physical therapist to work on movement and cardiovascular condition (Truchon, 2017).The rehabilitation of people having spinal cord injury ought to include numerous health professions, from the acute stage and it ought to be proceeded with specialized inpatient administrations. Inpatient restoration after SCI joins distinctive therapeutic approaches. One of the exceptionally vital recovery approaches, particularly for regaining locomotors function, is physiotherapy. The main limitations of over ground locomotion ability for patients with spinal cord injury are reduced coordination, leg paresis and impaired balance etc. Physiotherapists work on their limitations and provide supporting them in standing. Physiotherapeutic strategies for people with spinal cord injury helps them to regain ambulatory function which includes using repetitive and intensive practice of gait (Mehrholz et al., 2008)

Almost all the patients stated that their physical condition has improved after taking physiotherapy from CRP .They also said that, physical therapy improved their balance and increased their muscle power. That was beneficial for them to regain their maximum functional ability.

Theme 6: Preferable profession after returning to the community:

One of the participant said, "I used to do my household chores before my injury, I still want to do my household chores when I am well"

Another one said, "I want to study again"

Another one stated, "I am thinking of doing farming when I will go back to my home. I used to do farming before & I have some cows. I will take care of my cows. I did this & I will do this".

And one participant said, "Really, still I do not think anything. Because I will go to home. We have more people in our family. The decision which they will take, I have to do according to that decision because my own decisions will not do anything".

One of them said, "I have learnt to make handicraft bag. I will make handicraft bag".

Eight participants said that, they wants to join in their previous profession because they used to do that .One participant do not take any decision .And three participant said that after taking vocational training they will involve in new jobs..It is also seen that, pre-injury education and opportunities to return to the pre-injury employer to minimize the length of time until initiation of employment after SCI. After SCI people have to face several types of challenges in their employment including physical, environmental, social, educational, attitudinal and so forth. Overcoming these challenges completely often becomes impossible in Bangladeshi context due to limitation of resources. Return to previous employment following SCI is very much challenging and difficult with their capabilities. As a result people with SCI change their previous employment and adopt another suitable one after SCI.

Recent surveys have been conducted for occurrence distinguished fourteen components related to business after spinal cord injury .That incorporates: age, sex, conjugal status, race, harm seriousness, time since damage, professional

counseling, employer's demeanors, work sort, instruction, social back, restorative issues, mental state and environment. In spite of this body of inquire about, generally few thinks about have particularly centered on barriers and facilitators to employment (Krause & Reed, 2011). Employment rates after SCI vary widely depending on different factors, particularly on the characteristics of employment and on time of measurement also .An Employment rates after spinal cord injury (SCI) follows that of pre-injury rates and those of the general population. Participation in the earning activities is important in adults life, and lower employment rates after SCI are indicative of diminished participation in earning activities. This should be of concern to rehabilitation professionals that participation in earning activities is also highly correlated with both quality of life and life expectancy after SCI. A large number of researchers have identified forecasters of employment using mostly biographic, injury and educational characteristics

A Srilankan research shows that, Patients were discharged from the rehabilitation program when medically stable and able to perform activities of daily living independently or with assistance of a caregiver. Prior to discharge, the discharge coordinator worked with each individual and their caregiver to develop an educational and/or occupational plan. Many of them are benefited from training provided by local community organizations prior to discharge. Examples of the training provided by these local organizations include cell phone repair, computer courses, computer repair and the making of handicrafts. An auto rickshaw, a popular local means of transport, was adapted on site to allow driver training to take place. Other clients were facilitated to apply for educational bursaries, training positions or to renew their professional registrations (Armstrong et al., 2014). It is saw that, Earnings, at the time of injury, can influence the ability to return to work and productive events in multiple ways. Those who are wealthier may be able to buy equipment, secure transportation or hire assistants that would support them to go to school or return to work. They also are more likely to have

funds to pursue school or vocational training. Income may also be acting as a signal for other factors.CRP also provide vocational training for the SCI patients .It also helps them to choose a comfortable profession for themselves.

According to the statements of the participants of CRP, most of them are interested to choose their previous profession, as their preferable profession after returning to the community. The students wants to study again, house wives wants to do their household chores again. Those who were involved in farming are interested to do farming again. And some of them wanted to open shop to do business, because by using wheel chair this work is more preferable to them. Physical activity prior to injury and expressed interest in becoming active or maintaining an active life style. Participants identified a range of both motivational and socio-environmental factors that which facilitating them on planning about their new lifestyle after injury. Including personal motivation, independence, availability of accessible facilities, personal assistants, fear of health complications etc. Having a higher level of education, less severe injury, and returning to the pre-injury employer is also associated with a shorter interval to initiation of employment of the patients .In addition to these, gender is also associated with returning to different job.

As an undergraduate student, the researcher has faced several barriers during the study period. These barriers are written as the study limitation. At the beginning of the first research in life, researcher felt some limitation due to not utilize the times. To conduct the qualitative study it is needed to find out in-depth information. In this case the researcher requires high skills for conducting an interview and collecting valuable field notes. But it is the first time for the researcher to conduct this study as a part of 4th year course curriculum in Physiotherapy department. So researcher's skill to conduct interview may influence to get in-depth information. But the researcher offered maximum effort to collect information and tried to collect information from participants without bias and analyzed that in a systematic way. Then another limitation is, the researcher conducted the interview in Bengali and then it was translated into English. Therefore there might be chance to alteration of the actual meaning of information given by the participants.

There was no nearly related study about perception of SCI patients about their functional independence in the perspective of different countries. And it was a limitation during literature review & discussion. Complete accuracy is not being possible in any research so that some limitations may exist. Regarding this study, there were some limitations or barriers to consider .The first limitation of this study was small sample size. The data was taken only within few months.As the study was conducted at Centre for the Rehabilitation of the paralyzed (CRP) which may not represent the whole country.

CHAPTER-V CONCLUTION & RECOMMENDATION

5.1 Conclusion

In Bangladesh the number of spinal cord injury patient is increasing day by day. Spinal cord injury (SCI) is an insult to the spinal cord resulting in a change, either temporary or permanent, in its normal motor, sensory, or autonomic function. Spinal cord injury (SCI) is one of the most destructive conditions known to mankind. Although spinal cord injury is one of the most serious injuries that a person can survive, it is possible to return to a healthy, happy and productive life after even the most severe of cord injuries. In Bangladesh many of people in every year face Spinal Cord Injury and there is lack of information about this injury

This study explores perception of spinal cord injury patients about their functional independence. The researcher found that after completing rehabilitation stage, almost every patient has idea about their injuries, paraplegic patients are capable of doing their self-care activities. The researcher also saw that, between two incomplete tetraplegic patient one of them become active ambulatory and another one is completely bed bounded and can't perform any activity. And maximum of them hopes that they will be capable of walking within six months. Some of them also hope, within one to two years. But maximum patient can't become active ambulators.So the rehabilitation professionals should give appropriate knowledge to the patient about their maximum improvement level. According to the Bangladeshi social context riding on vehicle, stairs, muddy and broken paths, physical weakness etc. are barriers to perform activities of daily living to the spinal cord injury patients. It is a greatgaining for the physiotherapist that almost all the patient believes that physical therapy improved their balance and increased their muscle power, which helps to regain their maximum functional independence .And with this functional ability maximum of them wants to return to their previous profession and some of them wants to take different vocational

training from CRP and wants to join in some other professions also. So, by providing physiotherapy services and vocational training CRP plays an important role of rehabilitation center to the patients

5.2. RECOMMENDATION

This study put forward that it is important to educate patients about their injury, its level, and appropriate knowledge about their physical improvement, CRP needs to supervise more earnestly and ensure availability to improve patient's knowledge. Some new activities can be added and should apply to patients nicely.

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Consent Form (English)

I am Rafiat Afrin, 4th year student of B.Sc in Physiotherapy in Bangladesh Health Profession Institute. I am conducting a research and the title is "Perception of spinal cord injury patients about their functional independence at CRP in Bangladesh"which is included in my course. For that I am asking you to answer some questions, which will not take time more than 10-15 minutes. It also ensures that the information you provide will be kept confidential.

Participation here depends on your own will. If you want, you can skip your name from the list of participants at any time. In addition, if you have any questions as a participant in this study or if there is any problem, you can contact with me orMst.Fatemea Akter, senior lecturer, Department of Physiotherapy, BHPI, CRP, Savar, Dhaka

Do you have any questions before starting the research?

Can I start this interview with your permission?

Yes .....

No .....

Participant's signature ……

Recipient signature ……

"Perception of spinal cord injury patients about their functional independence at CRP in Bangladesh"

Personal details

ID No……	Date of interview……
Contact Number……	Address …….. …… ……

অনুমোদনপত্র (বাংলা)

আমি রাফিয়াত আফরিন, 'বাংলাদেশ হেলথ প্রফেশনস ইন্সটিটিউট' এর চতুর্থ বর্ষ বি.এস সি ইনফিজিওথেরাপির ছাত্রী।আমি একটি গবেষণা করছি যার শিরোনাম হল ''বাংলাদেশের সিআরপিতে মেরুরজ্জুতে আঘাতপ্রাপ্ত রোগীদের স্বাধীন কার্যকারী ক্ষমতা সম্পর্কে ধারণা,'' যেটা আমার অধ্যয়নের অন্তর্গত।এই জন্য আমি আপনার কাছে কিছু প্রশ্নের উত্তর জানতে চাচ্ছি, যেটাতে সর্বমোট২০-৩০ মিনিট সময় লাগবে।এটাও নিশ্চিত করছিযে,আপনি যেসব তথ্য প্রধান করবেন তার গোপনীয়তা বজায় থাকবে।

এখানে অংশগ্রহন আপনার নিজের উপর নির্ভর করে। আপনি চাইলে যে কোন সময় কোন ফলাফল ছাড়াই চলে যেতে পারেন।এছাড়াও যদি আপনার এই গবেষণায় অংশগ্রহনকারী হিসেবে কোন প্রশ্ন থাকে তাহলে আপনি আমাকে অথবা ফাতেমা আক্তার,সিনিয়র লেকচারার,ফিজিওথেরাপীবিভাগ, বিএইচপিআই, সাভার, ঢাকা, এর সাথে যোগাযোগ করতে পারেন।

গবেষণাটি শুরু করার আগে আপনার কোন প্রশ্ন আছে?

আমি কি আপনার অনুমতি পেয়েএই সাক্ষাতকারটি আরাম্ভ করতে পারি?

হ্যাঁ.....

না .....

সাক্ষাৎকারপ্রধানকারীরস্বাক্ষর.....

সাক্ষীরস্বাক্ষর .....

"**বাংলাদেশের সিআরপিতে মেরুরজ্জুতে আঘাতপ্রাপ্ত রোগীদের স্বাধীন কার্যকারী ক্ষমতা সম্পর্কে ধারণা** ''

ব্যক্তিগত তথ্য

আইডি নম্বর	সাক্ষাতকারের তারিখ.....
মোবাইল নম্বর.....	ঠিকানা ....

Questionnaires (English)

1 .What do you know about your injury?

2. After your spinal cord injury what are the activities you can do independently?

3. What are the activities you think you will be able to perform independently in future?

4. Activities you are not able to perform now, how long it will take for you to perform those activities in future?

5. How much improvement do you expect according to the severity of your injury?

6. What are the barriers to overcome, in order to perform activities of your daily living in future?

7. How Physiotherapy helps you to regain your activities of daily living independently?

8. After returning to your home with your current abilities, which profession, you think you can able to join?

প্রশ্নাবলী (বাংলা)

প্রশ্নঃ১I আপনি আপনার আঘাত সম্পর্কে কি জানেন?

প্রশ্নঃ২। মেরুরজ্জুতে আঘাতের পর বর্তমানে নিজের দৈনন্দিন কি কি কাজ আপনি নিজে স্বাধীনভাবে করতে সক্ষম?

প্রশ্ন:৩। ভবিষ্যতে দৈনন্দিন কি কি কাজ স্বাধীনভাবে করতে পারবেন বলে মনে করেন?

প্রশ্নঃ৪। বর্তমানে দৈনন্দিন যে কাজগুলো করতে পারছেন না ভবিষ্যতে কতদিন পর সেগুলো করতে পারতে পারবেন বলে ধারণা করছেন?

প্রশ্নঃ৫ । আপনি আপনার আঘাত অনুযায়ী কতটুকু উন্নতি আশা করেন?

প্রশ্নঃ৬। ভবিষ্যতে নিজের দৈনন্দিন কাজ স্বাধীনভাবে করার ক্ষেত্রে কি কি বাঁধা আছে বলে ধারণা করেন?

প্রশ্নঃ৭। আঘাতপ্রাপ্ত হবার পর দৈনন্দিন কাজগুলো পুনরায় স্বাধীনভাবে করার ক্ষেত্রে ফিজিওথেরাপি কতটুকু ভুমিকা পালন করে বলে ধারণা করেন?

প্রশ্নঃ৮।বর্তমান কর্মক্ষমতা নিয়ে বাড়ি যাবার পর আপনি কোন পেশায় নিয়োজিত হবেন বলে ভাবছেন এবং কেন?

Permission Letter

April 24,2017

Head of the Department

Department of Physiotherapy, CRP.

Through : Head of the Physiotherapy Department,

Bangladesh Health Professions Institute (BHPI)

CRP, Chapain, Savar, Dhaka-1343.

Subject: Seeking permission for data collection to conduct my research project.

Sir,

With due respect and humble submission to state that, I am Rafiat Afrin, student of 4th Professional B.Sc. in Physiotherapy at Bangladesh Health Professions Institute (BHPI). The ethical board of BHPI has approved my research project entitled on **"Perception of spinal cord injury patients about their functional independence at CRP in Bangladesh"** .To conduct this research, I want to collect data from the patients with spinal cord injury in the SCI unit of CRP.So, I need your permission for data collectionfrom thepatient with spinal cord injury from SCI unit of CRP. I would like to assure that anything of my study will not be harmful for the participants.

I therefore, pray and hope that you would be kind enough to grant my application and oblige thereby.

Sincerely yours

Rafiat Afrin

Rafiat Afrin

4th Professional B.Sc. in Physiotherapy

Class Roll-24,Session: 2012-2013

Bangladesh Health Professions Institute (BHPI)

(An academic Institute of CRP)

CRP, Chapain, Savar, Dhaka-1343.

Recommended & Forwarded

25/04/17

Md. Obaidul Haque
Associate Professor & Head of the Department
Department of Physiotherapy
Bangladesh Health Professions Institute (BHPI)
CRP,Chapain, Savar, Dhaka-1343

Approved

25.04.17

Mohammad Anwar Hossain
Associate Professor & Head
Physiotherapy Dept., CRP
CRP-Chapain, Savar, Dhaka-1343

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

Ref. CRP-BHPI/IRB/10/17/142

Date: 15.10.2017

To
Rafiat Afrin
B.Sc. in Physiotherapy
Session: 2012-2013, Student ID 112120025
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Subject: "Perception of Spinal Cord Injury Patients about Their Functional Independence at CRP in Bangladesh."

Dear Rafiat Afrin,

The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application on 08/08/2016 to conduct the above mentioned thesis, with yourself, as the Principal investigator. The Following documents have been reviewed and approved:

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

Since the study involves Parental stress scale, a self-administered socio-demographic and Cost analysis questionnaire that takes 15 to 20 minutes and 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 09:00 AM on August 17, 2016 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