BARRIERS IN ACCESSIBILITY OF COMMUNITY REINTEGRATION OF SPINAL CORD INJURY PATIENTS

Farzana Akter

Bachelor of Science in Physiotherapy (B.Sc. PT)

DU Roll no: 155

Reg. no: 5240

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BHPI, CRP, Savar, Dhaka-1343

Bangladesh Health Professions Institute (BHPI)

Department of Physiotherapy

CRP, Savar, Dhaka-1343

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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.

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

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Md. Shofiqul Islam
Assistant Professor
Department of Physiotherapy
BHPI, CRP, Savar, Dhaka
Supervisor

.....

Mohammad Anwar Hossain
Associate Professor, Physiotherapy, BHPI
Head of the Department of Physiotherapy
CRP, Savar, Dhaka

.....

Mohammad Habibur Rahman
Assistant Professor
Department of Physiotherapy
BHPI, CRP, Savar, Dhaka

.....

Ehsanur Rahman
Assistant Professor
Department of physiotherapy
BHPI, CRP, Savar, Dhaka

.....

Md. Obaidul Haque
Associate Professor &
Head of the Department
Department of Physiotherapy
BHPI, CRP, Savar, Dhaka

Declaration

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 declare that for any publication, presentation or dissemination of information of the study. I would be bound to take written consent from the Department of Physiotherapy, Bangladesh Health Profession Institute (BHPI).

Signature: Farzana Akter **Date:** 04.10.2017

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Contents

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List of Tables

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Acronyms

BHPI : Bangladesh Health Professions Institute

BMRC : Bangladesh Medical Research Council

CRP : Centre for the Rehabilitation of the Paralysed

ICF : International Classification of Functioning

IRB : Institutional Review Board

NGO : Non-governmental organization

QCA : Qualitative Content Analysis

SCI : Spinal Cord Injury

UK : United Kingdom

USA : United States of America

WHO : World Health Organization

Abstract

Purpose: To explore the barriers in accessibility of community reintegration of SCI patients. *Objectives:* To find out the consequences of SCI towards community reintegration, to find out the mobility and equipment related barriers in accessibility of community reintegration, to find out the environmental and transportation barriers in accessibility of SCI in community reintegration, to identify the economical state of SCI patients in community, to identify the employment opportunities of SCI patients in community, to identify the health related complication of SCI patients in community, to identify the social acceptance of SCI patients in community. *Methodology:* A qualitative study design was used to conduct the study where eleven participants with SCI who have completed their rehabilitation from Centre for the Rehabilitation of the Paralysed (CRP) were participated selected by purposive sampling method. The data were collected by using a semi structure open ended questionnaire form and were analyzed through content analysis. *Result:* Out of eleven participants, seven participants were male and two were female and their mean age was 35.45 (± 7.39) years with range 26-45 years. Road traffic accident was the most common cause of injury that was around five participants and thoracic was the commonest area of injury that was around five participants. Emerging themes on the basis of content analysis: Barriers in accessibility of community reintegration are pain and bowel- bladder problem that are the common physical issues, lack of assistance and equipment issues are the most encountering problem of mobility that create barriers in accessibility, inaccessible environmental structure (slops and stairs) are the vital factors as a barriers in accessibility, inaccessible in public transport due to its infrastructure is one of the barriers in accessibility, lack of social acceptance is the mostly related factors of obstruct in accessibility and in economical aspect poverty is the barriers in accessibility of community reintegration greatly. *Conclusion:* This study comprehends about the experienced barriers in accessibility of community reintegration of the SCI patients where they had residual disability but they can integrate themselves if these identified barriers can resolve. So, identification of these barriers will help to give emphasize on designing the overcoming the strategy of those challenges.

Key words: Spinal cord injury, barriers in accessibility, community reintegration.

CHAPTER-I INTRODUCTION

1.1 Introduction

Spinal cord injury is one of the most serious medical condition that causes functional, psychological and socioeconomic disorder and also lead to lifelong disability. The amount of disability associated with completeness as well as the level of injury (Sezer et al., 2015).

Traumatic spinal cord injury (SCI) is a devastating event, resulting from mechanical disruption of the spinal cord tissue. Spinal cord injury also occurs in non-traumatic disorders including spondylosis, tumors, and infection (Nagosi et al., 2015). About 40 million people in the worldwide are suffer from SCI in every year, among them young men are common, children are also included that occurs most commonly due to road traffic accident, gunshot injuries, knife injuries, falls and also sports injury (Sezer et al.,2015).

However, Spinal cord injury occurs as a result of compulsion, incision or contusion of the spinal cord from foramen magnum to the couda equina that interrupted the function of spinal cord at the distal level of injury (Nas et al., 2015). Below the level of lesion motor, sensory and autonomic innervation occurs, as a result SCI patients are often restricted in their physical activities of daily living. As a consequence, compare with able-bodied persons, SCI patients are live with the risk of developing a hypoactive lifestyle with possible harmful effects on physical fitness, social participation, and quality of life (Bussman et al., 2008).

Spinal cord injury is also associated with high risk of premature mortality. Most of the evidence shows that the mortality after SCI has historically focused on biographic and injury characteristics such as age, sex, race, cause of injury, level of injury, neurologic completeness of injury, ventilator dependency (Krause et al., 2011). Over the past three decades while clinical attention has increasingly focused on the prevention of secondary complications after that acute mortality rates of spinal cord injury patients have fallen. It

has been proved that the people who have spinal cord injury are highly capable to medical conditions and secondary chronic conditions, such as pressure sores, urinary tract infections, diabetes, cardiovascular disease, obesity, osteoporosis and arthritis. The development of SCI treatment units, including well-trained, specialized teams for rehabilitation, and regular follow-up can decrease the mortality rate of people with spinal cord injury (Razzak et al., 2011).

In case of spinal cord injury, the treatment and rehabilitation period is long, costly and also boring whether it is complete or incomplete. As SCI rehabilitation is a long process so it requires patience and motivation of the patient and relatives. To prevent joint contractures and the loss of muscle strength, conservation of bone density, and to ensure normal functioning of the respiratory and digestive system early rehabilitation is essential (Nas et al., 2015). And also the primary goals of rehabilitation of spinal cord injury patients are to prevent the secondary complications, maximization of physical functioning, and reintegration into the community (Saulino et al, 2017).

In chronic period, the most important goal is realization of the independent mobilization for both complete and incomplete spinal cord injury patients. In chronic phase or phase to return home are ensuring the maximum independence are the most important expectations that related to the level of the patient's injury, integration of the patient to society and teaching the importance of the family's role (Nas et al., 2015).

However, the aim of the rehabilitation is to promote the assumption or resumption of culturally and developmentally appropriate social roles after injury or illness. Rehabilitation should promote the full inclusion and participation of people with disabilities in the physical and psychosocial environment. Participation in community activities correlates strongly with subjective quality of life (Scelza et al., 2007). The actual objectives of the SCI rehabilitation include not only prevention of death and disability but also community reintegration and improving their quality of life (Ramkrishnan et al., 2011). Without good community reintegration, patients are more prone to get secondary complications, such as pressure ulcers, urinary tract infections that may lead to re-hospitalization or even death (Scovil et al., 2012).

Community reintegration is a broad term surrounding the process of returning home and re-establishing life in consequence of an event such as SCI (Dwyer & Mulligan et al., 2015).

Community reintegration is a right of persons in recovery from health issues. In 1990 American with Disabilities Act (ADA) set this right and the 1999 Supreme Court Olmstead decision in which it was determined that unnecessary institutionalization of persons who could live in the community with the proper supports is a violation of the ADA (Kennedy et al., 2006).

Community reintegration typically consider as engagement in various aspects of role functioning as an independent, autonomous person, family member, friend, student, member of the workforce, spouse and/or intimate partner parent, civic and community member (Bradford et al., 2012). Although community reintegration was considered as an essential part of Community Based Rehabilitation program launched in developing countries, most program have found it difficult to achieve adequate levels of community participation and few studies have focused on measuring the concept of community reintegration and the effects of various factors on promoting or facilitating community reintegration after SCI (Sekaran et al., 2010).

However, to enable people with disabilities to participate in their communities to the fullest extend which is their desire can be done by identifying the obstacles they faced (Scelza et al., 2007). People living with SCI face many barriers within social contexts (Newman, 2010). Existence of barriers in the environment gives rise to a sense of discrimination in people with SCI, prevents their social participation, limits their choices and foils their attempts to lead an independent life and the ability to care for themselves (Babamohamadi et al., 2011). Accessibility is one of the most common barrier, many articles specifically highlights the importance of accessibility. Accessibility underwrites the right to live independently in the community and to participate fully in all areas of life; failure to ensure accessibility can constitute discrimination (WHO, 2013).

SCI continues to be a major cause of disability throughout Asia as well as in Bangladesh. Patients who have SCI, very often develop life-threatening complications. These patients can, however, be assisted to regain integration within the community by appropriate

treatment and specialized rehabilitation. In Bangladesh, there are many governmental and non-governmental organization (NGO) who are working in the field of disability. Center for the rehabilitation of the paralysed (CRP) is one of them and the only organization which provide specialized service to the spinal cord injury patients (Islam et al., 2011). CRP managed the patients with multi and interdisciplinary approach which emphasis on the development of community based rehabilitation programs (Hoque et al., 1999). But there has been no specific research of is conducted to identify the barriers in accessibility in community reintegration based on perspective of spinal cord injury patients in Bangladesh. So, this study will be the preliminary initiative in this context.

1.2 Rationale

Spinal cord injury (SCI) is a debilitating condition that has a broad impact on the medical, social, physiological aspects of those who are directly affected their caregivers and the community. It is a low incidence, high burden, life- altering health conditions. And the current treatment process of spinal cord injury are primary healing, rehabilitation and prevention of complications. The objectives of the spinal cord injury rehabilitation include not only prevention of death and disability but also community reintegration and improving their quality of life. It is viewed as one of the key goals of rehabilitation following an SCI and community reintegration is also recognized by the World Health Organization as critical outcome following disability. Without good community reintegration, patients are more prone to get secondary complications, such as pressure ulcers, urinary tract infections, resulting re-hospitalization or even death. Through community reintegration, rehabilitation of the spinal cord injury patients become fulfillment and also it get meaningfulness.

Bangladesh is a poor country, half of the 150 million people living below the poverty line. Here, a majority of people with spinal cord injury (SCI) are either poor or very poor. So, after completion of rehabilitation from Center for the rehabilitation of the paralysed (CRP) when they access in the community, they faces many barriers in community reintegration. Accessibility is one of the most common barriers in community reintegration. For that cause community participation is reduced and slowly patients become isolate from the community that has a bad impact on patient's health.

As Bangladesh is a developing country and trying to develop health care system. If we want to give appropriate rehabilitation of spinal cord injury patients then we have to know the barriers in accessibility of community reintegration. CRP managed the patients with multi and interdisciplinary approach which emphasis on the development of community based rehabilitation programs but there has been no specific research of is conducted to identify the barriers in accessibility in community reintegration based on perspective of spinal cord injury patients in Bangladesh. Through the study the patient's experience about the barriers in accessibility of community reintegration they face in community will explore out. If the barriers are identify and generate the importance to

focusing on this expect an overcoming strategy can be undertaken by the professionals so that the sufferers can reintegrate themselves successfully and can lead a better productive life as well as the working area of the physiotherapist will broaden in this spectrum.

1.3 Research question

What are the barriers in accessibility of community reintegration of spinal cord injury patients?

1.4 Study Objectives

1.4.1 General objective

- To explore the barriers in accessibility of community reintegration of spinal cord injury patients.

1.4.2 Specific objectives

- To find out the consequences of SCI towards community reintegration;
- To find out the mobility and equipment related barriers in accessibility of community reintegration;
- To find out the environmental and transportation barriers in accessibility of SCI in community reintegration;
- To identify the economical state of SCI patients in community;
- To identify the employment opportunities of SCI patients in community;
- To identify the health related complication of SCI patients in community;
- To identify the social acceptance of SCI patients in community.

1.5 Operational definition

Spinal cord injury

A spinal cord injury (SCI), also called spinal cord lesion, is damage to the spinal cord as a result of trauma or pathological change, either temporary or permanent, of the normal motor, sensory, or autonomic function of the spinal cord.

Accessibility

Accessibility refers to the design of products and environments for people with disabilities. Examples include wheelchairs, entryway ramps, hearing aids, and braille signs.

Barriers

An obstacles faced by the participations in their own community as well as their everyday tasks.

Community

A community is a small or large social unit (a group of people) who have something in common, such as norms, religion, values, or identity and the communities share a sense of place that is situated in a given geographical area (e.g. a country, village, town, or neighborhood).

Reintegration

In social and physical environment of communities how the environment enables and disabled people to take part in everyday like others in society.

CHAPTER-II LITERATURE REVIEW

Spinal cord injury is a term that refers to damage to the spinal cord as a consequence of trauma or from disease or degeneration such as cancer (WHO, 2013). An irreversible neurological impairment ensuing in varying degrees of paralysis, sensory loss and sphincter disturbance which are permanent and irreversible in some cases (Rahimi-Movaghar et al., 2013). A spinal cord injury (SCI) is defined as "the occurrence of an acute, traumatic lesion of neural elements in the spinal canal, resulting in temporary or permanent sensory deficit, motor deficit or bladder or bowel dysfunction" (Barclay et al., 2011).

The risk of morbidity and mortality is high in spinal cord injury. Mortality risk is highest in the first year after injury and remains high compared to the general population. People with spinal cord injury are 2 to 5 times more likely to die prematurely than people without SCI. This life threatening condition has various epidemiological studies that have been carried out in different part of the world. Worldwide incidence of SCI varies from 9.2 to 56.1 per million (Mathur et al., 2015). Among worldwide incidence of spinal cord injury, males are most common than females, children also included (Nas et al., 2015). According to WHO estimate, males are most at risk in young adulthood between 20-29 years and older age greater than 70 years. On the other hand, females are most at risk in adolescence between 15-19 years and older age greater than 60 years. Studies report male-to-female ratios of at least 2:1 among adults, sometimes much higher (WHO, 2013).

In the U.S.A, the recent estimate showed that the annual incidence of spinal cord injury (SCI) is approximately 54 cases per million population or approximately 17,000 new SCI cases each year. The number of people in the U.S. who are alive in 2016 who have SCI has been estimated to be approximately 282,000 persons, with a range from 243,000 to 347,000 persons. Males account for approximately 80% of new SCI cases (White & Black., 2016). In the UK, there are approximately 40,000 people living with SCI (Barclay et al., 2011). In every eight hours someone is paralysed by SCI in the UK (Williams et al., 2014).

In Asia, incidence rates of SCI ranged from 12.06 to 61.6 per million and the average age ranged from 26.8 to 56.6 years old. Commonly, male are at higher risk than female. Most common causes of traumatic spinal cord injury is motor vehicle collisions and fall, war wounds also included (Ning et al., 2012).

In developing countries, such as India, male female ratio of SCI is 4.2:1 and common age group of 20-49. Epidemiological scenario of SCI are different from western countries with major cause being fall. Among the causes of injury, 53% patients had a fall from height and 28% suffered from road traffic accidents. Fall of heavy object overhead and back (10.7%), fall with heavy object overhead (3.0%) and fall following electric shock (4.0%) were uncommon causes (Mathur et al., 2015). In another neighboring country Nepal, there is no reliable estimate of incidence and prevalence of SCI. One estimate indicate yearly incidence of traumatic SCI in Nepal is 300-5000, and prevalence 1500-25000 (Scovil et al., 2007).

Although within both developed and developing countries the ratio of SCI are varies considerably, but the persons with SCI are predominantly male. Among developed countries the male-female ratio ranges from 2.5:1-4.3:1 and among developing countries it is 2.34:1-9:1. Though the populations of Bangladesh are almost the equal gender composition but the male female ratio is 4.5:1 among the people with SCI in Bangladesh. According to the different published articles in Bangladesh, nowadays the number of female with is on the rise in Bangladesh (Razzak et al., 2017). In our country perspective among the traumatic spinal cord injury lesions, 60% is paraplegics and 40% tetraplegic beside these among the non-traumatic spinal cord lesions cases 84% peraplegic and 16% tetraplegic. SCI have various non-traumatic and traumatic etiologies with varying degrees of resulting neurological damage. A study in Bangladesh aimed to discover life expectation of persons with SCI uncovered 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 Mellitus (Razzak et al., 2011).

The spinal cord injury (SCI) creates a lot of deficits, which often limits the lives of individuals and limits their contribution to society. Spinal cord injuries worldwide effect is dramatic (Anderson et al., 2007). For most of the invaded person, there is a spinal cord injury (SCI) that has long-term consequences. Reintegration means reconstruction after an extended period of hospitalization with immediate care and immediate rehabilitation at the beginning. (Cieza et al., 2010). Living with SCI is a complicated process that needs to be adapted after losses to cope with physical and psychoanalytic work for patients and their families. Reintegration means patients express understanding and physical attempts to manage stress. It plays an important role in achieving to adaptation, which in turn is the ultimate goal of rehabilitation after injury. And it is a key factor in assessing the effectiveness of any rehabilitation programs for people with SCI (Babamohamadi et al., 2011).

It is usually difficult and challenging that is the process of reintegration back to their local community. Reintegration enhances beyond the person, it develops his/her fullest inclusion and participation within the physical and psychosocial environment. Reintegration is a key issue for persons with spinal cord injury, in the entire rehabilitation process because in most cases SCI happens to persons who were healthy and actively integrated into social life (Sekaran et al., 2010).

Community reintegration is a similar construct to participation as defined by the ICF. Carpenter et al. (2007) gave the definition of the community reintegration as, “It can be defined as the process of becoming part of the mainstream of family and community life, participating in normal roles and responsibilities, and being an active and contributing member of one’s social groups and society as a whole” (Carpentar et al., 2007). Kennedy et al. (2006) said that “successful community integration can be defined as being part of the mainstream of family and community life, fulfilling normal roles and responsibilities and being an active and contributing member of one’s social groups and society as a whole.”

The main goal of rehabilitation is community reintegration. Successful community reintegration depends not only on a person's physical functioning, but also on many interrelated facilitators and barriers in the social and physical environment. Rehabilitation teams need to consider employment, mobility and transport, family support and physical accessibility in society while changing society (Cieza et al., 2010).

The conceptualization of barriers used three main components proposed by the ICF including: Body Function and structures, activities and participation, including components of capacity and performance, and environmental factors with measurement of barriers and facilitators (Silver et al., 2012). There are many barriers of community reintegration such as financial resource, employment opportunities, social acceptance and support, lack of knowledge but accessibility barriers are most common one of them that identified as barriers to participants ability to cope with disability and reduce their community participation (Babamohamadi et al., 2011).

Community reintegration will depend on the extent that a person with SCI can overcome the environmental barriers. In this section, environmental barriers are explored progressively, beginning with housing to which a person who recently developed SCI will have to return after rehabilitation, then continuing with transport, which will be vital to participating in the community, and finishing with public buildings, such as schools and workplaces, where access is needed to fulfill rights to education and employment (WHO, 2013).

There are a number of challenges faced by individuals with SCI in participation such as social life situations (Hitzing et al., 2012). However, specific treatments are given to maximize the community participation where the rehabilitation process is directed towards functional limitations, due to the probability of full reintegration of a person is often incomplete into his/her community (Scelza et al., 2007).

According to WHO international perspectives on SCI, accessibility underwrites the right to live independently in the community and to participate fully in all areas of life, failure to ensure accessibility can constitute discrimination. Accessibility mainly focuses on the housing, transportation and public accommodations necessary to achieve these outcomes to community reintegration (WHO, 2013).

Environmental barriers such as transport may prevent community participation. In accordance of Richards et al. report environmental access to be positively associated with life satisfaction (Kennedy et al., 2010). Access to transport is required to participate in education, employment and social activities outside the home. Public transport is often inaccessible to people with SCI. In developing countries, ramps, lifts and safety lock-down systems may be lacked (WHO, 2013).

The accessibility of the environment influenced on the ability of participants to participate fully in the community in the way as it wished by SCI patients. Transport is essential but can be challenging. The ability to have access to appropriate transport and infrastructure was essential for people to be able to get out and about in their community. This included public and private transport, the availability of car parks and access to petrol. For those that could drive, problems with access to parking spaces that were the correct size and design, and in an appropriate location, impacted significantly on their ability to participate in the community (Barclay et al., 2016).

Among whole environment home is one of the most important in life. Accessible housing is a global problem for people with disabilities, particularly those with mobility impairments such as SCI patients. Evidence from surveys in southern Africa shows that disabled people generally live in housing that is inferior to that of nondisabled people. For adults with SCI, leaving the rehabilitation hospital may be difficult if their accommodation has barriers such as stairs, small bathrooms and inaccessible kitchens, which in effect make them prisoners in their own homes. The result may be what is often called bed-blocking, when patients fit enough to go home are forced to stay in the hospital due to insufficiently accessible housing (WHO, 2013).

An Australian study examining the mental health of 443 adults with SCI living in the community found that nearly half (48.5%) suffered mental health problems of depression (37%), anxiety (30%) and clinical-level or post-traumatic stress (33.4%), with an overall two fold or more increase in the probability of emotional disorders compared with the general population (Migliorini et al., 2011). Quality of life was significantly poorer or people with SCI compared with the non-injured Australian population, with predictors of

poor quality of life being secondary impairments, activity limitation and participation restrictions (Barclay et al., 2011).

Secondary complications has a negative effect on quality of life of SCI patients. Chronic pain is one of the most common experienced among people with spinal cord injury. Approximately 25–45% of people with SCI experience persistent pain. In one study 27% of the 86% of participants who reported pain found it to negatively impact on activity participation and have a negative impact on psychological affect and activities in daily living. This indicates a need to target pain in early rehabilitation and again after discharge when residing in the community. It is essential to reduce secondary complications where possible because they have been found to pose serious physical and psychological barriers to community participation (Kennedy et al., 2010).

A further area of need has been found to be employment and leisure participation. Sport participation and employment declined after injury due to reduced access to facilities, whereas in a separate study work and leisure time was found to reduce by 40% compared to pre-injury status. Access to employment has been recognized as particularly weak within the community for people with SCI. Furthermore, outpatients report a lack of informational support for them to pursue a specific job they had re-trained for and were provided with information for a more suitable placement. This information highlights a discrepancy between what the individual wishes and service objectives (Kennedy et al., 2010). The perceptions of barriers linked with employment differ between employed and unemployed persons with SCI. It has been found that although employed persons with SCI tend to not recognize significant barriers to employment, 25% of individuals recognize inaccessibility into transportation and lack of social security as the main barriers. For persons with SCI who were engaged 64% indicated inaccessibility into transportation, whereas 48% having no time off for health related concerns as being main perceived barriers to employment (Ottomanelli & Lind, 2009).

The physical environment has traditionally been viewed as an important but modifiable barrier for people with mobility impairments. Changes in public policy that resulted in the presence of curb cuts, elevators, and accessible public transportation systems, to name a few, have greatly improved the ability of people in wheelchairs to participate in society.

An important barrier to full community participation is limited community resources—that is, those medical and social services needed by people with disabilities to live in the community. Independent living services are designed to minimize barriers to physical independence, mobility, occupation, social integration, and economic self-sufficiency, but access to these services may not be ideal. The transition from acute rehabilitation to home is especially critical, because people are confronted with many obstacles as they attempt to resume participation in the community. If services are made available to assist with this transition, successful reintegration is more likely (Scelza et al., 2007).

People with spinal cord injury (SCI) face challenges in their everyday lives including limitations in functioning, secondary conditions, medical complications and decreased quality of life. Social support represents an important resource to meet these challenges. Social support is known to positively influence health, life satisfaction and even mortality. Social support is crucial, but can be diminished after SCI. Social support is defined as an exchange of resources between individuals intended to enhance the well-being of the recipient. It conveys the information of being loved, cared for, esteemed, valued and bestows a sense of belonging. Social support can be instrumental, emotional or informational (Muller et al., 2012).

Many people with SCI do not receive adequate ILS (Independent Living Services), resulting in many unmet needs. In this case Centers for independent living (CILs) can play an important role in facilitating successful reintegration by providing peer mentoring and role modeling, access to transportation, accessible housing, attendant care personnel and general knowledge about independent living, advocacy and other community resource, besides this there has been an inadequate communication between the CIL and the medical rehabilitation and now for the being maintaining community participation is important for the persons with spinal cord injury (Scelza et al., 2007).

CHAPTER-III METHODOLOGY

3.1. Study design

The researcher selected qualitative methodology for this study, because it is helpful to find out the perceptions of people in particular settings and to understand their perspective. Qualitative research is exploratory in nature by which the researcher can gain insights into another person's view's, opinion, feeling and beliefs within their own natural setting (Ema, 2013).

The study was conducted by Qualitative Content Analysis (QCA) approach of qualitative method. QCA facilitates contextual meaning in text through the development of emergent themes derived from textual data. It also facilitates the production of core constructs from textual data through a systematic method of reduction and analysis.

3.2 Study setting

The research took place in the community setting where the persons with spinal cord injury faces barriers in accessibility of community reintegration after completion of their full rehabilitation from Centre for the Rehabilitation of the Paralysed (CRP).

3.3 Study population

Spinal cord injury patients who have been completed their full rehabilitation from CRP and have been return to their communities.

3.4 Participant selection procedure

Participants were selected from the population by using purposive sampling technique. Purposive sampling based on some pre-defined inclusion criteria. The researcher selected the participant by purposive sampling because researcher had specific requirements and chose those who met the selection criteria. The inclusion criteria for participation in this study were the persons with SCI who have been completed their full rehabilitation at CRP, Savar, Dhaka and at least 2 months resided in community. At first, investigator chose those patients who met the selection criteria from Community Based Rehabilitation

(CBR) unit of CRP. Then collect the address of persons who met the selection criteria. After that, investigator took the permission to go to the participant's home in community by mobile phone contract with them. Participants who gave the permission to go to their home, investigator only select that participation.

3.4.1 Inclusion criteria

- Age between 12-50 years (can understanding the research question and can give the expecting answer).
- SCI persons who have already completed their rehabilitation from CRP and at least 2 months resided in community.

3.4.2 Exclusion criteria

- Patients who have mental disorders.
- SCI persons who complete their rehabilitation from other hospital or rehabilitation center.
- Patients age below than 12 and greater than 50 years.

3.5 Sample size

Eleven participants were taken as sample from community that was according to data saturation.

3.6 Method of data collection

Researcher conducted face to face interview with open ended question for data collection. With open ended question, participants get more freedom to explain their opinions. That face to face interview helps the researcher to observe the participants facial expression and non-verbal expression during interview period (Depoy & Gitlin, 2015). Before starting the formal interview, researcher ensured a quiet place by contacting with the regarding authority and built connection with the participants and made them comfortable for interview. The researcher explained the research question and aim of the study. Then the researcher used information sheet and consent form to take the permission of the participants. Next researcher asked questions. All question and information sheet was

developed into Bangla. Interview was conducted in Bangla and recorded by recorder of mobile phone. The interview conducted during daytime and the duration was approximately 20-30 minutes for each participant. Venue of interview was the community where the persons with spinal cord injury deal with their family but the place of interview depended on situation and permission of regarding authority.

3.7 Data collection tools and materials

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. An open ended question sheet was used to conduct the interview.

3.8 Questionnaire

For data collection a semi-structured questionnaire was used. The questionnaire was formed based upon the related literature, determine of the study title and also pilot study.

3.9 Duration of data collection

Data were collected from 15th April 2017 to 18th May 2017. Each participant provided particular time to collect data. Each questionnaire took approximately 20-30 minutes to complete.

3.10 Data Analysis

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. Then three copies were made from the transcript and were given to eleven people for translation from Bangla to English. Then the data was analyzed by QCA. Data was analyzed by 3 stages: coding, categorizing and 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 categories were found from the interview questions. The researcher was arranging all the information

according to the categorization. Under these categories, the researcher coded all the information from the interviewed transcript. After finishing the tabulation of coding, the researcher detected some important codes that made the themes of the study. At last, themes were identified and emerged as a process of interpretation.

3.11 Pilot study

After getting approval for conducting the research and before starting the final data collection, researcher accomplished the pilot study with two participants. Pilot study was necessary as it helped the investigator to develop a final question and to collect data from participants easily. This study 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.

3.12 Ethical consideration

Ethical issues should consider strictly. So, before starting the study, a formal project proposal was submitted to the department of physiotherapy and after verifying the proposal, permission was taken from Institutional Review Board (IRB) of BHPI to continue the study. This study followed the World Health Organization (WHO) & Bangladesh Medical Research Council (BMRC) guideline and strictly maintained the confidentiality. After that, permission for data collection was obtained from the area where I conduct the study. The respondents were clearly informed about the aim and objectives of the study. After that they were interviewed following singing the consent from. The investigator has been ensured the confidentiality of participant's information, and shares the information only with the research supervisor.

The aims and objectives of the study should be informed to the subjects verbally. Before participating in the study the investigator had proved them a written consent from and explained them about it and then ask to sign as well as the researcher had also signed in the consent form. It was mentioned that the subjects had the rights to withdraw themselves from the research at any times. It was assumed to the participant that his or her name or address would not be used. Participation number were used in the notes and

transcripts throughout the study. The information might be published in any normal presentation or seminar or written paper but they would not be identified and these would not cause any herm to them. It was also ensured that every participant has the right to discuss about her problem with senior authority as related to this project.

3.14 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 coded accurately and checked by the supervisor to eliminate any possible errors. Try to keep all the participant's related information and documents confidential.

CHAPTER-IV RESULTS

4.1 Participant's Socio-demographic information:

In this study eleven patients with spinal cord injury were enrolled at various time points followed by at least two months post full rehabilitation from SCI unit of CRP. Among eleven people, nine patients were male and two were female. Mean age of the participants 35.45 (±7.39) years with range 26-45 years. Among the participants majority were in age group 26-35 years. Among the participants married unmarried ratio was equal, five were married and five participants were unmarried and also one participate was divorced. Most of the participants were lived in nuclear family about six and five participants were lived in extended family. Majority participants lived in rural area that were about eight and three participants were lived in urban area. The educational level among all participates, five were PSC completed, five were SSC completed and one was HSC completed and among them majority were unemployed about six participants, two participants were businessman, two participants were housewife and one participant was service holder. Majority participants were earned by others members of the family about five, three participants were earned by them own, two participants were earned by their husband, and majority participants had average monthly income of the participants were 5,000-20,000 taka about eight, 21,000-35,000 taka about two participants, 36,000-50,000 taka about one participants (Table-1).

Table -1: Socio-demographic information of the participants

Socio-demographic Information	Number (n)
Age group	
26-35	6
36-45	5
Sex	
Male	9
Female	2
Marital status	
Married	5
Unmarried	5
Divorced	1
Family type	
Nuclear family	6
Extended family	5
Residential area	
Rural	8
Urban	3
Educational status	
Primary school certificate	5
Secondary school certificate	5
Higher school certificate	1
Occupation	
Service holder	1
Unemployment	5
Business	2
Housewife	2
Earning member	
Own	3
Husband	2
Wife	1
Others	5
Average family income	
5000-20000	8
21000-35000	2
36000-50000	1

4.2 Participant's injury related information

The major causes of the spinal cord injury in the study was traumatic including road traffic accident about five participants, fall from height were three participants, falling heavy object on the back were two participants, shallow driving was one participants and the skeletal level of the injury were largely involve thoracic about five participants, lumber were four participants and three participants were cervical injury. Among the participants majority were complete A about seven participants, two were incomplete B, one was incomplete C and one participants was incomplete D. Among all participant most of the participants were paraplegic about eight participants and three were tetraplegic (Table-2).

Table-2: Injury related information of the participants

Injury Related Information	Number (n)
Etiology	
Road traffic accident	5
Fall from height	3
Fall of over load	2
Shallow driving	1
Skeletal level of injury	
Cervical	2
Thoracic	5
Lumbar	4
Impairment according to ASIA scale	
Complete A	7
Incomplete B	2
Incomplete C	1
Incomplete D	1
Diagnosis	
Tetraplegia	3
Paraplegia	8

4.3 Theme that emerged from data analysis are given below

Each table describes the interview findings, under the different categories. The tick was given only for those columns where the participant spoke about those issues. Here 'P' was used for participant.

Theme -1: Pain, bowel- bladder problem are the common physical issues experienced as barriers in accessibility of community reintegration.

(Emerged from category-1)

Category-1: Health related barriers for patients with SCI in accessibility of community reintegration.

Table-3: Health related barriers for patients with SCI in accessibility of community reintegration.

Participants response	Pain	Problem in bowel bladder	Spasticity	Weakness & Balance problem	Swelling of leg	Depression
P1	√	√				
P2		√	√			
P3	√	√		√		
P4	√					√
P5					√	√
P6			√			√
P7	√	√	√			
P8	√	√	√	√		√
P9	√	√	√	√		√
P10	√	√				√
P11	√	√		√		√
Total =11	8	8	5	4	1	7

Among eleven participants, eight participants complained about pain and bowel-bladder problem are the common physical issues that they experienced as barriers in accessibility of community reintegration. Seven participants said about metal depression are also a barrier in accessibility of community, five participants said about spasticity, four participants said about weakness and balance problem and one participant said about swelling in the leg are the physical issues that they face experienced as barriers in accessibility of community reintegration of SCI patients.

Theme-2: Lack of assistance and equipment issues are the most encountering problem of mobility that create barriers in accessibility of community.

(Emerged from category-2)

Category-2: Mobility aids and equipment issues as a barriers in accessibility of community.

Table-4: Mobility aids and equipment issues as a barriers in accessibility of community

Participants response	Lack of assistance	Crowded place	No problem with mobility aids	No mobility aids	Equipment issues
P1	√				√
P2			√		√
P3	√	√			√
P4				√	√
P5			√		
P6	√				
P7	√	√			√
P8	√				
P9	√				√
P10	√				√
P11	√	√			√
Total =11	8	3	2	1	8

Among eleven participants, majority of participants (n=8) said that lack of assistance and equipment issues are the most encountering problem of mobility that they face as barriers in accessibility of community reintegration. Crowd place is also a barriers in accessibility of community said by three participants. Two participants don't use mobility aid and one participant has no problem with mobility aid.

Theme-3: Inaccessible environmental structure /slops and stairs are the vital factors as a barriers in accessibility of community.

(Emerged from category-3)

Category-3: Environmental issues as a barriers in accessibility of community reintegration.

Table-5: Environmental issues as a barriers in accessibility of community reintegration

Participants response	Uneven road	Narrow and muddy road	Slops and stairs
P1	√		√
P2	√		√
P3	√		√
P4	√		√
P5		√	√
P6	√	√	
P7			√
P8	√		√
P9	√		√
P10	√		√
P11	√		√
Total=11	9	2	10

Among eleven participants ten participants said that inaccessible environmental structure specially slops and stairs are the vital factors as a barriers in accessibility of community. Uneven road is also a vital factor as a barriers in accessibility of community reintegration said by nine participants and two participants said about narrow and muddy road that they face as a barriers in accessibility of community reintegration.

Theme-4: Inaccessible in public transport due to its infrastructure is one of the barriers in accessibility of community.

(Emerged from category-4)

Category-4: Barriers of transportation in accessibility of community reintegration.

Table-6: Barriers of transportation in accessibility of community reintegration

Participants response	Infrastructural problem in access	Negligence	Lack of sitting opportunity
P1	√		
P2	√		
P3	√		
P4	√		
P5	√		√
P6	√		
P7	√	√	√
P8	√	√	
P9	√		
P10	√	√	
P11	√		
Total=11	11	3	2

All participants marked inaccessible public transport as a barriers in accessibility of community due to its infrastructure. There was three participants victim of negligence and two participants said about lack of sitting opportunity is the barriers of accessibility of community reintegration.

Theme-5: Lack of social acceptance is the mostly related factors of barriers in accessibility of community reintegration.

(Emerged from category-5)

Category-5: Societal barriers in accessibility of community reintegration.

Table-7: Societal barriers in accessibility of community reintegration

Participants response	Negative perception	Negligence	Lack of social acceptance	Supportive	Criticism
P1				√	
P2		√	√	√	√
P3	√	√	√		√
P4		√	√		√
P5			√		√
P6				√	
P7		√	√		
P8		√	√		
P9			√		
P10	√	√	√		
P11		√	√		
Total=11	2	6	9	3	4

Majority of participants (n=9) expressed about lack of social acceptance is the mostly related factors of barriers in accessibility of community reintegration from eleven participants. Again, six participants mentioned about negligence, four participants mentioned about criticism and tow participants mentioned about negative perception as barriers in accessibility of community participation. As opposed to, three participants said their social environment is supportive.

Theme-6: In economical aspect poverty is the barriers in accessibility of community reintegration.

(Emerged from category-6)

Category-6: Employment and economical barriers in accessibility of community reintegration.

Table-8: Employment and economical barriers in accessibility of community reintegration

Participants response	Unemployment due to lack of opportunity	Willingly Unemployment	Employment	Poverty	Economical solvency
P1			√	√	
P2		√			√
P3	√			√	
P4	√			√	
P5			√	√	
P6	√			√	
P7		√		√	
P8			√		
P9	√			√	
P10	√			√	
P11	√			√	
Total=11	6	2	3	9	1

Among eleven participants, majority said that poverty is one of the barriers in accessibility of community reintegration after spinal cord injury. Six participants also mentioned about lack of employment opportunity is one of the barriers in accessibility of community reintegration. On the other hand, three participants has employment and earn by own and two participants are willingly unemployment though has employment opportunities and one has economical solvency.

CHAPTER-V DISCUSSION

In this chapter the results of the study are discussed in relation to the research questions and objectives of the study. The discussion focus on barriers in accessibility of community reintegration of spinal cord injury patients. By the content analysis different categories are found under which different options are expressed by different codes. Six major categories found under which 6 themes were emerged. This part is carried out on the basis of analysis of acquired data and its relevance with other published literature related to the study.

Summary of theme that emerged from data analysis:

Theme -1: Pain, bowel- bladder problem are the most common health related issues experienced as barriers in accessibility of community reintegration.

Health related complications as a result of SCI plays a great effect on the participants post injurious life role. During the interviews, most of the participants said that pain and bowel-bladder complications are the most common barriers in accessibility of community.

One participate said that-*"There is a problem of pain and bowel-bladder incontinence that the reason to not access in the community. If I will go to another house, where to do the toile?"*

From the transcripts among eleven participants, most of the participants about eight participants reported that pain and bowel bladder incontinence are the main problem, six participants had spasticity, four participants had weakness and balance problem, one participant had swelling in the leg that create barriers to access in the community reintegration and seven participants had mentally depressed about access in the community reintegration.

Another one participant said that- *"There are many inflammation in my hands and legs that I cannot sit in wheelchair more than 2 hours. Again defecation-urination also problem, I have no sensation of it for these I cannot go to the community."*

About bowel bladder incontinence one participant said that-*"I am in meeting and need to do defecation-urination, there are many crowd and I cannot control this then my cloth become spoil, it is a barriers in accessibility of the community reintegration."*

So, we can say that pain and bowel- bladder incontinence are the most common health related issues experienced as barriers in accessibility of community reintegration.

Literature shows, persons with SCI describe pain as the most difficult medical condition to deal with, more so than the loss of motor or sensory function and 71% have reported that pain interfered with daily activities. Rose et al., reported that 18% of individuals did not return to work following a SCI because of pain (Donnelly & Eng., 2005). Bowel dysfunction is a significant consequence of spinal cord injury SCI. Bowel management and associated problems have been increasingly recognized as important factors in post-injury community reintegration and quality of life (Coggrave et al., 2009).

One the other hand, large part of the participants about seven participants said that they are mentally depressed and discomfort after SCI that is the barrier in accessibility of the community reintegration.

One participants said that- *"Yes, It (mentally depression) creates some barrier. A common person walk normal but I cannot. Sometime I go with my friend to spend some time it seems like they all gone but I still sit there"*

This finding is similar to other studies of Barclay et al. (2016) "Depression led to disengagement during transition home. A number of the participants, talked about going through a stage early on after discharged of significant depression and deliberately isolating themselves at home."

Hoffman et al. (2011) stated that depressive symptoms are not only linked to a host of negative outcomes, including pressure ulcers and urinary tract infections, lower self-appraised health, fewer leisure activities, but also linked to poor community mobility, poor community integration, and fewer meaningful social pursuits (Hoffman et al., 2011).

Theme-2: Lack of assistance and equipment issues are the most encountering problem of mobility that create barriers in accessibility of community

Most of the participants said that lack of assistance and equipment issues are the most encountering problem of mobility that create barriers in accessibility of community reintegration.

One participate said that *"I could not drive the wheelchair, if I had a daily assistance then I could drive it. So, I could not access in the community".* The same patients also said that *"I had no assistance who will help me to use catheter, I have bowel-bladder problem so without using catheter I could not go to the community."*

Literature shows that for performing activities in individual's work place either in their home setting or occupational setting people with SCI have to face a number of difficulties. After returning to the community about 14.4% individuals with SCI need assistance at home. Lack of assistance or support, lack of accessibility have been identified as barriers for people with SCI in carryout their activities of daily living (Silver et al., 2012).

In this study within eleven participants, majority participants about eight reported that lack of assistance and equipment issues act as barriers in accessibility of community reintegration, three participates said crowed place is a problem participate in the community, one don't use mobility aids and two uses mobility aids but they don't have any problem with mobility aid to access in the community reitegration.

One participate said that *"The roads are not well. I can't go alone because I afraid if I fall upside down. For this reason I feel barrier. I have no assistant, if I have an assistant I can go, if not then not go to the community".*

Another patients said that-*"I need an assistance. Mobility aids create problem because I need another person who can go with me. Whom I want to take with me he may have his important work to do. It create problem, I can't go."*

Two participates also said that they cannot maintain wheelchair in crowded place. One of them said, *"In Durga puja, it is so much crowed then I could not go with wheelchair."*

It is estimated by one study that-There is need of assistance among most of the participants with SCI in community reintegration (Scelza et al., 2007). Mobility issues, which include transfers and balance, were the most commonly reported physical limitations another study (Silver et al., 2012). In my study lack of assistance and equipment issues which create challenges in mobility are the vital issues in accessibility of community experienced by the participants.

Theme-3: Inaccessible environmental structure /slops and stairs are the vital factors as barriers in accessibility of community.

In environmental barriers in accessibility of community reintegration majority participants approximately ten said that they face barriers with slops and stairs, eight participants said problem with uneven road and few participants about two participants said their problem with narrow and muddy road that creates barriers in accessibility of community reintegration.

Barclay et al. (2016) stated that "Almost all participants described situations, where they were prevented from participating in activities they wanted due to inaccessible natural or built environments."

Among them one participate said that-*"If I go then I have to stand outside. Listen to….I went to visit my sister home, her house had not the facility to use wheelchair like other. Then they used the wood board upon the stairs and with the assist of two or three person and after many trouble, I enter the home. I faced too much trouble to access in the building of community."*

Another participate said that-*"In case of access in the house or buildings of the community barriers are stairs. Wheelchair doesn't run on the stairs, so it creates barriers in access of houses and buildings of the community. It is better to have a ram".*

According to WHO, for adults with SCI, leaving the rehabilitation hospital may be difficult if their accommodation has barriers such as stairs, small bathrooms and inaccessible kitchens which in effect make them prisoners in their own homes. The result may be what is often called bed-blocking, when patients fit enough to go home are forced to stay in the hospital due to insufficiently accessible housing (WHO, 2013).

On the other hand, uneven road is another encountering barriers to access in the community, about eight participates mention that. One participate stated that *"roads... many time in roads there have many cavity and sometime the roads are broken, the roads are not flat. There are many jig-jack place in roads. For this reason I can't go the community alone".*

Another participate said that-*"The roads are not well. I can't go alone because I afraid if I fall upside down. For this reason I feel barrier to access in the community."*

Narrow and muddy road also a barrier to access in the community with mobility aids. One participate state that-*"My brother's house is a little away from my house, road is narrow. When I want to go that road I fall down, cannot go on the road"*

So, we can say that inaccessible environmental structure /slops and stairs are the vital factors as barriers in accessibility of community.

Evidence regarding that, In rural area of Asia, many patients live in remote villages where subsistence farming is the primary source of income, and where steep terrain, limited road access and inaccessible housing are often barriers to those using mobility devices (Scovil et al., 2011).

Theme-4: Inaccessible in public transport due to its infrastructure is one of the barriers in accessibility of community reintegration.

Al participant stated that they have severe problem in access to vehicles due to its infrastructure. Few participants about two said that they become negligence when they want to access to the vehicles and two participates said that they don't get opportunities for setting through they have right to setting service.

One participate said that-*"Transports...such as kind of people like us it is a biggest barrier. I can't go anyplace. If I need to go anyplace I will rent a private car. I need to a rent car to go anywhere." He also said that, don't give the change to get up the bus. If I say I will go after pay money but they don't allow to get up into the bus. They never ask people like us. Who hear the voice of us."*

One participate state that, *"I have to stand there, nobody are ready to give me the chance of sit. I would go there by rickshaw and have to stand there. That vehicle has opportunities of sitting but the not allow to access there. The next has no free sit to setting."*

So, it is clear that Inaccessible in public transport due to its infrastructure is one of the barriers in accessibility of community reintegration.

Literature shows that mobility and equipment issues including transportation are 23% all of barriers in the community reintegration in people with SCI (Scovil et al., 2012). Access to wheelchair accessible private transportation is the most common barrier (22.54%) (Silver et al., 2012). Another literature shows that inaccessible housing and transportation, particularly compared to the hospital or spinal unit where the individual with SCI had come from, was identified as a barrier in community reintegration (Dwyer & Mulligan., 2015).

Theme-5: Lack of social acceptance is the mostly related factors of barriers in accessibility of community reintegration.

In this study, about eight participants don't get social acceptance after spinal cord injury that is one of the big barriers to access in the community. Again, six participants said they become highly negligence by the persons of society, four participants become victim of criticism and few participants about two participants report for negative perception of the community, only three participants get supportive environment from the community.

This finding is similar to other literature that presented, the majority of participants stated that a lack of social acceptance and support was one of the most important barriers to coping with SCI (Babamohamadi et al., 2011)

One participate said, *"I don't get social acceptance after my disability. As an experience… I went one place all people sat there together. I sat at the backside and I came back from there without say anything. Because they talked to each other, I am an unhealthy person, they thought that he is an unhealthy person what can he say here? For that I don't attend that place in the community."*

Another participate state that, "*At once I get honor from society when I was well. But now I don't get that because I am not like them. I cannot do anything like others 10 people for this I do not go to the community. I do not get the honor."*

One participate also said that *"It is access in the houses or buildings of the society, many people hate me too".*

So, this study reflected that the lack of social acceptance is the mostly related factors of barriers in accessibility of community reintegration. Where social acceptance is one of the most important matter of not only community reintegration but also the physical and mental health overall quality of life of persons with SCI.

Scene of the other literature presented that, the physical environment, unsupportive social attitudes and mental health issues were identified as barriers to community participation (Barclay et al., 2016).

Theme-6: In economical aspect poverty is the barriers in accessibility of community reintegration.

The need to have adequate financial resources to enable community reintegration was identified by most of the participants. In this study eight participants reported for poverty is the barrier in accessibility of community reintegration, six participants said that lack of employment opportunities is a barrier to access in the community, four participants with SCI in the community has employment opportunities among them two willingly unemployed. Only one participant have economical solvency.

In the reflection of question, *"Is it (financial problem) a barrier in accessibility in the community reintegration after disability?"* One participant said that-*"Of Crouse. Because I have no income. There is no people who can help me with money. At present it is about impossible for me to maintain my family because of this financial problem. When I was able to income I could go tea stall with others but now I can't, because I have no income. If I want to drink tea I need to spend money but I don't have that money. How can I go anyplace, how can I drink tea without money? May be any one invite me in marriage ceremony, if I want to go there I need to spend around 500tk but I have no that money to spend. For that I can't go any ceremony in the community".*

In accordance of literature, when a family is fully depending on the spinal cord injury persons who was the main source of income then there is a serious economic hardship experienced by the family (Hansen et al., 2007).

So, it is manifest that in economical aspect poverty is the barriers in accessibility of community reintegration.

On the other hand, about six participants said that lack of employment opportunities is a barrier to access in the community reintegration. About that one participant stated that-*"When I employed every day I could go to the road side. But now I have no job, for this reason I can't go anyplace. I don't go anyplace, always stay at home."*

So, it is shows that the reflection of the participants, lack of employment opportunities are a barrier in accessibility in community reintegration.

According to literature, employment and income are two important elements which determine the standard of individual living. Employment can provide a person with the confidence and assurance to live with dignity and independence. People with the disabilities are citizens who also have these desires (Ta & Leng, 2013).

As the study was focused on the barriers in accessibility of community reintegration of spinal cord injury patients and the settings should in participant's home or community setting but it was not possible for the researcher to go to the different area away from Dhaka city, for this reason this study not represents the overall image of Bangladesh in respect of the study. As it was the first research project and had had limited experience with techniques and strategies in terms of the practical aspects of research there might be some mistakes. Though researcher tried her best to collect the proper information from the participants, but there might be lack of depth information that not be collected properly.

CHAPTER-VI COMCLUSION AND RECOMMRNDATION

6.1 Conclusion

This study comprehends about the experience barriers in accessibility of community reintegration of SCI people in terms of physical, mental, mobility and equipment issues, environmental, social and economic aspects. Although SCI causes a residual disability to the people but they can reintegrate themselves if this identified barriers in accessibility can resolves. So, identification of these barriers will help to give emphasize on designing the overcoming strategy of these challenges and will increase the level of community reintegration and also increase the community participation. In accordance of the participants, bowel-bladder issues and pain impedes them a lot in accessibility of community reintegration. Lack of assistance and equipment issues are the most encountering problem of mobility that create barriers in accessibility of community reintegration faced by the persons with SCI. In social life they confronted the prejudiced and social stigma about their disability, they don't get social acceptance and honor. Inaccessibility of public transport and inaccessible environmental structure are most common issues that impedes in accessibility of community reintegration. Poverty and unemployment also acts as major economic barriers in accessibility of community reintegration. So, if these accessibility barriers are minimized or overcoming strategies are developed and implicate, these persons with SCI can reintegrate them in their community life successfully.

6.2 Recommendation

It is recommended to do further research on large group of people in quantitative approach and also find out the overcoming strategies of barriers in accessibility faced by SCI patients in presuming their community living. Besides these awareness program should arrange the community people as well as the service providers who are directly and indirectly related with the SCI patients in their community reintegration.

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Appendix

CONSENT STATEMENT

Assalamualaikum / Namasker,

My name is Farzana Akter. I am conducting this study for 4th professional B.sc in Physiotherapy project study dissertation titled **"BARRIERS IN ACCESSIBILITY OF COMMUNITY REINTEGRATION OF SPINAL CORD INJURY PATIENTS".** By this I would like to know the barriers in accessibility of community reintegration of spinal cord injury patients. Now I want to ask some personal and community reintegration related question. This will take approximately 20-30 minutes.

I would like to inform you that this is a purely academic study and will not be used for any other purpose. The researcher is not directly related with this area (spinal cord injury), so your participation in the research will have no impact on your life. All information provided by you will be treated as confidential and in the event of any report or publication it will be ensured that the source of information remains anonymous.

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 my Supervisor Md. Shofiqul Islam, Assistant Professor, Physiotherapy Department, BHPI, CRP, Savar, Dhaka-1343.

Do you have any questions before I start?

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

Yes ☐ No ☐

Signature of the Participant and date _____

Signature of the Interviewer and date _____

Witness signature and date _____

Questionnaire (English)

Part I- Patient's identification (To be collected from record/ respondent)

Identification number:	Date of interview:
Name of respondent:	
Address- House number/ Village: P.O: P.S: District:	
Contact number:	

Part II- Patient's Socio-demographic information (To be collected from record/ respondent)

Please give a tick (√) mark on the left side of the box of correct answer.

2.1 Age: ……years

2.2 Marital status: ☐ Unmarried

☐ Married

☐ Separated

☐ Divorced

☐ Others

2.3 Family type: ☐ Nuclear Family

☐ Joint Family

2.4 Living area: ☐ Rural

☐ Urban

2.5 Religion: ☐ Islam

☐ Hinduism

☐ Christian

☐ Others (Specify)

2.6 Educational status: ☐ Illiterate

☐ Literate

☐ Primary school certificate

☐ Junior school certificate

☐ Secondary school certificate

☐ Higher secondary certificate

☐ Bachelor

☐ Masters

☐ Others (specify)

2.7 Occupation: After injury-

2.8 Earning members: ☐ Own

☐ Husband

☐ Wife

☐ Son

☐ Daughter

☐ Others (Specify)

Average monthly family income (Taka): ……Taka

Part III- Injury related information's:

3.1 Causes of injury: Traumatic- ☐ Road traffic accident

☐ Fall from height

☐ Fall of over load

☐ Shallow driving

☐ Others (specify)

Non- traumatic- ☐ Potts disease

☐ Special tumor

☐ Transvers Myelitis

☐ Undiagnosed

☐ Others (Specify)

3.2 Skeletal level of injury: ☐ Cervical

☐ Thoracic

☐ Lumbar

☐ Sacral

☐ Coccygeal

3.3 Neurological level of injury: ☐ Complete A

☐ Incomplete B

☐ Incomplete C

☐ Incomplete D

☐ Normal E

3.4 Diagnosis (During admission): ☐ Tetraplegia

☐ Paraplegia

Part IV- Barriers in accessibility of community reintegration through open ended questionnaire:

1. Do you have any physical complications (such as balance problem, weakness, tightness, spasticity or others) that create problem in your mobility?

☐ Yes ☐ No

1.1 If yes, Do you face complication for those problems which create barriers to access in the community?

☐ Yes ☐ No

1.2 If yes, Then please tell me about your experiences in details.

2. Did you use any medical equipment? (Catheters, lumber belt, cushion etc)

2.1 Did you face any problem in your mobility due to use this medical equipment to access in the community reintegration?

☐ Yes ☐ No

2.2 If yes, explain please, what kinds of problem created by this medical equipment in your mobility?

3. Do you use any kind of mobility aids? (Such as-wheelchair, long trolley, walker, crutch)

☐ Yes ☐ No

3.1 what type of mobility aids do you use?

3.2 Did you face any challenges to use this mobility aids that create barriers to access in the community reintegration? (That might be lack of assistance or lack of knowledge)

☐ Yes ☐ No

3.3 If Yes, then tell me what type of problem did you face.

4. Did you face any challenges on the road of your local area?

☐ Yes ☐ No

4.1 If yes, then please tell me, Is it create any barriers to access in community reintegration?

☐ Yes ☐ No

4.2 If yes, then tell me about your experiences.

5. Did you face any challenges to take entry in the houses or buildings of community?

☐ Yes ☐ No

5.1 If yes, then please share with me your experience.

6. Did you face any challenges in transportation due to its infrastructure or others?

☐ Yes ☐ No

6.1 If yes, do you think it is one of the barriers to access in the community reintegration?

☐ Yes ☐ No

6.2 If yes, tell me about your experience in details.

7. After injury, do you think that you are financially poor?

☐ Yes ☐ No

7.1 Does this financially poverty create any barrier to access in the community reintegration?

☐ Yes ☐ No

7.2 If yes, please tell me about your experience in details.

8. Do you have employment opportunities in your community?

☐ Yes ☐ No

8.1 If no, Then do you think that lack of employment is one of the barriers to go outside of the home in the community?

☐ Yes ☐ No

8.2 If yes, tell me about your experience in details.

9. Are you mentally depressed or uncomfortable to go to the community or outside of home?

☐ Yes ☐ No

9.1 If yes, then tell me why?

10. After disability whenever you go to the community, did you get same social acceptance as before injury?

☐ Yes ☐ No

10.1 If no, then tell me, did you think that it is one of the barriers in accessibility in community reintegration?

সম্মতিপত্র

আসসালামুয়ালাইকুম/ নমস্কার,

আমি ফারজানা আক্তার, আমি এই গবেষণা প্রকল্পটি বাংলাদেশ হেলথ প্রফেশনস ইনষ্টিটিউট (বিএইচপিআই)-এ পরিচালনা করছি যা আমার ৪র্থ বর্ষ বিএসসি ইন ফিজিওথেরাপী কোর্সের অধিভুক্ত । আমার গবেষণার শিরোনাম হল- "মেরুরজ্জুতে আঘাত প্রাপ্ত রোগীদের সম্প্রদায়ে পুনঃপ্রতিষ্ঠায় প্রবেশ যোগ্যতার প্রতিবন্ধকতা" এর মাধ্যমে আমি মেরুরজ্জুতে আঘাত প্রাপ্ত রোগীদের সম্প্রদায়ে পুনঃপ্রতিষ্ঠায় প্রবেশ যোগ্যতার প্রতিবন্ধকতা সম্পর্কে জানতে চাই। আমি এখন আপনাকে কিছু ব্যক্তিগত এবং সম্প্রদায়ে পুনঃপ্রতিষ্ঠায় প্রতিবন্ধকতা সম্পর্কে আনুষাঙ্গিক কিছু প্রশ্ন করতে চাচ্ছি। এতে আনুমানিক ২০-৩০ মিনিট সময় নিবো।

আমি আপনাকে অবগত করছি যে, এটা আমার অধ্যয়নের অংশ এবং যা অন্য কোন উদ্দেশ্যে ব্যবহৃত হবে না । এই গবেষনায় আপনার অংশগ্রহণ বর্তমান জীবেন কোন প্রকার প্রভাব ফেলবে না । আপনি যেসব 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 যেকোন 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 অধিকারও আপনার আছে।

এই অধ্যয়নে অংশগ্রহণকারী হিসেবে যদি আপনার কোন প্রশ্ন থাকে তাহলে আপনি আমাকে অথবা/এবং আমার সুপারভাইজার মোঃ সফিকুল ইসলাম, সহকারী অধ্যাপক, ফিজিওথেরাপী বিভাগ, বিএইচপিআই, সিআরপি, সাভার, ঢাকা-তে যোগাযোগ করতে পারেন।

সাক্ষাৎকার শুরু করার আগে কি আপনার কোন প্রশ্ন আছে?

……

সুতরাং আমি আপনার অনুমতিতে এই সাক্ষাৎকার শুরু করতে পারি ?

হ্যাঁ ☐ না ☐

১।অংশগ্রহণকারীর স্বাক্ষর_____ তারিখ _____

২। উপাত্ত সংগ্রহকারীর স্বাক্ষর _____ তারিখ _____

৩। সাক্ষীর স্বাক্ষর _____ তারিখ _____

প্রশ্নাবলী (বাংলা)

পর্ব -১: রোগীর সনাক্তকরণ (রোগীর তালিকা পুস্তক/ রোগীর নিকট থেকে সংগৃহীত)

সনাক্তকারী সংখ্যাঃ	সাক্ষাৎকার গ্রহণের তারিখঃ
অংশগ্রহনকারীর নামঃ	
ঠিকানাঃ গ্রাম- পোষ্ট অফিস- থানা- জেলা-	বাড়ি নং-
মোবাইল নম্বরঃ	

পর্ব- ২: রোগীর সামাজিক জনতাত্ত্বিক তথ্যাবলী (রোগীর তালিকা পুস্তক/ রোগীর নিকট থেকে সংগৃহীত)

অনুগ্রহপূর্বক সঠিক উত্তরের বাম পাশে বক্সে (√) চিহ্ন দিন।

২.১ লিঙ্গ- ☐ পুরুষ ☐ মহিলা

২.২ বয়স (বছর)-

২.৩ বৈবাহিক অবস্থা- ☐ বিবাহিত

☐ অবিবাহিত

☐ তালাক প্রাপ্ত

☐ অন্যান্য

২.৪ পরিবারের ধরন- ☐ একক পরিবার

☐ যৌথ পরিবার

২.৫ এলাকা- ☐ গ্রাম

☐ শহর

২.৫ ধর্ম- ☐ ইসলাম

☐ হিন্দু

☐ খ্রিষ্টান

☐ অন্যান্য

২.৬ শিক্ষাগত যোগ্যতা- ☐ নিরক্ষর

☐ প্রাথমিক

☐ মাধ্যমিক

☐ উচ্চ মাধ্যমিক

☐ স্নাতক

☐ স্নাতকোত্তর

☐ অন্যান্য

২.৭ পেশাঃ আঘাতের পরে-

২.৮ উপার্জনকারী ব্যক্তি- ☐ নিজে

☐ স্বামী

☐ স্ত্রী

☐ ছেলে

☐ মেয়ে

☐ অন্যান্য

২.৯ মাসিক আয়-..... টাকা

পর্ব- ৩: দুর্ঘটনা সংশ্লিষ্ট তথ্যাবলী (রোগীর তালিকা পুস্তক/ রোগীর নিকট থেকে সংগৃহীত)

৩.১ আঘাতের কারণ- ☐ মোটরযানের আঘাত

☐ উপর থেকে পরে

☐ ভারী বস্তু নিয়ে পরে যাওয়া

☐ অগভীর পানিতে ঝাপ দেওয়া

☐ অন্যান্য

৩.২ আঘাত ব্যতীত- ☐ পটস রোগের কারনে

☐ স্পাইনাল টিউমারের কারনে

☐ ট্রান্সভার্স মাইলাইটিস

☐ অনিণয়ীয়

☐ অন্যান্য

৩.৩ আঘাত প্রাপ্ত মেরুদণ্ডীও অংশ- ☐ গ্রীবাদেশীয়

☐ বক্ষদেশীয়

☐ কটদেশীয়

☐ শ্রোণীদেশীয়

☐ পুচ্ছদেশীয়

৩.৪ স্নায়ুতন্ত্রীয় আঘাতের ধরন- (এ এস আই এ স্কেল অনুযায়ী)

☐ সম্পূর্ণ (A)

☐ অসম্পূর্ণ (B)

☐ অসম্পূর্ণ (C)

☐ অসম্পূর্ণ (D)

☐ স্বাভাবিক (E)

৩.৫ নির্ণয়কৃত পক্ষাঘাতের ধরন- ☐ ঊর্ধ্ব বাহু নিম্ন বাহু পক্ষাঘাত (চার হাত পা)

☐ নিম্ন অংশের পক্ষাঘাত

পর্ব -৪: উন্মুক্ত প্রশ্ন পত্রের মাধ্যমে সম্প্রদায়ে পুনঃপ্রতিষ্ঠায় প্রবেশ যোগ্যতার প্রতিবন্ধকতা সমূহ অনুসন্ধানঃ

১। আপনার কি কোন শারীরিক জটিলতা আছে যা আপনার চলন/ গতিশীলতায় সমস্যা সৃষ্টি করে? (যেমন-শারীরিক ব্যথা বা অন্যান্য অস্বস্তিকর অনুভতি, আন্ত্রিক মলাশয় জটিলতা, ভারসাম্য সমস্যা, দুর্বলতা, টান লাগা, মাংসপেশীর অনৈচ্ছিক কাঁপুনি অথবা অন্য কিছু)

☐ হ্যাঁ ☐ না

১.১ যদি থাকে, এর কারনে কি আপনি সমাজে যেতে বাধার সম্মুখীন হচ্ছেন?

☐ হ্যাঁ ☐ না

১.২ যদি হ্যাঁ হয়, তাহলে দয়া করে আমাকে আপনার অভিজ্ঞতার কথা খুলে বলুন।

২। আপনি কোন চিকিৎসা সরঞ্জাম ব্যবহার করেন? (যেমন- ক্যাথেটার বা নল, কুশন ইত্যাদি)

২.১ এই চিকিৎসা সরঞ্জাম কি আপনার চনল/ গতিশীলতায় কোন সমস্যা সৃষ্টি করে যার কারনে আপনি সমাজে যেতে বাধার সম্মুখীন হন?

☐ হ্যাঁ ☐ না

২.২ যদি হ্যাঁ হয়, তাহলে দয়া করে ব্যাখ্যা করুন এই সরঞ্জাম আপনার চলন/ গতিশীলতায় কি ধরনের সমস্যা সৃষ্টি করে?

৩। আপনি কি কোন চলন সহায়ক যন্ত্র ব্যবহার করেন?(যেমন- হুইলচেয়ার, লং ট্রলী, স্ক্র্যাচ ইত্যাদি)

☐ হ্যাঁ ☐ না

৩.১ আপনি কি ধরনের চলন সহায়ক যন্ত্র ব্যবহার করেন?

৩.২ এই চলন যন্ত্র নিয়ন্ত্রণ করতে বা চালাতে আপনার কি কোন সমস্যা হয় যার কারনে আপনি সমাজে যেতে বাধার সম্মুখীন হচ্ছেন? (হতে পারে সেটা দৈনিক সহকারীর অভাব, জ্ঞানের অভাব ইত্যাদি)

☐ হ্যাঁ ☐ না

৩.৩ যদি হ্যাঁ হয়, তাহলে দয়া করে আমাকে বলুন আপনার কি ধরনের সমস্যা হয়?

৪। আপনার স্থানীয় রাস্তার কাঠামোগত কারনে চলাচল করতে আপনার কি কোন সমস্যা হয়?

☐ হ্যাঁ ☐ না

৪.১ যদি হয়, তাহলে আমাকে বলুন এতে কি আপনি সমাজে যেতে বাধার সম্মুখীন হচ্ছেন? এবং দয়া করে আমাকে আপনার অভিজ্ঞতার কথা খুলে বলুন।

৫। সমাজের বাড়ি এবং দালানগুলুতে প্রবেশ করতে আপনাকে কি কোন সমস্যার সম্মুখীন হতে হয়?

☐ হ্যাঁ ☐ না

৫.১ যদি হয়, আপনি কি ধরনের সমস্যার সম্মুখীন হন সে কথা আমাকে খুলে বলুন।

৬। আপনি কি যানবাহনে কোন সমস্যার সম্মুখীন হন এটার গঠনগত বা অন্য কোন কারনে?

☐ হ্যাঁ ☐ না

৬.১ যদি হ্যাঁ হয়, তাহলে আপনি কি মনে করেন সমাজে যেতে এটা একটা অন্যতম বাধা?

☐ হ্যাঁ ☐ না

৬.২ যদি হ্যাঁ হয়, তাহলে দয়া করে আমাকে আপনার অভিজ্ঞতার কথা খুলে বলুন।

৭। অক্ষমতার পর আপনি কি নিজেকে অর্থনৈতিক ভাবে অস্বচ্ছল মনে করেন?

☐ হ্যাঁ ☐ না

৭.১ যদি হ্যাঁ হয়, তাহলে আপনি কি মনে করেন, অর্থনৈতিক অস্বচ্ছলতা সমাজে পুনঃপ্রবেশে বাধা স্বরূপ?

☐ হ্যাঁ ☐ না

৭.২ যদি হ্যাঁ হয়, তাহলে আমাকে আপনার অভিজ্ঞতার কথা খুলে বলুন।

৮। আপনার সমাজে আপনার জন্য কি কোন কর্মসংস্থানের সুযোগ আছে?

☐ হ্যাঁ ☐ না

৮.১ যদি না হয়, তাহলে আপনি কি মনে করেন যে, কর্মসংস্থানের অভাব সমাজে বা বাড়ির বাইরে যাওয়ার একটা বাধাস্বরূপ?

☐ হ্যাঁ ☐ না

৮.২ যদি হ্যাঁ হয়, তাহলে আমাকে আপনার অভিজ্ঞতার কথা খুলে বলুন।

৯। আপনি সমাজে বা বাড়ির বাইরে যেতে মানসিকভাবে বিষণ্ন বা অস্বস্তি বোধ করেন?

☐ হ্যাঁ ☐ না

৯.১ যদি হ্যাঁ হয়, তাহলে দয়া করে বলুন, কেন?

১০। অক্ষমতার পরে যখনই আপনি সমাজে যান, তখন কি আপনি আগের মতোই সামাজিক স্বীকৃতি পেয়ে থাকেন?

☐ হ্যাঁ ☐ না

১০.১ যদি না হয়, তাহলে আমাকে বলুন, আপনি কি মনে করেন যে এটি সমাজে যেতে বাধাগুলোর মধ্যে একটি?

Permission Letter

May 11, 2017

Head of the Department

Department of Physiotherapy

Bangladesh Health Professions Institute (BHPI)

CRP, Chapain, Savar, Dhaka-1343.

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

Dear Sir,

With due respect and humble submission to state that I am Farzana Akter a 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 **"BARRIERS IN ACCESSIBILITY OF COMMUNITY REINTEGRATION OF SPINAL CORD INJURY PATIENTS".** To conduct this research, I want to collect data from the community in patients with spinal cord injury who completed their rehabilitation treatment form CRP. So, I need permission for data collection. 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 give me the permission to make this research project successful.

Sincerely

Farzana Akter

Farzana Akter

Student of 4th Professional B.Sc. in Physiotherapy

Class Roll-09, Session: 2012-2013

Seen
Shahin
11.05.2017

Allowed for data collection
11.05.17
Prof. Obaidul Hoque
Associate Professor & Head of the Department
Department of Physiotherapy
Bangladesh Health Professions Institute (BHPI)
CRP, Chapain, Savar, Dhaka-1343

BANGLADESH HEALTH PROFESSIONS INSTITUTE

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

Ref. CRP-BHPI/IRB/07/17/135

Date: 02/10/17

To
Farzana Akter
4th Year B.sc in Physiotherapy
Session: 2012-2013, Student ID 112120009
BHPI, CRP, Savar, Dhaka-1343, Bangladesh.

Subject: "Barriers in accessibility of community reintegration of spinal cord injury patients".

Dear Farzana Akter,

The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application on 10/08/2016 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 semi structured questionnaire that takes 20 to 30 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,

Millat Hossain

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