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**PERCEPTION ABOUT LIFE CHALLENGES IN PATIENTS WITH
SPINAL CORD INJURY**

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Medicine, University of Dhaka, for the acceptance of this dissertation entitled

**PERCEPTION ABOUT LIFE CHALLENGES IN PATIENTS WITH
SPINAL CORD INJURY.**

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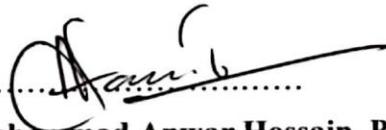
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Declaration

I declare that the work presented here is my own. All sources used here 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 Department of Physiotherapy of Bangladesh Health Professions Institute (BHPI).

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Acronyms

ADL: Activities of Daily Living

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

MDT: Multi-Disciplinary Team

NGO: Non-Government Organization

PWD: Person with Disability

QCA: Qualitative Content Analysis

SCI: Spinal Cord Injury

UK: United Kingdom

USA: United States of America

WHO: World Health Organization

Abstract

Background: Spinal cord injury (SCI) is one of the most serious types of physical trauma and has become a major life-threatening condition in the recent decade. It is essential that the life perception and experiences of patients with SCI be studied and evaluated in different cultural contexts so that their needs and the challenges they face can be properly determined. **Aim:** The present study aims to explore the how patients with SCI perceive facing life's challenges. **Objectives:** To explore the opinion of the person with SCI about their facing psychological, social, physical and environmental challenges and to know how the spinal cord injury patients overcome their life challenges. **Methods:** The present study is qualitative research with a descriptive phenomenological design. Participants were identified through purposive sampling of patients with spinal cord injury at Community Based Rehabilitation (CBR) Department at CRP. The researchers collected data using semi-structured, in-depth interviews with 15 SCI patients conducted between May and June, 2023. Data was analyzed according to Qualitative Content Analysis (QCA). **Results:** Analysis of the data led to the emergence of five themes. The five main themes were impairment in physical function (mobility impairment, pain, pressure sore, bowel and bladder incontinence, poor self-care, failure in marital relationship), emotional shock (crisis making and mental rumination, persistent depressive disorder, pitying behaviors, fear of the future, experience of stigma), lack of social acceptance (loss of job and educational status, financial problem, unable to attend social gathering, criticism, dependency crisis, discrimination), environmental obstacle (lack of barrier free environment, transportation problem) and strategies to overcome (regaining self-confidence, employment, self-care, career training/ education, need regular follow up, need specialized training, need to improve rehabilitation management). **Conclusion:** Patients with spinal cord injuries faced various issues in their care and social lives. Accordingly, healthcare administrators and caregivers are recommended to provide more comprehensive health support to SCI patients to meet their needs more effectively.

Keywords: Patient, Spinal cord injuries, Life's challenges, Qualitative study.

1.1 Background

Spinal cord injury (SCI) is one of the most serious types of physical injury and is among the major life-threatening conditions of the recent decade. The World Health Organization (WHO) reports that 40 million people worldwide suffer from SCIs and nearly three million new cases emerge every year (Jazayeri et al. 2015). Spinal cord injuries often occur in young individuals, over 23% of SCIs occur in individuals aged between 19 and 30 years, and young active men are at higher risk (Kudo et al. 2019). Because men are very active at a young age and have more work and sports conflicts, they also tend to drive in a high-risk manner and at high speeds, which in turn can result in traumatic SCIs. In the U.S., there are currently over 300,000 individuals with SCIs, and 8,000 to 10,000 new cases are added to that number every year (Farrehi et al. 2020). Because of the high rate of car accidents in and between cities and the war which lasted eight years, Bangladesh also has many SCI cases; there are currently 100,000 known cases, and 3,000 new cases are recorded every year (Mohammadi et al. 2021).

Spinal cord injury is a overwhelming neurological injury, ensuing in varying degrees of paralysis, sensory loss and sphincter disturbance which are permanent and irreversible in some cases (Sezer, Akkus and Ugurlu 2015). Globally many people are experiencing spinal cord injury almost every year. These injuries can be devastating causing physical and emotional distress as well as loss of wages. Long term physical problems may reduce the person's involvement in work, school, social and community activities. Persons with SCI experience poor health related quality life than general people (Duggan and Dijkers 2001).

After SCI, one may experience different feelings such as anger, anxiety, nostalgia, and even despair. Anger and denial are the first psychological experiences of the injured person and his or her family. Amaan et al. (2020) showed that depression and anxiety were reported in 22% and 27% of patients with SCI, respectively. In a study on identification of post-SCI psychosocial problems, Scholten et al. (2020) showed that 14% of the study population had psychoneurotic disorders such as attention and concentration

deficits, memory, learning, and problem-solving disorders. In addition, 22% of them suffered from Post-Traumatic Stress Disorder (PTSD). There are promising advances in the treatment of psychiatric disorders among people with SCI. However, the social sphere has received less attention. The social needs of individuals are often as important as their physical needs (Buckelew et al. 1991). In a study on the psychosocial consequences of SCI, presented items, such as the lack of job opportunities, high living costs, transportation, and changes in the place of residence, education, marriage and social relations as important problems following SCI (Stephens, Neil and Smith 2012).

Over recent years, researchers have used qualitative approaches to identify the challenges faced by SCI patients in life, especially psycho-emotional issues, from their patients and caregivers' perspective (Mahooti et al. 2020).

The experiences of patients with spinal cord injuries are completely dependent on the socio-cultural context and environmental support (family, community, etc.). It is, therefore, essential that the life perception and experiences of patients with spinal cord injuries be studied in different cultural contexts so that their needs and problems are accurately identified and their living conditions improved (Mohammodi et al. 2022).

According to a study, in Bangladesh, the costs of treatment and rehabilitation programs are too high for patients with SCIs, many of whom face poverty as a result of their injury, and the support given by authorities and charities is not adequate. In the present study, the participants believed that effective social and financial support and easy access to facilities provided by social organizations affiliated with the government and private foundations can reduce their anxiety and, consequently, improve their psychological security (Islam, Hafez and Akter 2011). Patients with SCIs can have psychological security only when they are given comprehensive support combined with respect for their human dignity. Similarly, other studies have reported that social organizations and foundations which support hospitalized patients and other vulnerable groups in the society play a major role in increasing the psychological security of these populations (Le Fort et al. 2021).

1.2 Rationale

Spinal cord injury (SCI) is a devastating medical condition that can profoundly impact a person's life physically, emotionally, and socially. It is a complex and life-changing event that poses numerous challenges for individuals who experience it. Understanding the perception of life challenges faced by patients with spinal cord injury is crucial for providing comprehensive care and support.

This justification explores the multifaceted nature of these challenges and their implications on the lives of those affected. The most evident and immediate impact of spinal cord injury is the loss of motor and sensory functions below the level of injury. Patients often face paralysis, loss of sensation, and impaired bowel and bladder control. These physical challenges can lead to reduced independence, mobility limitations, and an increased risk of secondary health issues such as pressure sores, urinary tract infections, and respiratory problems. The perception of these challenges varies depending on the level and severity of the injury, but they universally present obstacles to daily activities and quality of life. The emotional toll of spinal cord injury can be overwhelming for patients. The sudden loss of physical function, coupled with uncertainty about the future, can lead to feelings of grief, depression, anxiety, and a sense of loss of identity. Coping with a permanent disability and adjusting to a new way of life may involve a process of acceptance and emotional resilience.

The perception of these emotional and psychological challenges can significantly influence a patient's motivation to pursue rehabilitation and adapt to their new circumstances. Patients with spinal cord injury often encounter social challenges, including societal stigma and barriers to participation in daily life. Inaccessible environments, limited opportunities for employment and education, and reduced social interactions can lead to feelings of isolation and exclusion. The perception of being dependent on others for assistance can also affect self-esteem and confidence. The involvement of family, friends, and support networks becomes vital in facilitating social reintegration and combating these challenges. The financial implications of spinal cord injury can be substantial. Costs associated with medical treatment, assistive devices, home modifications, and ongoing care can place significant financial strain on patients

and their families. The perception of this financial burden can lead to stress and anxiety, exacerbating the emotional impact of the injury. Access to adequate insurance coverage, government assistance, and financial planning support are essential to alleviate these burdens and help patients manage their finances effectively.

The perception of rehabilitation and adaptive strategies can play a pivotal role in shaping a patient's recovery and long-term outcomes. Engaging in rehabilitation with a positive outlook and a sense of determination can lead to better outcomes in terms of functional recovery and overall well-being. Patients who perceive rehabilitation as an opportunity for growth and adaptation may be more motivated to engage actively in therapies and exercises, promoting physical independence and a higher quality of life. Perceptions about spinal cord injury among patients, their families, and society as a whole can significantly influence the level of support and understanding available to those living with SCI. Increasing public awareness about spinal cord injury, its challenges, and the achievements of individuals with SCI can help break down barriers and combat stigma. Education plays a crucial role in promoting empathy, inclusivity, and the integration of individuals with SCI into various aspects of society.

There is no research about perception on life challenges. Through this study, the feelings and values of persons with SCI according to the Bangladeshi cultural perspective were explored. This study may be helpful to identify the areas that need to improve. Understanding the perception of life challenges in patients with spinal cord injury is vital in providing comprehensive care and support for this vulnerable population. The physical, emotional, social, and financial challenges they face are interconnected and complex, and each patient's experience is unique. Empathy, education, and a multidisciplinary approach to care are essential in helping individuals with SCI navigate their journey to recovery and enhance their overall quality of life. By acknowledging and addressing their challenges, we can work together to create a more inclusive and supportive society for everyone living with spinal cord injury.

1.3 Research Question

What is the perception about life challenges in patients with spinal cord injury?

1.4 Objectives

1.4.1 General objective

- i. To identify the perception about life challenges among the spinal cord injury patients.

1.4.2 Specific objectives

- i. To find out the socio-demographic profile among the spinal cord injury patients
- ii. To know the opinion of the person with SCI about their facing psychological challenges
- iii. To identify the physical challenges, they faced in their daily life after having a spinal cord injury
- iv. To find out the social and the environmental challenges they faced after moving back to the community
- v. To explore how the spinal cord injury patients overcome their life challenges

1.5 Operational definition

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

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.

Complete SCI: A complete spinal cord injury occurs when a person loses all sensory and motor function below the level of the spinal cord injury.

Incomplete SCI: When a person with a spinal cord injury retains some function below the level of the injury, they have an incomplete spinal cord injury.

Life challenge: Life challenges are problems and issues that interfere with your quality of life or ability to achieve life goals. Challenges in life are hindrances or problems that make life difficult. These challenges may make it hard for you to reach your goals in life or make you experience harsh or hard situations. It was an obstacles faced by the participations in their own community as well as their everyday tasks.

Spinal cord injury (SCI) is a kind of high disabling injury; it not only can lead to damage or loss of sensation and motor function, but also may lead to multiple organ dysfunctions (Bouyer et al. 2015). Spinal cord injury is destructive and unpurchaseable situation which occur unexpectedly in human and social life. Physical disabilities can either be acquired or are congenital, and the impact they have upon function and independence can vary considerably from individual-to-individual (Stephens, Neil and Smith 2012).

Traumatic spinal injury commonly leads to significant impairment in the quality of life. More than 10% of trauma patients sustain spinal injury and they have a higher mortality rate compared to other trauma. The incidence of spinal fractures is reported to vary between 16 and 64/100,000 depending on the study area and population concerned (Hasler et al. 2019). Internationally, most of the injuries are caused by road traffic accidents (RTAs), together with low and high falls. Road traffic and high fall accidents are typical etiology in young patients, whereas the role of low falls and associated osteoporosis increases trauma in older population. Spinal fractures are often associated with other injuries as 30% to 55% of patients are reported to have at least one associated injury (Doyle et al. 2020).

The most common affected age group in this study was 20–39 years followed by 50–59 years. It can be seen that 56.14% patients come under the 20–39 years age group, signifying higher incidence in young, active, and productive population of the society. Injury in 50– 59 years age group was mostly due to fall. The male–female ratio ranged from 3.0:1 to 4.3:1 among developed countries. With regard to developing countries, China reported the lowest male-female ratio 1.73:1, whereas Pakistan and Bangladesh had the highest ratio 7.55:1 and 7.5:1, respectively (Saadat et al. 2010). According to WHO November 2013, every year around the world, between 2, 50,000 and 50, 00,000 people suffer a spinal cord injury. The majority of spinal cord injury of SCI are due to preventable causes such as, road traffic crashes, falls or violence. People with SCI are two to five times more likely to die prematurely than people without a spinal cord injury,

with worse survival rates in low- and middle-income countries. Males are most at risk in young adulthood (20-29 years) and older age (70+). Females are most at risk in adolescence (15-19) and older age (60+). Studies report male-to-female ratios of at least 2:1 among adults, sometimes much higher (WHO 2013).

Most of the developed countries had higher percentages of tetraplegia. But most of the developing countries had the opposite condition where percentages of paraplegia were higher than those for tetraplegia (Kang et al. 2018). In Europe with an incidence variation from 10.4 per million per year to 29.7 per million per year. Five studies were based on information from Northern America (Alaska, Mississippi, Kentucky, Indiana, Ontario, and Alberta), showing an incidence between 27.1 per million per year and 83 per million per year (Moghimian et al. 1995). A report from the NSCISC estimated the annual incidence of SCI, not including those who die at the scene of the accident, to be approximately 40 cases per million population or approximately 11000 new cases each year.

In Bangladesh the number of female spinal cord injury patients is on rise according to different published article. In our country traumatic spinal cord injury lesions, paraplegic 60% and tetraplegic 60%. Among the traumatic patients (72%), there were three main causes of injury. Seventy-six (43%) resulted from a fall from a height (such as a tree). Thirty-seven injuries (20%) were associated with falling while carrying a heavy load on the head which is a common practice in Bangladesh. Thirty-three (18%) were a result of a road traffic accident. Eleven patients (6%) formed a very diverse group which included assault, stab injury, sports injury and bull attack (Hogue et al. 1995). Among the 68 patients (28%) in the non-traumatic spinal cord lesion group the main cause was Pott's disease (19 patients 28%), followed by 14 patients with a tumour (21%), seven cases of transverse myelitis (10%), six from a prolapsed intra-vertebral disc (9%), four with Guillain Barre syndrome (6%) and one associated with cervical spondylosis (1%) (Parareya et al. 1996).

SCI causes overwhelming effects on physical, psychological, social, emotional and cultural impact of individual lives (Dorsett 2001).

Persons with SCI may be dependent on others for support with many tasks of ADLs such as toileting, bathing, dressing, grooming, eating, community access, and leisure activities. These changes repeatedly have considerable effects on the spinal cord injured person's social relationships. The changes' effects are lifelong and influence every aspect of a person's life (Dorsett 2001). As a result, the superiority of life of persons with SCI becomes poor. They might feel disconsolate and desperate about the future and not want to encumber others with their feelings. (Sadat et al. 2010).

Depression has been the most commonly studied psychological variable following SCI. It was a common hypothesis that persons with SCI would experience depression than in the nondisabled population (Krause, Kemp and Coker 2000). The predictable occurrence of depression after SCI is variable from study to study. In one study, it was reported that during rehabilitation 60% of persons with SCI 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 (de Carvalho et al. 1998).

Over recent years, researchers have used qualitative approaches to identify the challenges faced by SCI patients in life, especially psycho-emotional issues, from their caregivers' perspective (Hall et al. 2021). Zanini et al. (2021) reports that depression and loneliness in SCI patients are outweighed by their feelings of inefficiency and poor self-confidence following the loss of their physical autonomy and financial independence and disorders in their emotional interactions and sexual relationships. Many SCI patients were active young adults with numerous social interactions whose lives changed dramatically with one incident in which they lost their ability to move their body parts and control their bodily functions voluntarily.

Hall et al. (2021) reports that SCI patients experience many psychological, financial, environmental, and interactive challenges and require comprehensive physical and social support. Duggan et al. also stated that the duration of spinal cord injury, financial status, and the level of support strongly affect the patient's life experiences and quality of life.

One study state that SCI patients reported having suicidal thoughts within the first two years of experiencing their injury. However, no participants think that they would have been able to make an informed decision about medical assistance-in-dying during this time. Bombardier et al. also states that patients with spinal cord injuries experience more anxiety and psychological tension and subsequently suicidal thoughts (Tchajkova, Ethans and Smith 2021).

McCullumsmith et al. (2015) said that SCI patients have reported many psychological attacks that are influenced by the level of environmental reward and control, spiritual well-being, and severity of SCI. Based on these results, the mentioned studies suggest that nurses, healthcare providers, and authorities employ effective educational interventions to increase psychological empowerment in patients with SCIs and to address their psychological issues (Bombardier et al. 2021).

Teismann et al. (2014) posits that rumination, as a perseverative, past-oriented, and passive way of negative thinking, puts individuals at risk of experiencing intensified and prolonged symptoms of emotional distress.

The present study is conducted to investigate patients' perception of living with spinal cord injuries in the south of Iran. Analysis of the lived experiences of SCI patients identified three themes: emotional shock, loss of dignity, and lack of effective support (Mohammadi et al. 2022).

Amann et al. (2020) also reported that empowering patients with SCIs in self-care and multidisciplinary and comprehensive rehabilitation care can make a significant contribution to the patients' self-efficacy, which will help them prevent further physical injuries and improve their psychological health and security. It can also create a sense of autonomy and self-sufficiency in the patients and encourage them to play a more active part in their personal and social activities.

According to a study in Bangladesh, the costs of treatment and rehabilitation programs are too high for patients with SCIs, many of whom face poverty as a result of their injury, and the support given by authorities and charities is not adequate. In the present study, the participants believed that effective social and financial support and easy access to

facilities provided by social organizations affiliated with the government and private foundations can reduce their anxiety and, consequently, improve their psychological security (Islam, Hafez and Akter 2011).

According to the study Le Fort et al. (2021) states that patients with SCIs can have psychological security only when they are given comprehensive support combined with respect for their human dignity. Similarly, other studies have reported that social organizations and foundations which support hospitalized patients and other vulnerable groups in the society play a major role in increasing the psychological security of these populations.

Inadequate support from charities, government departments, and healthcare organizations, the high costs of treatment, disregard for their rights as citizens, and the lack of special facilities in city and office buildings are the most important issues extracted from the participants' experiences with regard to effective support. The participants mentioned that they faced problems in receiving even the most basic services, including transportation, public amenities (e.g. parks and movie theaters), and education. The study of Atobatele et al. (2018) finds that patients with SCIs find it difficult to use public amenities such as transportation and other social services, e.g. those provided by public offices. In explanation of this issue, it can be said that in the less-or moderately-developed countries, the lack of facilities, economic problems, and a lack of infrastructure exacerbate these problems more than in developed countries.

One research identifies the challenges across the hospital to home to community continuum and highlights cross-cutting recommendations for needs by persons with SCI. Participants identified a number of challenges to community integration. To address these challenges, participants recommended education about their injury, better patient-provider relationships, an improved rehabilitation system, and social support (Babamohamadi, Negarandeh and Dehghan-Nayeri 2011).

Lower household income is predominantly associated with poor structural social relationships, whereas financial strain was robustly linked to poor functional social relationships. Financial strain is associated with general mental health problems and

depressive symptomatology, even after controlling for social relationships. Education and household income are not linked to mental health. Poor structural and functional social relationships are related to general mental health problems and depressive symptomatology (Zürcher et al. 2019). The results demonstrates that Spiritual Well-being, Loneliness and Hopelessness significantly correlated with Psychological Distress among the patients with SCI (Abbasi , Ghadampour and Amirian 2018).

According to Babamohamadi, Negarandeh and Dehghan-Nayeri (2011), this study provides four main themes and twelve subcategories reflecting the participants' experiences of the psychosocial challenges of social reintegration. One of the challenges that participants in this study faced in the early months after SCI is early crises. Other studies have shown that individuals with SCI experience different crises, such as anxiety, depression, attempted suicide, the conflict between dependence and independence, and the denial of disability (Kamijo and Yukawa 2018). Mir et al. (2019) indicates that 49% of people with SCI suffer from mild to severe depression. Tong, Sainsbury and Craig, (2007) also finds in a study that one of the factors influencing the psychosocial reintegration of individuals with SCI are their reliance on caregivers. Thus, the lacks of attention to the emotional and psychological aspects and the shock resulting from the fact that an active and healthy person is currently encountering disability have generated various psychosocial problems for individuals with SCI that can have devastating consequences.

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 views, opinion, feeling and beliefs within their own natural setting.

A semi-structured questionnaire is used and face to face interview is conducted and the Interview were recorded for getting a clear idea about the socio-demographic characteristics, physical and social challenges, psychological challenges, others challenges and their suggestion's opinion for improvement their activities. Perception, believe, fear attitude cannot be described in quantitative method. So qualitative research method is used to find out perception of spinal cord injured sports participants where the participants were given freedom to express their view and feelings. That's why researcher selected the qualitative research approach, which help to gain understanding and exploring the feelings, opinion, and challenges to access their perception about life's impediment after SCI .

3.2 Study area

The research took place in the community setting after completion of their full rehabilitation from Centre for the Rehabilitation of the Paralysed (CRP).

3.3 Study population

Spinal cord injury patients who had 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 12 months history of spinal cord injury. 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 contact with them. Participants who gave the permission to go to their home, investigator only select that participation.

3.4.1 Inclusion criteria:

- i. Subject who was willing to participate
- ii. People who had at least 12 months' history of a spinal cord injury (Mohammadi et al. 2022)
- iii. The age range of participants were be from 19 to 63 years (Babamohamadi, Negarandeh and Dehghan-Nayeri 2011).
 - i. Both tetraplegic and paraplegic SCI patient (Babamohamadi, Negarandeh and Dehghan-Nayeri 2011).
 - ii. Both male and female was selected
 - iii. Easy to communicate with subject

3.4.2 Exclusion criteria:

- i. Subject who was not willing to participate
- ii. Age < 19 years and >63 years
- iii. SCI patients with severe head injury
- iv. SCI with speech problem & medically unstable patient
- v. Patient with cognitive problem
- vi. Undiagnosed patient

3.5 Sample size

Fifteen 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. 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 different community.

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 were 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 open-ended 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 25th May 2023 to 10th June 2023. Each participant provided time to collected data. Each interview took approximately 20-30 minutes to complete.

3.11 Data analysis

At first in data analysis, the researcher listened to the interviews several times from the phone recorder and then the interviewed data was transcribed 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 fifteen people for translation from Bangla to English. The study was conducted by Qualitative Content Analysis (QCA) approach of qualitative method. Priest et al. quoted Bryman's work in their article (Priest et al. 2002) that 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. 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.

3.12 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.

3.13 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 signing the consent form. 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 form 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 harm 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 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.

A qualitative study results were analyzed by content analysis. By using this analysis process, the researcher organized collected data according to categories, coding and themes. The aim of the study is to identify the perception about life challenges among the spinal cord injury patients. Participants respond according to their perception. In this section coding was used to understand the participants statement and to generate the themes. In this research the results of the study are discussed in relation to the research questions and objectives of the study. The descriptions of the themes are according to the answer of the participants. Discussion according to the themes are also provided below-

4.1 Socio-demographic information of the participants

4.1.1 Age of the participant

In the study the number of subjects was 15 with spinal cord injuries. Among the participants majority were in age group 19-40 years. Participants in between 19-30 years were 6, participants in between 31-40 years were 5, participants in between 41-50 years were 3 and also 1 participants in between 51-63 years.

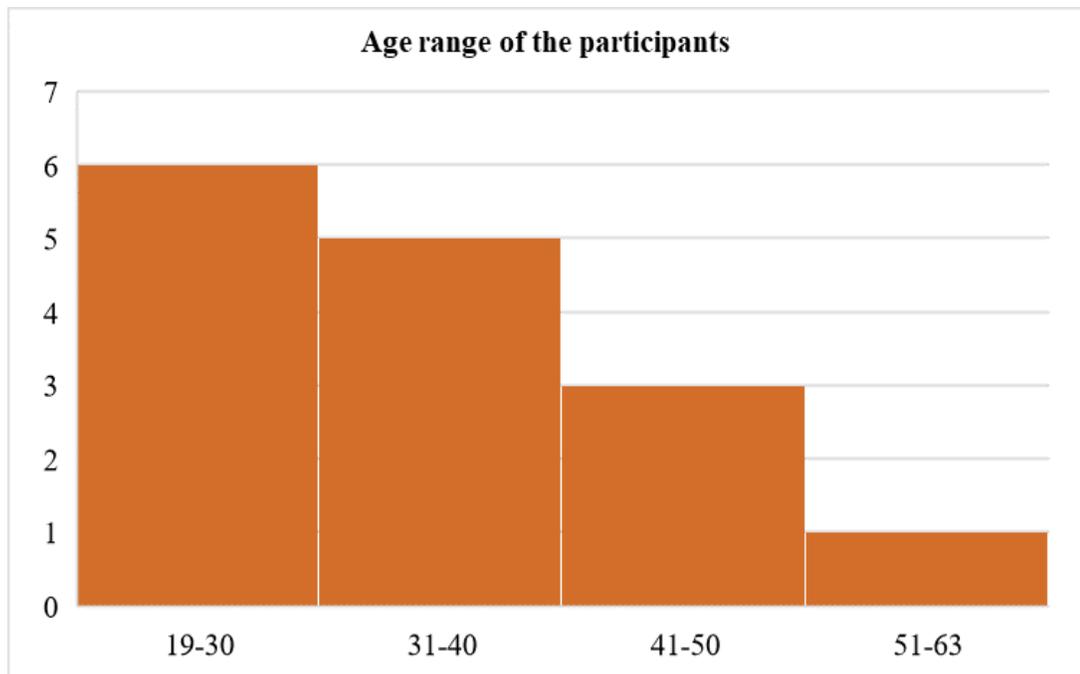


Figure -4.1.1: Age of the participants

4.1.2 Sex of the participants

In the study among the 15 participants, 67% (n=10) patients were male and 33% (n=5) were female.

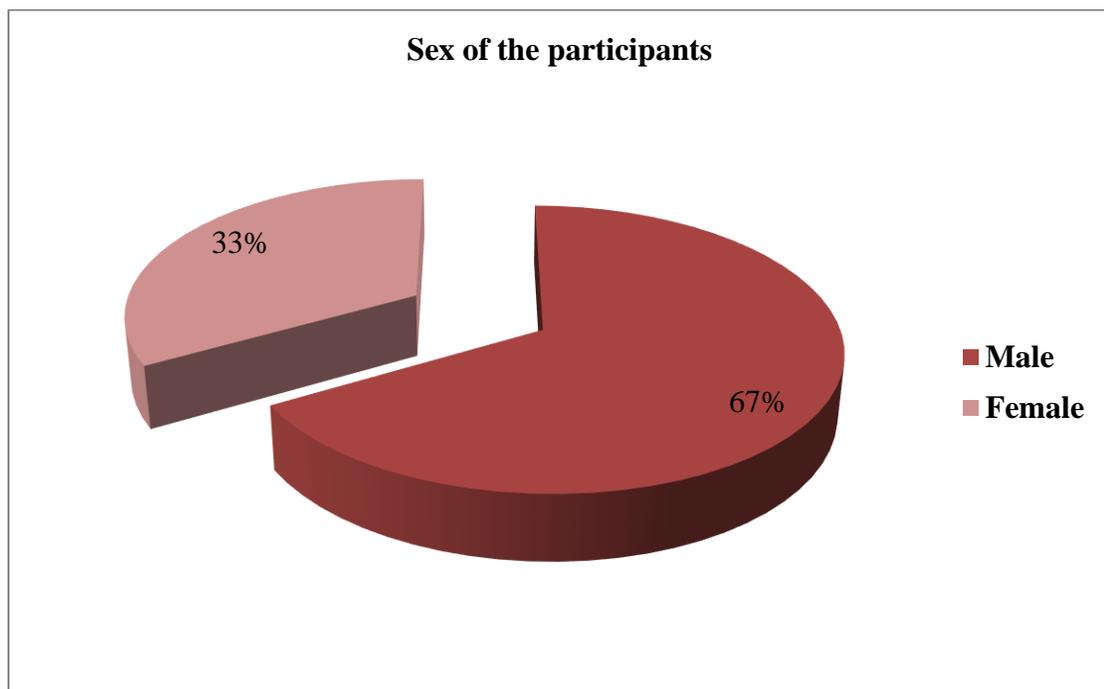


Figure- 4.1.2: Sex of the participants

4.1.3 Marital status of the participants

Among the 15 participants 60% (n=9) were married, 26.7% (n=4) participants were unmarried and 13.3% (n=2) participants were divorced.

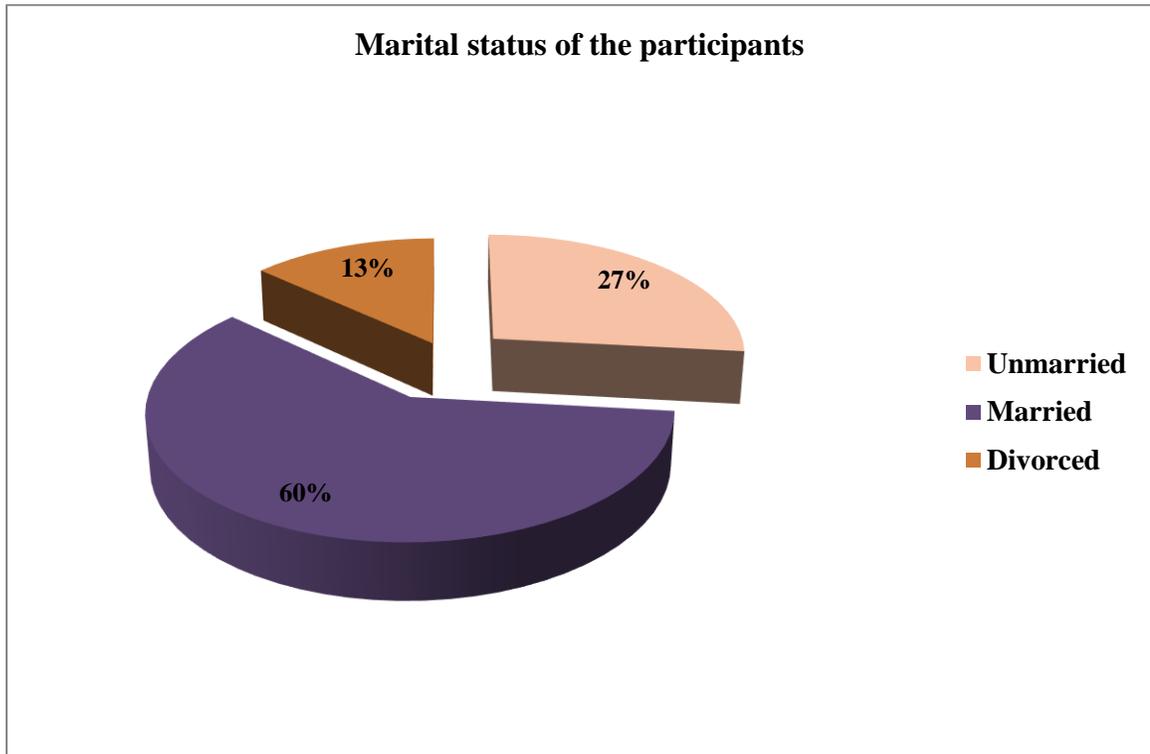


Figure- 4.1.3: Marital status of the participants

4.1.4. Family type

Among the 15 participants it was found that 33.3% (n=5) were lived in nuclear family and 66.7% (n=10) were lived in joint family.

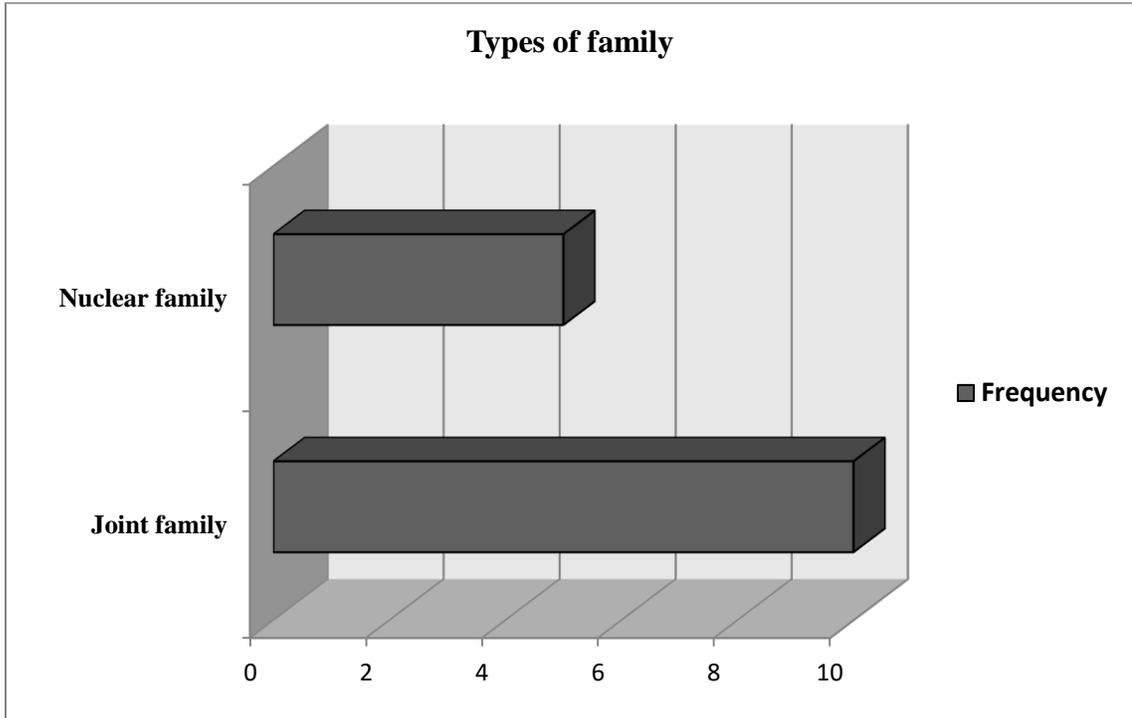


Figure- 4.1.4: Family type of the participants

4.1.5 Living area and Educational level of the participants

Participants	Living area	Educational level
P1	Urban	HSC
P2	Rural	HSC
P3	Rural	SSC
P4	Rural	JSC
P5	Rural	PSC
P6	Rural	JSC
P7	Rural	Illiterate
P8	Urban	JSC
P9	Rural	BSc
P10	Rural	PSC
P11	Rural	JSC
P12	Urban	SSC
P13	Rural	PSC
P14	Rural	JSC
P15	Rural	PSC

Table 1: Living area and Educational level of the participants

Among the 15 participants Majority participants lived in rural area that were about 80% (n=12) and 20 % (n=3) were live in urban area.

The educational level among 15 participates, 1 was illiterate, 4 were PSC completed, 5 were JSC completed, 2 were SSC completed, 2 were HSC completed and 1 were studying BSC.

4.1.6 Occupation (Before injury) of the participants

Among the 15 participants majority were students about 5 participants, 3 participants were day labor, 3 were businessman, 2 was housewife, 1 were farmer and 1 were garments worker.

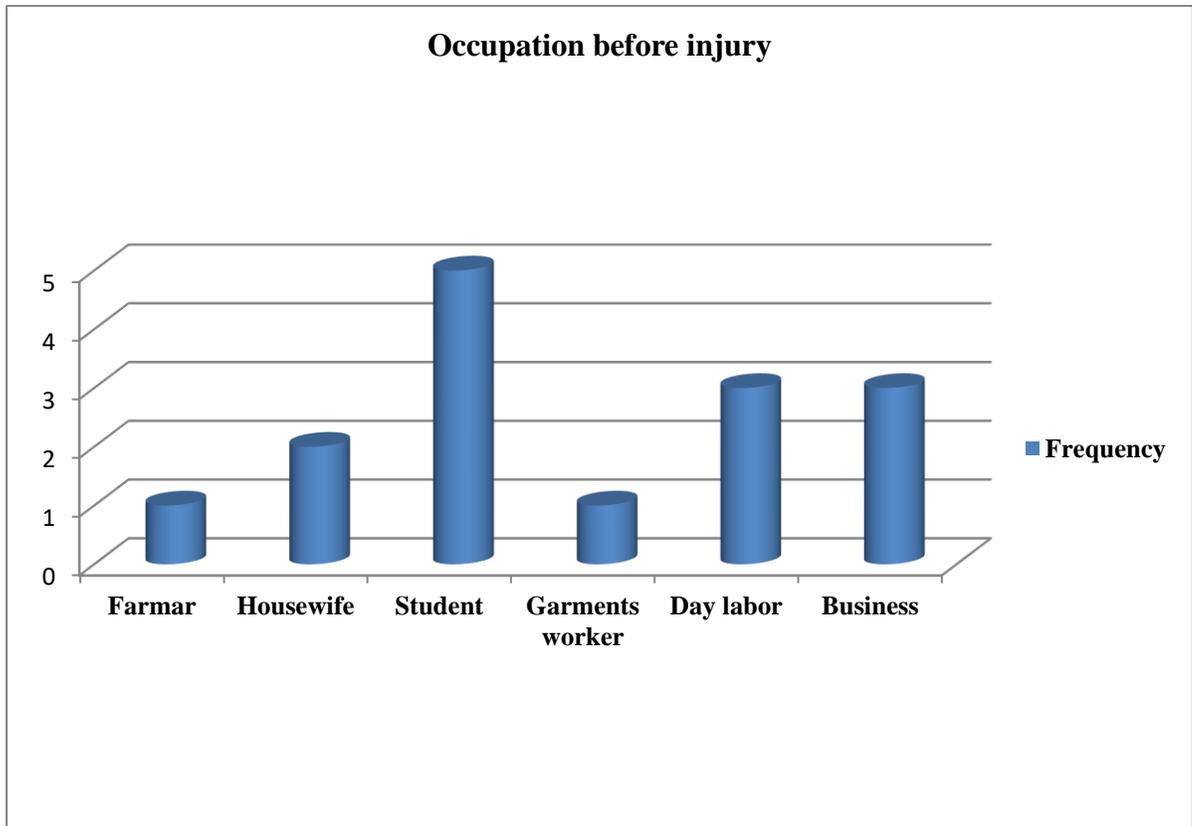


Figure-4.1.5: Occupation of the participants

4.1.7 Earning member of the participant's family

Among 15 participants, 1 participant were earned by them own, 3 participants were earned by their husband, 6 were earned by their father and 5 were earned by others members of the family.

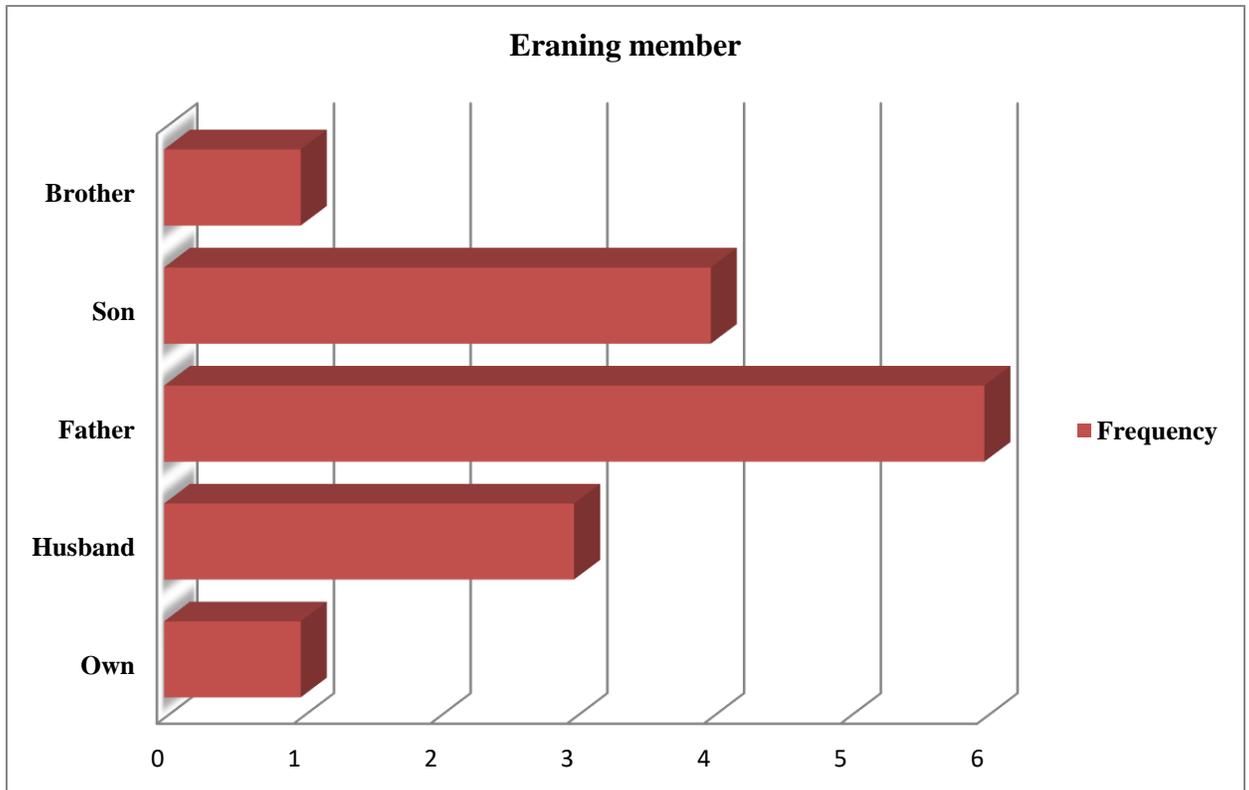


Figure-4.1.6: Earning member

4.2 Participant's injury related information

4.2.1 Causes of injury

The major causes of the spinal cord injury in the study were traumatic. About 13 participants had traumatic injury, 2 participants had non-traumatic history including spinal tumor and Pott's disease.

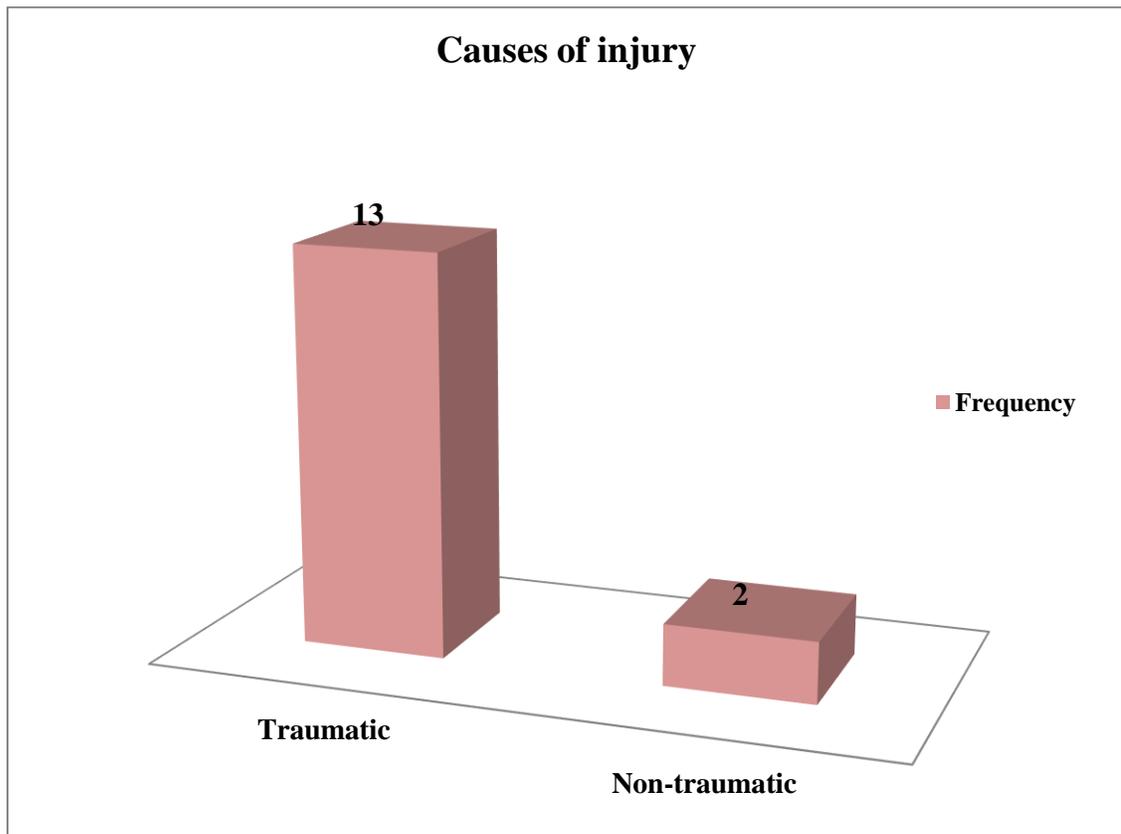


Figure-4.2.1: Causes of injury

4.2.2 Skeletal level of injury

Among 15 participants, skeletal level of the injury was largely involved cervical about 20% (n=3) participants, thoracic were 47% (n= 7) participants and 33% (n=5) participants were sacral injury.

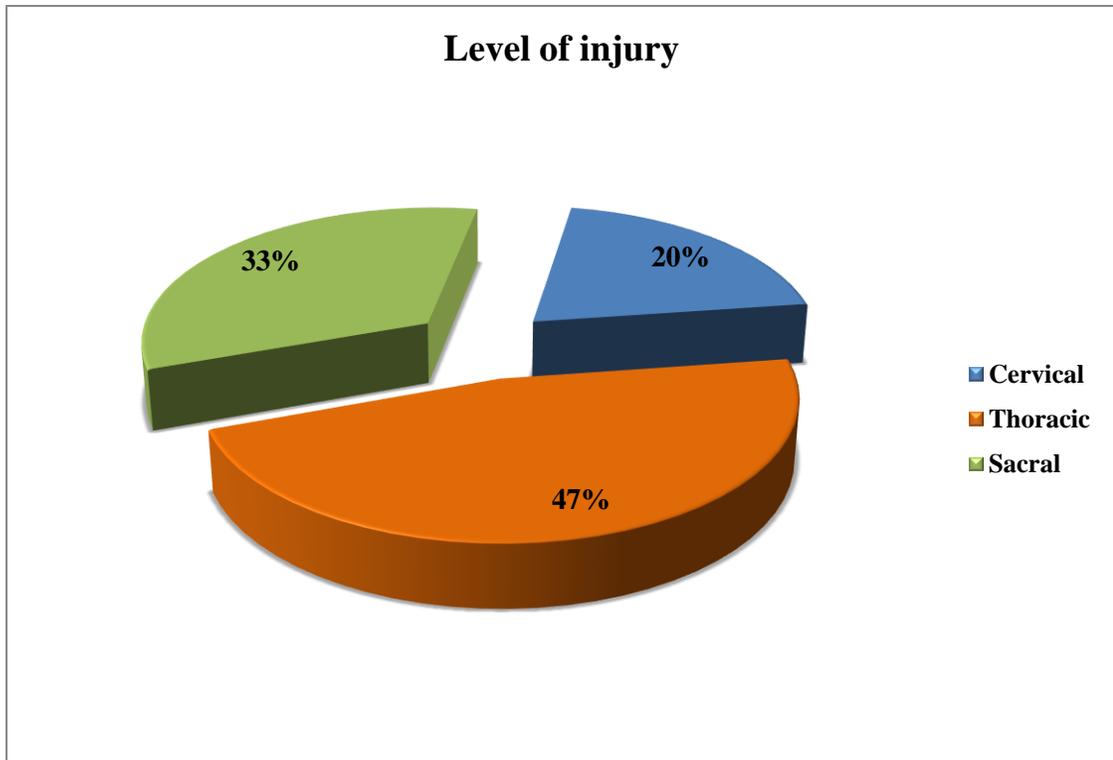


Figure-4.2.2: Skeletal level of injury

4.2.3 Impairment according to ASIA scale

Among 15 participants, majority were complete A about 27% (n=4) participants, 20% (n=3) were incomplete C and 46% (n=7) were incomplete D and 7% (n=1) were incomplete E.

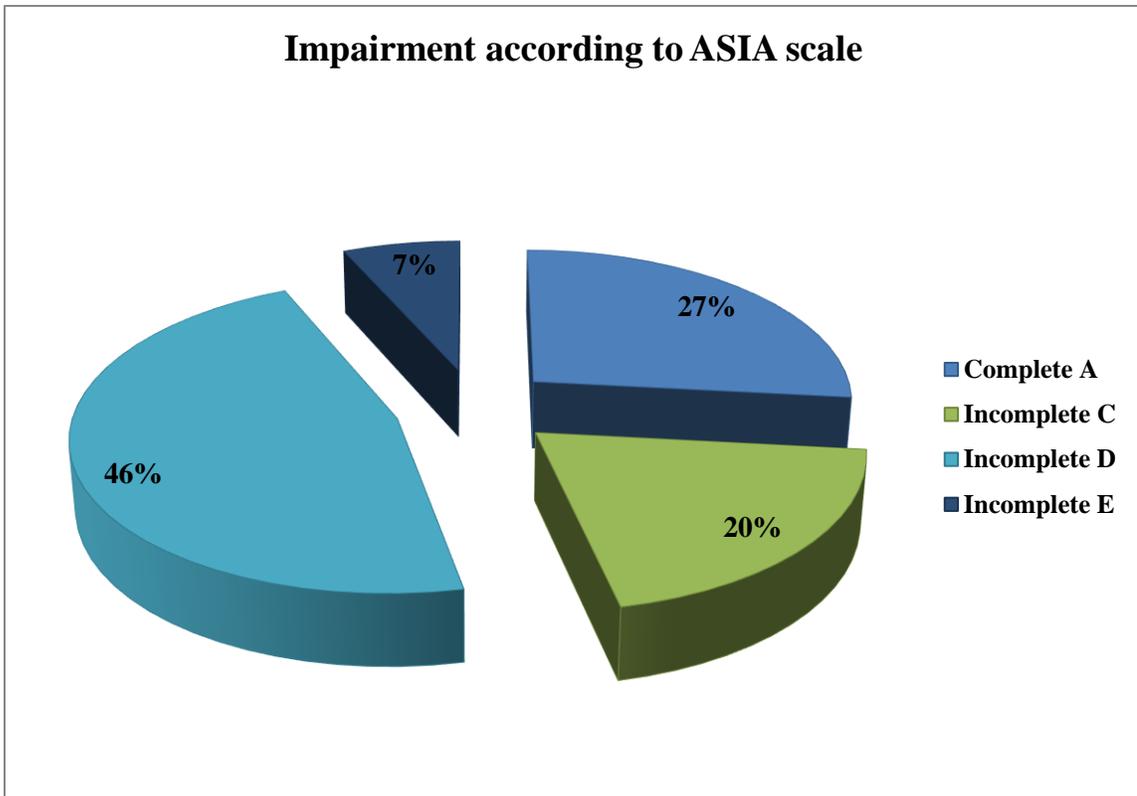


Figure-4.2.3: Impairment according to ASIA scale

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: Impairment in physical functioning act as a perception of life challenges in patients with spinal cord injury.

Category-1: Physical challenges for persons with spinal cord injury about facing life challenges.

Table-1: Physical challenges for persons with spinal cord injury about facing life challenges

Participants	Mobility impairment	Pain	Pressure sore	Bowel and bladder incontinence	Poor self-care	Failure in marital relationship
P1	✓	✓			✓	✓
P2					✓	✓
P3	✓				✓	
P4	✓				✓	
P5	✓	✓			✓	✓
P6	✓	✓				
P7	✓	✓		✓	✓	✓
P8	✓	✓	✓	✓	✓	✓
P9		✓				✓
P10	✓				✓	
P11	✓	✓	✓	✓	✓	✓
P12		✓				
P13	✓	✓	✓	✓	✓	

P14	✓				✓	
P15		✓			✓	
Total: 15	11	10	3	4	12	7

Among fifteen participants, majority of participants about twelve participants said that poor self-care is the most common life challenge they faced. Eleven participants said that mobility impairment is also a great challenge. Pain is also a challenge faced by ten participants and about 7 participants face challenges at failure in marital relationship. Four participants are having bowel and bladder incontinence and three participants face pressure sore as life challenge after moving back to the community.

Theme-2: Emotional trauma act as a perception of life challenges in patients with spinal cord injury.

Category-2: Psychological challenges for persons with spinal cord injury about facing life challenges.

Table-3: Psychological challenges for persons with spinal cord injury about facing life challenges

Participants	Crisis making and mental rumination	Indescribable sadness and depression	Pitying behavior	Fear of the future	Experience of stigma
P1		✓		✓	
P2	✓		✓		✓
P3	✓	✓	✓		
P4		✓	✓	✓	✓
P5	✓		✓	✓	
P6	✓	✓			✓
P7		✓	✓	✓	
P8	✓	✓	✓	✓	✓
P9		✓	✓		
P10	✓				✓
P11		✓	✓	✓	
P12					✓
P13	✓	✓		✓	
P14		✓			
P15	✓				
Total: 15	8	10	8	7	6

Among fifteen participants, majority of participant's said that indescribable sadness and depression is major psychological life challenge. About eight participants said that crisis making and mental rumination and pitying behavior also biggest life challenges they faced. Seven participants out of fifteen said that fear of future is also a big life challenge. Experience of stigma is also a challenge experienced by six participants.

Theme-3: Lack of social acceptance act as a perception of life challenges in patients with spinal cord injury.

Category-3: Social challenges for persons with spinal cord injury about facing life challenges.

Table-3: Social challenges for persons with spinal cord injury about facing life challenges

Particip ant	Loss of job/ educationa l status	Financia l problem	Unable to attend social gatherin g	Criticism	Dependenc y crisis	Discrimina tion
P1		✓		✓	✓	
P2	✓	✓	✓			✓
P3				✓	✓	
P4	✓	✓				✓
P5	✓			✓	✓	
P6		✓	✓			
P7		✓	✓	✓	✓	
P8	✓	✓	✓		✓	
P9	✓			✓		✓
P10		✓			✓	✓
P11		✓	✓	✓	✓	
P12					✓	
P13	✓	✓	✓	✓	✓	
P14	✓	✓	✓			✓
P15		✓			✓	✓

Total: 15	7	11	7	7	10	6
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Among fifteen participants, majority of participants about eleven participants said that financial problem is the greatest life challenge they have faced. Dependency crisis is also a major challenge experienced by ten participants. Seven participants said that loss of job/ educational status, unable to attend social gathering and criticism are the challenges they faced. Discrimination is also experienced by six people as a life challenge.

Theme-4: Environmental obstacles act as a perception of life challenges in patients with spinal cord injury.

Category-4: Environmental challenges for persons with spinal cord injury about facing life challenges.

Table-4: Environmental challenges for persons with spinal cord injury about facing life challenges

Participants	Lack of barrier free environment	Transportation problem
P1	✓	✓
P2	✓	✓
P3	✓	
P4	✓	
P5		✓
P6	✓	
P7	✓	✓
P8	✓	✓
P9		✓
P10	✓	
P11	✓	✓
P12	✓	
P13	✓	✓
P14	✓	
P15		✓
Total: 15	12	9

Among fifteen participants, majority of participants about twelve participants said that lack of barrier free environment is the major life challenge they experienced. Transportation problem is also faced by nine participants.

Theme-5: Strategies to overcome as a perception of spinal cord injury patients how they overcome life challenges

Category-5: Overcome strategies in patients with spinal cord injury

Table-5: Overcome strategies in patients with spinal cord injury

Participan ts	Regaining self confidenc e	Employ ment	Self- care	Carrer training/ education	Need regula r follow up	Need specialize d training	Need to improve rehabilitatio n managemen t
P1	✓		✓	✓	✓		
P2	✓				✓		
P3			✓		✓		
P4		✓	✓				
P5	✓						✓
P6		✓			✓		
P7	✓	✓	✓	✓	✓	✓	✓
P8	✓	✓		✓	✓	✓	✓
P9	✓					✓	✓
P10		✓			✓		
P11	✓			✓	✓	✓	✓
P12			✓				
P13	✓			✓	✓	✓	✓
P14		✓	✓				
P15	✓		✓				
Total: 15	9	6	7	4	9	5	6

Among fifteen participants, majority of participants about nine participants said that regaining self-confidence and regular follow up are the major strategies to overcome. Seven participants said that self-care is also a major overcoming factor. Other major strategies are employment and need to improve rehabilitation management, specialized training and carrer training/ education.

In this chapter the results of the study are discussed in relation to the research questions and objectives of the study. The discussion focuses on perception about life challenges in patients with spinal cord injury. By the content analysis different categories are found under which different options are expressed by different codes. Five major categories found under which five 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: Impairment in physical functioning act as a perception of life challenges in patients with spinal cord injury.

SCI changes a person's life and creates new challenges for everyday life. SCI can occur at any level of the spinal cord. Altered or lost body functions depend on the level of the injury. Changes are also depending on how severely the spinal cord was injured. Damage to the spinal cord can cause changes in movement, feeling, bladder control, or other functions (Smith & Sparkes, 2005). Complications of SCI spoil the physical, mental and economical condition of that person. Person with SCI has different complications after getting injury. SCI causes paralysis in different body part. Bowel-bladder incontinence is another most common complication among complete tetraplegia patients.

One of the participants mentioned that- *“There are problems. After that trauma my body is paralyzed below my chest. I can't do anything with my hands.”*

SCI brings changes the person's life. It reduces person's function such as motor and sensory. He faces difficulties in performing his mandatory activities (Smith and Sparkes, 2005). In this study researcher also found this kind of information about the complications of SCI.

Another participant said that- *“I have problems in bowel bladder, legs hands. Fingers of hand do not work”*.

Loses bowel and bladder control is one of the common complications among complete SCI persons. They cannot manage their own bowel and bladder. Sometimes they wet bed and clothes. It can cause skin breakdown and pressure sore. They feel pain in their hand, back, leg and whole body.

A major factor adversely affecting the quality of life and self-efficiency of SCI patients is poor self-care. The patients in this study stated that they sometimes even needed assistance with their basic needs, such as eating, getting dressed, and using the bathroom, their dependence on others and lack of autonomy leads to poor self-care and health status.

According to one SCI patient: *“Life in a wheelchair is an ordeal. It is really sad when you can’t take care of yourself and have to rely on other people for your smallest and simplest needs, like a puppet whose movements are controlled by others and can’t do anything on its own”*

All SCI patients, both male and female, expressed that in their experience, SCIs can result in failed marital relations, which adversely affects the patients’ marital relationships. These patients were not satisfied with their marital relationships and were not willing to engage in sexual acts with their spouses. In some cases, their failure in marital relations had led to divorce.

One participant said that- *“I feel I’ve lost my masculinity. I have no desire for or interest in having sexual relations. I can’t satisfy my wife’s sexual needs. I suffer from premature ejaculation and can’t enjoy sex with my wife, which embarrasses me”*.

Another SCI patient stated: *“I’m really worried about my life. My wife keeps saying that she wants to have a baby, but I hate sexual relations and have no desire for sex. I can’t help it. Before my spinal cord was injured, I had very intimate relationships with my wife and really enjoyed my sexual relationship with her, but now, I just don’t have any interest in having sex. Maybe it’s because of my injury. The day is approaching when my wife will divorce me because of our inability to have marital interactions”*.

Theme-2: Emotional trauma act as a perception of life challenges in patients with spinal cord injury.

SCI patients described their condition as a horrible, painful, and unbearable crisis. Their perception of their condition as a crisis led to their mental rumination about the consequences of their injuries. Crisis making and the resulting mental rumination caused patients to lose all hope for the future, lose the ability to adapt effectively to their situation, and experience severe psychological issues including anxiety and chronic depression.

According to one of the patients: *“My whole life has been ruined by this disaster. What can I do now in this situation? My life is filled with pain and suffering. All my hopes and dreams are gone. What use does my living have now? I wish for death every day. I can’t put up with this situation anymore”*.

The experiences of SCI patients showed that spinal cord injuries aggravate the symptoms of depression. These patients stated that they were suffering from post-traumatic stress, insomnia, lethargy, despair, and guilt and were taking antidepressants and anti-anxiety drugs.

One participant stated: *“What sin did I commit to deserve this catastrophe? I’m tired of this life. I’ve wanted to kill myself several times and put myself and my family out of this misery”*.

Another patient stated: *“I have dreadful nightmares. I do not have any peace at all. I feel that my life is not worth living. I am of no use to anyone, and I’m just a burden on my family and society”*.

Pitying behaviors and undue expressions of sympathy on the part of their families, society, and caregivers cause patients with SCIs to feel inefficient and unvalued, which in turn makes them feel upset and angry. From the patients’ point of view, pitying looks and offers of help undermine their self-esteem and are viewed as an insult to their human dignity.

According to one SCI patients: *“The pity my family and relatives show me really bothers me. I don’t want them to help me when they remind me of what they are doing for me. This kind of sympathy is such a pain. Of course, sometimes they really want to help, but they don’t know how to do it right, and that makes me upset. The way they help me is like the friendship of the bear and the gardener”* (Participant 13).

Fear of future is also an important subtheme experienced by patients.

According to one participant: *“Every day, I think about what the future holds for me. Is there any chance of my recovery so I can have a useful life and keep my family together? My life is in chaos, and I don’t know what will happen next”* (Participant 9).

Participants said they withdrew from society because of the way people looked at them using a wheelchair. The stigma of disability and how individuals perceive it has a significant effect on their social reintegration.

A 35-year-old female participant, as a wife of a man with SCI, said: *“People’s gaze is important. It is one of the important issues that a person with SCI experiences in society. This look is very different from the time when the person is healthy and everyone is looking at him/her as a normal person.”*

People often experiencing these challenges, as a consequence they were in emotional trauma. The pitying behavior from others, the dependency crisis make them emotionally break down. Then they went through depression and mental illness.

Theme-3: Lack of social acceptance act as a perception of life challenges in patients with spinal cord injury.

Another sub-theme of loss of dignity was loss of job and/ or educational status. Spinal cord injuries can lead to many issues in the patients' occupational, educational, and other social activities.

One participant stated: *"Who would give a person with a spinal cord injury a job? In the eyes of society, we are useless and incapable people who can't do anything. It's not our fault. It's not like we wanted this to happen to us. No one understands us"*.

Forced dropouts, changing disciplines, and inability to access educational and training facilities were the most important educational restrictions referred to by the participants.

Regarding the coercion to changing the field of study, a 35-year-old female participant stated: *"It wasn't possible for me to continue studying food engineering because it was all about experimenting within labs and most of its credits are practical. The only discipline that would fit my circumstances and allow me to study remotely and have a job in the future was English translation"*.

Many of the patients in this study mentioned that there were only a few institutes or charities which helped them.

One participant said that: *"In these difficult times with this high cost of living, how are we supposed to meet our needs? No one gives us a job, no one employs us, and we don't get any financial support. What should we do then?"*.

Another patient with SCI stated: *"The costs of treatment are exorbitant. Nobody feels responsible for us. It's as if we didn't belong to society. Why don't the authorities do something for us? Where are these charities that they say will help us?"*

Overwhelming dependency on others in many personal and daily activities and being a burden was one of the most important crises and issues dealt with by participants and regarded by participants as one of the most difficult situations in their lives. People with

SCI are humiliated by asking for help with personal activities, especially for bathing and using the toilet.

In this regard, a 37-year-old woman said: *“It was very difficult for me. I felt offended to let someone else do my daily tasks. It might be funny and too usual for a person who didn’t experience it. Maybe I was too sensitive. It was very hard for me to have someone else come to my house to take off my clothes, for example, to insert the catheter and take me to the bathroom. I can’t stand imagining one person to come and take me to the toilet. For example, some people would come to take me to the bathroom. It was so hard for me”*

Lack of attention and not being listened their words make some participants disappointed. That resulted in feeling them unimportant and exclusion. This kind of social attitude adversely affected their motivation and confidence.

Another participant reported that, *“When Normal people can deliver their speech in public stage, I can’t. People don’t appraise my word. Even they laughed at me. My friend doesn’t care what I say.”*

Participants stated that they experienced discrimination and exclusion because of the disregard by society and authorities of the issues facing people with SCI, and the disrespect for and negligence of people with SCI.

Concerning the inferiority of the disabled in the society, a 48-year-old male participant said: *“The authorities think that every person with SCI is an inferior person in society and allow themselves to treat us in any manner”*.

A 58-year-old male participant commented on discrimination and rejection in society: *“I may say that I changed three or four jobs. First of all, our society didn’t accept us very much. They said you couldn’t. Everywhere we went, they told us that you had a medical exemption, and you aren’t physically able to this work”*.

Theme-4: Environmental obstacles act as a perception of life challenges in patients with spinal cord injury.

One of the categories extracted in this study as the main reason for the absence of people with SCI in the community was the environmental barriers to access the community and services. This category consisted of two subcategories: lack of barrier-free environments and transportation challenges.

One of the main problems reported by the participants in the community was the lack of barrier-free environments (e.g., streets, passages, and urban furniture), which discouraged them from leaving their homes and decreased their social participation.

Regarding the inaccessibility of public places and offices, a 30-year-old male participant said: *“You want to go to university, but it lacks barrier-free sanitation. Another university has stairs and no ramps. Well, when you see there is no barrier-free university, you have to quit your studies. When you want to go to the municipality and follow it up, the municipality itself is still disabled, and has no ramps. I want to open a bank account; I see 20 stairs. They want to lift me up the stairs in my wheelchair, and the guy doesn’t know how to do this, he is likely to hurt me, I then have to go to another bank. Then I have to go around the whole city to find an accessible bank”*.

The lack of barrier-free vehicles and public transport, the need for taxis to support wheelchair users, and consequently, high transportation costs were among the issues referred to by the research participants as problems while joining the society.

Regarding the problems of not having a personal car and using taxis, a 35-year-old man said: *“It’s very hard for me to go somewhere because I don’t have a personal car. I don’t have the tools. I can’t use vehicles. I have to hire a taxi. Taxis often don’t accept me because my wheelchair is an electric non-folding wheelchair so their trunks remain half open, and most of them do not accept me and those who accept, nag so much and charge us a lot of money. Because of this wheelchair, they say that your wheelchair occupies much space”*.

Theme-5: Strategies to overcome as a perception of spinal cord injury patients how they overcome life challenges

All the participant says that they are regaining their self-confidence by this training.

Participant-1 said, *“Yes. Becoming self-confident. I will do something to learn this task so that I can be self-employed. By the society actually everyone looks me with good sight. I think that I will do that.”*

Participant-3 said, *“Mental condition is better than ever. Doing this training, getting experience from training. So that I can do something.”*

Participant-5 said, *“Yes. I want to solve the economic condition of my parents by taking training, making shop at home. So that continuing the work and I think I will able to help my parents.”*

Participant-6 said, *“Yes. Because I did not able to do this work in before. Now learning. Feeling good. I will able to do this work in future, will able to earn and also can stand my own deeds.”*

So, we can say that they are experienced by taking this training and regaining their self-confidence. Vocational training plays a vital role. Because now they think they will be self-dependent, they will play an important role in their family solvency. Employment/job-related activities and work are among the ways used to gain autonomy and independence and are important for enhancing self-esteem and identity. Some participants (paraplegic patients) used this strategy to prove their ability and release the burden of others.

For example, one participant said: ‘I was an active person before the injury, serving as a nurse. I tried this kind of activity (working at protection centers of spinal cord injury patients), in order to prove my ability and release the burden of others.’

The participants stated that they were struggling with lack of inadequate knowledge about SCI and its characteristics, i.e., the lack of information on how to cope with the problem

and accept it, and the lack of training on how to perform daily living activities and personal tasks.

Regarding the need for basic skills training, a 37-year-old female participant stated, *“One of the problems was that I had no idea that one is suddenly told that he/she can’t walk, go to the bathroom, go to the toilet anymore. What could he/she do? I wish there were a group where SCI guys learned how to live. I wish there were a place where we could receive training in case of an accident, when something happens, and the persons suffer from SCI for always - you might find it a bit trivial - we need someone to tell how to dress, for example”* (p1)

One of the most important aspects of independence is moving and walking again, which is carried out using walker brace or wheelchair. Acceptation of auxiliary devices such as walker and brace are, in fact, an effort towards releasing the burden from others and gaining more independence.

The following examples explain the strategy better: *‘I accepted walker and brace easily. Perhaps at first my motivation was not to build-up my problems. In addition, I wanted to remain more at home, get more independence and, thereby, could release my old mother a bit from burden’* (P5).

Another patient said that: *‘After 3 months use of medical shoes extending to thighs, I could stand on my feet, of course with pain. Three months later, I used crutch and walker, and, after six months, cane, to walk’* (P4).

Receiving education from professional people and especially the peers, concerning the problems and challenges involved, leads to the situation where the person learns how to prevent problems, how to solve them and how to achieve self-control.

For example, one participant said: *‘With educations presented in this center, I’m now able to do around 90% of the self-care activities independently’* (P7).

A person who had been active before the time of injury, assuming many occupational, familial and social responsibilities, and supporting the family financially and emotionally, turned from an independent person to a dependent one immediately after injury,

experiencing many pressures and pains. The person attempts to resume his independence because the dependent state is distressful for him. Annoyance caused by pity expressed by others, dissatisfaction with being a burden for others and being condescended to others cause patients to attempt to reacquire the independent state. Switching from a dependent state to an independent one requires re-definition and re-evaluation of individual's social and occupational objectives. The majority of participants in this study used strategies such as trying for movement, receiving education from professional persons and peers, employment, searching for information, and setting objectives for self-care, to regain independence.

5.1 Limitations

The limited sample size was the primary limitation. Sample selected from a limited community area. But it needed to collect samples from different places and organization in Bangladesh to make it generalized. Due to time limitation small area are selected for this study. Both the tetraplegic and paraplegic SCI patient were taken. There are some differences of challenges in these two groups. The researcher did not use any software. In-depth interview was required to gain information from participants. Due to lack of interviewing skills, it was not possible to collect data from participants thorough. Besides, participants have given different information rather than related information to study when audio records were used.

CHAPTER:VI CONCLUSION AND RECOMMENDATION

6.1 Conclusion

This study comprehends about the perception of facing life challenges in patients with spinal cord injury. This study demonstrates factors that, patients experienced life challenges after moving back to community. Participants explain their biography about their obstacles, facilities, existence and current conditions in society to attain an ideal level of adaptation. SCI patients in society experience many challenges and emotional problems following impairment in physical function (mobility impairment, pain, pressure sore, bowel and bladder incontinence, poor self-care, failure in marital relationship), emotional shock (crisis making and mental rumination, persistent depressive disorder, pitying behaviors, fear of the future, experience of stigma), lack of social acceptance (loss of job and educational status, financial problem, unable to attend social gathering, criticism, dependency crisis, discrimination), environmental obstacle (lack of barrier free environment, transportation problem) and strategies to overcome (regaining self-confidence, employment, self-care, career training/ education, need regular follow up, need specialized training, need to improve rehabilitation management). The life experiences of patients with SCIs are complex and completely dependent on culture. In this regard, extensive support for these patients as well as empowering them in efficient self-management can affect their experiences and their view of life. Accordingly, it is necessary to create a cultural, professional, and organizational context in which this population can receive proper care and their psychological security is maintained. Patients with spinal cord injuries face various issues in their care and social lives. Accordingly, healthcare administrators and caregivers are recommended to provide more comprehensive health support to SCI patients to meet their needs more effectively.

6.2 Recommendation

Several suggestions are extracted from the results of this study. It is recommended to do further research on large group and long-time observation of people in qualitative approach and also find out the overcoming policy of life challenges spinal cord injury patients faced. It is recommended to collect samples from different places and organization in Bangladesh to make it generalized. Conduct specific research for tetraplegic and paraplegic SCI patient group separately. Healthcare policy makers and administrators are recommended to use the findings of the present study to provide more comprehensive healthcare services and support to this group of patients. Reforming laws and structures, such as reducing environmental barriers, is suggested in the aspect of policymaking. Providing necessary training, improve rehabilitation management, career training/ education, appropriate services and regular follow-up after hospital discharge, suggested for the executive dimension. For the research field, developing of protocols and interventions to facilitate reduce the challenges in patients with spinal cord injury.

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APPENDIX

I am **Jahanara Akter**, a student of B.Sc. in physiotherapy, Session 2017-2018, at Bangladesh Health Professions Institute, Under the Faculty of Medicine, University of Dhaka. To obtain B.Sc. in physiotherapy degree I have to complete a dissertation. My dissertation title is **“Perception about Life Challenges in Patients with Spinal Cord Injury”**. The aim of the study is to identify the perception about life challenges among the spinal cord injury patients. I would like to ask you some questions regarding the dissertation. I am assuring you that the management provided to you would not cause any harm. The information will be kept confidential and will be used only for dissertation purposes. You have the right to withdraw your participation at any time. Besides, if you feel uncomfortable giving answers to any question you can escape that question. The questionnaire will take 30 to 40 minutes to fill up. Please give me the correct answer to the question and allow the data collector to examine your health condition.

If you have any queries, please contact me and my supervisor Farjana Sharmin, Lecturer of BHPI, Consultant & OPD in charge, Department of Physiotherapy, BHPI, CRP.

If you kindly give your consent, we can start.

Yes

No

Thank you for your participation as well as in the formation.

Participants signature & Date:

Data Collector signature & Date:

Witness Signature & Date:

Researcher Signature & Date:

Questionnaire (English)

Part I- Patient's identification

(To be collected from record/ respondent)

Questions	Response
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.

Questions	Responses
1. Age: Years
2. Gender:	<input type="checkbox"/> Male <input type="checkbox"/> Female
3. Marital status:	<input type="checkbox"/> Unmarried <input type="checkbox"/> Married <input type="checkbox"/> Separated <input type="checkbox"/> Divorced <input type="checkbox"/> Others
4. Family type:	<input type="checkbox"/> Nuclear Family <input type="checkbox"/> Joint Family
5. Living area:	<input type="checkbox"/> Rural <input type="checkbox"/> Urban
6. Educational qualification:	<input type="checkbox"/> Illiterate <input type="checkbox"/> Up to class 5 <input type="checkbox"/> Primary school certificate <input type="checkbox"/> Junior school certificate <input type="checkbox"/> Secondary school certificate <input type="checkbox"/> Higher secondary certificate <input type="checkbox"/> Bachelor

	<input type="checkbox"/> Masters <input type="checkbox"/> Others (specify)
8. Occupation: (Before injury)	<input type="checkbox"/> Farmer <input type="checkbox"/> Housewife <input type="checkbox"/> Student <input type="checkbox"/> Garments worker <input type="checkbox"/> Service holder <input type="checkbox"/> Day Labor <input type="checkbox"/> Businessman <input type="checkbox"/> Driver <input type="checkbox"/> Others
9. Occupation (After injury)	
10. Earning members	<input type="checkbox"/> Own <input type="checkbox"/> Husband <input type="checkbox"/> Wife <input type="checkbox"/> Son <input type="checkbox"/> Daughter <input type="checkbox"/> Others (Specify)

Part III- Injury related information's
(To be collected from record/ respondent)

Questions	Responses
1.Causes of injury:	<input type="checkbox"/> Traumatic- <input type="checkbox"/> Non- traumatic
2.Skeletal level of injury:	<input type="checkbox"/> Cervical <input type="checkbox"/> Thoracic <input type="checkbox"/> Lumbar <input type="checkbox"/> Sacral <input type="checkbox"/> Coccygeal
3.Neurological level of injury:	<input type="checkbox"/> Complete A <input type="checkbox"/> Incomplete B <input type="checkbox"/> Incomplete C <input type="checkbox"/> Incomplete D <input type="checkbox"/> Normal E

Part IV: Interview Questionnaire

- 1) Do you feel any difference between your pre-incidental life and current life?
- 2) What kind of impacts had on your life after this incident?
- 3) What feelings did you experience after your injury? What about your mental health?
- 4) What obstacles have you faced in fulfilling your duties and responsibilities?
- 5) Could you briefly describe the physical challenges you are facing?
- 6) Could you briefly describe the social challenges you are facing?
- 7) What were the most challenging factors you face after moving back to the community?
- 8) What are the environmental challenges you faced after spinal cord injury?
- 9) Can you please give us your opinion about how can you overcome these challenges?

APPENDIX

সম্মতিপত্র

(অংশগ্রহণকারীকে পড়ার জন্য অনুরোধ করা হলো)

আসসালামুআলাইকুম, আমি জাহানারা আক্তার, ঢাকা বিশ্ববিদ্যালয়ের চিকিৎসা অনুষদের অধীনে বাংলাদেশ হেলথ প্রফেশনস ইন্সটিটিউট (বি এইচ পি আই) এর ফিজিওথেরাপি কোর্সের ২০১৭-১৮ সেশনের শিক্ষার্থী। আমার বিএসসি ইন ফিজিওথেরাপি ডিগ্রী অর্জনের জন্য আমাকে একটি গবেষণা সম্পূর্ণ করতে হবে। আমার গবেষণার শিরোনাম হল, “মেরুদণ্ডে আঘাত প্রাপ্ত রোগীদের জীবনের প্রতিবন্ধকতা সম্পর্কে উপলব্ধি”। এই গবেষণাটি অধ্যয়নের মূল লক্ষ্য হচ্ছে মেরুদণ্ডে আঘাতপ্রাপ্ত রোগীদের জীবনের প্রতিবন্ধকতা উপলব্ধি সম্পর্কে জানা। এই গবেষণা সম্পূর্ণ করার জন্য আমি আপনাকে আপনার শারিরিক ও মানসিক অবস্থা সম্পর্কিত কিছু প্রশ্ন করব। আপনাকে আশ্বস্ত করছি, আমার ও আমার প্রশ্নের দ্বারা আপনার কোনরূপ ক্ষতি হবে না। আপনার দেওয়া তথ্য গোপন রাখা হবে এবং শুধুমাত্র গবেষণার উদ্দেশ্যে ব্যবহার করা হবে। যে কোন সময় গবেষণায় আপনার অংশগ্রহন বন্ধ করার অধিকার রয়েছে। পাশাপাশি আপনি যদি কোন প্রশ্নের উত্তর দিতে অস্বস্তি বোধ করেন তবে আপনি সেই প্রশ্ন এড়িয়ে যেতে পারেন। প্রশ্নাবলী পূরণ করতে ৩০ মিনিট থেকে ৪০ মিনিট সময় লাগবে। অনুগ্রহ করে আমার প্রশ্নাবলীর সঠিক উত্তর দিন এবং আপনার স্বাস্থ্যের মূল্যায়ন করতে ডেটা সংগ্রহকারীকে যথাসাধ্য সহযোগিতা করুন। আপনার কোন প্রশ্ন থাকলে আমার বা আমার সুপারভাইজার ফারজানা শারমিন, প্রভাষক, বিএইচপিআই, কন্সাল্ট্যান্ট অ্যান্ড আউটপেশেন্ট ইনচার্জ, ফিজিওথেরাপি বিভাগ, সিআরপি, সাভার, ঢাকা-১৩৪৩ এ যোগাযোগ করতে পারেন। আপনি যদি অনুগ্রহ পূর্বক আপনার সম্মতি দেন, তাহলে আমরা শুরু করতে পারি।

হ্যা

না

ধন্যবাদ আপনার অংশগ্রহনের পাশাপাশি প্রশ্নগুলোর যথাযথ উত্তর দিয়ে সহযোগিতা করার জন্য।

অংশগ্রহনকারীর স্বাক্ষর.....

তারিখ.....

তথ্য সংগ্রহকারীর স্বাক্ষর.....

তারিখ.....

গবেষকের স্বাক্ষর.....

তারিখ.....

প্রশ্নাবলী বাংলা

পর্ব ১- রোগীর শনাক্তকরণ

(রোগীর তালিকা পুস্তক / রোগীর নিকট থেকে সংগৃহীত)

প্রশ্ন	উত্তর
সাক্ষাতকার গ্রহণের তারিখঃ	
অংশগ্রহণকারীর নামঃ	
ঠিকানাঃ	বাড়ি নং/ গ্রামঃ পোস্ট অফিসঃ থানাঃ জেলাঃ
মোবাইল নাম্বারঃ	

পর্ব ২- সামাজিক জনতাত্ত্বিক তথ্যাবলী

(রোগীর তালিকা পুস্তক/ রোগীর নিকট থেকে সংগৃহীত)

অনুগ্রহপূর্বক সঠিক উত্তরের বাম পাশে বক্সে (✓) চিহ্ন দিন

প্রশ্ন	উত্তর
১. বয়সঃ	
২. লিঙ্গঃ	<input type="checkbox"/> পুরুষ <input type="checkbox"/> মহিলা
৩. বৈবাহিক অবস্থাঃ	<input type="checkbox"/> অবিবাহিত <input type="checkbox"/> বিবাহিত <input type="checkbox"/> তালাক প্রাপ্ত <input type="checkbox"/> অন্যান্য
৪. পরিবারের ধরনঃ	<input type="checkbox"/> একক পরিবার <input type="checkbox"/> যৌথ পরিবার
৫. বাসস্থানের ধরনঃ	<input type="checkbox"/> গ্রাম <input type="checkbox"/> শহর
৬ শিক্ষাগত যোগ্যতাঃ	<input type="checkbox"/> নিরক্ষর <input type="checkbox"/> প্রাথমিক <input type="checkbox"/> মাধ্যমিক <input type="checkbox"/> উচ্চমাধ্যমিক <input type="checkbox"/> স্নাতক

	<input type="checkbox"/> স্নাতকোত্তর <input type="checkbox"/> অন্যান্য
৭. পেশা (আঘাতের পূর্বে)	<input type="checkbox"/> কৃষক <input type="checkbox"/> গৃহিণী <input type="checkbox"/> ছাত্র <input type="checkbox"/> পোশাক শ্রমিক <input type="checkbox"/> দিন-মজুর <input type="checkbox"/> ব্যবসায়ী <input type="checkbox"/> অন্যান্য
৮. পেশা (আঘাতের পরে)	
৯. উপার্জনকারী ব্যক্তি	<input type="checkbox"/> নিজে <input type="checkbox"/> স্বামী <input type="checkbox"/> স্ত্রী <input type="checkbox"/> ছেলে <input type="checkbox"/> মেয়ে <input type="checkbox"/> বাবা <input type="checkbox"/> অন্যান্য

পৰ্ব ৩- দুৰ্ঘটনা সংশ্লিষ্ট তথ্য

(রোগীর তালিকা পুস্তক/ রোগীর নিকট থেকে সংগৃহীত)

অনুগ্রহপূর্বক সঠিক উত্তরের বাম পাশে বক্সে (√) চিহ্ন দিন

প্রশ্ন	উত্তর
১. আঘাতের কারণঃ	<input type="checkbox"/> আঘাত জনিত <input type="checkbox"/> আঘাত ব্যতীত
২. আঘাতপ্রাপ্ত মেরুদন্ডের অংশঃ	<input type="checkbox"/> গ্রীবদেশীয় <input type="checkbox"/> বক্ষদেশীয় <input type="checkbox"/> কটিদেশীয় <input type="checkbox"/> শ্রোণীদেশীয় <input type="checkbox"/> পুচ্ছদেশীয়
৩. স্নায়ুতন্ত্রী আঘাতের ধরণঃ (এ এস আই এ স্কেল অনুযায়ী)	<input type="checkbox"/> সম্পূর্ণ (A) <input type="checkbox"/> অসম্পূর্ণ (B) <input type="checkbox"/> অসম্পূর্ণ (C) <input type="checkbox"/> অসম্পূর্ণ (D) <input type="checkbox"/> অসম্পূর্ণ (E)

পর্ব ৪- উন্মুক্ত প্রশ্নপত্রের মাধ্যমে মেরুদন্ডে আঘাতপ্রাপ্ত রোগীর জীবনের প্রতিবন্ধকতা সম্পর্কে অনুসন্ধান।

(সরাসরি রোগীর নিকট থেকে সংগৃহীত)

১. আপনি কি আপনার মেরুদন্ডে আঘাতের পূর্ববর্তী জীবন এবং পরবর্তী জীবনের মধ্যে কোনো পার্থক্য অনুভব করেন?
২. এই ঘটনার ফলে আপনার জীবনে কি ধরণের প্রভাব পড়েছে?
৩. সমাজে ফিরে যাওয়ার পর সবচেয়ে বেশি কোন ধরণের সমস্যার সম্মুখীন হয়েছিলেন?
৪. আপনার দায়িত্ব ও কর্তব্য পালনে আপনি কি কি ধরণের প্রতিবন্ধকতার সম্মুখীন হয়েছেন?
৫. আঘাতের পরে আপনি কি ধরণের অনুভূতি অনুভব করেছেন? আপনার মানসিক স্বাস্থ্য কেমন ছিল?
৬. মেরুদন্ডে আঘাতের পর আপনি কি ধরণের শারীরিক প্রতিবন্ধকতার সম্মুখীন হয়েছিলেন?
৭. মেরুদন্ডে আঘাতের পর আপনি কি ধরণের সামাজিক প্রতিবন্ধকতার সম্মুখীন হয়েছিলেন?
৮. এই প্রতিবন্ধকতাগুলো কিভাবে কাটিয়ে উঠতে পারে সে সম্পর্কে আপনার মতামত দিন।

Date: 17th July, 2023
The Chairman
Institutional Review Board (IRB)
Bangladesh Health Professions Institute (BHPI), CRP.
Savar, Dhaka-1343, Bangladesh.

Subject: Application for review and ethical approval.

Dear sir,

With due respect, I am Jahanara Akter, student of B.Sc. in physiotherapy program at Bangladesh Health Professions Institute (BHPI) the academic institute of Centre for the Rehabilitation of the Paralyzed (CRP) under the Faculty of Medicine, University of Dhaka. As per the course curriculum, I have to conduct a dissertation entitled “**Perception about life challenges in patients with spinal cord injury**” under the supervision of Farjana Sharmin, Lecturer of BHPI, Consultant & OPD in charge Department of Physiotherapy, BHPI, CRP.

The purpose of the study is to explore how patients with SCI perceive facing life’s challenges. The study involves spinal cord injury patients and face-to-face interview by using semi-structured questionnaire at community (CBR). Data collectors will receive informed consent from all participants and the collected data will be kept confidential.

Therefore, I look forward to having your kind approval for the dissertation proposal and to start data collection. I can also assure you that I will maintain all the requirements for study.

Sincerely,

Dissertation presentation date: 9th January, 2023

Jahanara Akter
Jahanara Akter
4th Year B.Sc. in Physiotherapy
Session: 2017-2018 Student ID: 112170401
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

SKD
Head, Department of Physiotherapy,

Shazal Kumar Das
Lecturer
Dept. of Physiotherapy
BHPI, CRP, Savar, Dhaka-1343

Recommendation from the dissertation supervisor

Farjana Sharmin
Farjana Sharmin
Lecturer of BHPI
Consultant & OPD In-charge
Department of Physiotherapy
BHPI, CRP, Savar, Dhaka



বাংলাদেশ হেল্থ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই)
Bangladesh Health Professions Institute (BHPI)

(The Academic Institute of CRP)

Ref: CRP/BHPI/IRB/03/2023/702

Date: 13/03/2023

To
Jahanara Akter
4th Year B.Sc. in Physiotherapy
Session: 2017-2018, Student ID: 112170401
BHPI, CRP, Savar, Dhaka- 1343, Bangladesh

Subject: Approval of the dissertation proposal “Perception about life challenges in patients with spinal cord injury” by ethics committee.

Dear
Jahanara Akter,
Congratulations.

The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application to conduct the above-mentioned dissertation, with yourself, as the Principal Investigator. The following documents have been reviewed and approved:

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

The purpose of the study is to explore the perception about life challenges in patients with spinal cord injury. Should there any interpretation, type, spelling, grammatical mistakes in the title, it is the responsibilities of the investigator. Since the study involves questionnaire that takes maximum 20- 30 minutes and have no likelihood of any harm to the participants, the members of the Ethics committee approved the study to be conducted in the presented form at the meeting held at 09:00 AM on January 9, 2023 at BHPI (34th IRB Meeting).

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. However, the members of ethics committee have approved the study to be conducted in the presented form at the meeting held at 9.00 AM on January 9, 2023 at BHPI.

Best regards,

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

সিআরপি-চাপাইন, সাভার, ঢাকা-১৩৪৩, বাংলাদেশ। ফোন: +৮৮ ০২ ২২৪৪৪৫৪৬৪-৫, +৮৮ ০২ ২২৪৪৪১৪০৪, মোবাইল: +৮৮ ০১৭৩০ ০৫৯৬৪৭
CRP-Chapain, Savar, Dhaka-1343, Bangladesh. Tel: +88 02 224445464-5, +88 02 224441404, Mobile: +88 01730059647
E-mail: principal.bhpi@crp.bangladesh.gov.bd

Date: April 9, 2023

To

Head

Department of Physiotherapy

Centre for the Rehabilitation of the Paralysed (CRP)

Chapain, Savar, Dhaka-1343

Through: Head, Department of Physiotherapy, BHPI

Subject: Prayer for seeking permission to collect data for conducting a research project.

Sir,

With due respect and humble submission to state that I am Jahanara Akter, student of 4th year B.Sc. in Physiotherapy at Bangladesh Health Professions Institute (BHPI). The Ethical committee has approved my research project entitled: **“Perception about life challenges in patients with spinal cord injury attending at CRP”** under the supervision of Farjana Sharmin, Lecturer of BHPI, Consultant & OPD In-charge, Department of Physiotherapy, CRP, Savar, Dhaka- 1343. Conducting this research project is partial fulfillment of the requirement for the degree of B.Sc. in Physiotherapy. I want to collect data for my research project from department of Physiotherapy. So, I need your kind permission for data collection at Spinal Cord Injury unit of CRP, Savar, Dhaka. I would like to assure that nothing of the study would be harmful for the participants.

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

Sincerely

Jahanara Akter

Jahanara Akter

4thYear

B.Sc. in Physiotherapy

Class Roll: 21; Session: 2017-18

Bangladesh Health Professions Institute (BHPI)

(An academic institution of CRP)

Chapain, CRP, Savar, Dhaka, 1343.

Approved
Dr. Mohammad Omar Hossain, PhD
Senior Consultant & Head
Physiotherapy Department
Associate Professor, BHPI
CRP, Savar, Dhaka-1343

Recommended
Rumana
Consultant, PT
09.04.2023

Allow for data collection
Muzaffar Hossain 24.5.23
Muzaffar Hossain
Consultant - Physiotherapy & In-charge
Spinal Cord Injury (SCI) Unit
Physiotherapy Department
CRP Chapain, Savar, Dhaka-1343

Recommended
09.04.23
Md. Shofiqul Islam
Associate Professor & Head
Department of Physiotherapy
Bangladesh Health Professions Institute (BHPI)
CRP, Chapain, Savar, Dhaka-1343

Date: May 23, 2023

To

The Manager, Rehabilitation Wing

Centre for the Rehabilitation of the Paralyzed (CRP)

Chapain, Savar, Dhaka-1343

Dear CRP Coordinator
Assist Jahanara if you need
relevant data

Sanjida (y)
24/5/23

Subject: Prayer for seeking permission to collect data for conducting a research project.

Sir,

With due respect and humble submission to state that I am Jahanara Akter, student of 4th year B.Sc. in Physiotherapy at Bangladesh Health Professions institute (BHPI). The Ethical committee has approved my research project entitled: "Perception about life challenges in patients with spinal cord injury attended at CRP" under the supervision of Farjana Sharmin, Lecturer of BHPI, Consultant & OPD In-charge, Department of Physiotherapy, CRP, Savar, Dhaka- 1343. Conducting this research project is partial fulfillment of the requirement for the degree of B.Sc. in Physiotherapy. I want to collect data for my research project from Community Based Rehabilitation (CBR) Department. So, I need your kind permission for data collection. I would like to assure that nothing of the study would be harmful for the participants.

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

Sincerely

Jahanara Akter

Jahanara Akter

4thYear

B.Sc. in Physiotherapy

Class Roll: 21; Session: 2017-18

Bangladesh Health Professions Institute (BHPI)

(An academic institution of CRP)

Chapain, CRP, Savar, Dhaka, 1343.

Forwarded
Rumana
20.05.23