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PERCEPTION OF BENEFITS AND BARRIERS IN PERFORMING SPORTS AT SPINAL CORD INJURED PATIENT AT CRP IN BANGLADESH

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

Perception of benefits and barriers in performing sports at spinal cord injured patient at CRP in Bangladesh

Submitted by, **Saima Tasnim** for the partial fulfillment of the requirement for the degree of Bachelor of Science in Physiotherapy (B.Sc. PT).

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Declaration

I declare that this work presented here is done by me. I also declare that all sources used have been cited appropriately. The information and data given in this report is authentic to the best of my knowledge. Any mistake and inaccuracies are my own. I also declare that for my publication, presentation or dissemination of information of this study. I would be bound to take written consent from the department of Physiotherapy, Bangladesh Health profession Institute (BHPI).

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Contents

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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

QCA: Qualitative Content Analysis

SCI: Spinal Cord Injury

UK: United Kingdom

USA: United States of America

WHO: World Health Organization

Abstract

Purpose: To find out the perception of benefits and barriers in performing sports at spinal cord injured patient. *Objectives:* To gather the socio-demographic information, To find out the benefits in performing sports, To know about the barriers patients face in performing sports, To figure out the way to overcome their barriers. *Methodology:* A qualitative descriptive approach with semi structured interview used to conduct the study where fifteen participants with SCI who had 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 thematic analysis to determine key theme arising from individuals with SCI**.** *Result*: Participants mentioned a number of benefits and barriers they face in performing sports. Benefits are physical (decrease pain, improve balance, movement, hand exercise etc) , social (supportive, helpful, learning from others, increase unity etc) , mental (decrease depression, mental refreshment, enjoyable etc), improve self - confidence. Barriers are physical (pain), mental (depression for paralised limb) and participant gives their opinion to overcome their barriers. *Conclusion:* This study highlighted the spinal cord injured patient perception about benefits and barriers in performing sports. Participators felt that they get a lot of benefits after participating sports and some participants has a few barriers and they give their opinion to overcome those barriers. They can do better performance if their if barriers can be removed.

Key word: Perception, benefits, barriers, sports, spinal cord injury.

CHAPTER-I INTRODUCTION

1.1 Background

A spinal cord injury (SCI) is defined as any impairment to any part of the spinal cord, results in permanent changes in motor and sensory abilities, as well as other body functions are loss below the level of lesion (Dixon & Budd, 2017). This physical impairments depending on the depth and severity of the injury and for this injury physical health, work and occupation, personal relationships, and recreation—may be impacted (Munce et al., 2014). Spinal cord injury (SCI) typically occurs in young people and, in the majority of instances, results in long-term impairment (Tsai et al., 2017). A spinal cord injury (SCI) paralyzes someone every eight hours (Smith, 2013). Spinal Cord Injury causes a variety of physical limitations, depending on the severity and extent of the damage. Following Spinal Cord Injury, practically every part of a person's life may be influenced, including physical health, work and occupation, personal relationships, and recreation (Dixon & Budd, 2017).

A spinal cord injury (SCI) is a medically complicated and life-altering disorder that causes a variety of functional limitations and health-related issues. It is well recognized that persons with SCI have challenges with activities of daily living (ADL) and participating in social activities as compared to those who do not have a SCI (Kader et al., 2018). Completeness is related with a certain level of injury as well as a certain level of impairment (Sezer et al., 2015). A crosssectional research from the US Model System discovered that 95.6 percent of patients experienced at least one medical problem at the time of their usual yearly check-up. Pressure ulcers, urinary tract infections, intestinal issues, fractures, chronic pain, and mental disorders are all common secondary complication following SCI (Munce et al., 2014).

After Spinal cord injury, the body's composition, metabolism, and physical activity are changes. People with SCI may be at a higher risk of developing Cardio Vascular Disease (CVD) at a younger age due to an increased incidence of hypertension, changes the normal range of lipid profile, decreased glucose tolerance, and/or diabetes mellitus. Diabetes and poor glucose tolerance are more common in the SCI community than in the general population, and individuals with the most neurologic impairment may be the most vulnerable (Ginis et al ., 2012).

A spinal cord injury can result from a spinal disease and it can cause physical damage, hemorrhage, tuberculosis, tumors, and syphilis. The most common causes of this injury are connected to urban violence, sports accidents, and work accidents (Ducharme, 2010).The mechanisms for these injuries may be traumatic or nontraumatic. Non-traumatic causes include: developmental anomalies (e.g. spina bifida) and congenital anomalies (e.g. angiomatous malformations); inflammation (e.g. multiple sclerosis); ischaemia (e.g. cord stroke); pressure on the cord due to expanding lesions (e.g. abcess or tumour extrinsic or intrinsic to the spinal cord)(Paddison & Middleton,2004). Traumatic spinal cord injury are most commonly caused by falls, motor vehicle accidents, and violence (Ge et al., 2018).

The incidence of SCI as a consequence of falls from great heights or falling while carrying a big weight on one's head, or as a result of a traffic accident (Hachinski et al., 2006). People with SCIs in less-developed nations, like as Bangladesh, experience obstacles owing to a lack of access to health care, rehabilitation programs, and high-quality assistive technologies (Kader et al.,2018). The most prevalent patient age group (10-40 years) represents Bangladesh's socioeconomic condition. Patients with SCI have a male: female ratio of 7.5:1.0 due to their socioeconomic position and society's customary practices. More than 80% of spinal cord injury (SCI) patients are men, and 55% of SCI sufferers are between the ages of 16 and 30 (Hachinski et al., 2006). Among SCI patients, the number of men was consistently greater than the number of girls. In industrialized nations, the male-to-female ratio ranged from 1.10:1 to 6.69:1. The ratio for developing nations ranged from 1.00:1 to 7.59:1. In affluent nations, the

average age of SCI ranged from 14.6 to 67.6 years. In articles on developing countries, the average age ranged from 29.5 to 46.0 years (Kang et al., 2018).

The incidence ranged from 13.01 to 163.4 per million persons. In industrialized nations, the incidence rates varied from 13.1 to 163.4 per million persons. Non-developed nations' rates ranged from 13.0 to 220.0 per million people (Kang et al., 2018).There are several international researches on the epidemiology of spinal cord injury patients (SCI). The yearly incidence of SCI in the general population in the United States is around 40 cases per million persons. As a result, based on the population of the United States in 2010, roughly 12,400 new people were diagnosed with SCI per year (Shin et al., 2013). In the United States, around 40 cases of Spinal cord injury per million people occur each year, and only 1% of SCI patients discharged from the hospital have no residual neurological disability (Tsai et al., 2017).

According to the most recent studies, the incidence rate of traumatic SCI in the Americas ranged from 20.7 to 83.0 persons per million inhabitants per year (Furlan et al., 2013). According to a Norwegian research, the yearly incidence rate of SCI increased from 6.2 per million between 1952 and 1956 to 26.3 per million between 1997 and 2001 (Shin et al., 2013). In Europe, the estimated incidence rate ranged from 8.0 per million people in Spain to 130.6 per million inhabitants in Bulgaria every year. In Oceania, the estimated incidence rate of traumatic SCI per million people per year ranged from 10.0 to 77.0 in Fiji and New Zealand, respectively (Furlan et al., 2013).Other yearly incidence rates of SCI documented are 40.2 per million in Japan between 1990 and 1992, 18.0 per million in Jordan between 1988 and 1993, and 18.8 per million in Taiwan between 1992 and 1996 (Shin et al., 2013).

Thirteen studies on the prevalence of traumatic SCI were included in the systematic review, with rates ranging from 50 to 1,298 cases per million population globally (Furlan et al., 2013). Only three studies addressed the prevalence of SCI, and two of them showed prevalence ranging from 49024 to 52625 per million populations in developed nations. Only one publication estimated a frequency of 440.026 per million individuals in non-developed nations. According to one report, the overall NTSCI prevalence rate in Australia was 367.2 per million (Kang et al., 2018).

Reports from the Americas suggest prevalence rates ranging from 50 to 906 persons, with one research from Canada estimating a frequency of 1,298 per million populations. . The prevalence rates of traumatic SCI were estimated to be 227, 280, 351 to 419, and 526 persons per million populations in Sweden, Finland, Norway, and Iceland, respectively. Based on data from Nepal and India, two Asian studies revealed prevalence rates of traumatic SCI as 849.8 cases per million people in Nepal and 236 cases per million populations in India. In Iran, the prevalence rate was estimated to be 440 per million people. Finally, O'Connor et al. recently reported a prevalence rate of 681 persons with traumatic SCI per million population in Australia (Furlan et al., 2013). There is no good statistical data on the prevalence and incidence of SCI in South Korea, but epidemiologic changes are likely to occur over time due to an increase in the number of automobile accidents, advances in medicine, a rise in the total population, and population aging (Shin et al., 2013).

People living with a spinal cord injury (SCI) experience several problems and limitations to participating in physical exercise. Physical inactivity can also increase the likelihood of numerous secondary health conditions that are frequent in persons with SCI, such as pressure sores and chronic pain, and can impair psychological well-being, social involvement, and general quality of life (Ginis et al., 2012). The capacity to engage in daily activities both outside and within the house might vary and deteriorate as a result of SCI. As time spent on individual homebased occupations such as watching TV, listening to the radio, and reading grows, participation in work, leisure, sports activities decreases day by day and the spinal cord injured person are become less interested to participating social activities (Barclay et al., 2016).

Disabled individuals expect the same level of attention and care as non-disabled persons. They desire to be a part of the community, to learn social and self-care skills for future independence, and to be confident and respected by others. Enhanced development of a feeling of self is one of the numerous possible psychological impacts of participation in sport. People make a statement about themselves and others by committing to and engaging in freely chosen physical activities. Some people may come to consider themselves, at least in part, as athletes as a result of their engagement

in sports. (Brewer et al., 2007)

Systematic initiatives to enhance physical activity and sports engagement might have a significant impact on the physical and psychosocial well-being (PSWB) of persons with SCI. Sport is often a competitive kind of physical activity organized by rules, whereas exercise is a planned, organised, and repetitive physical activity meant to enhance or maintain fitness. The goal of this article is to offer a summary of the research supporting the advantages of these two forms of activities. We begin by looking at the function of exercise and sports in two areas of physical well-being: the prevention of chronic disease and the promotion of physical fitness, and then we look at their involvement in promoting other components of PSW (Ginis et al., 2012).

A number of authors have claimed that exercise, sports, and an overall better level of fitness can help patients with SCI. Dallmeijer and colleagues discovered that, aside from non-modifiable characteristics, the most important determinant of physical ability is engagement in activity, which was characterized in this study as hours of sport participation per week, in a study of persons with tetraplegia. Similarly, Noreau and colleagues discovered a link between fitness level and functional competence in persons with SCI. Individuals with paraplegia who participate in wheelchair sports, in particular, have been shown to be more effective in avoiding serious medical issues and hospitalizations. According to Stotts, non-athletes with paraplegia had a higher frequency of medical issues and a higher number of hospitalizations than athletes (Levins et al., 2004).

With regard to the effects of sports participation on chronic disease prevention among persons with SCI, preliminary evidence indicates potential protective benefits. For instance, there is some evidence that sports participation is associated with greater lean mass and lower fat mass. More specifically, upper limb fat mass and lean mass ratios have been shown to be better among athletes with SCI than non athletes . Participation in sports has also been associated with greater insulin sensitivity and higher high-density lipoprotein cholesterol levels (Ginis et al., 2012).

Physical activity and sports participation have been linked to improved quality of life and community integration in the SCI population. Researchers looked at two groups of people with chronic SCI and compared those who participated in sports to those who did not, as well as the effect of sports participation on quality of life and community integration. Participation in sports after SCI was found to be 4.75 and 7.00 times more likely to have high Community Integration Questionnaire (CIQ) scores and improved quality of life scores (as measured by the Reintegration to Normal Living Index), respectively, when compared to those who did not participate in sports (Diaz et al., 2019). During and after the Second World War, Sir Ludwig Guttmann introduced sport as a method of rehabilitation to help injured people improve their function and independence. Since its inception, participation in regular sporting activity to provide physical and psychological advantages to handicapped people (Stephens et al., 2012).

A lot of individuals stated the physical benefits of sports that they were aware of. These included body weight maintenance, functional capacity improvement, pain alleviation, and a reduction in the occurrence of pressure sores, as well as a sense of exertion and physical exhaustion. Sport is a significant aspect of pain management for participants (Stephens et al., 2012). Gioia et al conducted a cross-sectional study of 137 people with SCI and observed that those who did not participate in sports had greater anxiety and sadness scores and lower extraversion scores than those participating in sports (Diaz et al., 2019).

Tasiemski and colleagues investigated whether sports engagement and physical leisure were linked to life satisfaction in wheelchair-bound SCI patients. They observed that those who did not participate in leisure or sports had considerably lower levels of life satisfaction, as judged by the Life Satisfaction Questionnaire, in a group of 985 people. 15 Physical activities was linked to 7 of the 8 life satisfaction areas in a favorable way. The categories connected to the participant's sexual life and occupation status had the lowest level of pleasure. Sports involvement, mood, marital status, and loss of independence were revealed to be the greatest predictors of life satisfaction in a logistic regression study. Participating in adaptive sports has been shown to improve quality of

life and life satisfaction in people with SCI as well as other impaired people (Diaz et al., 2019)

1.2 Rationale

In Bangladesh, approximately 4.6 percent of people are disabled as a result of a spinal cord injury or lesion and it is a major public health issue. It is a divesting condition that has an impact on not only physiological aspects but also psycho- social condition in community participation. The incidence of SCI is estimated to be 2.5 cases per million in Bangladesh. It became one of the leading causes of disability in our country's population.

Worldwide there are many Spinal cord patients who are trying to improve their lifestyle through sports related and sports activism. In this way, Bangladesh is not trailing behind. Bangladesh has many spinal cord injury patients who are involved in sports like wheelchair (basketball, volleyball, table tennis, badminton etc). Participation in regular sporting activity is thought to offer physical and psychological benefits for disabled individuals. The quality of life and long-term management of individuals with spinal cord injury (SCI). Specifically, quality of life has become a key outcome in determining the efficacy of the rehabilitation process for this population with findings suggesting that health promotion and increased physical activity may improve the quality of life and levels of life satisfaction . Consequently, the level of sport and active leisure participation is important in rehabilitation and long-term care.

Just as spinal cord injured patient can improve themselves in many ways through these sports performances, they also have to face many barriers during sports performances such as physical, mental, financial, environmental . There are a limited research in our country about the barriers and benefits of the spinal cord injured patient who are participating sports but it is important to know the benefits and barriers of the participate sports activities of spinal cord injured patient. Through this research, I will be able to know the spinal cord injured patient in Savar CRP of Bangladesh and those who are involved in sports, what are the benefits and barriers in their sports performance. This study explores what individuals with spinal cord injury (SCI) perceive to be the benefits of becoming involved in organized sport and identifies the barriers to participation. This study is formulated to fill the gap of knowledge in the area of disability sports. The aim of the study is to identify the perception of benefits

and barriers about sports among physically disabled sports participants. And from this study awareness is increased and may provide proper recommendation for every single risk and barriers which is helpful for participants. Beside this it is help to established proper guideline and proper technique. This study is also help to discover the lacking area of a disable participant, especially about performing their sports activities. So the study enhances the knowledge about disabled people, disability sports and their view towards sports. These research project is established to identify the need of continuation of recreational sports activity for disabled people. Individual with spinal cord injury have variable psychological problem even after social returns. So sports can be used in treatment purpose and study would be helpful for disabled people as treatment. From their rehabilitation and recreation if it can be be proven that sporting activity can improve psychological status and quality of life. Accordingly we consider their benefits and encourage more SCI individuals to become involved in disability sport and recover from their obstacles so that they can improve their performance, may improve the quality of life and levels of life satisfaction.

1.3 Research question

What are the perception of benefits and barriers in performing sports at spinal cord injured patient at CRP in Bangladesh?

1.4 Objectives

1.4.1 General objective

- To find out the benefits and barriers in performing sports at spinal cord injured patient.

1.4.2 Specific objectives

1. To gather the socio-demographic information

   (Age, Sex, Occupation, Marital status etc).

2. To find out the benefits in performing sports.

3. To know about the barriers they face in performing sports.

4. To figure out the way to overcome their barriers.

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. It may result from direct injury to the cord itself or indirectly from damage to surrounding bones, tissues, or blood vessels

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. Paralysis of both legs.

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.

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**.**

Benefits

The meaning of benefit is something that produces good or helpful results or effects or that promotes well-being

Barriers

Barrier is a physical structure which blocks or impedes something. It is an obstacles faced by the participations in their own community as well as their everyday tasks.

Sports

Sports are all forms of usually competitive physical activity which through casual or organized participation, aim to use, maintain or improve physical ability and skills while providing entertainment to participants. Sports are usually governed by a set of rules or customs, which serve to ensure fair competition, and allow consistent adjudication of the winner.

Disability sports

While sport has value in everyone's life, it is even more important in the life of a person with a disability. This is because of the rehabilitative influence sport can have not only on the physical body but also on rehabilitating people with a disability into society. Furthermore, sport teaches independence.

CHAPTER-II LITERATURE REVIEW

Spinal cord injury (SCI) is an injury to the spinal cord that can result in reduced or lost senses, movement, and autonomic functions below the level of injury due to trauma to the neural elements of the spinal canal (Azeez & Hammed , 2019). Spinal cord injury is a serious event that can cause a lot of pain and suffering for the people involved, their families, and society as a whole. People who have paraplegia have damage to their thoracic, lumbar, or sacral spinal cord, and tetraplegia occurs when damage is done to the cervical spinal cord (Noonan et al., 2012). The cervical vertebrae were the most common part of injury in both developed and non-developed countries. The majority of articles found that a lower percentage of injuries were complete than incomplete (Kang et al., 2018) .

It can affect the function of limbs, trunk, pelvic organs, bladder and bowel, as well as sexual function. This loss of function can eventually bring about major changes in the lives of those affected Person who makes routine occupational, social, sexual, and recreational activities difficult. It may be complete or incomplete, which can lead to complications and changes Respiratory, thermal, circulatory and neuro-motor functions as well as spasticity and pain (Azeez & Hammed, 2019). Spinal cord injuries are associated with significant functional, psychological, social and economic adverse consequences due to long-term complications. Spasticity is one of the most problematic and most common (78% to 93% for cervical and 45% to 82% for thoracic injuries) secondary long-term complications after SCI, as associated with increasing functional impairment, contractures, pain and postural disorders (Vural et Al., 2020).

These estimates include complications during the early surgical phase, such as wound infections and displaced instruments. They also include emergency readmissions and long-term complications, such as pressure ulcers, bladder and bowel dysfunction, neuropathic pain, and respiratory problems (Singh et al., 2014). Spinal cord injuries can cause complications, including neuromuscular, respiratory and circulatory impairment, metabolic changes, difficulty controlling sphincters, and spasticity. Due to these Some health problems, such as obesity, coronary heart disease and type 2 diabetes, may occur under certain conditions. Combined with health problems, these complications may Causes people with spinal cord injury to be unable to perform the following activities everyday life (Coura et al., 2012) . For example, a person with spinal cord injury high risk of depression, social isolation, unemployment and community decline Participation. In summary, damage from spinal cord injury has an impact affects individuals' physical, psychological and social functions, and ultimately to their overall wellbeing (Cheung et al., 2021).

Spinal cord injury is a life-threatening condition that results from traumatic or nontraumatic injury to the spinal cord (Cheung et al., 2021). The most common causes of Spinal injuries were car accidents (31.5%) and falls (25.3%), followed by gunshot wounds (10.4%), motorcycle accidents (6.8%), diving incidents (4.7%),and medical/surgical complications (4.3%) (Chen et al., 2013). Non-traumatic cause including spondylolisthesis, infection or tumor (Vural et al., 2020).

Non-traumatic spinal cord injury (NTSCI) patients are older, more likely to be female, have more comorbid conditions, and more usually present with paraplegia than tetraplegia, according to studies comparing patients with traumatic spinal cord injury with non-traumatic spinal cord injury (Vural et al., 2020). Patients with spinal cord injuries are living longer on average. According to predictions, patients who suffer a spinal cord injury between the ages of 25 and 34 will live an average of 38 years after the accident, with 43% living for at least 40 years (Wyndaele, 2006). Ages 16 to 30 were the most prevalent age range for injuries (38.5%), followed by 31 to 45 and 46 to 60 years (Chen et al., 2013)

The financial impact of spinal cord injury on healthcare professionals and the system as a whole is a subject that is receiving more and more attention. According to Krueger et al., the projected lifetime financial burden associated with spinal cord injury in Canada ranges from $1.47 million for someone with partial paraplegia to $3.03 million for someone with complete tetraplegia (Singh et al., 2014). Understanding the incidence and frequency of spinal cord injuries is crucial due to their significant long- and short-term socioeconomic effects, as well as their profound personal and bio-psychological effects. The amount of control over spinal cord injuries is shown by incidence rates, which may indicate the need for better prevention (Wyndaele, 2006).

According to a literature study, the incidence of traumatic spinal cord injuries varies between 10 and 83 per million individuals worldwide. In Australia, there are 26 incidences of non-traumatic spinal cord damage for every million persons, according to a recent study by New and Sundararajan. They also noted that non-traumatic spinal cord injury occurs more frequently than traumatic spinal cord injury. Based on the higher number of people with non-traumatic spinal cord damage compared to traumatic spinal cord injury recorded in Australia and Canada, the ratio of non-traumatic spinal cord injury to traumatic spinal cord injury in the discharge population was calculated at 1.65. Estimation of the frequency of traumatic spinal cord injury and non-traumatic spinal cord injury in Canada shows that in 2010, there were 1,785 initial cases (53 per million), and 1,389 discharge cases (41 per million) (Noonan et al., 2012).

The projected prevalence of spinal cord injury in Canada for 2010 is 85,556 people, or 2,525 per million, including both traumatic and non-traumatic spinal cord injuries. Of this total, 41,582 (49%) would have a non-traumatic and 43,974 (51%) would have traumatic spinal cord injury. According to estimates, there are 48,243 individuals living with paraplegia and 37,313 people living with tetraplegia (Noonan et al., 2012). Many studies have overestimated figures because of the high mortality rate at the scene of the accident and during patient retrieval and transport, as well as the fact that most global prevalence data comes from developed countries and that there is little data from developing continents (Singh et al., 2014).

Unfortunately, 40.3 percent of persons with disabilities have fair or poor health, compared to 9 percent of those without disabilities. Physical exercise is crucial for the many persons with disabilities who have poor health and secondary illnesses (e.g., diabetes) for both quality of life and as a public health measure (Martin, 2013). Participation in physical exercise presents a number of difficulties and hurdles for persons with spinal cord injuries. As a result, this group is regarded as the most physically inactive part of society and is particularly susceptible to illnesses that have been associated with a sedentary lifestyle (eg, cardiovascular disease, diabetes mellitus). Physical inactivity may affect a person's psychological well-being, social participation, and overall quality of life, as well as increase the risk for a number of secondary health issues that are common in people with spinal cord injuries, such as pressure sores and chronic pain (Ginis et al., 2012).

Exercise is crucial for good health and wellbeing. Experience and research indicate that participating regularly in sports and other suitable physical exercise benefits individuals of all ages and conditions, including those with disabilities, in terms of their physical, social, and mental health (Berardi et al., 2021). It has been suggested that playing sports might help people re-establish touch with the outside world by promoting community integration and enhancing family ties. The chance for persons with physical impairments to play sports with their able-bodied peers is especially valuable because it normalizes disability, lessens social stigma, and shows the full potential of people with disabilities (Tasiemski et al., 2004)

Sport is a holistic activity that has promise for those with spinal cord injuries. The term "sport" refers to any physical activity that emphasizes effort, skill, and/or hand-eye coordination, includes aspects of competition, and is formally sanctioned by organizations. Sports can be played alone or in teams, and they can be amateur or professional (Cheung et al., 2021). A larger number of participants played sports primarily for enjoyment and to keep in touch with or make new friends. Indeed, interacting with individuals in similar circumstances was a definite advantage of

participating in athletics. Prior research has concentrated on the social support that athletics offers, but this study allowed people with spinal cord injuries the chance to explain why a social network is so crucial (Stephens et al., 2012). The absence of accessible sports facilities, distaste for traditional sports for individuals with disabilities, and high dependence on activities of daily life appear to be the most frequent causes for post-injury sports avoidance (Tasiemski et al., 2004).

A person with a disability can benefit in practically every area of their life via sport. Among the advantages include improved life satisfaction, physical independence, social integration, greater strength and endurance, and self-esteem. In fact, the benefits of participating in sports are so numerous and significant that these results, together with reams of anecdotal data, helped advance the area of therapeutic leisure (Lastuka & Cottingham, 2016).

Sport has evolved to play a fundamental role in contemporary culture and offers a variety of benefits to those who participate. These advantages include both mental and physical wellness. Physical activity enhanced functional health, musculoskeletal health, cardiorespiratory health, mental health, and metabolic health, according to an evaluation of treatments for people with impairments. Physical activity might be considered to be even more crucial for people with disabilities given their secondary health and functional issues (Wilson & Khoo, 2013). Sport participation can help people achieve these physical and psychological benefits as well as act as a catalyst for social reintegration. Regular exercise has significant social advantages, including the ability to make new acquaintances, share experiences, create social networks, and lessen disability (Tasiemski et al., 2004).

The advantages of sharing comparable experiences with others who truly understood their predicament and learning from these people were obvious. Indeed, this study emphasizes the significance of incidental learning via sports and interaction with other impaired persons. Surprisingly, pain was not regarded as a barrier to those with spinal cord injuries participating in sports. In fact, this study discovered that players saw a decrease in pain and spasms, and that pain alleviation was one of the side advantages of participating in sports (Stephens et al., 2012). The majority of respondents claimed that taking part in the HandbikeBattle had advantages in each sector. The majority of respondents (90%) said that they have seen improvements in their physical fitness, handcycling (87%) and personal development (81 percent). A few people reported losing some of their health (8%), fitness (5%), personal development (1%), handcycling (1%), and ADL skills (1 percent) (De Groot et al., 2020)

Sports involvement benefits include increased strength and independence as well as the prevention of secondary problems. Participation in sports contributed to the reduction of SCI-related secondary effects. Urinary tract infections, discomfort, muscular spasms, pressure sores, pharmaceutical dependence, and hospitalizations all decreased, according to the participants. Participants' emphasis on the beneficial effects of sport on their mental health was not surprising given the goal of improving mental health. It's intriguing that having competition allows athletes to experience some parts of competitiveness and accept their injury (Cheung et al., 2021).

Playing adapted sport can provide challenging obstacles, even in industrialized countries. Participation in adaptive sports is constrained by barriers such a lack of accessibility in sporting venues, a hatred of activities frequently associated with disabilities, physical reliance making practicing challenging, and a lack of time and money. He accepts that there could be psychological hurdles, such low self-esteem, that are not included in his studies and utilizes a survey tool to gauge athletic identity and identify a number of barriers to practicing adaptive sport. Qualitative research, such as Smith and Sparkes' narrative inquiry approach, is a crucial tool for identifying these psychological limitations. Clearly, increasing financial support for adapted sport might alleviate some

of the hurdles to participation in adaptive sports, such as a lack of accessible facilities and budgetary restraints. Unfortunately, despite the numerous benefits that sport provides for persons with disabilities, resources to promote disability sport are limited, particularly when compared to other industrialized countries and those of college age (Lastuka & Cottingham, 2016).

The most of the difficulties encountered by the athletes in both studies could be classified as structural, and included a lack of money (both for athletes with and without impairments) as well as concerns with facilities and equipment (Wilson & Khoo, 2013).The most often reported personal barriers were time (31 percent), being unable to participate in sports owing to handicap (17 percent), and pain concerns (15 percent). The most often reported environmental impediments were long travel times to sport accommodations (19%) and a lack of fellow athletes (16%) (De Groot et al., 2020). Lack of information, despair and mental disease, as well as negative messaging about sport from medical experts, all hampered earlier participation in sports (Cheung et al., 2021).

It was discovered throughout the results analysis that the advantages weren't constant over time. For example, sociability, accidental learning, and the acquisition of information from others within sport were important after hospital release. Structured exercise, on the other hand, was found to be a way to maintain weight, develop functional capacity, improve independence, and experience real feelings of exertion and fatigue after accepting the injury and having grown more aware of and appreciative of issues related to health and wellbeing. These results underline the need of encouraging social network formation through sport during the initial phases of recovery to increase SCI patients' awareness of and comfort with managing their condition (Stephens et al., 2012).

The majority of participants (78 percent) did not live in cities, showing that increased facilities and access are required at the local level. Furthermore, "traditional" activities for individuals with disabilities (e.g., table tennis, archery) are not high-profile and are not always viewed as strategies to maintain or enhance upper-body strength. This underscores the need of promoting a wider range of activities for persons with spinal cord injuries, particularly those that can help with the primary motivations associated to physical health (Tasiemski et al., 2004).

Employment rates for those with spinal cord injuries are relatively poor, as was previously mentioned. It would be possible to expand funding for adapted sport and enhance the quality of life for many people with SCI by establishing a clear connection between adaptive sport and employment (Lastuka & Cottingham, 2016). The athletes understood the value of a coach, but issues with poor communication, a lack of access to high-quality coaching, and changing coaches were found to be obstacles to performance growth. The difficulty of boosting the involvement of people with disabilities in sport is one that all developing nations must overcome (Wilson & Khoo, 2013).

Even while there has been significant improvement, especially for professional athletes, technology for athletes with disabilities has to be significantly more sophisticated if they are to compete at their very best. To ensure excellent health and satisfying performances, bridging the gap between assistive technology and the demands of athletes with disabilities appears to be essential (Berardi et al., 2021)

CHAPTER-III METHODOLOGY

3.1 Study design

A qualitative approach was chosen to conduct my study. Qualitative research approach was applied to gain understanding and explore the benefits and barriers of spinal cord injured patient during performing sports activities in CRP. A semi-structured questionnaire was used and face to face interview was conducted and the Interview were recorded for getting a clear idea about the socio-demographic characteristics, accommodation facilities, personal and social barriers, psychological barriers, others barriers and their suggestions 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 was 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, benefits and barriers to access their perception about performing sports in CRP.

3.2 Study setting

The SCI registered unit of physiotherapy department of at the Centre for the Rehabilitation of the Paralysed (CRP) in Bangladesh which is the largest spinal cord injury rehabilitation Centre for the patient with spinal cord injury in Bangladesh was selected. At first the standard questionnaire was developed and then collected data from SCI registered unit.

3.3 Study population

The target population are the patient with Spinal Cord Injury who were admitted and related with sports activities at CRP spinal cord injury unit, Savar, Dhaka.

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.

3.4.1 Inclusion criteria

- Complete and incomplete paraplegic spinal cord injury patients who are participate in sports activities at CRP, Savar, Dhaka.
- 15-45 age groups were selected.
- Both male and female were included.
- Mentally & medically stable patient.
- The patients who had interest to participate in the interview.

3.4.2 Exclusion criteria

- Complete and incomplete tetraplegia patient.
- Patient who had unwillingness to participate.
- Age < 15 years and >45 years.
- Mentally ill & medically unstable patient.
- Patient with cognitive problem as they won_t cooperate with researcher.

3.5 Sample size

15 participants were taken as sample from spinal cord injury unit,CRP, Savar, Dhaka.

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 spinal cord injury unit, CRP, Savar, Dhaka.

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 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 March 2022 to 05th April 2022. Each participant provided time to collected data. Each interview 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 phone 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 fifteen 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.

3.13 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.

CHAPTER-IV RESULTS

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 of benefits and barriers about sports among patients with spinal cord injury who are involved with sports activities at Centre for the Rehabilitation of the Paralysed (CRP). 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 description 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 16-35 years. Participants in between 16-20 years were 6, participants in between 21-25 years were 5, participants in between 26-30 years were 2 and also 2 participants in between 31-35 years.

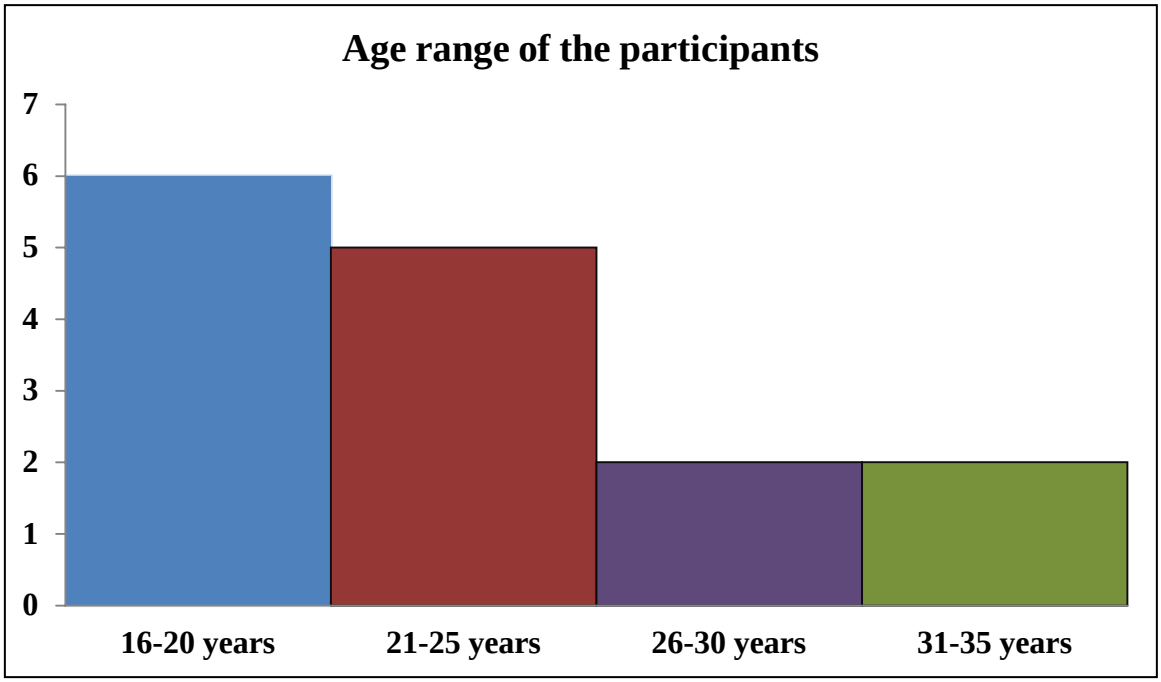

Figure -4.1.1: Age of the participants

4.1.2 Sex of the participants

In the study among the 15 participants, 87% (n= 13) patients were male and 13% (n=2) were female.

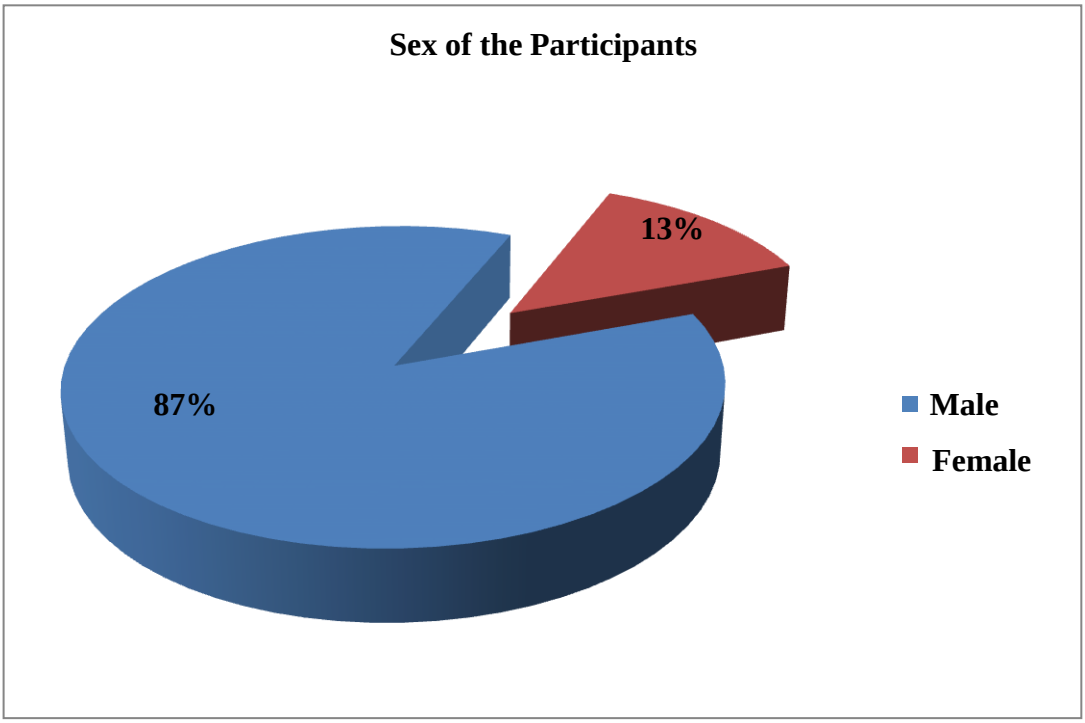

Figure- 4.1.2: Sex of the participants

4.1.3 Marital status of the participants

Among the 15 participants 40% (n=6) were married and 60% (n=9) participants were unmarried.

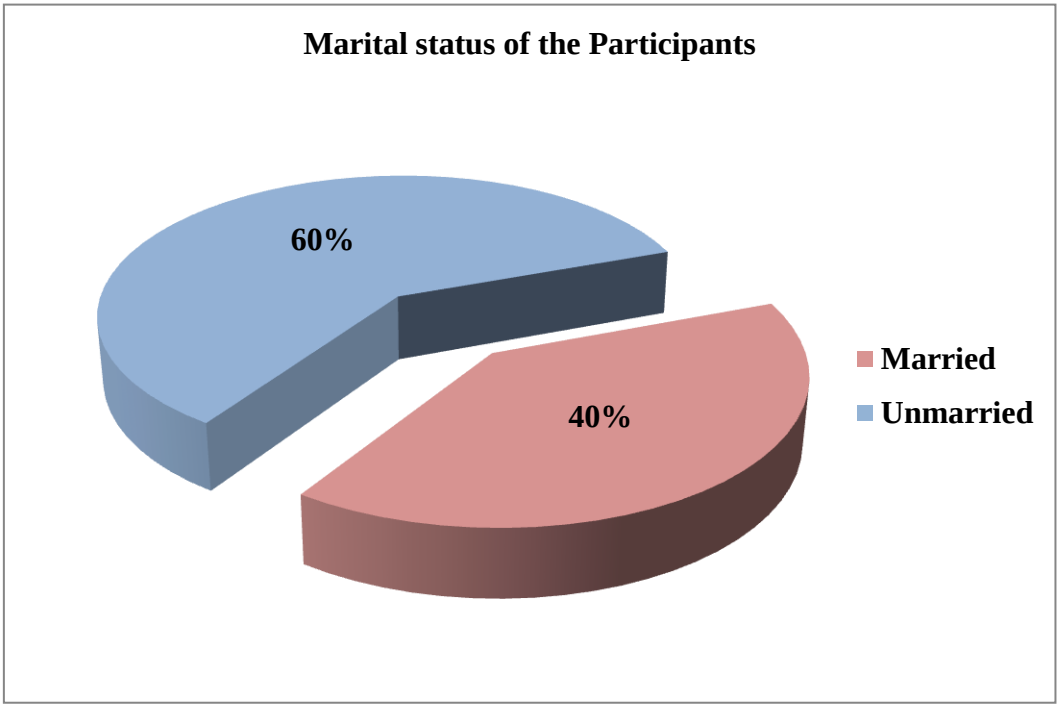

Figure- 4.1.3: Marital status of the participants

4.1.4 Family type

Among the 15 participants it was found that 60% (n=9) were lived in nuclear family and 40% (n=6) were lived in joint family.

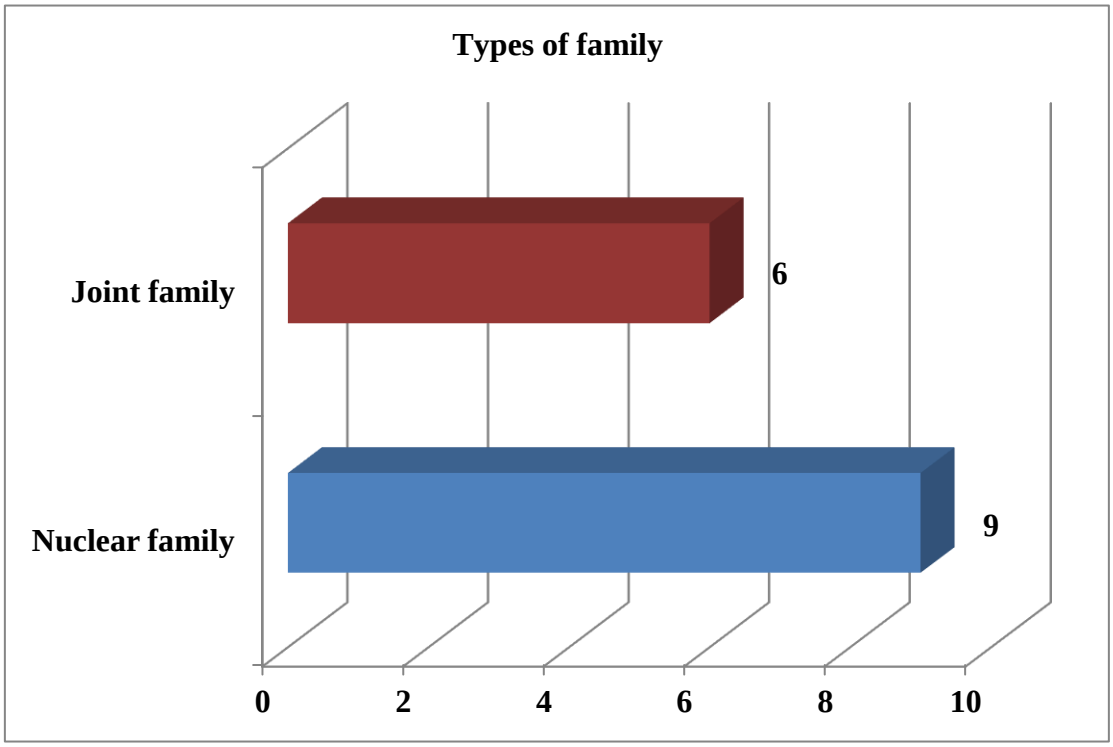

Figure- 4.1.4: Family type of the participants

4.1.5 Living area, Educational level and Religion of the participants

Participants	Living area	Educational level	Religion
P1	Urban	SSC	Islam
P2	Rural	HSC	Islam
P3	Rural	SSC	Islam
P4	Rural	JSC	Hindu
P5	Rural	SSC	Islam
P6	Rural	Up to class 5	Islam
P7	Rural	Others	Islam
P8	Urban	BSc	Islam
P9	Rural	BSc	Hindu
P10	Rural	BSc	Islam
P11	Rural	JSC	Islam
P12	Urban	SSC	Islam
P13	Rural	Up to class 5	Islam
P14	Rural	HSC	Islam
P15	Rural	PSC	Islam

Table 1: Living area, Educational level and Religion 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, 2 were up to class 5, 1 was PSC completed, 2 were JSC completed, 4 were SSC completed, 2 were HSC completed, 3 were studying BSC and 1was others.

Among 15 participants, it was found that 87% (n=13) religion were Islam and 13% (n=2) were Hindu.

4.1.6 Occupation (Before injury) of the participants

Among the 15 participants majority were students about 7 participants , 3 participants were driver, 2 were businessman, 1 was housewife, 1 was service holder and 1 was others professions.

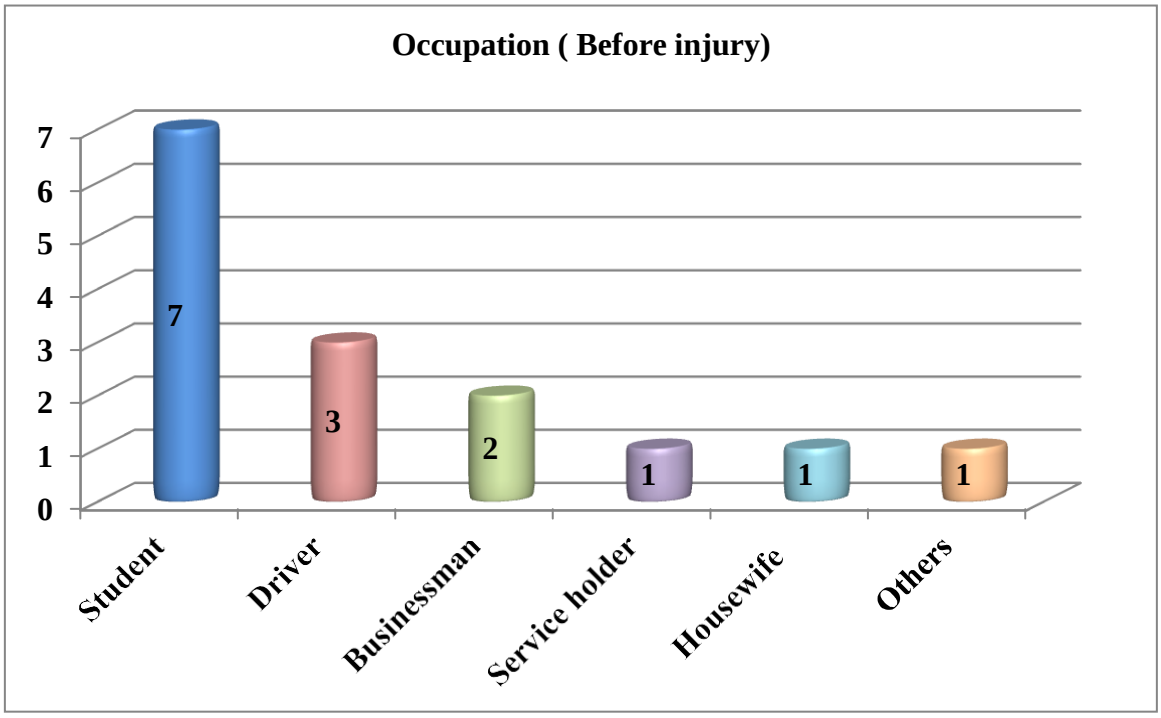

Figure-4.1.5: Occupation of the participants

4.1.7 Earning member of the participant's family

Among 15 participants, 7 participants were earned by them own, 2 participants were earned by their husband and 7 were earned by others members of the family.

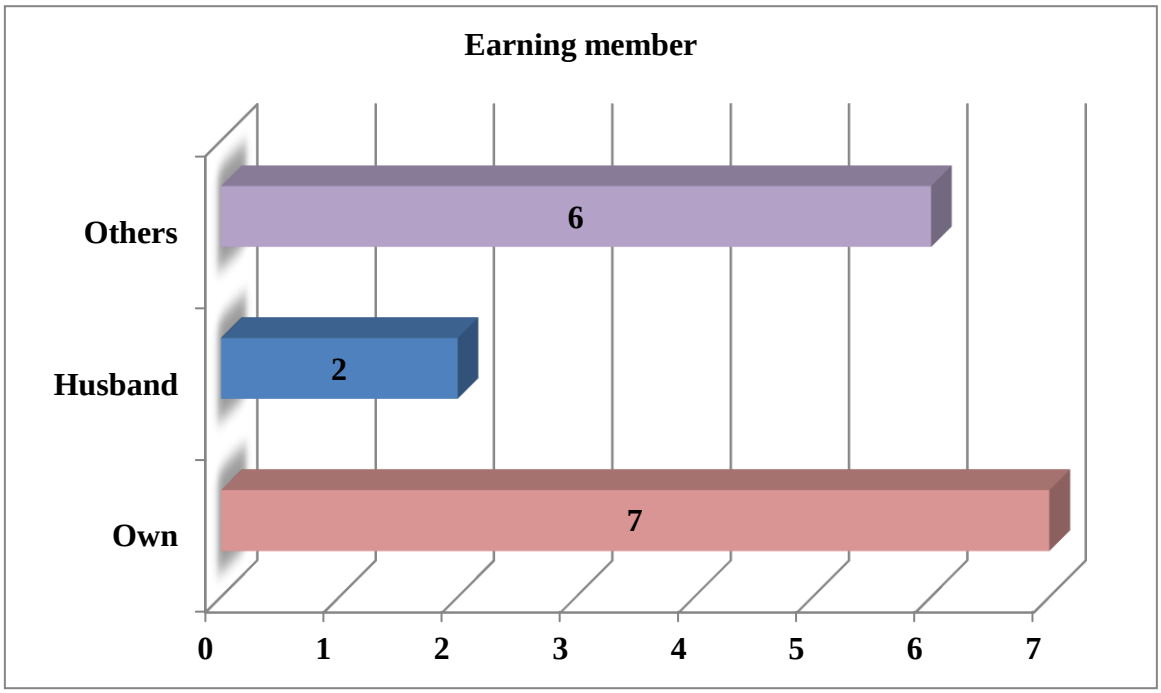

Figure-4.1.6: Earning member

4.1.8 Monthly family income of participants

Among 15 participants, 6 participant_s monthly family income is 7000-15000 taka, 4 participants family earn 16000-25000 taka, another 4 participants earn 26000-35000 taka and 36,000-60,000 taka about 1 participant.

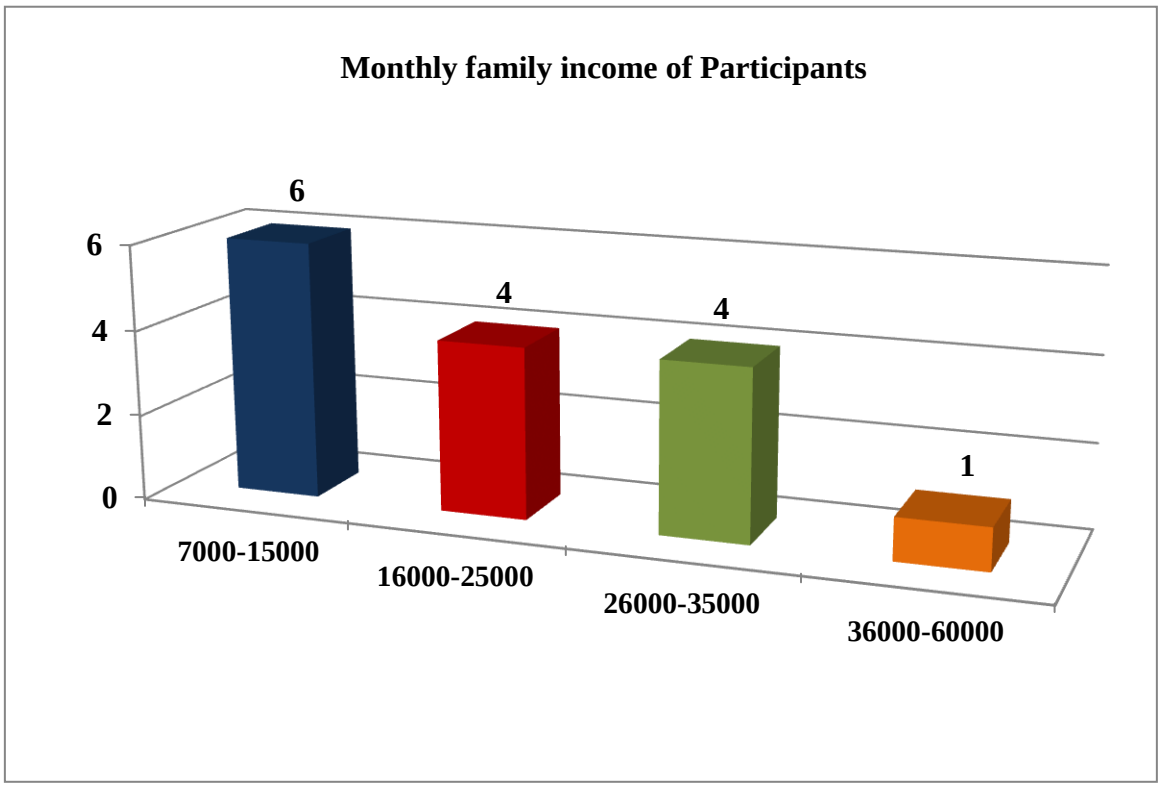

Figure-4.1.7: Monthly family income of the participants

4.2 Participant's injury related information

4.2.1 Causes of injury

The major causes of the spinal cord injury in the study was traumatic including road traffic accident about 6 participants, fall from height were 4 participants, and non-traumatic including spinal tumors about 3 participants, Transvers Myelitis about 1 participant and 1 was others.

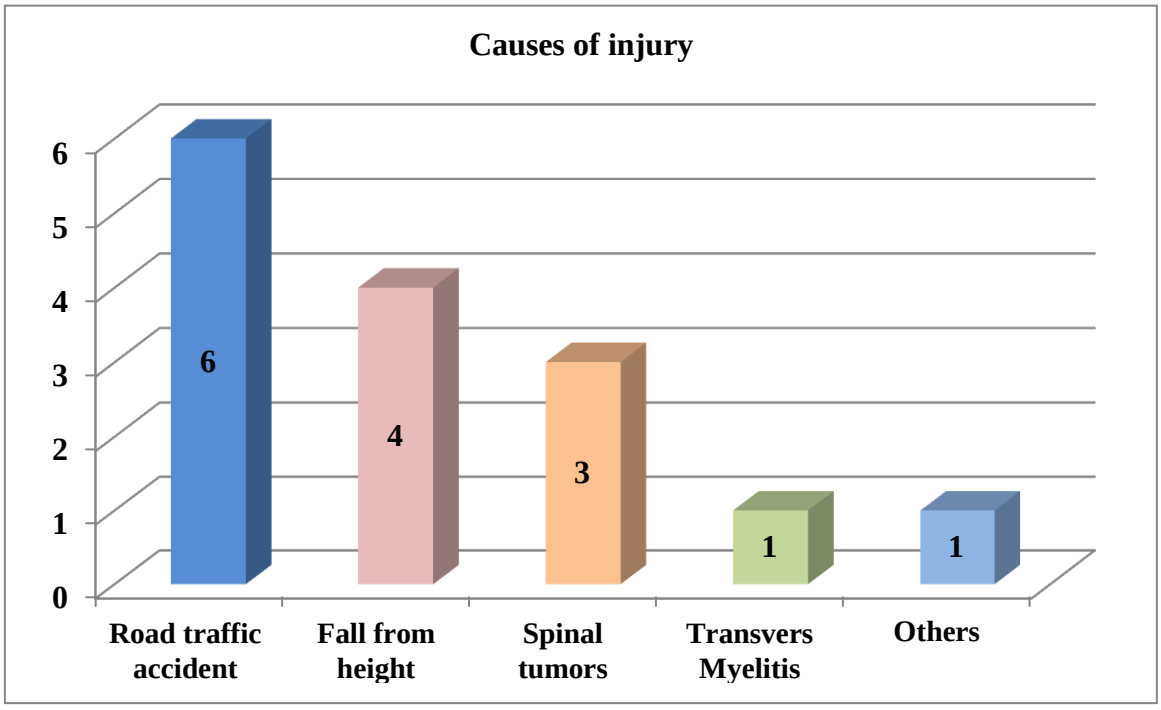

Figure-4.2.1: Causes of injury

4.2.2 Skeletal level of injury

Among 15 participants, skeletal level of the injury were largely involve thoracic about 47% (n=7) participants, lumber were 40% (n= 6) participants and 13% (n=2) participants were cervical injury.

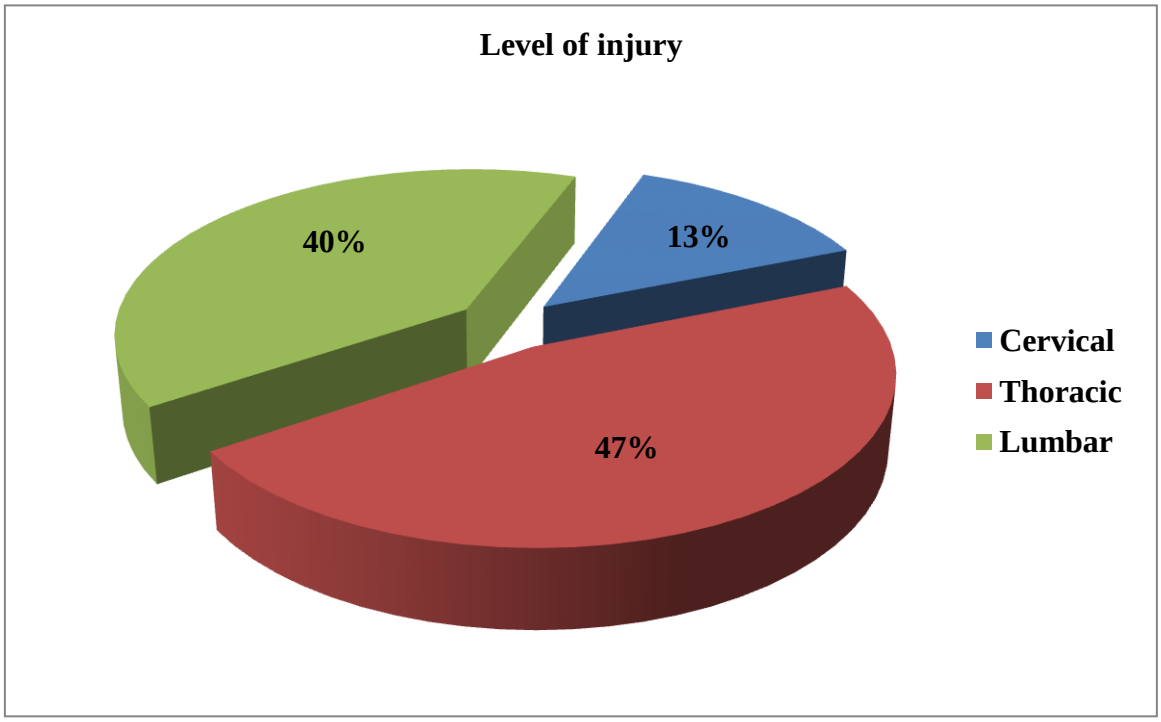

Figure-4.2.2: Skeletal level of injury

4.2.3 Impairment according to ASIA scale

Among 15 participants, majority were complete A about 74% (n=11) participants, 13% (n=2) were incomplete B and 13% (n=2) were incomplete C.

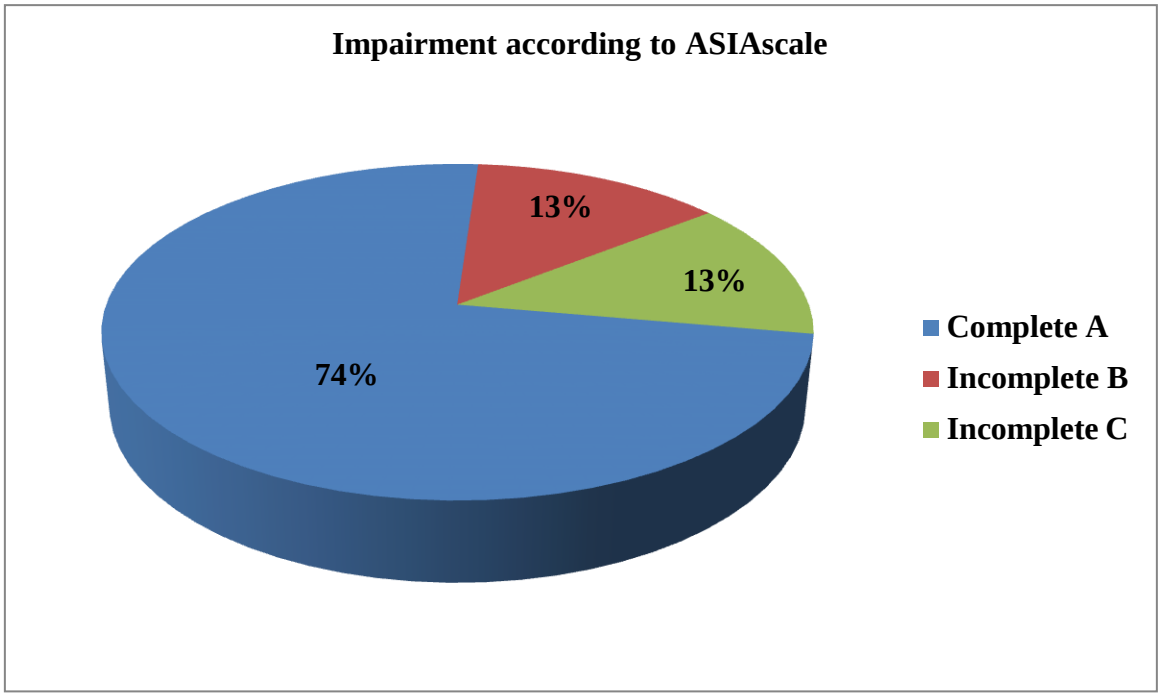

Figure-4.2.3: Impairment according to ASIA scale

4.2.4 Diagnosis of the participant

Among 15 participants, 100% (n=15) were paraplegic.

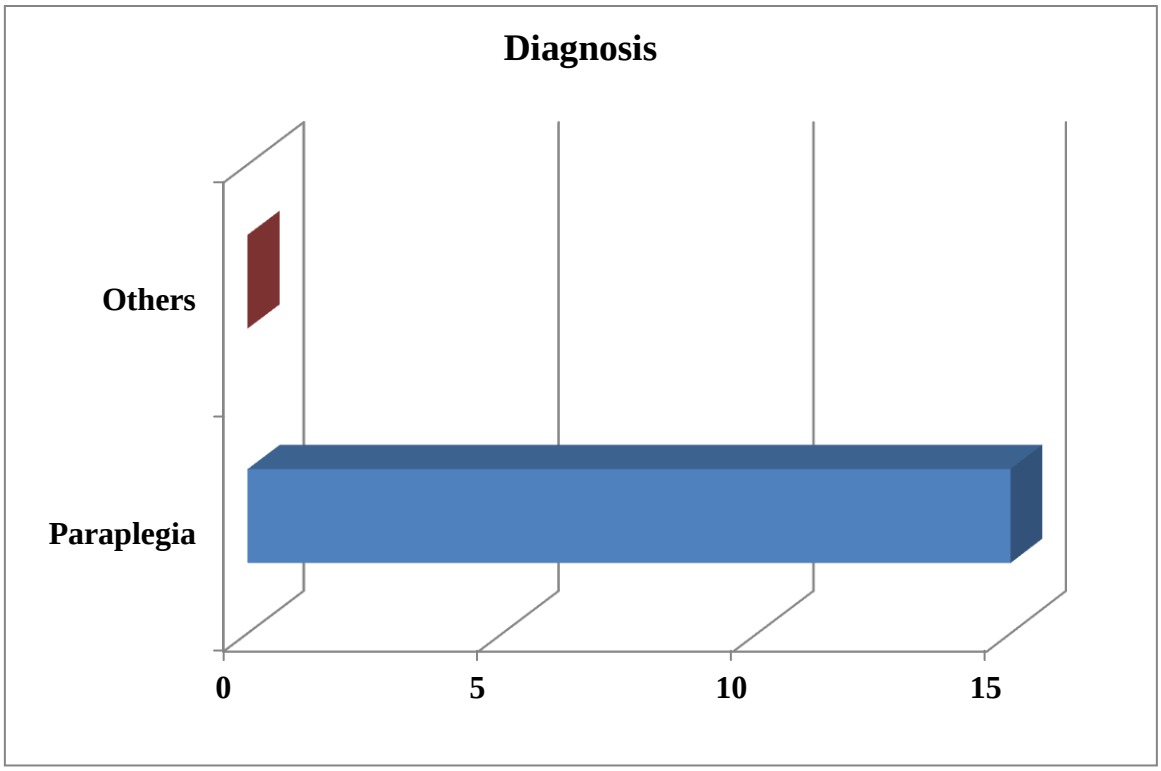

Figure-4.2.4: Diagnosis of the participant

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: Basketball, Volleyball, Table Tennis, Badminton are the common sports that the spinal cord injured patients are like to play.

Category-1: The sports that the spinal cord injured patients are like to play.

Table-2: The sports that the spinal cord injured patients are like to play.

Participants response	Basketball	Volley ball	Table Tennis	Badmin ton	Archery	Ball through	Weight lifting
P1		√	√				
P2		√	√	√			
P3		√	√	√			
P4			√	√			
P5		√		√			
P6	√						
P7		√					
P8		√					
P9		√					
P10					√	√	
P11	√			√			
P12	√	√					
P13	√	√					
P14		√	√				
P15	√	√					√
Total=15	5	11	5	5	1	1	1

Among fifteen participants, majority of participants about eleven participants said that they are playing volleyball, five participants said that they are playing basketball , others five participants also said that they are playing table tennis, another five participants said that they are playing badminton. One participant said that he is playing archery, another one participant told that he is playing ball through and one participant also said that he is playing weightlifting in CRP, Savar.

Theme-2: Improve balance, decrease pain, increase movement are the common physical benefits that spinal cord injured patient get after performing sports.

Category-2: physical benefits for patients with SCI after performing sports.

Table-3: physical benefits for patients with SCI after performing sports.

Participants response	Decrease pain	Improve balance	Increase movement	Increase energy	Decrease muscle tightness	Improve wheel chair skill	Increase Hand exercise	Improve sitting
P1		√		√		√		
P2	√	√					√	
P3		√			√		√	
P4	√	√						√
P5	√							
P6	√						√	
P7	√		√	√			√	
P8		√				√		√
P9			√	√				
P10	√	√	√					
P11		√			√			
P12	√	√						
P13	√	√	√					
P14							√	
P15	√		√	√				
Total=15	9	9	5	3	2	2	5	2

Among fifteen participants, majority of participants about nine participants said that decrease pain and improve balance are the most common benefits after performing sports, five participant said that after participating sports increase movement and hand exercise. Increase energy is also a benefits after performing sports said by three participants. Two participant also said that decrease muscle tightness, improve wheelchair skill and increase hand exercise are the benefits of performing sports.

Theme-3: Helpful, supportive, get importance by others, friendly are the common social benefits that spinal cord injured patient get after performing sports.

Category-3: Social benefits for patients with SCI after performing sports.

Table-4: Social benefits for patients with SCI after performing sports.

Participants response	No benefits	Helpful	Supportive	friendly	Get importance by others	Incidental learning from others	Encouragement from others	Increase unity
P1		√	√					
P2		√	√		√			
P3	√							
P4		√	√		√			
P5					√	√		
P6			√	√	√			
P7	√				√			
P8					√			
P9					√		√	
P10				√				
P11		√			√			
P12			√					
P13	√							
P14			√		√			√
P15					√		√	
Total= 15	3	4	6	2	10	1	2	1

Among fifteen participants, majority of participants about ten participants said that they get importance by others, six participants said that they get support from others, four participants said they get help from others, three participants said that they have no social benefits, two participant told that all people are friendly and they get encouragement from others. One participant said that they can learn from others and another one participant said that increase unity is the social benefit of performing sports.

Theme-4: Decrease depression, Increase Self-confidence, mental refreshment are the vital factor as a mental benefits that spinal cord injured patient get after performing sports.

Category-4: Mental benefits for patients with SCI after performing sports.

Table-5: Mental benefits for patients with SCI after performing sports.

Participants Response	Decrease depression	Happiness	Increase Self-confidence	Mental refreshment	Increase Mental strength	Enjoyable	Rela-xation
P1	√	√	√		√	√	
P2	√		√	√			
P3	√		√				
P4	√		√			√	
P5	√		√	√			
P6	√	√	√				
P7			√	√			√
P8	√		√				√
P9	√		√	√			
P10		√	√			√	
P11			√	√			
P12			√		√	√	
P13			√	√	√		
P14	√		√				
P15		√	√	√			
Total=15	9	4	15	7	3	4	2

Among fifteen participants, all the participant said that after participating sports their self-confidence grow up than before ,majority of participants about nine participants said that decrease depression is the most common mental benefits after performing sports, seven participant said that mental refreshment also a common be benefits after performing sports, four participants mention that happiness and enjoyable are the mental benefit that they face after participating sports, another three participant said that increase mental strength also a mental benefits and lastly two participant said that relaxation is the mental benefits after performing sports.

Theme-5: Pain, incontinence, poor balance, internal fixation are the common physical barriers that spinal cord injured patient face during performing sports.

Category-5: Physical barriers for patients with SCI during performing sports.

Table-6: Physical barriers for patients with SCI during performing sports.

Participants Response	No physical barriers	Pain	Incon-tinence	Internal fixation	Poor physical fitness	Heavy sweating	Seizers	Poor Balance
P1			√					
P2		√						
P3		√		√				
P4	√							
P5						√		
P6				√	√			
P7			√	√			√	
P8								√
P9		√	√	√				
P10								√
P11	√							
P12			√					
P13	√							
P14		√						
P15				√		√		
Total=15	3	4	4	5	1	2	1	2

Among fifteen participants, five participant said that they face some physical problem for internal fixation, four participants said that pain and incontinence are the most common physical barriers during performing sports, three participants said that they have no any physical barriers during performing sports, two participants said that poor balance and heavy sweating are the physical barriers that they face, one participant told that poor physical fitness is also a physical barriers , another one participant said that seizers is also a physical barriers during performing sports.

Theme-6: Depression for paralisis limb is the main mental barrier that spinal cord injured patient face during performing sports.

Category-6: Mental barriers for patients with SCI during performing sports.

Table-7: Mental barriers for patients with SCI during performing sports.

Participants Response	No mental barriers	Depression for paralisis limb
P1		√
P2	√	
P3		√
P4		√
P5		√
P6	√	
P7		√
P8		√
P9		√
P10		√
P11		√
P12	√	
P13		√
P14		√
P15		√
Total=15	3	12

Among fifteen participants, majority of participants about twelve participants said that depression for paralisis limb is the most common mental barrier during performing sports and three participants said that they have no any mental barriers during performing sports.

Theme-7: Need to improved medical management, coordination, communication, time management are the opinion to overcome barriers of spinal cord injured patient.

Category-7: Opinion to overcome barriers of SCI patient.

Table-8 Opinion to overcome barriers of SCI

Parti-cipants Respon se	Well man age ment	Suppor tive for wheel chair patient	Prop er train ing is given	Need to impro ved medical manage ment	Impro ve coor-dina tion	Main tain time manage ment	Need to improve commu nication	Play Regu lar timel y	Don_t Be Frus trated and increas e mental strengt h
P1	√	√							
P2	√								
P3	√								
P4	√								
P5			√						
P6	√								
P7				√					
P8					√	√	√		
P9									√
P10	√								
P11	√								
P12	√								
P13						√		√	
P14				√		√			
P15									√
Total= 15	8	1	1	2	1	3	1	1	2

Among fifteen participants, majority of participants about twelve participants said that well management and everything is fine. One participant said that it is supportive for wheel chair patient and Proper training is given here. Three participants said that maintain time management, two participants said that need to improved medical management and don_t be frustrated and need to increase mental strength. Another one participant gives opinion to improve coordination, communication and play regular timely to overcome their barriers.

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. Ten major categories found under which ten 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: Basketball, Volleyball, Table Tennis, Badminton are the common sports that the spinal cord injured patients are like to play.

Sport is a holistic activity that shows promise for people living with a SCI. ‑Sport‖ is defined as a physical activity involving exertion, skill, and/or hand–eye coordination as the primary focus, with elements of competition and formally existing through organizations (Cheung et al., 2021). Sports activity may improve the quality of life and levels of life satisfaction. Consequently, the level of sport and active leisure participation is important in rehabilitation and long-term care.

One participate said that- *"I would like to play basketball here".* Among fifteen participants, five participants said that they are like to play basketball. Another participant said that- *"I would like to play volleyball here".* Above participants, majority of participants about eleven participants are like to volleyball here.

Another one participant told that- –*Table Tennis is my favorite game, I would like to play table tennis here".*5 participants also said that they are like to play table tennis. Another participant said that- *"I would like to play badminton".* Above participants about five participants said that they are also like to play badminton here. Another one patient said that- *"I play archery here".* One participant said that- *"I would like to play ball through".* One participant also said that- –*I would like to play weightlifting here".*

So, we can say that majority of the participants are like to play volleyball, basketball, table tennis, badminton. A few participants are like to play archery, ball through, weightlifting.

A number of authors have claimed that exercise, sports, and an overall better level of fitness can help patients with SCI (Levins et al., 2004). Sports participation have been linked to improved quality of life and community integration in the SCI population (Diaz et al., 2019).

Theme-2: Improve balance, decrease pain, increase movement are the common physical benefits that spinal cord injured patient get after performing sports.

Researcher found a lot of physical benefits of spinal cord injured patient who are performing sports. During the interviews, most of the participants said that they get various physical benefits when they perform sports.

One participate said that –*"I get a lot of pain down my legs and it goes up my back as well. By performing sports activities my pain decrease than before, it also helps to improve balance, at first my balance are too poor but now I play sports and my balance are improving day by day".* Like this participant majority of the participant about nine participants mention that they also feel that their pain are decrease and improve balance by performing sports.

Another participant are said that -*"My body movement are improve and increase my hand exercise when I play sports."* Among fifteen participants, most of the participants about five participants said that after performing sports they feel that their body movement are improve and their hand exercise are improve.

One participant said that - *"My energy are increase than before, when I playing sports I feel my energy are increase now."* About three participants said that increase energy are the physical benefit that they get after performing sports. A few participants mention that after performing sports they get some benefits like that decrease muscle tightness, improve wheel chair skill and improve sitting.

From the reported of the above, we can understand that decrease pain, improve balance, movement and hand exercise are the common benefits of spinal cord injured patient who are related with sports. A few participants get some others benefits like that increase energy, decrease muscle tightness, improve wheelchair skill and improve sitting.

Literature shows, there are much benefits of sports activities, some spinal cord injured patient are get benefits by performing sports, they have a lot of pain on leg, groin and back and their muscle spasm are present, when they perform sports they don‘t get spasm and also relief their pain and this sports activities are really helps pain management (Stephens et al., 2012). Engagement in sport was a factor that prevented secondary complications associated with SCI. Participants noted reductions in urinary tract infections, pain, muscle spasms, pressure sores, medication dependency, and hospitalizations (Cheung et al., 2021).

Theme-3: Helpful, supportive, get importance by others, friendly are the common social benefits that spinal cord injured patient get after performing sports.

Person with spinal cord injury who are related sports activities they get many benefits to perform sports. Social benefits are also a common benefits that spinal cord injured patient get after performing sports.

Among fifteen participants, ten participants mention that- *"I get importance by others, when i talk another participant all participants are gives me importance."*

Participants- 1, 2,4,6,12,14 said similar – –*All people are supportive, I get support from others any time also during sports".* Participants – 1, 2,4,11 said that- *"All person are helpful here, everybody help me at any situation. When I fall any problem they help me to solve it".* Participants – 9 & 15 told – *"When i playing sports, others participants and others people are encourage me for better performance. By getting encourage i much better playing then before".* Participants – 6 & 10 said that – *"All participants are friendly, before playing sports we didn't knew one another but after playing sports together we know one another and let's be friendly with each other".*

Participant- 8 said that – *"Socialization is the benefit that I get after performing sports".* Participant- 5 told- *"when i play with others i can learn many incidental things from others".* Participant -14 said that- *"when we play sports we can know about one another we spend a good and long time, we can share our own problem or any events that's why our unity are increase day by day".* Participants - 3,7,13 said that – *"I did not get social benefits".*

From the reported of the above, we can understand that, among fifteen participants, majority of participants about six participants said that they get support from others, four participants said they get help from others, three participants said that they have no social benefits, two participants told that all people are friendly and they get encouragement from others. One participant said that they can learn from others, one participant told that socialization is the social benefit and another one participant said that increase unity is the social benefit of performing sports.

Literature shows that by participating sports, participants are working together to achieve a common goal, incidental learning from others, obtaining a valuable social support (Stephens et al., 2012). Regular physical activity can have substantial social benefits, providing a means of establishing new friendships, sharing experiences, developing social support networks, and reducing handicap (Tasiemski et al., 2004). The benefits of sharing similar experiences with people who have a true understanding of their situation and learning from these individuals was evident. Indeed, this study highlights the importance of incidental learning that comes from sport and mixing with similarly disabled people (Stephens et al., 2012).

Theme-4: **Decrease depression, Increase Self-confidence, mental refreshment are the vital factor as a mental benefits that spinal cord injured patient get after performing sports.**

Mental benefits are the common benefits of spinal cord injured patient get after performing sports. Researcher found some mental benefits from participants.

Among fifteen participants, all the participant said that *"After participating sports my self-confidence are improve day by day. At the 1st time i could not play properly now i can perfectly and I feel now i do better performance than before that's why my confidence are improved."* One participant said that- *"when i spend leisure time i feel depressed about my condition but when i play sports by others i don't feel depressed."* Among fifteen participants, majority of the participants about nine participants said the similar things , so decrease depression are the most common mental benefits that spinal cord injured patient get after performing sports.

Another one participant said that – *"After performing sports i feel too much mental refreshment that are encourage me to play better."* Like this participant, about seven participants also said that they feel mental refreshment after playing sports. So, mental refreshment also the common mental benefits of performing sports.

Some participants mention that- *"Sports are too enjoyable, when we play together we enjoy our sports and we feel so happy to participate there."* One participant said that- *"when i playing sport its helps to increase my mental strength, when i see others participants perform i feel that i also can do this like others."* About three participants are said also this that after playing sports their mental strength are increasing day by day. A few patients said that –-Sports are gives us lot of entertainment and after performing sports we feel so relax‖.

In this study among fifteen participants, majority of participants about nine participants said that decrease depression is the most common mental benefits after performing sports, seven participant said that mental refreshment also a common be benefits after performing sports, four participants mention that happiness and enjoyable are the mental benefit that they face after participating sports, another three participants said that increase stamina also a mental benefits and lastly two participant said entertainment and relaxation are the mental benefits after performing sports.

Improving mental health was not surprising that participants emphasized the positive impact sport had on their mental health .Having competition is an interesting benefit of sport was that it allowed participants to experience aspects of competition (Cheung et al., 2021).

Theme-5: Pain, incontinence, poor balance, internal fixation are the common physical barriers that spinal cord injured patient face during performing sports.

Spinal cord injured patient who are participating sports activities they face some barriers during performing sports. Physical barriers are the common of those barriers. Pain, incontinence, poor balance and fitness some common barriers. A few participants are said that they have no any physical barriers.

One participant said that-*"After participating sports i feel pain on back and leg. Sometimes i feel it during sports. For this complication i can't play well and this is my barrier to participating sports."* Most of the participants about four participants are said the similar complication. They also say about pain. Another five participants reported that- *"when i participate sports, during my sports time when i tern left or right then i get pain on back where the fixator are located for this pain and i can't perform well."* So pain is the common complication of internal fixation and participant face this during their sports time. Among of them one participant said that -–*During performing sports i get pain on my abdomen."* So, pain is the most common barriers that spinal cord injured patient face during performing sports.

Another one participant said that- *"when i play sports i can't hold my urine, sometimes i can feel then i do catheter but a few times i can't understand and i can't hold urine. It is a very embarrassing situation and then i give up my sports and go to fresh. I can't perform that day and it is a barrier for me to participating sports."* About four participants are said this. So, incontinence is also a common physical barrier.

One participant said that- *"My balance is too poor, for this i can't perform well and this poor balance is my physical barrier that occur problem during my sports time."* About two participants said similar that incontinence is their physical barriers. Two participant said that- *Heavy sweating is my physical barriers that occur problem to participate sports."* One participant said that –*" For my poor physical fitness I can't play well with others player."* Another one participant said that-*" I have seizure and for this when i play sports sometimes i can't play for seizures.* One participant told that-*" I feel fatigue that's why i can't play long time."*

So we can say finally that among fifteen participants, four participants said that pain and incontinence are the most common physical barriers during performing sports, three participants said that they have no any physical barriers during performing sports, two participants said that poor balance and heavy sweating are the physical barriers that they face, one participant told that poor physical fitness is also a physical barriers , another one participant said that seizers is also a physical benefits and lastly one participant said that fatigue is also a physical barriers during performing sports.

The personal barriers that were mentioned most frequently were time, less able to practice sport due to the disability and pain complaints (De Groot et al., 2020).

Theme-6: Depression for paralisis limb is the main mental barrier that spinal cord injured patient face during performing sports.

Mental barriers are the common barrier that the spinal cord injured patient face during performing sports.

One participant said that -*"When i play sports sometime i feel depression for my peralised limb, i think if i were not paralised or my condition was better from now or i can walk then i can play well and do better performance than now."* Majority of the participants about twelve participants are say this similar things that they are feel depressed about their paralised limb and it is their mental barriers that they face during performing sports. Another one patient said that-*" I have no mental depression."*

So researcher found that among fifteen participants, majority of participants about twelve participants said that depression for paralisis limb is the most common mental barrier during performing sports and three participants said that they have no any mental barriers during performing sports.

Lack of information, depression and mental illness and negative messages about sport from medical professionals prevented earlier engagement in sport (Cheung et al., 2021).

Theme-7: Need to improved medical management, coordination, communication, time management are the opinion to overcome barriers of spinal cord injured patient.

Researcher found some opinion which is given by the participant to overcome their barriers.

Participants -1,2,3,4,5,6,10,11,12 said that - *"Management system are very well here and i get everything as needed This place and medical system are supportive for wheelchair patient and proper traning is given here ."* we can see the majority of participants are pleased about management system here.

Participants- 8, 13,14 said that- *"Time management is very important things and i think that it is important to maintain proper time management here to do everything timely."* Participants – 7 & 14 said that- *"For better treatment it is important to improve medical management here."* Participants-9 & 15 said that- *" Participants need to increase their mental strength and they need to be motivated so that they are not frustrated."* Participant -8 said that-*"It is important to improve coordination and communication for better feedback from the participants."* Participant -13 said that- *"play regular timely it is helps us to do better performance and it keep good our mental and physical health."*

So we can say that among fifteen participants, majority of participants about twelve participants said that well management and everything is fine. One participant said that it is supportive for wheel chair patient and Proper training is given here. Three participants said that maintain time management, two participants said that need to improved medical management and don‖t be frustrated and need to increase mental strength. Another one participant gives opinion to improve coordination, communication and play regular timely to overcome their barriers.

Developing countries all face the challenge of increasing participation in sport of persons with disabilities, and barriers must be addressed (Wilson & Khoo, 2013). Although much progress has been achieved, technology for athletes with disability must be far advanced to allow them to reach highest performances, especially for professionals‟ athletes. Closing the gap between assistive technologies and the needs of athletes with disability seems to be fundamental to guarantee good health and satisfactory performances (Berardi et al., 2021).

Limitation

This is a qualitative type of study purposive sampling was used to collect data from participants. The validity and reliability of the semi-structured questionnaire used in this study was not tested. 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 was used. Due to time limitation small area are selected for this study. To make a successful research it may be time consuming. I have to take small sample size that is 15. If large number of sample size was taken, it would be more effective. As it was the first research of the researcher so there might be some mistakes that should be overlooked by the supervisor and the honorable teachers.

CHAPTER-VI CONCLUSION AND RECOMMENDATION

6.1 Conclusion

This study comprehends about the perception of benefits and barriers in performing sports at spinal cord injured patient. This study comprehends about the experience benefits and barriers of spinal cord injured patient. Participants are performing various types of sports. Majority of the participants are like to play volleyball, basketball, table tennis, badminton and a few participants are playing archery, ball through and weight lifting. From this study found some benefits and barriers. Researcher found some physical Benefits. The most common physical benefits are decrease pain, improve balance, increase energy and hand exercise. Others some benefits are decrease muscle tightness, improve wheelchair skill and sitting. Most of the participants are get support from others, get importance by others. They get friendly and helpful behavior from others participants. They gets encourage from others for better performance and they can learn many incidental things from others and it gives them a strong unity each-others, this is the social benefits of performing sports. A few patients said that they don‘t get any social benefits. Decrease depression, increase self-confidence, mental refreshment, feeling happy and enjoy the sports are the common mental benefits of participating sports. Most of the participant have internal fixation and a few participants have not this fixation. Pain and sting are common complication that participants gets during perform sports, some participant said that they don‘t feel any complication for the fixator. From this study found physical and mental barriers of the participants. Pain, incontinence, internal fixation, poor balance and physical fitness, heavy sweating, seizures and fatigue are also some physical barriers that the participants face during participating sports. A few participants said that they do not face any physical barriers.

Most of the participants are feel depressed for their paralised limb and a few participants said that they don_t face any mental barriers. Researcher found some opinion which is given by the participant to overcome their barriers. From this study find that majority of participants are pleased about management system here. Some participant said to improve Time management and medical management. Others participants said need to increase their mental strength and they need to be motivated so that they are not frustrated. It is important to improve coordination and communication for better feedback from the participants. Play regular timely it is helps them to do better performance and it keeps good their mental and physical health.

6.2 Recommendation

The results of the study will be useful in improving performance of the spinal cord injured patient who are related with sports of CRP, Savar. 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 strategies of benefits and barriers of spinal cord injured patient who are related with sports activities.

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APPENDIX

Verbal Consent Statement

(Please read out to the participants)

Assalamualaikum/Namasker,

I am Saima Tasnim, 4th professional B.sc in Physiotherapy student under Bangladesh Health Professions Institute (BHPI), which is affiliated by University of Dhaka. I am conducting this study as a part of my academic work. My dissertation title is **"PERCEPTION OF BENEFITS AND BARRIRES IN PERFORMING SPORTS OF SPINAL CORD INJURED PATIENT AT CRP IN BANGLADESH".** I would like to know about benefits and barriers in performing sports at spinal cord injured patient. Now I want to ask some personal, benefits and barriers related question. This will take approximately 20 to 30 minutes.

I would like to inform you that, this is a purely academic study and will not be used for any other purpose. Your participation in the research will have no effect on your current or upcoming life. All information provided by you will be kept in confidential and in the event of any report or publication it will be ensured that the source of information remains unidentified.

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 or my Supervisor Farjana Sharmin, Lecturer of BHPI, Consultant & OPD In-charge, Department of Physiotherapy, CRP, Savar, Dhaka-1343.

Do you have any questions before I start?

☐ Yes ☐ No

If yes…….

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

☐ Yes ☐ No

Signature of the Participant and date_____

Signature of the Data collector and date _____

Signature of Witness and date_____

Questionnaire (English)

Part I- Patient's identification

(To be collected from record/ respondent)

Questions	**Response**
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.

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

	☐ Masters ☐ Others (specify)
7. Religion:	☐ Islam ☐ Hinduism ☐ Christian ☐ Buddhism ☐ Others (Specify)
8. Occupation: (Before injury)	☐ Farmer ☐ Housewife ☐ Student ☐ Garments worker ☐ Service holder ☐ Day Labor ☐ Businessman ☐ Driver ☐ Others
9. Earning members	☐ Own ☐ Husband ☐ Wife ☐ Son ☐ Daughter ☐ Others (Specify)
10. Average monthly income (Taka):	……Taka

Part III- Injury related information's:

(To be collected from record / respondent)

Questions	Responses
1.Causes of injury:	Traumatic- ☐ Road traffic accident ☐ Fall from height ☐ Fall of over load ☐ Shallow driving ☐ Others (specify) Non- traumatic- ☐ Potts disease ☐ Spinal tumor ☐ Transvers Myelitis ☐ Undiagnosed ☐ Others (Specify)
2.Skeletal level of injury:	☐ Cervical ☐ Thoracic ☐ Lumbar ☐ Sacral ☐ Coccygeal
3.Neurological level of injury:	☐ Complete A ☐ Incomplete B ☐ Incomplete C ☐ Incomplete D ☐ Normal E
4.Diagnosis (During admission):	☐ Tetraplegia ☐ Paraplegia

Part IV- Benefits and barriers in performing sports at spinal cord injured patient through open ended questionnaire:

1. Which type of sports would you like to play?
2. What kind of benefits you get from playing sports?
3. What kind of physical benefits you get after performing sports?
4. What kind of social benefits you face when participate sports?
5. What kind of mental benefits you get after participating sports?
6. Do you think your self-confidence has improved after sports? If yes, then tell me why?
7. Do you facing any challenge to communicate with other players when you perform sports? If yes, what type of challenges you face? Please describe.
8. Do you have any attachment or internal fixation in your body that creating problem during performing sports? Please explain.
9. What kind of problem are you facing for lack of supply of accessory device? Please explain.
10. What kind of physical barriers you get after participating sports? Why are you facing these? Please describe.
11. Please describe the social barriers that you face during performing sports and why?
12. Mention about the psychological barriers that you encounter during performing sports and why are you facing this? Please describe.
13. What is your opinion to overcome those barriers?

মৌখিক সম্মতিপত্র/ অনুমতিপত্র

(অংশগ্রহনকারিকে পড়ে শোনাতে হবে)

আসসালামুয়ালাইকুম/নমস্কার,

আমি, সায়িমা তাছনিম, ঢাকা বিশ্ববিদ্যালয়ের অধিভুক্ত বাংলাদেশ হেলথ প্রফেশনস ইনস্টিটিউট (বিএইচপিআই)- এর অধীনে পরিচালিত বিএসসি ইন ফিজিওথেরাপী কোর্সের ৪র্থ বর্ষের একজন ছাত্রী। আমি আমার একাডেমিক কাজের একটি অংশ হিসাবে এই গবেষণা করছি। আমার গবেষণার শিরোনাম হল-**" বাংলাদেশের সিআরপি তে মেরুদন্ডের আঘাতপ্রাপ্ত রোগীর খেলাধুলা করার ক্ষেত্রে সুবিধা এবং বাধা সম্পর্কে ধারনা"**। এর মাধ্যমে আমি মেরুরজ্জে আঘাতপ্রাপ্ত রোগীর খেলাধুলা করার ক্ষেত্রে সুবিধা এবং বাধা সম্পর্কে জানতে চাই। এখন আমি কিছু ব্যক্তিগত, সুবিধা এবং বাধা সম্পর্কিত প্রশ্ন জিজ্ঞাসা করতে চাচ্ছি। এটি প্রায় ২০-৩০ মিনিট সময় নিবে।

আমি আপনাকে অবগত করছি যে, এটা আমার অধ্যায়নের অংশ এবং যা অন্য কোন উদ্দেশ্যে ব্যবহৃত হবে না। এই গবেষণায় অংশগ্রহন আপনার বর্তমান এবং পরবর্তী জীবনে কোন প্রভাব ফেলবে না। আপনি যেসব তথ্য প্রদান করবেন তার গোপনীয়তা বজায় থাকবে এবং আপনার প্রতিবেদনের ঘটনাপ্রবাহে এটি নিশ্চিত করা হবে যে এই তথ্যের উৎস অপ্রকাশিত থাকবে।

আপনার অংশগ্রহণ স্বেচ্ছাপ্রণোদিত এবং আপনি যে কোন সময় এই অধ্যায়ন থেকে কোনো নেতিবাচক ফলাফল ছাড়াই নিজেকে প্রত্যাহার করতে পারবেন। এছাড়াও কোন নির্দিষ্ট প্রশ্ন অপছন্দ হলে উত্তর না দেয়ার এবং সাক্ষাৎকারের সময় কোন উত্তর না দিতে চাওয়ার অধিকার ও আপনার আছে। এই অধ্যায়নে অংশগ্রহণকারী হিসেবে আপনার যদি কোন প্রশ্ন থাকে তাহলে আপনি আমাকে অথবা আমার সুপারভাইজার ফারজানা শারমিন, প্রভাষক, বিএইচপিআই, কনসালটেন্ট এন্ড আউটপেসেন্ট ইনচার্জ, ফিজিওথেরাপি বিভাগ,সিআরপি ,সাভার,ঢাকা-১৩৪৩ এ যোগাযোগ করতে পারেন।

সাক্ষাৎকার শুরু করার আগে কি আপনার কোন প্রশ্ন আছে?

☐ হ্যাঁ ☐ না

যদি থাকে.....

সুতরাং, আমি আপনার অনুমতিতে সাক্ষাৎকার শুরু করতে পারি?

☐ হ্যাঁ ☐ না

১।অংশগ্রহণকারী স্বাক্ষর ও তারিখ_____

২।উপাত্ত সংগ্রহকারীর স্বাক্ষর ও তারিখ_____

৩।সাক্ষীর স্বাক্ষর ও তারিখ_____

প্রশ্নাবলী বাংলা

পর্ব ১- রোগীর সনাক্তকরণ

(রোগীর তালিকা পুস্তক / রোগীর নিকট থেকে সংগৃহীত)

প্রশ্ন	উত্তর
শনাক্তকারী সংখ্যাঃ	
সাক্ষাৎকার গ্রহণের তারিখঃ	
অংশগ্রহণকারী নামঃ	
ঠিকানা	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. বয়স:	.....বছর
২. লিঙ্গ:	☐ পুরুষ ☐ মহিলা
৩. বৈবাহিক অবস্থা:	☐ অবিবাহিত ☐ বিবাহিত ☐ পৃথক ☐ তালাক প্রাপ্ত ☐ অন্যান্য
৪. পরিবারের ধরন:	☐ একক পরিবার ☐ যৌথ পরিবার
৫. এলাকা:	☐ গ্রাম ☐ শহর
৬. শিক্ষাগত যোগ্যতা:	☐ নিরক্ষর ☐ নিম্ন প্রাথমিক

	☐ প্রাথমিক ☐ নিম্ন মাধ্যমিক ☐ মাধ্যমিক ☐ উচ্চমাধ্যমিক ☐ স্নাতক ☐ স্নাতকোত্তর ☐ অন্যান্য
৭. ধর্ম:	☐ ইসলাম ☐ হিন্দু ☐ খ্রিস্টান ☐ বৌদ্ধ ☐ অন্যান্য
৮. পেশা: (আঘাতের পূর্বে)	☐ কৃষক ☐ গৃহিণী ☐ ছাত্র ☐পোশাক শ্রমিক ☐ পরিষেবা ধারক ☐ দিন-মজুর ☐ ব্যবসায়ী

	☐ চালক ☐ অন্যান্য
৯. উপার্জনকারী ব্যক্তি:	☐ নিজে ☐ স্বামী ☐ স্ত্রী ☐ ছেলে ☐ মেয়ে ☐ অন্যান্য
১০. গড় মাসিক আয়: (টাকা)	..... টাকা

পর্ব -৩ : দুর্ঘটনা সংশ্লিষ্ট তথ্য

(রোগীর তালিকা পুস্তক / রোগীর নিকট থেকে সংগৃহীত)

প্রশ্ন	উত্তর
১. আঘাতের কারন:	আঘাত জনিত- ☐ মোটরযানের আঘাত ☐ উপর থেকে পরে যাওয়া ☐ভারী বস্তু নিয়ে পরে যাওয়া ☐ অগভীর পানিতে ঝাপ দেওয়া ☐ অন্যান্য আঘাত ব্যতীত- ☐ পটস রোগের কারনে ☐ স্পাইনাল টিউমারের কারনে ☐ ট্রান্সভার্স মাইলাইটিস ☐ অনির্ণয়ীয় ☐ অন্যান্য
২. আঘাতপ্রাপ্ত মেরুদন্ডীও অংশ:	☐ গ্রীবাদেশীয় ☐ বক্ষদেশীয় ☐ কটদেশীয় ☐ শ্রোণীদেশীয় ☐ পুচ্ছদেশীয়

৩. স্নায়ুতন্ত্রীয় আঘাতের ধরন: (এ এস আই এ স্কেল অনুযায়ী)	☐ সম্পূর্ণ (A) ☐ অসম্পূর্ণ (B ☐ অসম্পূর্ণ (C) ☐ অসম্পূর্ণ (D) ☐ স্বাভাবিক (E)
৪. নির্ণয়কৃত পক্ষাঘাতের ধরন:	☐ ঊর্দ্ধ বাহু নিম্ন বাহু পক্ষাঘাত ☐ নিম্ন অংশের পক্ষাঘাত

পর্ব -৪ : উন্মুক্ত প্রশ্নপত্রের মাধ্যমে মেরুদন্ডে আঘাতপ্রাপ্ত রোগীর খেলাধুলা করার সুবিধা এবং বাধা সমূহ অনুসন্ধান-

১ . আপনি কোন ধরনের খেলা খেলতে পছন্দ করেন?

২. খেলাধুলা করার ফলে আপনি কি ধরনের সুবিধা পান?

৩. খেলাধুলা করার পর আপনি কি ধরনের শারীরিক সুবিধা পান?

৪. খেলাধুলায় অংশগ্রহণ করার ফলে আপনি কি ধরনের সামাজিক সুবিধার সম্মুখীন হন?

৫. খেলাধুলায় অংশগ্রহণ করার পর আপনি কী ধরনের মানসিক সুবিধা পান?

৬. আপনি কি মনে করেন খেলাধুলার পরে আপনার আত্মবিশ্বাস বেড়ে গেছে? যদি হ্যাঁ হয়, তাহলে বলুন কেন।

৭. খেলাধুলা করার সময় অন্য খেলোয়াড়দের সাথে যোগাযোগ করার জন্য আপনি কি কোন সমস্যার সম্মুখীন হন? যদি হ্যাঁ হয়, আপনি কি ধরনের সমস্যার মুখোমুখি হন? অনুগ্রহ করে বর্ণনা করুন।

৮. আপনার শরীরে কি কোনো সংযুক্তি বা অভ্যন্তরীণ ফিক্সেশন আছে যা খেলাধুলা করার সমস্যা তৈরি করে? দয়া করে ব্যাখ্যা করুন।

৯. আনুষঙ্গিক ডিভাইস সরবরাহের অভাবে আপনি কি ধরনের সমস্যার সম্মুখীন হচ্ছেন? দয়া করে ব্যাখ্যা করুন।

১০. খেলাধুলায় অংশগ্রহণ করার পর আপনি কী ধরনের শারীরিক প্রতিবন্ধকতা পান? আপনি কেন এসবের সম্মুখীন হন? অনুগ্রহ করে বর্ণনা করুন।

১১. খেলাধুলা করার সময় আপনি যে সামাজিক বাধাগুলির সম্মুখীন হন এবং কেন হন তা বর্ণনা করুন?

১২. খেলাধুলা করার সময় আপনি যে মানসিক বাধাগুলির সম্মুখীন হন সে সম্পর্কে উল্লেখ করুন এবং কেন আপনি এগুলোর মুখোমুখি হচ্ছেন? অনুগ্রহ করে বর্ণনা করুন।

১৩. আপনি যে বাধা গুলোর সম্মুখীন হচ্ছেন তা প্রতিরোধে আপনার মতামত কী?

Permission Letter

Date: March 16, 2022

To

The 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 research project.**

Respected Sir,

With due respect and humble submission to state that I am Saima Tasnim, a student of 4th year B.Sc. in physiotherapy at Bangladesh Health Professions Institute (BHPI). The Ethical committee has approved my research project entitled: **"Perception of benefits and barriers in performing sports at spinal cord injured patient at CRP in Bangladesh"** under the supervision of Farjana Sharmin, Lecturer of BHPI, Consultant & OPD In-charge, Department of Physiotherapy, CRP, Savar, Dhaka-1343. I want to collect data for my research project from the Department of Physiotherapy at CRP. So, I need permission for data collection from the Spinal Cord Injury (SCI) unit at CRP-Savar. I would like to assure that anything of the study will not be harmful for the participants and the department itself.

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

Yours faithfully,

Saima Tasnim

23.03.2022

Saima Tasnim

4th Year B.Sc. in Physiotherapy

Class Roll: 35; Session: 2016-17

Bangladesh Health Professions Institute (BHPI)

(An academic Institution of CRP)

CRP-Chapain, Savar, Dhaka-1343

Approved

24/04/22

Recommended

23.03.22

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

Forwarded

23.03.2020

Prof. Md. Obaidul Haque
Vice-Principal
BHPI, CRP, Savar, Dhaka.

23.03.2022

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 Saima Tasnim , student of final year B.Sc. in Physiotherapy program at Bangladesh Health Professional Institute (BHPI) the academic institute of Centre for the Rehabilitation of the Paralysed (CRP) under the Faculty of Medicine, University of Dhaka. As per the course curriculum, I have to conduct a research project entitled "**Perception of benefits and barriers in performing sports at spinal cord injured patient at CRP in Bangladesh**" under the supervision of Farjana Sharmin,Lecturer of BHPI, Consultant & OPD In-charge, Department of Physiotherapy,BHPI,CRP, Savar, Dhaka.

The purpose of the study is to gain in-depth insight and understandings from people with spinal cord injury in order to understand their own perception of benefits and barriers in performing sports. The study involves face-to-face and by over phone interview by using questionnaire to explore the perception of people with spinal cord injury who are involve with sports activities at CRP hospital in Savar that may take 20 to 30 minutes to fill in the questionnaire and there is no likelihood of any harm to the participants. Related information will be collected from the patients' guide books. 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 research project and to start data collection. I can also assure you that I will maintain all the requirements for study.

Sincerely,

Saima Tasnim
Saima Tasnim
Final Year B.Sc. in Physiotherapy
Session: 2016 – 2017,
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Recommendation from the Supervisor

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

Thesis presentation date: 17th October 2021

Shofiq
Head of Department
B.Sc. in Physiotherapy, BHPI.

Md. Shofiqul Islam
Associate Professor & Head
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: Date:

CRP/BHPI/IRB/02/2022/556

20/02/2022

Saima Tasnim
4th Year B.Sc. in Physiotherapy
Session: 2016 – 2017
BHPI, CRP, Savar, Dhaka- 1343, Bangladesh

Subject: Approval of the research project proposal **"Perception of benefits and barriers in performing sports at spinal cord injured patient at CRP in Bangladesh"** by ethics committee.

Dear Saima Tasnim,
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 and Farjana Sharmin as thesis supervisor. The Following documents have been reviewed and approved:

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

The purpose of the study is to gain in-depth insight and understanding form people with spinal cord injury to identify with their own perception of benefits and barriers in performing sports. 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 October 12, 2021 at BHPI (30th 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.

Best regards,

Muhammad Millat Hossain
Assistant Professor, Dept. of Rehabilitation Science
Member Secretary, Institutional Review Board (IRB)
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