



Faculty of Medicine  
University of Dhaka

**Barriers and Facilitators during Community Participation  
of Spinal Cord Injury Patients after Completing  
Rehabilitation: A Qualitative Study**

**Submitted by:**

**MD. Saiful Islam Shuvo**

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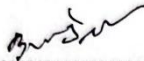
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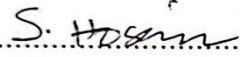
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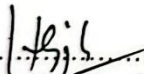
We the undersigned certify that we have carefully read and recommended to the Faculty of Medicine, University of Dhaka, for acceptance of this thesis entitled, “**Barriers and Facilitators during Community Participation of Spinal Cord Injury Patients after Completing Rehabilitation: A Qualitative Study**” Submitted by **MD. Saiful Islam Shuvo** for the partial fulfillment of the requirements for the degree of Bachelor of Science in Physiotherapy (BSc. PT).

  
.....

**Md. Waliul Islam**  
Lecturer  
Department of Physiotherapy  
BHPI, CRP.

  
.....

**Prof. Dr. Mohammad Sohrab Hossain, PhD**  
Professor of Physiotherapy, BHPI  
Executive Director, CRP.

  
.....

**Mohammad Habibur Rahman**  
Assistant Professor of Physiotherapy  
School of Science and Technology  
Bangladesh Open University, Gazipur-1750.

  
.....

**Prof. Md. Obaidul Haque**  
Vice Principal  
BHPI, CRP.

  
.....

**Dr. Shazal Kumar Das, PhD**  
Assistant Professor and Head  
Department of Physiotherapy  
BHPI, CRP.

**Approved Date: 10 - 8 - 25**

## **Declaration**

I hereby declare that the research work entitled “**Barriers and Facilitators during Community Participation of Spinal Cord Injury Patients after Completing Rehabilitation: A Qualitative Study**” has been carried out by me as a part of my academic requirements.

This study is original and has not been submitted in any form to any other university or institution for any degree or diploma. All sources of information and data have been duly acknowledged and referenced.

I also declare that ethical approval was obtained and all participants gave informed consent before taking part in the study.

Signature: Saiful Islam Shuvo

Date: 10/08/2025

**MD. Saiful Islam Shuvo**

Bachelor of Science in Physiotherapy

DU Roll no: 1520

DU Registration No: 6268

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BHPI, CRP, Savar, Dhaka-1343

Bangladesh

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## Acronyms

SCI	Spinal cord injury
YLDs	Years Lived with Disability
ADL	Activity of Daily Living
QOL	Quality of Life
VR	Vocational Rehabilitation
SCISM	Spinal Cord Injury Self-Management
LMICs	Low-Middle Income Countries
CBR	Community-Based Rehabilitation
WHO	World Health Organization
IRB	Institutional Review Board
BMRC	Bangladesh Medical Research Council
BHPI	Bangladesh Health Professions Institute
CRP	Centre for the Rehabilitation of Paralysed

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## Abstract

**Background:** Spinal cord injury (SCI) is a life-changing injury that is associated with physical incapacitation and social reintegration struggles. We know that people with spinal cord injury have unique challenges as they transition through life, leaving rehabilitation centres, that have huge impact on their ability to engage meaningfully with their communities. **Objective:** The aim of this research was to explore the barriers and facilitators that influence community participation among spinal cord injury patients after completing rehabilitation. **Methodology:** A qualitative methodology was used, and face-to-face semi-structured interviews were carried out based upon feedback from ten participants with spinal cord injury (SCI) who had participated in inpatient rehabilitation at the Centre for the Rehabilitation of the Paralysed (CRP), Savar, Bangladesh. Thematic analysis was used to explore data for recurring themes and patterns relevant to participation within the community at discharge. **Results:** Seven main topics emerged. Major barriers included transit and road issues, dependence on adaptive equipment, physical pain, the need for help with activities of daily living, social stigma, and psychological distress. In contrast, strong family and spousal support, self- or employed, use of available resources at CRP, structured health routines, encouragement from peers and desire for independence were identified as significant facilitators. These themes emphasize the interplay of environmental, psychological, social, and institutional factors. **Discussion:** Study highlights illustrate that while environmental barriers significantly impact re-entry, determinants of participation are highly individualized and driven by motivation in social support. Interventions related to these areas must be geared towards increasing accessibility, decreasing stigma, and developing models of peer support to truly achieve inclusion and quality of life for those with spinal cord injury after generally accepted rehabilitation.

**Keywords:** *spinal cord injury, community participation, rehabilitation, qualitative study, barriers, facilitators.*

## 1.1 Background

Spinal cord injury (SCI) is a complex and disabling condition due to involvement and injury to the spinal cord, which may be related to traumatic or non-traumatic events. Depending on the region and level of neurological impairment, the injury is classified as either complete or incomplete (Güngör, 2024). SCI exerts profound multi-systemic effects and has several associated complications, including, but not limited to, neurogenic bladder, pressure ulcers, and cardiovascular problems, having a serious impact on the quality of life of patients (Güngör, 2024). These challenges have traditionally posed significant hurdles in the treatment of neurodegenerative diseases, although recent developments in regenerative medicine, especially stem cell therapies applied in various contexts, have provided hope in facilitating neural repair and significant recovery (Mili & Choudhary, 2024). Despite the continuing inquiry of biomarkers and therapeutic strategies, no definitive cure for SCI has yet been defined and the need for continued exploration in this field (Yari et al., 2024).

Globally, approximately 250,000–500,000 new cases of spinal cord injury (SCI) are documented annually, with a substantial increase in the burden of SCI over recent decades; by 2019, an estimated 20.6 million individuals were living with SCI, reflecting an approximate prevalence rise of 81.5% since 1990 (Trinka et al., 2023). It is the predominant cause of 0.91 million cases per year within the predicted range, occurring in 97% of nations (Guan et al., 2023). In 2020, it was anticipated that spinal cord injury (SCI) resulted in 6.2 million years lived with disability (YLDs), significantly affecting the healthcare system and individuals' quality of life (Trinka et al., 2023). Importantly, the age-standardized incidence rates remained relatively stable, but the number of cases has increased, and therefore, the burden of SCI is increasing (Guan et al., 2023). In addition, it's more common in men, the highest development rate occurs in younger groups of people with a significant indication between 45 and 54 years of age (Trinka et al., 2023). An increasing burden calls for improved healthcare policy management and preventive measures (Liu et al., 2023).

Spinal cord injury (SCI) has a significant impact on an individual's activities of daily living (ADL) and ability to carry out daily tasks, leading to increasing limitations in performing routine activities. Individuals with paraplegic SCI face challenges in social participation, mobility, self-care, and cognition, all of which have a significant effect on health-related quality of life (QOL) after discharge (Khanzada et al., 2023). At cervical and thoracic levels, a greater injury is linked to increased functional capacity impairment, imposing more challenges to performing daily activities (Lima et al., 2024). Furthermore, pain, low self-esteem and several environmental factors negatively impact participation in daily life, highlighting the importance of a multidisciplinary rehabilitation intervention that enhances participation and Quality of Life (QOL) (Khanzada et al., 2024). SCI impairments limit a person's ability to participate in social and recreational activities and are a driving factor in the need to address the comprehensive service needs of patients (Boraiah & As, 2022).

Community reintegration is a growing area of research in spinal cord injury (SCI) where the terms are commonly used to describe how individuals with SCI can be resettled into their old social roles and be empowered to engage in their community. This complex construct includes mobility but extends to emotional recovery, social identity and engagement with community events including both work and socializing (Anderson et al., 2024). Individual environmental availability, individual willpower and support systems may be paramount to successful reintegration in areas where rehabilitative resources are limited (Nizeyimana et al., 2024). Pain management is particularly important since shoulder pain may knock a full recovery out of reach, whether that pain originates as a result of surgery, for psychosocial reasons, or otherwise (Henderson & Mashola, 2024). Gender and employment status are socio-demographic factors that have associated with higher levels of reintegration, with men and employed showing towards higher reintegration (Buys et al., 2022). Therefore, it is a complex phenomenon and requires extensive multi-faceted interventions to target clinical and socio-environmental challenges of community reintegration (Mohan & Deb, 2023).

Community reintegration is crucial for individuals with spinal cord injury (SCI), influencing their quality of life, societal participation, and overall well-being. The socio-demographic attributes of individuals, psychosocial influences, and contextual accessibility are believed to facilitate effective reintegration. Previous results show that being male, employment status, and the absence of muscle spasms impact reintegration

outcomes (Buys et al., 2022). Secondly, social support and self-efficacy play a crucial role in this process but psychological and physiological barriers may impede it (Gupta et al., 2019). Reintegration becomes even more difficult due to barriers, including but not limited to a poor transportation system, environmental inaccessibility and socio-economic challenges (Akter et al., 2019). Effective service delivery approaches including multidisciplinary models and vocational rehabilitation, are needed to support people through this transition (Barclay et al., 2020). Hence, it becomes imperative that these complex challenges are tackled to improve community reintegration for people with SCI (Atobatele et al., 2018).

Individuals with spinal cord injury (SCI) face many physical barriers that may hinder their participation in the community, and so community reintegration is challenging. Loss of mobility and independence is a significant issue for people living with SCI (Razzaghi et al., 2023), with environmental barriers (e.g., lack of accessibility in public places and transport systems) contributing to this. Besides, their impairment is another barrier to reintegration, which requires an assistive device such as crutches and wheelchairs, and lack of physiotherapy or rehabilitation centers (Razzaghi et al., 2023). Such isolated physical challenges then get interconnected with systemic ones such as inadequate resource provisioning in rehabilitation centers and their geographical inaccessibility (Bhattarai et al., 2024). Moreover, transitioning care and dropping out of therapy can block the learning of functional skills for independence (Bryden, Gran, 2024). Addressing these challenges requires an integrated approach, with community support, policy change, and better rehabilitative services (Kanyoni et al., 2024).

Psychosocial barriers impacting quality of life for individuals with spinal cord injury (SCI) in reintegrating within the community. Their main concerns relate to environmental and structural barriers (including poor accessibility), along with the requisite infrastructure, which limit their social participation (Razzaghi et al. 2023). Psychological barriers like loneliness, hopelessness, anxiety, etc., associated with stigma and misconceptions towards disability can be even more debilitating (Mohan & Deb, 2023). Family dynamics can add layers to the challenges of reintegration, making it more complex when caretakers have emotional and practical needs that compromise their ability to offer care and support to someone coming home. Occupational challenges, including obstacles in securing appropriate job and participating in significant activities, further hinder social integration. Emotional support, workplace

rehabilitation, and participation initiatives are designed to challenge barriers and promote functional reorganization in individuals with spinal cord injury, ultimately improving psychosocial outcomes (Alejo, 2024).

Spinal cord injury (SCI) patients face important economic barriers when reintegrating into the world outside of the hospital, which are largely due to low socioeconomic status and poor access to vocational rehabilitation. Low or zero job prospects and financial instability often contribute to the poor vocational outcomes for many SCI patients, especially in low- and middle-income countries, that worsen their social inclusion and quality of life (Li et al., 2024). In addition to this, clinical barriers such as lack of mobility, bladder incontinence, and chronic pain reinforce their inability to obtain employment (Alwashmi et al., 2022). There is also inadequate support from family and community contributing to these economic issues (Mohan & Deb, 2023). So, there is a need for specific interventions aimed at increasing resource access and refinement of the rehabilitation process to facilitate easier reintegration into the community (Razzaghi et al., 2023).

Physical facilitators of community reintegration for individuals with spinal cord injury (SCI) are environmental (accessibility), assistive devices and safety. Accessibility is important as it enables people with SCI to move around their community easier, facilitating participation in social and physical activities (Nizeyimana et al., 2024). Rehabilitation technologies (e.g., mobility aids, adaptive equipment) have a large role in enabling independence post-SCI, along with overall quality of life (Nizeyimana et al., 2024). Safe and available infrastructure is also critical, given that availability and safety of infrastructure promote a supportive environment for physical activity maintenance, key to health and well-being (Vermaak et al., 2022). Moreover, expert staff and relevant programs in such institutions may also help SCI people to participate in physical activities that can be advantageous for their body and well-being (Vermaak et al., 2022). Social support from family and friends is another key enabler which offers psychological support and practical help to the SCI persons in their overcoming the barriers to reintegrate (Mohan & Deb, 2023).

Psychosocial enablers for individuals with spinal cord injury (SCI) to reintegrate into the community includes family support, financial security, and social participation are found to be important factors that facilitate the process of returning to life after the

injury. Here, family relations are most important as well as supportive relationships that could contribute to resilient behaviour and emotional health (Mohan and Deb, 2023). Moreover, participation in recreational and community activities is a means to build social networks which are necessary to obtain emotional and psychological rehabilitation (Razzaghi et al., 2023). The need for the normalization around sexual health and confidence is also emphasized, as people moving past the cultural taboo can improve their human relationship quality and satisfaction (Barrett et al., 2022). In addition, interventions that are adapted to individual demographics, such as age and gender, are important for successful reintegration programming (Kanyoni et al., 2024). Together these facilitators form a holistic approach to rehabilitation to enhance self-efficacy and participation in the community for individuals with SCI.

Employment and financial aid are important to facilitate community reintegration after individuals sustain spinal cord injury (SCI). Here we would like to point out that studies indicate financial stability as a critical factor facilitating overcoming the reintegration barriers, as it enhances self-efficacy and mental health and, as a result, eases the way for greater participations in the community (Mohan & Deb, 2023). Employment is frequently identified as a critical factor in successful reintegration as it facilitates financial independence and helps individuals to reconstruct their social roles and identity in the wake of an injury (Anderson et al., 2024). These findings indicate that the lack of friendly environments and support networks amplify the challenges associated with social reintegration and there is need for inclusive reforms that include funding and job support for the promotion of resilience and success among people with SCI. In turn, addressing the factors is critical for enhancing the community integration and overall quality of life of this population (Kanyoni et al., 2024).

Both medical and psychosocial needs of persons with spinal cord injury (SCI) are addressed by rehabilitation programs and healthcare services that play a significant role in facilitating the community reintegration of this population. Together, effective rehabilitation (e.g., community- or home-based exercise programs) results in improved physical fitness and functional capacity, necessities for participation in daily activities of daily living (Kang and Park, 2024). Effective pain control, particularly for shoulder pain, is also important as poor pain control may inhibit reintegration into the community (Henderson & Mashola, 2024). In addition, from stakeholder viewpoints, accessible environments, supportive networks, and policy changes are said to support reintegration

(Nizeyimana et al, 2024). Interventions to support people living with SCI in resource-scarce settings, knowledge of the unique challenges confronting the individual with SCI can help in designing client-centered rehabilitation programmes which enhance agency and resilience (Metzger et al., 2024).

## **1.2 Justification**

People with spinal-cord injury (SCI) face major obstacles for community reintegration, especially in developing countries. Despite developments in medicine, individuals with SCI have to deal with multiple obstacles of life which exclude them from social participation, resulting in reduced quality of life. This study is important in filling the gap in the knowledge about the factors affecting persons with SCI in an emerging country like Bangladesh with its unique healthcare policies, attitudes, and resources, being very different from the outside countries. Existing studies have examined a number of dimensions of SCI re-integration single but there is an apparent absence of qualitative research capturing the everyday barriers and enablers that promote or inhibit re-integration in this population in less resourced settings. This is important as it recognizes not only barriers and facilitators, such as lack of infrastructure and societal stigma on one side, and family support, economic sustainability and religious practices on the other, which allow to overcome such barriers. By addressing these underexamined topics, this study aims to bridge an important gap in the literature and offer practical considerations for the development of community reintegration interventions for people with SCI. The results of this study may inform policy and practice to help challenge factors that prevent people living with SCI from being able to participate in society. Second, public and patient involvement is essential and empahsises the necessity for personalized healthcare strategies and societal changes that are required to promote the well-being and enablement of people with SCI.

### **1.3 Research aim:**

The aim of the study is to explore the barriers and facilitators that influence community participation among spinal cord injury patients after completing rehabilitation.

### **1.4 Study objectives:**

#### **1.4.1 General objective:**

- To explore the barriers and facilitators that affect community participation among spinal cord injury patients after completing rehabilitation.

#### **1.4.2 Specific objectives:**

- To explore the environmental, cultural, psychological, and health-related barriers affecting community participation among spinal cord injury patients after completing rehabilitation.
- To explore the perceptions and lived experiences of spinal cord injury patients regarding societal attitudes and infrastructural limitations during community participation.
- To explore the coping strategies and facilitators that support spinal cord injury patients in overcoming challenges to community participation after rehabilitation.

## **1.5 Operational definition**

### **Spinal Cord Injury:**

Spinal cord injury (SCI) is a complex and disabling condition due to involvement and injury to the spinal cord, which may be related to traumatic or non-traumatic events.

### **Rehabilitation:**

Rehabilitation refers to the structured medical and therapeutic intervention programs provided to individuals with SCI at CRP, which include physical therapy, occupational therapy, counselling, mobility training, and reintegration planning.

### **Community Participation:**

Community participation is the participation of persons with SCI in ADL, social, vocational/educational, recreation, and community and public access activities in the home community following discharge from the rehabilitation center.

### **Barriers:**

Barriers are physical, psychological, social, cultural or environmental barriers or obstacles that were reported by respondents to prevent or limit them from participating in community reintegration after rehabilitation.

### **Facilitators:**

Facilitators are any factors such as personal motivation, social support, financial resources, accessibility and skills that identified by participants as helping or enabling their community participation after completing rehabilitation.

Community participation (CP) reflects the participation of people in activities and involvement in social life and it is especially important for people with SCI. It improves their quality and standard of life and facilitates their socialization (Karimi et al., 2022). This can have significant effect on their mental health and general happiness (Amiri et al., 2024). Studies have found that physical accessibility, social attitudes, and mental health may act as barriers against participating while supportive environments and financial resources are facilitators of participation (Moniruzzaman et al., 2024). Moreover, community-based interventions, including peer mentorship programs, have demonstrated efficacy in promoting post-traumatic resilience and growth among SCI survivors, thereby highlighting the significance of social networks in the recovery process (Dong et al., 2024). Identifying these implications on CP at both urban and rural and individual levels is essential for implementing tailored interventions that enhance involvement and life satisfaction for individuals with SCI (Amiri et al., 2024).

Rehabilitation interventions, which concentrate on, e.g. physical therapy, vocational rehabilitation, etc., are important tools in reintegrating individuals with spinal cord injury (SCI) into their communities. Community-based exercise programs such as SpinalFit improve physical fitness and functional capacity, remove obstacles to physical activity and encourage and promote mobility (Kang & Park, 2024). Simultaneously, vocational rehabilitation (VR) programs target job and life satisfaction of individuals through individualized resources and supports, leading to improved work readiness and confidence (Li et al., 2024). Furthermore, it is apparent that psychological, cultural, and environmental factors must be considered in order to ensure successful re-entry, a theme that has emerged from qualitative work that has underscored strong family support and economic viability (Mohan & Deb, 2023). Multidisciplinary intervention in the application of different therapeutic means is essential to maximize rehabilitation benefit and support patients with SCI (Harder et al., 2023).

Existing rehabilitation strategies are insufficient in encouraging social and community participation in individuals with spinal cord injury (SCI). One of the major challenges is the poor attention to environmental, cultural and psychological issues that obstruct the process of re-integration in society, as evidenced from qualitative studies that

envision a requirement for holistic systems of assistance (Mohan & Deb, 2023). The level of disability is exacerbated by the fact that most have secondary health conditions and are socially isolated, factors that further limit their participation in their respective communities (Moniruzzaman et al., 2024). The absence of efficient travel training programs and physical activity instruction is another factor leading to this isolation since people usually do not pursue leisure activities that would help to boost social contacts (Baehr et al., 2022). Moreover, available rehabilitation methods often do not focus sufficiently on enhancing self-efficacy and community participation, so as to enhance quality of life and social participation in individuals with SCI (Baehr et al., 2022). Thus, a multi-disciplinary approach that includes these factors is required to improve participation outcomes.

Crucial domains of community participation in persons with disabilities, including those with spinal cord injury (SCI), are personal, social, and environmental factors related to their successful integration into community living. Studies have also shown different levels of participation among those with SCI depending on their contextual environments; urban residents generally report higher participation compared to rural residents, who may encounter challenges such as weaker self-efficacy and mobility restrictions (Amiri et al., 2024). Social support and financial resources are important contributors to participation and adverse factors include unsupportive social attitudes and physical access barriers (Moniruzzaman et al., 2024). The World Health Organization's Community-Based Rehabilitation matrix underscores the importance of wide services and community involvement for participation to be increased (Raha et al., 2023). In addition, alternative methods, such as community micro-grants and relational coordination between stakeholders, may facilitate authentic dialogue and increase participation in the process for people with disabilities (Warfield et al., 2022). Community participation is largely influenced by culture and society among people with spinal cord injury (SCI), as indicated by numerous researches. Participants with SCI in the city had better community participation than those in the country due to the existence of environmental barriers and low self-efficacy in the country (Amiri et al., 2024). Access and social constraints were the predominant determinants that limited participation in Bangladesh, indicating the importance of the supportive public policies to inclusive people with disability (Howlader et al., 2022). There is also evidence from qualitative studies that personal and extrinsic contextual factors, such as social support and mental health, contribute to a range of outcomes (Amsters et al., 2022).

Furthermore, strategies to facilitate participation need to take the context into account and could be built around behavior change frameworks and strategies addressing contextual barriers and to promote social participation for older adults with SCI (Giroux et al., 2021). Therefore, understanding the dynamic relationship of cultural and social context is fundamental for the development of successful interventions to enhance community participation for persons with SCI.

Existing rehabilitation strategies for people with spinal cord injury (SCI) have been shown to differ in their success in facilitating community participation, with advanced technology resources and community-based programs pinpointed as instrumental. A systematic approach to well-rounded rehabilitation, which incorporates early intervention as well as an interdisciplinary approach, has been demonstrated to improve functional results and quality of life of those with SCI patients (Alhazmi et al., 2024). Community rehabilitation programs, such as the SpinalFit Service, also target enhancing exercise tolerance and disability after discharge, and reducing barriers to physical activity (Kang & Park, 2024). Moreover, peer mentor approaches have developed as useful tools to facilitate integration between healthcare providers and organizations and to provide support for SCI outgrowths (Shi et al., 2023). Yet the uptake of technology-aided treatments is poor and only around 30% of patients access such interventions, suggesting the need for more personalized and accessible rehabilitation solutions (Tamburella et al., 2024). Overall, promising results have been reported with current programs, however continued refinement and incorporation of community resources is needed to maximize rehabilitation effects.

Various models of care target barriers and facilitators to community participation through tailored strategies and focus on local context and stakeholder involvement. The importance of Community Involvement and Engagement (CIE) for more equitable health services is emphasized, with evidenced-based models requiring ‘true partnerships’ and trust-building (Shobana, 2024). In Iran, the failure to effectively integrate community involvement into health policies is due in part to a lack of political will and knowledge despite its constitutional mechanism, the gap calls for greater capacity development and resource mobilization (Bonab et al., 2023). Likewise, such a community-based approach in rural healthcare settings, such as India, reports challenges as in India, using participatory learning approach resources mapping, and action planning were attempted (Mishra et al., 2022). In the final, successful healthcare systems need to shape themselves to local needs, generate political commitment, and

involve people in order to also improve the community engagement hierarchy in health outcomes (Johani et al., 2024).

Individuals with SCI experience multiple limitations to community reintegration after discharge from rehabilitation potentially affecting the quality of life. Issues include environmental factors such as limited access in public places and for public transport, which are notoriously under-provided in rural areas where individuals with incomplete injuries self-reported lower participation than their urban peers (Amiri et al., 2024). Psychological blockades such as depression, hopelessness and low self-efficacy contribute to the difficulty of returning to society (Mohan & Deb, 2023). Unsupportive social attitudes and stigma, too, have a role in eliciting isolation (Moniruzzaman et al., 2024). Work-related barriers include pain and urinary tract infections as secondary complications, which are also cited as health-related barriers (Moniruzzaman et al., 2024). In addition, navigation challenges (e.g access to information and services) also impede transition toward independent living (Bryden & Gran, 2024). Meeting these complex barriers to care will necessitate focused interventions and developed community support (Kim et al., 2024).

Environmental environments have a considerable impact on the participation of people with SCI in society, through mobility, accessibility and social participation. It appears that urban residents are relatively more socially connected as compared to the rural counterparts would enjoy to mobilize with their community and that the environmental context impacts self-efficacy and social reintegration (Amiri et al., 2024). Issues involve structural and social barriers such as inability to walk outside of one's home or limited income, social stigma and facilitators includes social networks, financial resources (Moniruzzaman et al., 2024). Qualitative findings show cultural and psychological barrier for the reintegration, with an implication of the necessity for customized rehabilitation interventions on the community participation of persons with SCI (Mohan & Deb, 2023).

Personal barriers play a large role in community participation for those living with spinal cord injury (SCI) obstructing self-efficacy, motivating behavior and as a result, participation in daily activities. Decreased levels of participation are, however, related to low self-esteem and educational level and inconsistent health seeking behaviour, especially in rural context, with limited available resources (Amiri, et al., 2024). Psychosocial barriers such as aloneness and cultural stigmas complicate community reintegration (Mohan & Deb, 2023). Furthermore, individual health problems such as

persistent pain and secondary concerns may limit mobility and participation in community activities (Khazada et al., 2024). Interventions that focus on these problems via individual's personal factors according to the ICF model would lead to reduce these problems and improve the quality of life of patients with SCI, and to enable them to participate more in the community (Khazada et al., 2024).

Key facilitators to promote community participation for individuals with traumatic spinal cord injury (SCI) post-rehabilitation include financial support, social support and organised community-based programs. Material resources matter as they allow individuals access to a wider range of services and activities, and social or peer support from family and friends is the greatest contributor to both self-efficacy and mental well-being (Mohan & Deb, 2023). Community-based exercise initiatives, such as the SpinalFit program, have shown potential in enhancing physical fitness and functional capacity to facilitate reintegration into community life (Kang & Park, 2024). Moreover, addressing environmental challenges and enhancing public knowledge could help reduce stigma and foster a more supportive atmosphere for individuals with spinal cord injury (Khazada et al., 2024). At last, a multidisciplinary approach that tackles these enablers is essential for enhancing the quality of life and community involvement of individuals with spinal cord injuries (Khazada et al., 2024).

Community participation among spinal cord injury (SCI) patients depends significantly on the impact of health care professionals, as revealed in several studies. Nurses can help, as well, to increase patients' participation in their rehabilitation by engaging in a collaborative attitude that is centered around the patient's perspective, thus creating a supportive environment for participation (Steenagaard, 2022). In addition, the existence of adequate economic resources and social network, as well as health professionals' training, are key factors in order to foster community integration (Moniruzzaman et al., 2024). Obstacles like health, barriers to environmental access, and a lack of motivations are among the limitations that come into play, obviating the importance for the medical staff challenges so as to ensure their participation and need to overcome these challenges through specific interventions (Kashif et al., 2019). Moreover, socio-political environment and support are essential to developing social inclusion and community participation, suggesting that healthcare professionals should lobby for systemic change that will improve the quality of life for people with SCI overall (Hitzig et al., 2021).

Community programs have demonstrated success in increasing the involvement of individuals with SCI through different types of interventions. The SpinalFit program, which incorporates structured exercise regimes in patients were proved to be valuable in the improvement of physical fitness and functional capacity after hospital discharge (Kang & Park, 2024). The Spinal Cord Injury Self-Management (SCISM) Program reinforced the value of community engagement, accountability, and personalized intervention in the form of meaningful increases in the health and goal-related outcomes for participants. These results emphasize the success of a community approach to addressing the specific needs of SCI populations and indeed the health both mental and physical of the SCI patient (Kraus et al., 2024).

Entrepreneurship and self-employment are essential for encouraging economic independence among individuals with spinal cord injury (SCI), serving as means of personal empowerment and economic self-sufficiency. Examples like the Kaivalya Self-Employment Scheme in Kerala demonstrate how structured support can assist individuals with disabilities in establishing their own enterprises, thereby presenting transformative role models to inspire others (Jose & Muthulakshmi, 2024). Likewise, digital entrepreneurship training initiatives such as SKIL-TERPRENEUR OKU show how potential for individuals with disabilities can move forward in the digital economy, despite obstacles such as the ebb and flow of health conditions and bureaucratic obstacles (Subhi et al., 2024). Additionally, initiatives such as SAYLEAD in Malaysia pay attention to the development of an inclusive entrepreneurial ecosystem, which transcends the focus on individual handicaps and rather puts the emphasis on the embeddedness of a disabled entrepreneur in a system that is sympathetic toward the disabled entrepreneurs (Saadun & Alias, 2023). In combination, these initiatives help illustrate the need to embed entrepreneurship into vocational (disability) policy as a means to improved independence and creativity and ultimately, greater financial independence for people with SCI (Maritz & Laferriere, 2016).

A number of strategies can be adopted to improve the effectiveness of CBR programs for SCI individuals. For one, there should be training and on-going support for healthcare providers, to ensure a skilled workforce to provide EI, particularly in low-middle income countries (LMICs) where resources are scarce (O'Connell et al., 2024). Incorporating CBR in primary care systems may enhance access and moderate challenges experienced by SCI patients (O'Connell et al., 2024). Moreover, the community-based exercise programs, as the SpinalFit program, have reported potential

to improve physical fitness and functional capacity after discharge, indicating that tailored exercise intervention should be tailored to the needs of each individual (Kang & Park, 2024). Additionally, by overcoming obstacles to successful community reintegration – including those at the level of the environment, culture and individuals’ psychologies – of ensuring facilitators include access to family and financial support systems could increase the success of CBR (Mohan & Deb, 2023). Finally, it is important to establish adaptable monitoring & evaluation systems, which can guarantee quality and equality of CBR programmes and therefore better health of SCI patients (Butura et al., 2024).

Research on SCI and community participation There are several areas where more research on SCI and community participation is needed in order to improve quality of life for people with SCI. One particular discrepancy is that of community participation between urban and rural residents, where those in rural areas, and those with incomplete injuries, earn lower participation relative to their urban peers (Amiri et al., 2024). Furthermore, obstacles to social participation in Dhaka, Bangladesh including the lack of money, unsupportive social attitudes, and mental health problems demand targeted intervention to improve access to reduce stigma (Moniruzzaman et al., 2024). A better understanding of these realities will inform greater, more effective community participation research in SCI, reevaluate research designs and additional cross-cultural studies, also present gaps which, if addressed, could inform better practices on SCI community participation research (Gonzalez et al., 2024). In addition, although robotic exoskeletons have potential to enhance the quality of life and participation, studies are small and heterogeneous, and therefore larger and more complete research is needed to provide evidence on the long-term advantages of the technology (Yip et al., 2022). Finally, initiatives such as the development of community participation indicators, as illustrated by the SCI-High Project, highlight the importance of identifying a standard set of outcomes to evaluate and improve the impact of SCI rehabilitation, but these indicators need to be vetted and widely implemented (Hitzig et al., 2021). Current studies that examine the facilitatory and the inhibitory conditions of SCI rehabilitation indicates number of shortcomings which must be rectified to optimize the rehabilitative process. Very important missing links are those related to communication strategies at different levels of healthcare, so relevant to for the effectiveness of a rehabilitation process. Research demonstrates that inadequate communication and uncertainty regarding roles and responsibilities among health personnel have the

potential to obstruct rehabilitation efforts indicating a need for an enhanced cross-organizational understanding and communication (Skumsnes et al., 2023). Moreover, there is knowledge of different facilitators such as multidisciplinary collaboration and personal resources, and barriers such as waiting times for treatment and shortcomings in planning are continued within, in particular in the rehabilitation planning process (Tallqvist et al., 2024). A further limitation is that cultural and environmental factors which influence successful community reintegration are commonly ignored. Studies have shown that support, financial sufficiency, and cultural practices are important factors to overcome such barriers, however, this is not always incorporated into rehabilitation programs (Mohan & Deb, 2023). Besides, the translation of preclinical results into the clinical field presents challenges, with current trials addressing neuroprotection and neuro regeneration strategies whereas an integrated perspective covering regenerative treatments does not exist yet (Hassan et al., 2024). The challenges in addressing these gaps demand a holistic perspective, such as with improved communication, and the consideration of culture and environment, which also necessitates an effective translation between research and practice.

In the future, aimed at enhancing community engagement for individuals with spinal cord injuries include community exercise programs, peer-assisted self-management initiatives, and home-based exercise regimens. The SpinalFit program is a community-focused exercise project designed to enhance physical fitness and functionality through customized aerobic and resistance training, while eliminating communal obstacles to physical activity for individuals with spinal cord injuries (Kang & Park, 2024). Moreover, the virtual peer-led self-management interventions explicitly highlight the significance of emotional connections among participants and shared experiences, which might enhance engagement and the perceived relevance of the intervention (Starosta et al., 2024). The PHOENIX program is an evidence-based, peer-mediated self-management technique utilizing telemedicine to provide education and supportive care for health and community engagement following spinal cord injury (Newman et al., 2022). Moreover, the SCI-HOME-ACTIVE study shows the feasibility of a home-based, supervised exercise training program, which may help reduce the geographic barrier to accessing exercise and increase adherence to exercise, thus optimizing the quality of life and functional capacity. Together, these interventions imply that a multifaceted strategy, including physical exercise, peer support and available self-management tools, might be a promising avenue to improve participation and wellbeing

among individuals with SCI. Further research is needed to refine these interventions and investigate the potential scalability and long-term effects on community integration for persons with SCI (Pinelli et al., 2024).

### 3.1 Study Design

A phenomenological approach was chosen to comprehensively explore the multifaceted experiences of individuals with spinal cord injuries (SCI) in their community reintegration process. The research employed qualitative methods through in-depth interviews to study the complex personal experiences of participants thus identifying key reintegration barriers from environmental and cultural aspects and psychological challenges as well as facilitators such as family support and social networks. This method highlights the importance of understanding personal and contextual factors affecting social integration and coping mechanisms. The research investigates the real-life situations of SCI patients to develop better methods for enhancing their community bonding while addressing their exclusive barriers.

### 3.2 Participants

Participants were recruited from the spinal cord injury unit of a tertiary-level rehabilitation centre who had already completed their rehabilitation program and are now engaged in community participation. Patients were selected from hospital data to participate in the study. A purposive sampling strategy was used to select individuals who met the following criteria:

- Aged at least 18 years.
- Are currently living in the community (non-hospitalised) for at least 1 year post-rehabilitation.
- Are cognitively capable of providing informed consent and participating in interviews.
- Are willing to participate and provide informed written consent voluntarily.

(Mohan & Deb, 2023).

Participants will be excluded if they:

- Are below 18 years of age.
- Have severe cognitive impairments or communication difficulties
- Are currently hospitalized or have not yet completed their rehabilitation process.

(Mohan & Deb, 2023).

### **3.3 Procedure:**

To conduct the study data was collected through using different types of data collection tools. The organized materials that were used for data collection were a mobile recorder, pen, pencil, clipboard, consent form, questionnaire. The interviewer conducted a semi-structured face-to-face interview with 10 participants. This data collection method generates in-depth information and provides flexibility. The interviewer used a written guideline with interview questionnaires. The interview guide was developed based on existing literature and expert input and focused on the following themes: (barriers to community participation after rehabilitation, Facilitators that help individuals reintegrate into society, Experiences with physical and psychological challenges, perceived societal attitudes and support systems and Strategies and coping mechanisms used post-discharge). The interview response was recorded on an electronic device with consent. Interviewer clarified the questions if requested or observed the issues of clarity. Data was collected between 19th Feb 2025 and 20th March 2025. Each data was collected carefully, and confidentiality was maintained. Each participant provided a particular time to collect data. Each questionnaire took approximately 10-15 minutes to complete. During the face-to-face interview, the respondent completes a socio-demographic part of the questionnaire, which is formulated in accordance with the Bangladeshi context. Modified and additional words were used to make the questions more understandable for the respondent. The researcher developed the extensive part of the interview through literature review and expert consultation leading to open-ended questions that examined participant experiences with post-rehabilitation community involvement. Through the interview process researchers collected information about the barriers people faced during post-rehabilitation life alongside the factors which helped their transition and the methods they used for adapting to community

environment. The first interview questions were easy-to-answer initial questions about “How long has it been since your spinal cord injury?” and “how did the injury occur?” The basic background information needed for the research became accessible through these questions. The participant discussed their post-rehabilitation life through essential questions such as “How are you managing now in daily life?” and “How did you learn about the rehabilitation center you attended?” The interviewer asked clarifying questions for instance “Does your physiotherapist mention community reintegration to you?” and “What difficulties do you encounter while returning to work and social situations?” The research moved into more detailed areas that turned up in previous interviews regarding the participant's experience. For example, the researcher asked "How would you compare your current quality of life with that before rehabilitation?" The participants were asked at the culmination of each interview to share advice for spinal cord injury patients to regain community participation.

### **3.4 Data analysis:**

The data was analysed by thematic analysis. Thematic analysis as an independent qualitative descriptive approach is mainly described as “a method for identifying, analysing and reporting patterns (themes) within data” (Braun & Clarke, 2006). It has also been introduced as a qualitative descriptive method that provides core skills to researchers for conducting many other forms of qualitative analysis. The researcher selected this methodology because it allowed to detect patterns and concepts and relationships present in unstructured information. Multiple systematic procedures during data analysis worked to maintain both rigor and accuracy in the process. The researcher transcribed all interview data verbatim for checking accuracy by conducting a second review. The researcher read transcripts various times to establish full knowledge of data content also to analyze participant responses deeply. The researcher recorded all interviews in Bangla first before translating each transcript for English interpretation.

The analysis included the segmentation of discrete analytical units that were found within the responses. A specific framework was established to categorically arrange the noted units. This study built the coding system through repeated development sessions

to ensure every important data point had been included. The researchers applied codes to units depending on patterns and meanings detected in them.

The evaluation team independently analyzed each answer from interview questions for consistency with coding techniques. This data refinement process reflected participants' actual thoughts to maintain accurate data interpretation of their thoughts. The process of interpretation was executed multiple times to recognize reliable outcomes while stopping potential mistakes in understanding. Data codes allowed the researcher to identify important patterns and themes leading to conclusions which explain how spinal cord injury patients perceive their community engagement following rehabilitation sessions. Participant data enabled a deep understanding of their life characteristics along with their faced difficulties and methods of adaptation to life changes and their readiness to return to normal activities. The research findings delivered comprehensive knowledge about elements obstructing and promoting effective community reintegration among people who live with spinal cord injuries.

### **3.5 Ethical consideration**

The ethical guideline of WHO (World Health Organization), IRB (Institutional Review Board) & BMRC (Bangladesh Medical Research Council) was strictly followed. The research proposal was submitted to the ethical review committee of Bangladesh Health Professions Institute (BHPI) for approval and to CRP's ethical committee for getting permission for data collection. After the proposal was approved to carry on with the study, the researcher had moved the study. Researcher takes concern of participants prior to collect interview who are interested to participate in the study. Before starting the interview, signatures obtained from each participant on a Bangla consent form. It is clearly explained to the participants that their information may be publishing, but their name and address not be connecting with the research study. It informed that the participant has the right to withdraw the study any time if he or she would want to. In that consent form, the researcher committed to the participant about confidentiality, participant's right and potential benefits of the study that is all informed to the participant during interview. All the participants gave their consent to participate in the interview. Before participating in the study, the researcher had provided them a written consent form to sign. The researcher had also signed in the consent form. Only the

investigator had access of that information. The raw data destroyed after the completion of the research & all the data on computer file were deleted. Considering all those ethical norms & values no ethical problems arises as there were some personal & sensitive questions. The participants were informed that they have the right to withdraw consent & discontinue participation at any time without any prejudice.

The researcher processed the data collected into codes, and themes to systematically fulfil the study objectives. The aim of the study to explore the barriers and facilitators influencing community engagement among individuals with spinal cord injury (SCI) following rehabilitation at the Centre for the Rehabilitation of the Paralysed (CRP). Participants expressed their experiences and perceptions of their present post-rehabilitation lives. Coding processes had been used to analyze these responses and identify main themes that highlight both the barriers and facilitators of community reintegration. This chapter highlights the findings related to the research questions and aims, with each topic expressed and verified by the participants' narratives.

Socio-demographic information at a glance:

#### 4.1 Socio-demographic information

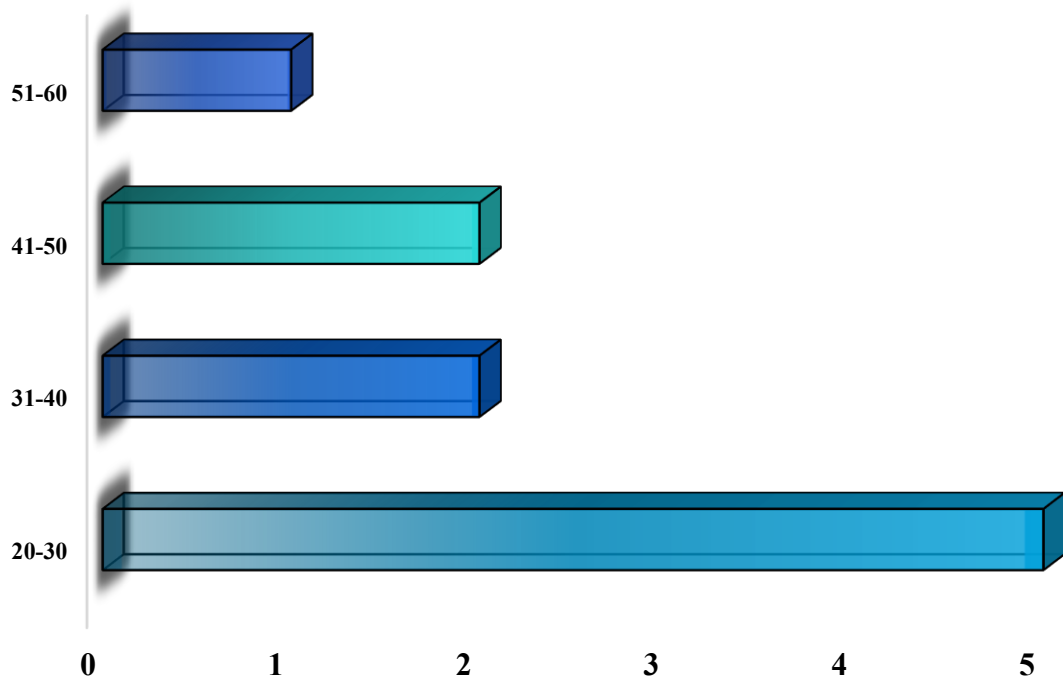
Table -1: Socio-demographic information of the participant

Socio demographic	Frequency	Percentage (%)
<b>Age</b>		
20-30	5	50%
31-40	2	20%
41-50	2	20%
51-60	1	10%
<b>Gender</b>		
Male	8	80%
Female	2	20%
<b>Residential area</b>		
Rural	4	40%
Semi urban	6	60%
<b>Marital status</b>		
Married	8	80%
Unmarried	2	20%

<b>Educational qualification</b>		
Primary	2	20%
Secondary	6	60%
Higher Secondary	1	10%
Undergraduate	1	10%
<b>Occupation</b>		
Businessman	3	30%
Shopkeeper	3	30%
Service Holder	3	30%
Technician	1	10%

#### 4.1.1 Age range of the participants:

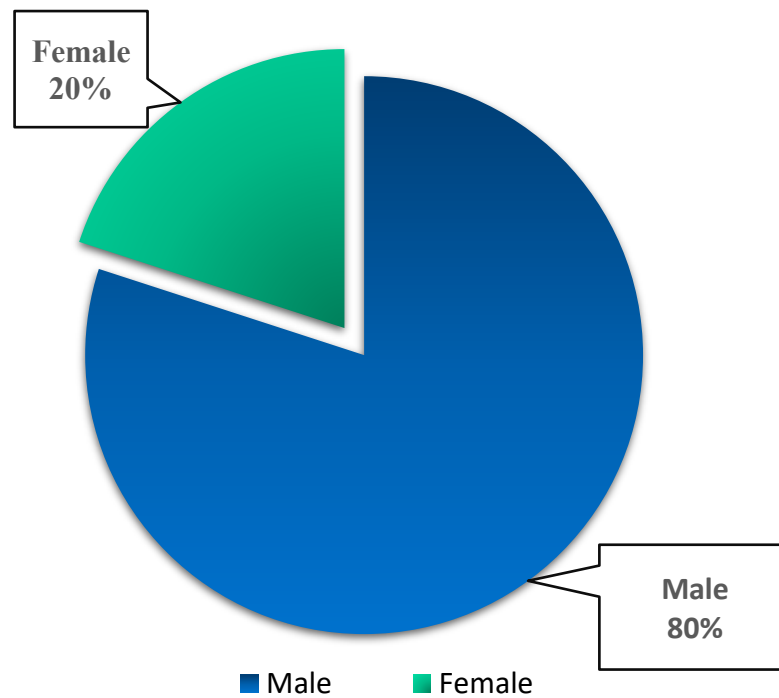
This bar chart demonstrates the age distribution of participants in a study. The predominant age group among participants is 20–30, comprising five individuals. The 31–40 and 41–50 age groups each comprise two participants, whereas the 51–60 age group contains only one participant.



**Figure 1: Age range of the participants**

### 4.1.2 Gender of the participants

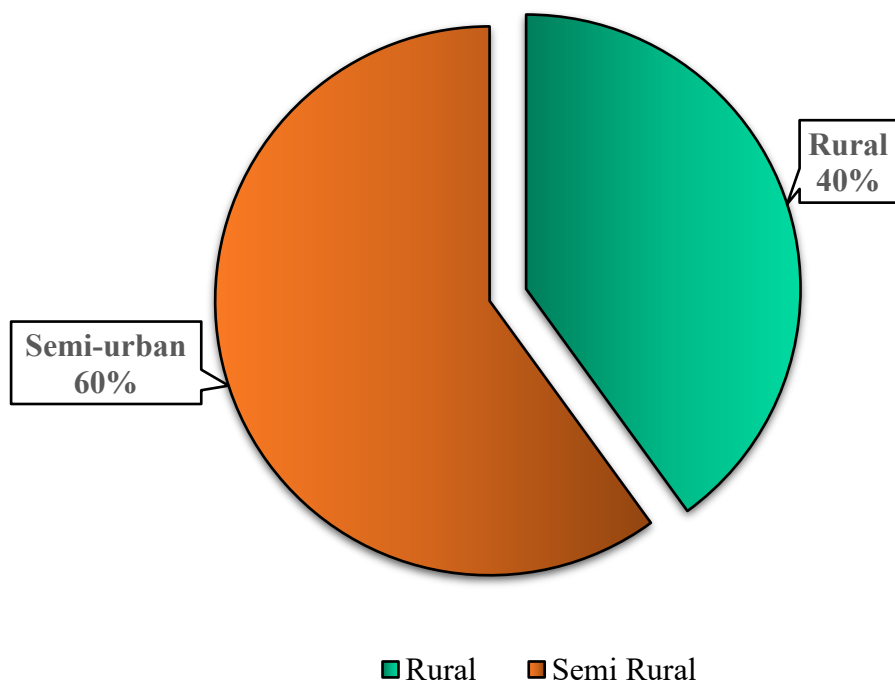
The pie chart represents the gender breakdown among study participants. Males constitute 80% of the overall sample, whereas females account for merely 20%.



**Figure 2: Gender of the participants**

### 4.1.3 Living area of the participants

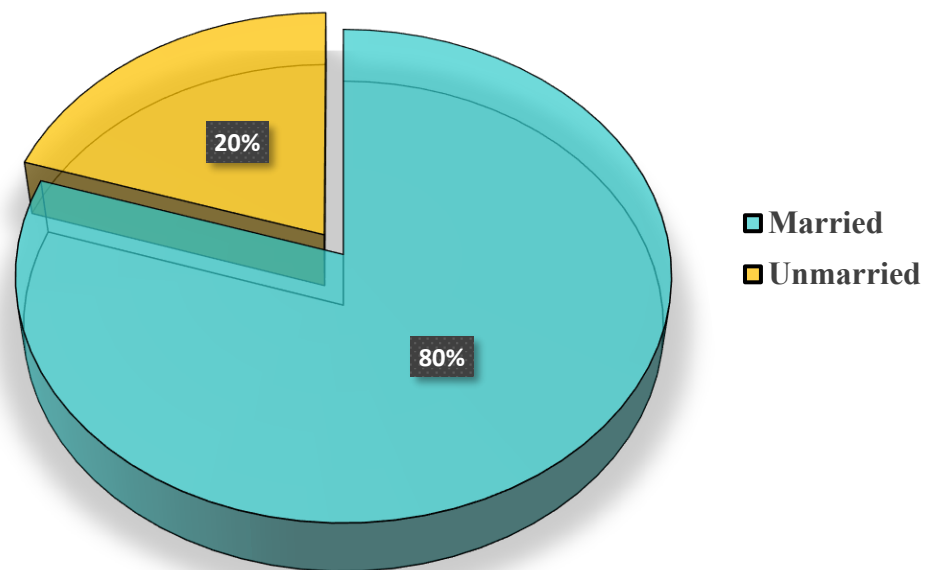
The pie chart represents the participants according to their geographical background. A larger portion, representing semi-rural areas, accounts for approximately 60% of the participants. On the other hand, those from rural areas make up about 40%. This suggests that individuals from semi-rural settings were more represented in the study compared to those from purely rural areas.



**Figure 3: Living area of the participants**

#### 4.1.4 Marital status of the participants

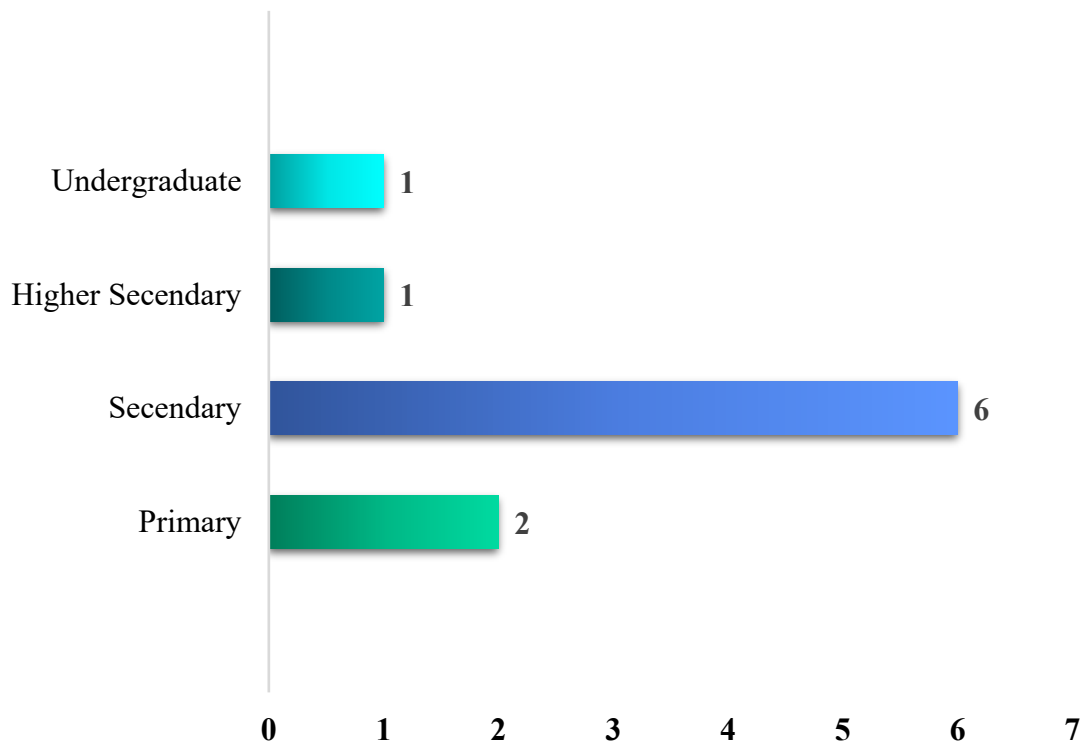
This bar chart shows that the distribution of marital status among a sample population. It shows that the majority of participants are married, with a count of 8 individuals, while only 2 individuals are unmarried.



**Figure 4: Marital status of the participants**

#### 4.1.5 Educational Qualification of the participants

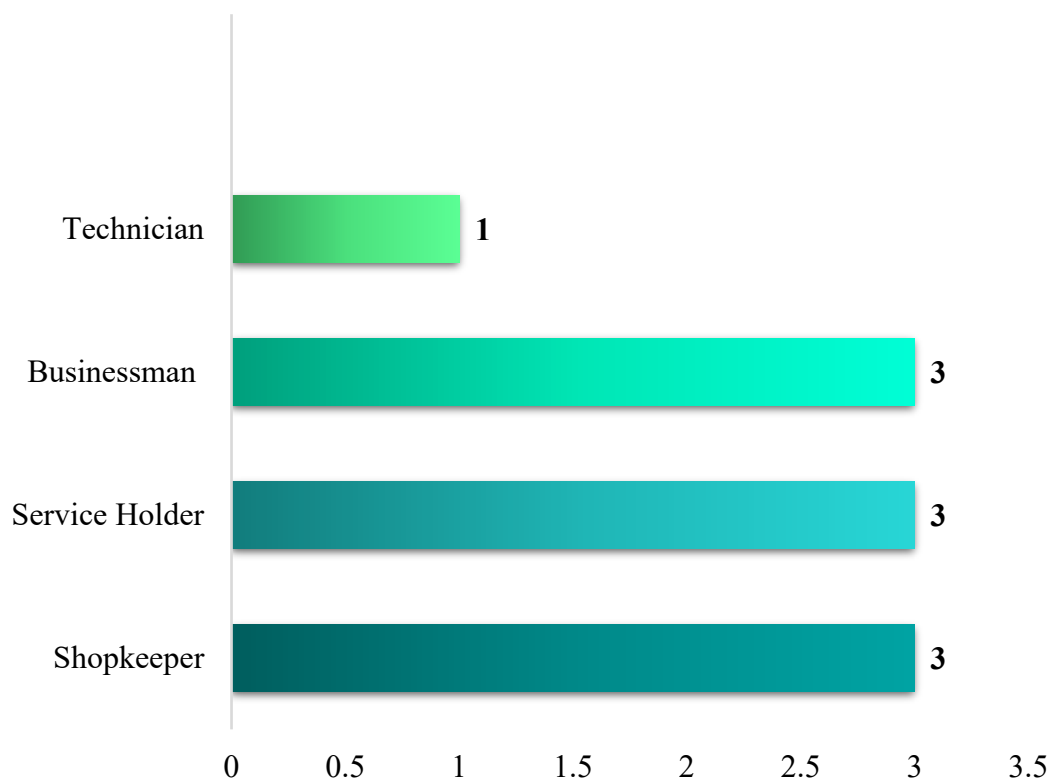
The horizontal bar chart illustrates the educational qualifications of the study participants. The data indicates that a significant portion, specifically 6 individuals, has achieved secondary education completion. Subsequently, there are two individuals who possess primary education. Only one individual has completed higher secondary education, and one has completed undergraduate education. The distribution reveals that secondary education is the predominant level within the group, whereas higher levels of education are less prevalent.



**Table 5: Educational Qualification of the participants**

#### 4.1.6 Occupation of the participants

The horizontal bar chart illustrates the distribution of occupations among the participants. The data reveals that the individuals are evenly distributed across three professions: Businessman, Service Holder, and Shopkeeper, with three individuals in each category. Conversely, there is only 1 individual identified as a technician, rendering it the occupation with the least representation. This indicates a prevalent portrayal of professions related to trade and services within the group.



**Table 6: Occupation of the participants**

## 4.2 Summary of theme that emerged from data analysis

### Theme – 1: Environmental and Infrastructural Barriers

Coding	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Total
Inaccessible public transport and roads	✓		✓	✓	✓		✓	✓	✓	✓	8
Lack of ramps and accessibility		✓	✓	✓	✓		✓		✓	✓	7

**Table 2: Environmental and Infrastructural Barriers**

Individuals with spinal cord injuries encounter considerable obstacles within their communities, largely attributable to environmental and infrastructural restrictions. One significant obstacle highlighted by eight participants is the limited accessibility of public transport and roadways. The absence of adequate transportation alternatives or appropriate pathways significantly restricts the mobility of individuals with spinal cord injuries, thereby hindering their engagement in community activities. In addition, the absence of ramps and other accessibility features in public spaces was noted by 7 participants as a major hurdle. These environmental factors further isolate individuals from social engagements, making it difficult for them to interact with their surroundings and the wider community.

## Theme 2: Health-related barriers

Coding	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Total
Physical limitation and pain	✓	✓	✓	✓	✓		✓	✓		✓	8
Need for assistance with daily activities	✓	✓	✓	✓	✓	✓	✓	✓		✓	9

**Table 3: Health-related barriers**

Health-related factors were the second most commonly cited concern, with 8 participants describing their physical limitations and pain as a barrier to full participation in the community. These limitations affect people's ability to perform every day physical activities and participation in social activities. In addition, the dependence on others in performing day-to-day activities reported by 9 participants emphasizes the need of outside support in basic functions. This is a dependency that confines how much autonomy someone with an SCI can have, despite their efforts to enter into the community and their attempts to live independently in it, without the constant accompaniment of caregivers.

### Theme – 3: Psychological and Emotional barriers

Coding	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Total
Depression and anxiety		✓	✓	✓			✓	✓	✓		6
Low self-esteem and social withdrawal		✓		✓				✓			3

**Table4: Psychological and Emotional barriers**

Participants also reported psychological and emotional barriers as barriers toward participating in their community. Depression and anxiety, for 6 of the participants, were the common emotional problems which affected their social interaction or participation. Such mental health adversities could result in social withdrawal and disengagement from community life. Low self-esteem and withdrawal are also compounding factors as indicated by 3 participants. Inadequacy, lack of self-confidence and fear of being judged are things that make many hesitate to reintegrate into their society, making them feel isolated and alienated.

#### Theme – 4: Societal and cultural barriers

Coding	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Total
Stigmatizing behavior from society		✓		✓				✓	✓		4
Discriminated behavior from society		✓		✓				✓	✓		4

**Table 5: Societal and cultural barriers**

Societal and cultural influences are vital to the promotion or the limitation of community engagement among individuals with spinal cord injury. Society's attitude, seen by 4 respondents, includes social discrimination against disable people. Such stigmas can lead to the situation that people are rejected and not allowed to participate in social activities, which can leave the people with a feeling of being marginalized. Also, discriminated behavior, also endorsed by four participants, illustrates the discrimination and disparate treatment experienced by people with SCI. These societal impediments pose further emotional and social struggle which renders it even harder for these people to move through the world and interact with others.

## Theme – 5: Family and Social support

Coding	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Total
Strong family and spousal support	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10
Support from CRP and society	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10

**Table 6: Family and Social Support**

On the positive side, family and social support were key enablers to participate in community living. All 10 participants reported that strong family and spousal support was an important factor in being able to engage with communities. There are family supporters who care for people in their homes, and friends and family members who provide both emotional and physical support. Support from both the community and rehabilitation professionals (CPR) was equally important and was completely recognized by participants. This wider circle of family and community support provides stability and encouragement to allow people to overcome barriers and keep connected to community programs and services.

## Theme – 6: Vocational and Economical Independence

Coding	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Total
Self-employment and financial stability	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10
Desire for independence and self-reliance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10

**Table 7: Vocational and Economical Independence**

Financial independence and self-sufficiency were found to be crucial elements facilitating involvement in the community. Freedom and a regular income as two key components to have flexible working opportunities and have control over what they do, reported by all 10 participants, seemed to create the right conditions for participation in social and work functions for these two individuals. Being independent financially allows them to take decision on their own without being dependant on any one that gives them a sense of freedom and control. The acceleration for independence and autonomy, having in common that all participants felt this, is also what motivates people to look for ways to independently gain control over their lives and to develop the opportunity for making choices that comply to their personal and social implications.

## Theme – 7: Personal Strategies and Coping Mechanisms

Coding	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Total
Self-belief and Mental Strength	✓	✓	✓		✓	✓	✓	✓	✓	✓	9
Health Routines and Exercise Discipline			✓	✓		✓		✓	✓	✓	6
Religious and Philosophical Encouragement	✓							✓	✓	✓	4
Engaging in Work or Hobbies	✓	✓	✓		✓	✓		✓		✓	7

**Table 8: Personal Strategies and Coping Mechanisms**

Participants indicated that there were personal tactics and coping strategies that empowered and enabled them to succeed in overcoming their adversity. Self-belief and inner determination by 9 responses were essential in enabling a confident, positive response to the challenges associated with living with spinal cord injury. Participants related the relevance of mental resiliency in the face of the gradients of their rehabilitation and social participation. Furthermore, health regimens and lack of exercise discipline mentioned by 6 users were instrumental in developing positive physical as well as mental health practices leading to an active and engaged lifestyle. Moral and philosophical inspiration, reported by 4 participants, supplied inner resources, enabling people to find motivation and significance in veterans' experiences. Finally, work or hobbies, which were mentioned by 7 participants, was another means to remain active and connected to their communities, feeling rewarded and socially engaged.

In this chapter, the results of the study are discussed in relation to the research questions and objectives. The discussion focuses on the facilities and barriers influencing community participation among spinal cord injury (SCI) patients' post-rehabilitation. Thematic analysis was used to explore the facilitators and barriers that have enabled SCI patients to successfully engage in community life.

### **5.1 Environmental and infrastructural barriers**

#### **Inaccessible transport and roads**

For spinal cord injury patients, transportation is a major issue. Moving from one place to another is so much difficult for them. On top of that, if the roads are not suitable to access for the SCI patients, it becomes a lot more troublesome.

One participant mentioned that, *“When I go to a place far from here, I feel difficulty in entering a bus.”* (Participant 9)

Another participant stated, *“If I go somewhere far from here, transport becomes a serious issue. If the roads are not well built, it becomes tough for me to operate my wheelchair.”* (Participant 4)

#### **Lack of ramps and accessibility**

SCI patients mainly operate through wheelchairs. But in the outside world, ramps are not available that much in most of the structures. So, without ramps it becomes difficult for them operate a wheelchair.

One Participant shared, *“I feel a little bit afraid of climbing up here. It is a bit higher from the ground that's why.”* (Participant 2)

Another Participant noted, *“I cannot do that for a long period because the spaces are not built for my wheelchair. It makes me tired.”* (Participant 3)

Participants with SCI in the city had better community participation than those in the country due to the existence of environmental barriers and low self-efficacy in the country (Amiri et al., 2024).

In addition, environmental barriers such as accessibility to public environments and problems using city public transportation are common, while perceived barriers such as weather and decisions made by politicians affects many participants engagement level (Saarimäki et al., 2024).

## **5.2 Health-Related Barriers**

### **Physical limitation and pain**

SCI patients are not like the normal people in the society. They have physical limitations. They cannot do a specific task easily as any other individual. Sometimes, they feel pain while doing a heavy task. So, they face numerous physical problems and pain while doing their everyday work.

One Participant shared, *"When I go home after working long hours at my shop, I feel a lot of pain in my back. Staying for such long hours at my shop makes my back hurt."* (Participant 2)

Another Participant mentioned, *"If I use my wheelchair for too long, I feel pain in my joints. It becomes difficult to move freely after that."* (Participant 3)

### **Need for assistance with daily activities**

Most of the SCI patients are depended on their family members. While some of them can manage all by themselves, most of them are unable to do so. They need assistance in doing daily activities such as clothing, combing, bathing etc.

One Participant shared, *"I need help in all or most of my daily activities... for example in bathing, wearing a pant I need a little bit of or some sort of help from others."* (Participant 1)

Another Participant explained, *"Right now, I have to sit on my wheelchair and cook. I can do other works all by myself but sometimes I need help from others."* (Participant 5)

Studies have found that physical accessibility, social attitudes, and mental health may act as barriers against participating while supportive environments and financial resources are facilitators of participation (Moniruzzaman et al., 2024).

Community-based exercise programs improve physical fitness and functional capacity, remove obstacles to physical activity and encourage and promote mobility (Kang & Park, 2024).

Furthermore, individual health problems such as persistent pain and secondary concerns may limit mobility and participation in community activities (Khanzada et al., 2024).

### **5.3 Psychological and Emotional Barriers**

#### **Depression and anxiety**

SCI patients remain depressed about their situation all the time. They feel like that everything is over, their lives mean nothing etc. They remain anxious all the time about the people of the society. They feel uncomfortable in making a decision due to these anxious and depressed feelings.

One Participant shared, *“Mentally, feel good when everyone behaves well with me. But as I am a guard, if someone neglects me due to my profession, I feel bad.”* (Participant 4)

Another participant mentioned, *“I am healthy physically but not so well mentally due to my surroundings of these people.”* (Participant 2)

#### **Low self-esteem and social withdrawal**

Lack of confidence is another characteristic of SCI patients. Their confidence level seems to be very low. They think that they are not suitable for any kind of work. For which, they do not integrate with society. They withdraw themselves from the activities of the society.

One Participant expressed, *“Those people who are like me pass their day doing nothing, they do not like me. Some of them have tried to harm me in many ways. That’s why I stay away from disable people.”* (Participant 2)

One of the major challenges is the poor 'attention' to environmental, cultural and psychological issues that obstruct the process of re-integration in society, as evidenced

from qualitative studies that envision a requirement for holistic systems of assistance (Mohan & Deb, 2023).

Psychological blockades such as depression, hopelessness and low self-efficacy contribute to the difficulty of returning to society (Mohan & Deb, 2023).

Furthermore, it is apparent that psychological, cultural, and environmental factors must be considered in order to ensure successful re-entry, a theme that has emerged from qualitative work that has underscored strong family support and economic viability (Mohan & Deb, 2023).

## **5.4 Societal and Cultural Barriers**

### **Stigmatization from society**

The society labels the SCI patients as a totally different group. Social stigma serves as a fear among SCI patients due to that.

One Participant shared, *“There are a lot of people who try to demotivate me, mainly my neighbors. such as they always say to me that My life is finished, I don't have this.”* (Participant 9)

Another Participant stated, *“But as I am a guard, if someone neglects me due to my profession, I feel bad.”* (Participant 4)

### **Discrimination**

SCI patients feel discriminated in every aspect of life. Their surroundings label them as a burden to the society. Like they are not able to do any task like other people. This inequality massively impacts the mindset of the SCI patients.

One participant shared, *“When someone promises me something but does not fulfill tha, I feel bad. If I was normal, I could have done that work All by Myself. I feel like they're taking advantage of me as I am not like them.”* (Participants 8)

Qualitative findings show cultural and psychological barrier for the reintegration, with an implication of the necessity for customized rehabilitation interventions on the community participation of persons with SCI (Mohan & Deb, 2023).

Unsupportive social attitudes and stigma, too, have a role in eliciting isolation (Moniruzzaman et al., 2024).

Moreover, addressing environmental challenges and enhancing public knowledge could help reduce stigma and foster a more supportive atmosphere for individuals with spinal cord injury (Khanzada et al., 2024).

## **5.5 Family and Social Support**

### **Strong family and spousal support**

Getting support from the family and life partner plays an important role in the journey of a SCI patient. A lot of the patients get divorced after their injury. This affects their mental state in a very negative way. Besides, the members of the family start think them as a burden to the family. So, they feel that they are left alone.

One Participant shared, *"My father, mother, and wife provide me support both physically and mentally in every aspect of life."* (Participants 1)

Another Participant expressed, *"Mainly my wife helps me in doing a lot of things. I only have her right now."* (Participant 2)

### **Support from CRP and society**

Support from the Centre for the Rehabilitation of the Paralysed (CRP) and society plays a vital role in the lives of individuals with spinal cord injuries. CRP offers a safe, structured environment where patients receive medical care, therapy, and emotional support, helping them regain confidence.

One Participant shared, *"My customers treat me with respect; they see that I'm working hard and not sitting idle"* (Participant 10)

Another Participant expressed, *"In the past I felt bad. But right now, I have a circle of my own. I interact with them, talk with them and I feel good."* (Participant 8)

Material resources matter as they allow individuals access to a wider range of services and activities, and social or peer support from family and friends is the greatest contributor to both self-efficacy and mental well-being (Mohan & Deb, 2023).

Social support and financial resources are important contributors to participation and adverse factors include unsupportive social attitudes and physical access barriers (Moniruzzaman et al., 2024).

Access and social constraints were the predominant determinants that limited participation in Bangladesh, indicating the importance of the supportive public policies to inclusivise people with disability (Howlader et al., 2022).

## **5.6 Vocational and Economic Independence**

### **Self-employment and vocational pursuits**

Self-employment and vocational pursuits provide spinal cord injury patients with a sense of purpose, independence, and financial stability after rehabilitation. Many individuals turn to small businesses, tailoring, or mobile phone servicing as a way to earn a living despite physical limitations. These pursuits not only help them support themselves and their families but also boost their self-esteem and social involvement.

One Participant explained, *“Now I do business through which I can feed myself as well as my family fairly.”* (Participant 1)

Another Participant mentioned, *“I am running a shop all by myself.”* (Participant 2)

### **Desire for independence and self-reliance**

The desire for independence and self-reliance is a strong motivating factor for individuals with spinal cord injuries after rehabilitation. Many express a deep need to manage their daily activities, earn an income, and contribute to their families without constant assistance.

One Participant explained, *“I wanted to do that all by myself. I refused to take any help and preferred to run my shop independently.”* (Participant 2)

Another Participant mentioned, *“Don’t sit around waiting for help. Learn what you can do, start small, and build confidence.”* (Participant 10)

Entrepreneurship and self-employment are essential for encouraging economic independence among individuals with spinal cord injury (SCI), serving as means of personal empowerment and economic self-sufficiency (Jose & Muthulakshmi, 2024).

Simultaneously, vocational rehabilitation (VR) programs target job and life satisfaction of individuals through individualized resources and supports, leading to improved work readiness and confidence (Li et al., 2024).

In combination, these initiatives help illustrate the need to embed entrepreneurship into vocational (disability) policy as a means to improved independence and creativity and ultimately, greater financial independence for people with SCI (Maritz & Laferriere, 2016).

## **5.7 Personal Strategies and Coping Mechanisms**

Personal strategies and coping mechanisms play a critical role in helping spinal cord injury patients adjust to life after rehabilitation. Individuals often develop routines such as regular exercise, maintaining personal hygiene, and setting daily goals to manage their condition and stay motivated.

### **Self-belief and Mental Strength**

One Participant shared, *“You need to take control of your temper. the most important thing is self-belief.”* (Participant 7)

### **Health Routines and Exercise Discipline**

One Participant shared, *“Follow all the guidelines related to health strictly. It is the most mandatory thing.”* (Participant 4)

### **Religious and Philosophical Encouragement**

One Participant shared, *“Personally, my faith in Allah and my decision to stay busy keep me going. I always remind myself that life doesn't end with disability.”* (Participant 10)

### **Engaging in Work or Hobbies**

One Participant shared, "*They need to do their day to day works all by themselves and try not to be dependent on others.*" (Participant 5).

SCI patients mostly feel vulnerable all the time. They think that they have become a burden to their family and the society. They think that they need help in their day to day works. They cannot do anything all by themselves. This type of mindset really hinders their mental state. They need to learn to be independent. They must try to do their activities of daily living all by themselves. Keeping oneself busy, occupies the brain. This will help the brain to function in a sound way. So, all the SCI patients need to be involved with various activities. This will help them to enhance the quality of their physical and mental health.

**Conclusion**

This study explored the experiences of individuals with spinal cord injuries (SCI) during their participation in community life after completing rehabilitation. The findings revealed a range of interconnected barriers that hindered their reintegration. Environmental inaccessibility was a major obstacle, with participants frequently encountering difficulties in transportation, roads, and public spaces due to a lack of disability-friendly infrastructure. A range of health concerns that include muscle weakness, chronic pain, and fatigue reduced their ability to live independently and to move around. Emerging from selection process were psychological hurdles such as depression, anxiety and feelings of isolation - compounded by negative social attitudes and stigma towards disability. In spite of these barriers, a number of facilitators aided participants in making transitions to life following rehabilitation. Strong family and social support also had a major impact in providing emotional and practical support. A majority of participants were engaged in income-generating activities, most of who were in self-employment contributing to financial independence and self-esteem. Coping strategies, such as orderliness, faith in oneself and in spirituality, and work or hobbies, were found to be individual ways of dealing with emotional and physical pressures.

## **Recommendation**

### **Further Research**

- Do longitudinal studies to see how community participation changes over time.
- Include family, caregivers, and policymakers in future research to get a full picture.
- Compare rural and urban situations to design better local solutions.
- Test new programs such as peer support or home-based rehab to see what works best.

### **Practical Implications**

- Improve physical accessibility through ramps, roads, and transport suited for people with disabilities.
- Include mental health support and peer groups in rehabilitation to help with depression and low confidence.
- Arrange community awareness programs to reduce stigma and discrimination.
- Encourage family and community involvement to support daily living and social activities.
- Expand vocational training and small business opportunities to help SCI patients become financially independent.

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## Appendix- A

### অনুমতি ফর্ম

(অংশগ্রহণকারীদের উদ্দেশ্যে পড়ে শোনানো হবে)

আসসালামুআলাইকুম,

আমি মোঃ সাইফুল ইসলাম শুভ, ঢাকা বিশ্ববিদ্যালয়ের মেডিসিন অনুষদের অধীনে বাংলাদেশ হেলথ প্রফেশনস ইনস্টিটিউট (BHPI)-এর ফিজিওথেরাপি বিভাগের চতুর্থ বর্ষের ছাত্র। আমার ব্যাচেলর ডিগ্রি অর্জনের জন্য আমাকে থিসিস করতে হবে, যা আমার পাঠ্যসূচির একটি অংশ। আমার থিসিসের শিরোনাম হলো “পুনর্বাসন সম্পন্ন করার পর পুনঃরায় স্বাভাবিক জীবনযাপনে ফিরে যাওয়ার ক্ষেত্রে প্রতিবন্ধকতা এবং সহায়ক বিষয়সমূহ : একটি গুণগত অন্বেষণ”। আমার গবেষণা প্রকল্পের জন্য তথ্য সংগ্রহ করা প্রয়োজন। আপনি আমার গবেষণায় একজন সম্মানিত অংশগ্রহণকারী হতে পারেন এবং আমি আপনাকে আমার গবেষণার বিষয় হিসেবে অংশগ্রহণ করার জন্য অনুরোধ করছি। আমি আপনার কিছু ব্যক্তিগত এবং সংশ্লিষ্ট তথ্য জানতে চাই, যা প্রায় ২০ মিনিট সময় নেবে। আমি আপনাকে জানাতে চাই যে এটি শুধুমাত্র একাডেমিক গবেষণার জন্য এবং এটি অন্য কোনো উদ্দেশ্যে ব্যবহার করা হবে না। আপনার অংশগ্রহণ বর্তমানে বা ভবিষ্যতে আপনার চিকিৎসায় কোনো প্রভাব ফেলবে না। আমি আপনাকে আশ্বস্ত করছি যে সমস্ত তথ্য গোপন রাখা হবে। আপনার অংশগ্রহণ সম্পূর্ণ স্বেচ্ছামূলক এবং আপনি যেকোনো সময় এই গবেষণায় অংশগ্রহণ বন্ধ করতে বা সম্মতি প্রত্যাহার করতে পারেন। আপনার যদি গবেষণা বা আপনার অধিকার সম্পর্কে কোনো প্রশ্ন থাকে, তাহলে আপনি আমার সাথে যোগাযোগ করতে পারেন অথবা আমার তত্ত্বাবধায়ক মোঃ ওলিউল ইসলাম, লেকচারার, BHPI, সিআরপি, সাভার, ঢাকা-১৩৪৩ এর সাথে যোগাযোগ করতে পারেন। তাহলে, আমি কি সাক্ষাৎকার শুরু করার জন্য আপনার সম্মতি নিতে পারি?

আমি কি এখন সাক্ষাৎকারটি শুরু করতে পারি?

হ্যাঁ

না

অংশগ্রহণকারীর স্বাক্ষর ও তারিখ: .....

সাক্ষাৎকার গ্রহণকারীর স্বাক্ষর ও তারিখ: .....

**Appendix- B**  
**Consent Form**  
**(Please read out to the participant)**

Assalmualaikum,

I am MD. Saiful Islam Shuvo, a student of the B.Sc. in Physiotherapy course, Session 2019-2020, at Bangladesh Health Profession Institute, under the Faculty of Medicine, University of Dhaka. I must complete a thesis to earn my B.Sc. in physiotherapy degree. My thesis title is “Barriers and Facilitators during Community Participation of Spinal Cord Injury Patients after Completing Rehabilitation: A Qualitative Study”. The aim of the study is to explore the barriers and facilitators that influence community participation among spinal cord injury patients after completing rehabilitation. In order to ask you some questions about this thesis, I will meet with you once and you will have to answer some questions in an interview. The information you provide will be kept confidential and will only be used for thesis purposes. You have the right to terminate your participation at any time. Moreover, if you feel uncomfortable answering any question you can skip that question. The interview will take 20 to 30 minutes. Please give me the correct answers to the questions and enable the data collector to evaluate accurately. Contact my supervisor if you have any questions. MD. Waliul Islam, Lecturer, BHPI. If you would kindly give your consent, we can start.

Yes

No

Participant’s signature.....

Date.....

Data collector’s signature.....

Date.....

## Appendix -C

প্রশ্নাবলী (বাংলা)

শিরোনাম: “পুনর্বাসন সম্পন্ন করার পর পুনঃরায় স্বাভাবিক জীবনযাপনে ফিরে যাওয়ার ক্ষেত্রে প্রতিবন্ধকতা

এবং সহায়ক বিষয়সমূহ : একটি গুণগত অন্বেষণ”

রোগীর তথ্যাবলী

সাক্ষাৎগ্রহণের তারিখঃ	
অংশগ্রহণকারীর নামঃ	
ঠিকানাঃ	
মোবাইল নাম্বারঃ	

প্রথম অংশ: সামাজিক-জনতাত্ত্বিক তথ্য

প্রশ্নক্রম	প্রশ্নাবলী	প্রতিক্রিয়া	প্রতিক্রিয়া কোড
১।	বয়স	বছরে	
২।	লিঙ্গ	১। পুরুষ ২। মহিলা	
৩।	বৈবাহিক অবস্থা	১। বিবাহিত ২। অবিবাহিত ৩। বিচ্ছিন্ন ৪। তালাকপ্রাপ্ত ৫। বিধবা	
৪।	শিক্ষাগত যোগ্যতা	১। আনুষ্ঠানিক শিক্ষা	

		২। প্রাথমিক ৩। মাধ্যমিক ৪। উচ্চ মাধ্যমিক ৫। স্নাতক ৬। স্নাতকোত্তর এবং উপরে	
৫।	বসবাসের স্থান	১। গ্রাম ২। মফস্বল ৩। শহর	
৬।	পেশা	১। কৃষক ২। বিদ্যুৎমিস্ত্রি ৩। গৃহিণী ৪। শিক্ষার্থী ৫। চাকুরিজীবী ৬। ব্যবসায়ী ৭। গাড়িচালক ৮। দোকানদার ৯। রিকশাচালক	

দ্বিতীয় অংশ: এই অংশটি পুনর্বাসন সম্পন্ন করার পর পুনঃরায় স্বাভাবিক জীবনযাপনে ফিরে যাওয়ার

ক্ষেত্রে প্রতিবন্ধকতা এবং সহায়ক বিষয়সমূহ জানার জন্য তৈরি করা হয়েছে

- ১। আপনার বর্তমান অবস্থা কেমন? বর্ণনা করুন।
- ২। সিআরপি থেকে যাওয়ার পর আপনি কোন কোন পরিবর্তন গুলো খেয়াল করেছেন?
- ৩। আপনার দৈনন্দিন জীবনের কাজগুলো করার ক্ষেত্রে আপনি কী কী পরিবর্তন খেয়াল করেছেন?
- ৪। যাতায়াত ক্ষেত্রে আপনি কী কী পরিবর্তন খেয়াল করেছেন?
- ৫। ব্যক্তিগত এবং সামাজিক ক্ষেত্রে কোন কোন জিনিসগুলো আপনাকে অনুপ্রাণিত করেছে?
- ৬। মেরুদণ্ডে আঘাতপ্রাপ্ত রোগীদের স্বাভাবিক জীবনে পুনঃরায় ফিরে যেতে আপনি কি কি পরামর্শ দিবেন?

## Appendix -D

### Questionnaire (English)

**Title: “Barriers and Facilitators during Community Participation of Spinal Cord Injury Patients after Completing Rehabilitation: A Qualitative Study”**

#### Patient information

Patient ID	
Date of interview	
Name of the participant	
Address	
Phone number	

#### Part-1: Socio-demographic information

QN	Questions	Categories of response	Code of response
1	Age	In years	
2	Sex	1. Male 2. Female	
3	Marital Status	1. Married 2. Unmarried 3. Separated 4. Divorced 5. Widow	
4	Education	1. Formal education 2. Primary	

		3. Secondary 4. Higher Secondary 5. Graduate 6. Masters and above	
5	Residential area	1. Rural 2. Semi-urban 3. Urban	
6	Occupation	1. Farmer      8. Driver 2. Electrician   9. Shopkeeper 3. Housewife   10. Rickshaw puller 4. Student 5. Service holder 6. Day labor 7. Businessman	

**Part-2: This part is designed to know about Barriers and Facilitators during  
Community Participation of Spinal Cord Injury Patients after Completing  
Rehabilitation**

1. How is your current condition? Please describe.
2. What are the changes that you have noticed after getting discharged from CRP?
3. What are the changes that you are noticing in completing your activities of daily living?
4. What are the changes that you have noticed in terms of transport?
5. What are the things that have motivated you in the personal and social sector?
6. What advice would you give to the spinal cord injury patients in order to get back to their normal life?

## Appendix – E

### IRB Approval Form



## বাংলাদেশ হেলথ প্রফেশন ইনস্টিটিউট (বিএইচপিআই) Bangladesh Health Professions Institute (BHPI)

(The Academic Institute of CRP)

Ref: CRP-BHPI/IRB/12/2024/1041

Date: 15/12/2024

To  
MD. Saiful Islam Shuvo  
4<sup>th</sup> Year B.Sc. in Physiotherapy  
Session: 2019-20, Student ID: 112190521  
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

**Subject: Approval of the thesis proposal "Barriers and Facilitators during Community Participation of Spinal Cord Injury Patients after Completing Rehabilitation: A Qualitative Study." by the ethics committee.**

Dear Saiful,  
Congratulations.


The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application to conduct the dissertation mentioned above, with you, as the principal investigator and MD. Waliul Islam, Lecturer, Department of Physiotherapy, BHPI as thesis supervisor. The following documents have been reviewed and approved:

Sl. No.	Name of the Documents
1	Research Proposal
2	Questionnaire (English version)
3	Consent form

The purpose of the study is to explore the barriers and facilitators during community participation of spinal cord injury patients. The study involves the use of a self-structured questionnaire to explore the perceptions of spinal cord injury patients about adaptive sports and other related information will be collected from the patients with spinal cord injuries that may take up to 20 to 30 minutes to answer the questionnaire any instruction or precaution for collection of specimens and there is no likelihood of any harm to the participants and participation in the study may benefit the participants. Informed consent will be taken from all participants and any data collected will be kept confidential. The members of the Ethics Committee have approved the study to be conducted in the presented form at the meeting held at 9 AM on 15 July 2024 at BHPI (44<sup>th</sup> 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 in accordance with the Nuremberg Code 1947, the World Medical Association Declaration of Helsinki, 1964 - 2013, and other applicable regulations.

Best regards,

  
Muhammad Millat Hossain,  
Associate Professor & Course Co-Ordinator, MRS  
Member Secretary, Institutional Review Board (IRB)  
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

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