



“Physical disability and functional independence of spinal cord injury patients in the community after completing rehabilitation from Specialized Rehabilitation Centre”

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

“Physical disability and functional independence of spinal cord injury patients in the community after completing rehabilitation from Specialized Rehabilitation Centre”

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

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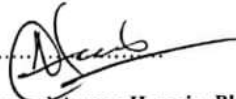
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Declaration

I declare that the work presented here is my own. All sources used have been cited appropriately. Any mistakes or inaccuracies are my own. I also declare that same any publication, presentation or dissemination of information of the study. I would bind to take consent from the department of Physiotherapy of Bangladesh Health Profession Institute (BHPI).

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List of Acronyms

List	Acronyms
SCI	Spinal cord injury
WHO	World health organization
TBI	Traumatic brain injury
PNI	Peripheral nerve injury
ICF	International classification of functioning
ADL	Activity of daily living
SCIM	Spinal cord independence measure scale
TSCI	Traumatic spinal cord injury
QOL	Quality of life
PA	Physical Activity
WHODAS	World Health Organization Disability Assessment Schedule
BHPI	Bangladesh health professions institute
SPSS	Statistical analysis and data management tool
BMRC	Bangladesh medical and research council
CRP	Centre for the rehabilitation of the paralyzed

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ABSTRACTS

Objective: The study aimed to identify the level of physical disability & functional independence of spinal cord injury patients after being discharged from specialized hospitals following complete rehabilitation program.

Methodology: This was a cross-sectional study conducted in Dhaka district, Bangladesh. A total of 40 participants were conveniently selected from Savar and Shimulia Upazilla. Among them, 80% (n=32) were male, and 20% (n=08) were female. The participants had completed their rehabilitation from specialized hospitals. An interviewer-administered Bengali version of the Spinal Cord Independence Measure scale (SCIM III) and World Health Organization Disability Assessment Scale (WHODAS 2.0). Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS).

Results: The study included participants aged between 20 and 70 years. The most significant limitation was observed in the 'mobility' domain (mean \pm SD: 19.87 \pm 2.797) and respiration and sphincter management (mean \pm 26.53 \pm 15.275). Between age and gender and total score of WHODAS and SCIM have good correlation but the correlation is negative. That means, if age is increase then WHODAS will be decrease whereas both gender male and female it's negatively correlated also education and occupation and total score of WODAS has no significant correlation but SCIM has significant correlation with education but has no significant correlation with occupation.

Conclusion: This study provides a standardized measure of the impact of spinal cord injuries on activities of daily living. Among community-dwelling individuals with spinal cord injuries, the most significant barriers were observed in the domains of mobility and respiration and sphincter management.

Keywords: *Spinal cord injury, physical disability, functional independence, activities of daily living, quality of life, barriers, participation, community*

1.1 Background

Spinal cord injury (SCI) is a circumstance which can be traumatic or non-traumatic that results in disruptions to normal sensory, motor, or autonomic function and ultimately effect a patient's physical, psychological, and social well-being (Singh et al. 2014). Following SCI, almost every prospect of a person's life, including their physical health, employment, interpersonal relationships, and leisure activities, may be impacted (Dixon & Budd 2017). The functional independence of persons with spinal cord injury is crucially lower than that of the community people. The most habitual type of spinal cord injury in the neck is posterior ligament rupture and dislocation, which produces momentous neurological disorders, particularly when it is associated with destruction and ischemia of the gray section of the cord. Spinal cord injury results differ depending on the size and location of the lesion (Barbin et al. 2008). One of the most devastating and incapacitating injuries in the world is spinal cord damage. It is a fatal and catastrophic condition that frequently affects healthy and young people. In addition to leaving the sufferer with severe physical impairment, this illness also depresses them emotionally. It results in significant adjustments to a person's physical and psychological relationships. Loss of motor function, an inability to manage bowel and bladder function, and impaired sexual function are some of the changes. As a result of SCI, one's capacity to engage in routine tasks both within and outside the home may alter or decline. The amount of time spent engaging in solitary home-based activities like TV watching, radio listening, and reading increases at the expense of participation in job, leisure, and recreational activities, potentially resulting in social isolation. (Barclay & colleagues 2015).

The word 'spinal cord injury' refers to spinal cord damage due to trauma (such as road traffic accidents) or disease or degeneration (e.g. cancer). There is no dependable evaluation of global prevalence, the annual global amplitude is estimated to be 40 to 80 cases per million populations. Traumatic causes account for up to 90% of these cases, and

the proportion of non-traumatic spinal cord injuries appears to be increasing. According to WHO the severity of the injury and its location on the spinal cord dominate the symptoms of a spinal cord injury. Symptoms may include damage to sensory function or motor control of the arms, legs, and/or body.

SCI prosecutes around 40 million individuals worldwide each year. Most of them are youth between the ages of 20 and 35, with children accounting for 1% of the community people (Yip et al. 2012). Spinal cord injury commonly causes severe locomotor disability, due to muscle paralysis. Depending on the level and thoroughness of the lesion, a community of people with spinal cord injury can be completely independent or need total assistance in all the activities of daily living. The results of spinal cord injury are sensory alterations, spasticity, pain, and neurogenic bladder, which also impact the level of disability and lower functional independence (Dahlberg et al. 2003).

According to World Health Organization (WHO) data, 10% of the community people in Bangladesh are disabled. Disability in Bangladesh (2002) reports, that the overall disability rate is rising as the population ages and grows. The fact that disabled community people are often denied social opportunities and rights is a severe issue in our society. It also comprises life expectancy, financial burden, and quality of life (Ning et al. 2011). Over the last three decades, the global incidence of spinal cord injuries has increased.

Spinal cord injury is a devastating disorder that can damage physical, psychological, and social functioning (Kennedy et al. 2006). With rehabilitation and proper follow-up, these patients' life expectancy will approach by rule. As a result, the conspicuous goals of rehabilitation and ongoing care for people with SCI are to end the complications of their conditions and to help them optimize function and quality of life. According to the World Health Organization (WHO) every year, between 250,000 and 500,000 people worldwide suffer a spinal cord injury (SCI). People with a spinal cord injury are two to five times more likely than people without a spinal cord injury to die prematurely, with lower survival rates in low- and middle-income countries. Spinal cord injury has been connected to lower rates of school enrollment and economic participation, as well as significant individual and societal costs.

Most SCI patients are discharged after completing inpatient rehabilitation and are expected to restart their lives and find ways to compete with their disability (Forchheimer & Tate 2004). Because some disabilities, including those combined with SCI, are permanent. It is necessary to recognize the factors affecting well-being that can be influenced by the rehabilitation team. Only a few studies have looked at the physical disability of SCI patients where the allotted SCI prevalence is 236 per million (Hegan et al. 2012). Gupta et al. discovered that patients with neurological illnesses, along with SCI, reported impaired physical ability in all domains of life; additionally, the social relationships estate of physical ability was found to negatively affect functional abilities (Gupta et al. 2008). The United Nations Office for Disaster Risk Reduction identifies disability as "a serious disruption of a community's or society's functioning that conduct to significant human, material, economic, or environmental losses that conquer the affected community's or society's ability to cope using its own resources. Disability, such as traumatic brain injury (TBI), spinal cord injury (SCI), limb amputation, peripheral nerve injury (PNI), crush, and/or musculoskeletal injury, consequence in significant mortality and long-term physical disability (Amatya et al. 2017).

According to the World Health Organization's definitions from 1980, the philosophy of rehabilitation is to alleviate disabilities and handicaps caused by trauma or disease. Patients with spinal cord injuries (SCI) perception with motor and sensory deficits, as well as bladder and bowel dysfunction, resulting in limitations in daily activities (Ditunno et al. 1994). The aim of rehabilitation is to treat patients with spinal cord injuries in order to accomplish optimal independence and a satisfying lifestyle in their own community. Participation in meaningful activities has been proven to enhance health and well-being and is an essential aspect of the human condition and experience. It is universally acknowledged that all persons, including those with impairments, have the right to fully participate in society (Whiteneck et al. 2009). Participation has been proven to be more strongly associated with quality of life than impairment or functional ability, making it a highly valued rehabilitation result for people with disabilities (Magasi et al. 2008). The term "disability" is used to describe a wide range of impairments, activity constraints, and participation restrictions, according to the International Classification of Functioning (ICF). When an individual (with a health condition) interacts negatively with that

individual's contextual elements, it refers to the negative characteristics of those interactions. Activity constraint refers to challenges people could face carrying out their daily activities. An activity limitation, in it, is the most comprehensive sense, includes all of the ways in which carrying out a daily activity may be hampered, such as doing it in pain or discomfort, too quickly or slowly, or not at the appropriate time or location, clumsily or in any other way that is not consistent with expectations. Physical activity limitations can range from a minor to a significant departure (Ustun et al. 2010).

Individuals who have suffered a spinal cord injury (SCI) confront enormous obstacles in adjusting not only to the physical element of the damage, but also to the changes it may bring about in terms of living circumstances, lifestyle, relationships, and adjustment. These difficulties first manifest themselves during rehabilitation, but they are also experienced following discharge back into society, and again as people age with their disability. The rehabilitation problems clearly encompass not just adapting to a different physical life, learning how to do frequently the most fundamental functions like feeding or dressing oneself, but also coming to grips with these physical changes emotionally and psychologically. The level of functional independence ultimately achieved by an individual will also be influenced by a variety of medical and non-medical factors, such as age, body size, and weight, associated injuries, the severity of spasticity, motivation, family support, living environment, pre-morbid lifestyle, vocation, educational background, and financial status (Jongjit et al. 2004). Physical activity is well known to be an important contributor to good health. People with disabilities are generally less physically active than those without disabilities. According to Momin (2003), people with spinal cord lesions in Bangladesh either die soon after their injuries or are unable to get treatment. Disability is a genuine issue in our culture, and disabled persons are frequently denied social opportunities and their rights.

This study is conducted to evaluate the level of physical disability and functional independence of spinal cord injury patients in the community after completing rehabilitation from specialized hospitals. This study will be an attempt to find out the physical disability and functional independence level of spinal cord injury from the perspective of Bangladesh.

1.2 Rationale

Spinal cord injury is the condition that causes the greatest risk to human life on the globe and has a negative impact on people's activities of daily life. SCI and its complications affect somewhere from 12.1 and 57.8 instances per million people per year in the general population. Mobility, self-care, physical functioning, social functioning, and mental state are all impacted by SCI. Spinal cord injuries that are compounded by physical harm are a significant public health issue in Bangladesh because they have a high rate of morbidity and mortality. From the different studies, it is evident that Functional independence and physical activity is a significant part of the rehabilitation of a person with a SCI. It is very important to determine the functional and disability status while a physiotherapy management team does work towards the improvement or the recovery of the functional and disability status of SCI survivors.

After this study physiotherapist will get an idea about the level of physical disability and functional independence of spinal cord injury patients in the community after completing rehabilitation from specialized center. Many persons with spinal cord injuries seek physiotherapy treatment at specialized center, however, the treatment's goals are not always met because of the patient's quality of life. After SCI, functional independence is a crucial concern. Physical disability and functional independence are both the ultimate objective of rehabilitation after SCI.

The ability of patients to carry out daily activities and adapt to different situations depends on their functional status, general health, and the success of their spinal cord injury rehabilitation. The functional ability and life expectancy of these vulnerable groups have recently come under scrutiny due to insufficient rehabilitation, community health care assistance, and regular follow-up. After getting proper rehabilitation, failing to follow basic guidelines and home counseling might affect a patient's quality of life and functional independence. It is also thought that changes in resilience following a spinal cord injury are related to life satisfaction, and functional independence during inpatient rehabilitation. Few studies have been conducted in Bangladesh regarding the degree of physical disability and functional independence after SCI. Physical impairment and functional independence have been demonstrated to significantly affect health and result in worse performance of

daily living tasks after rehabilitation. The level of physical disability and functional independence of spinal cord injury patients in the community after finishing rehabilitation at specialized hospitals will be revealed by this study. The study will enable experts to give these patients better-quality care in the future. Follow-up and patient reevaluation are essential to reducing the effects of physical disability and maximizing functional independence. Through this study, physiotherapists and other professionals will be aware of the quality of life and can understand the level of disability and functional independence after spinal cord injury from Bangladeshi perspectives. From the literature review, it is also evident that there is lacking literature regarding the functional and disability status of the person with SCI. Very few studies have been found regarding this area.

1.3 Research Question

What is the level of physical disability and functional independence of spinal cord injury patients in the community after completing rehabilitation from specialized centers?

1.4 Study Objectives

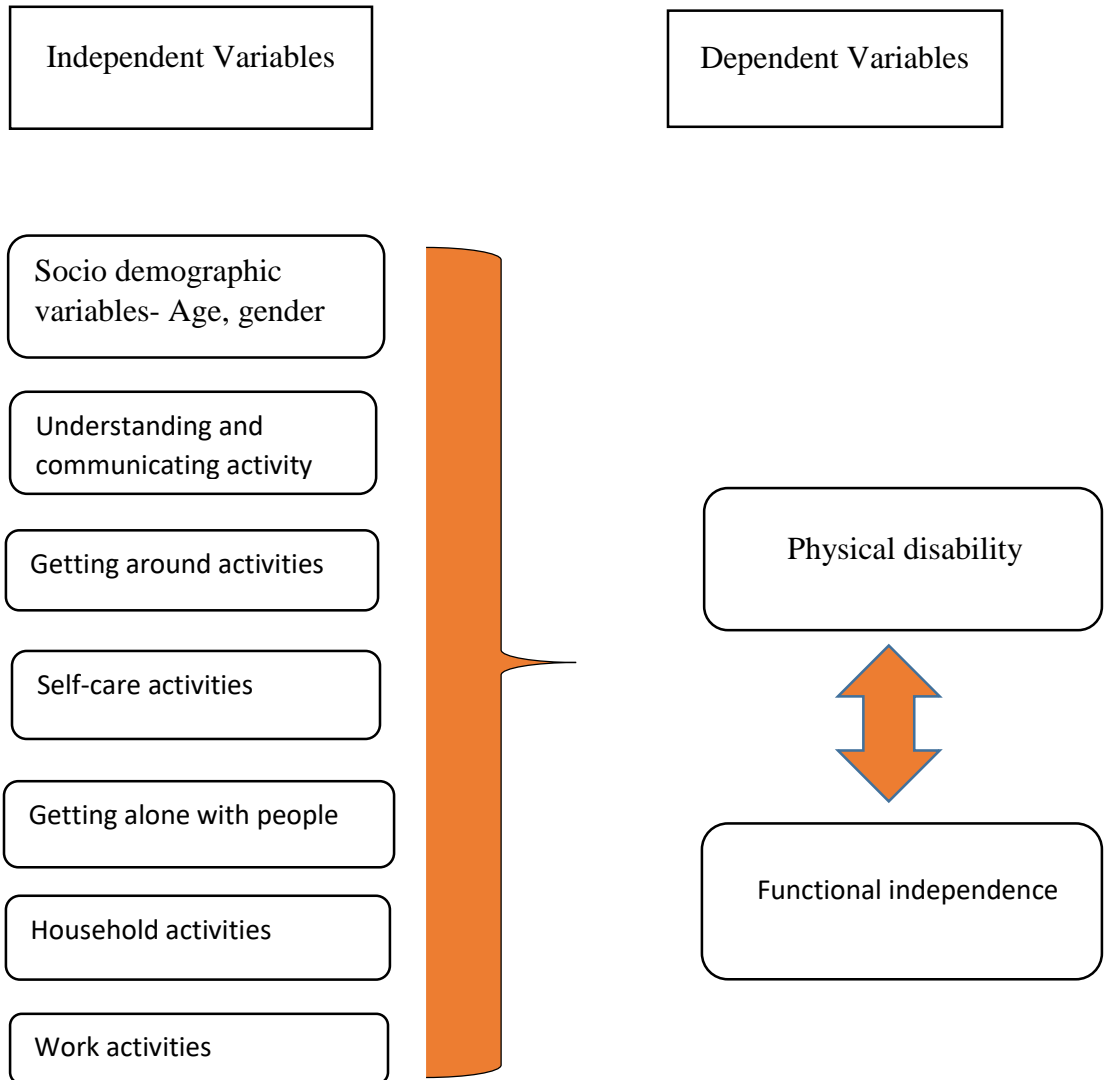
1.4.1 General objective

- To determine the level of physical disability & functional independence of spinal cord injury patients after discharging from specialized hospitals following complete rehabilitation program.

1.4.2 Specific Objective

- To explore the sociodemographic factors of spinal cord injury patient
- To find out the level of physical disability including cognition, mobility, self-care, getting along, life activities and participation of spinal cord injury patients
- To identify the functional independence of spinal cord injury patient after completing rehabilitation
- To analyze their functionality in the community
- To evaluate the social participation capability of the participants.

1.5 Conceptual Framework



1.6 Operational Definition

Disability: An umbrella term for impairments, activity limitations and participation restrictions. Any physical or mental condition that makes it harder for the person with the condition to do particular activities (activity limitation) or interact with the world around them (participation restrictions) is referred to as a disability.

Physical activity: Any voluntary skeletal muscle produced movement that involves an energy expenditure is considered to be physical exercise.

Functional independence: Functional independence can be defined as an individual's ability to perform activities of daily living (ADLs). Autonomy in performing tasks ensures a person's ability to live alone in a domiciliary context.

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

Rehabilitation: Rehabilitation is the course of training that is required to develop who some disability illness their physical progress, psychological well-being, social status and capacity for gainful occupational according to their capability.

SCIM III: Spinal Cord Independent Measurement III is a measurement tool that helps to measure patient's independency, functional ability, mobility and community joining ability.

Activities of daily living: Activities of daily living are activities related to personal care. They include bathing or showering, dressing, getting in and out of bed or a chair, walking, using the toilet, and eating.

Participation restrictions: Health conditions that may make it difficult for people to participate in various life events are referred to as participation restrictions. constraints on participation in activities that are often part of daily life, such as working, taking part in social and recreational activities, and receiving medical care and preventative services.

Spinal cord injury (SCI) can impact all components of the postural control system, including information processing due to the disconnection of the spinal cord with the brain. SCI also affects the spinal cord's afferent and efferent pathways, causing problems with somatosensory input, deficiencies in the trunk muscles, and balance issues. These bodily function impairments that people with SCI experience limit their capacity to do daily living activities (ADLs). According to a study, patients with SCI in Bangladesh have a mean life expectancy of 5.36 years. Worldwide, the great majority of SCI patients are still managed through non-systematic and fragmented processes. Only a few high-income nations offer complete, coordinated systems of care from the acute phase to lifetime monitoring. Individuals with SCI frequently face loneliness, sadness, and poor physical and psychological functioning after returning home. Six months after discharge, it was discovered that having low levels of self-efficacy had a negative impact on adjustment. In addition, social support has been cited as being especially important for helping people adjust to life after discharge (Divanoglou & Georgiou 2017). According to Razzak et al. (2011), SCI patients in developing nations like Bangladesh have a shorter life expectancy than those in industrialized ones.

Overall, of those admitted with SCI, 56.4% passed away within 5 years, whereas 43.6% lived for 5 years or longer. According to a survey, age groups 20 to 40 in Bangladesh were the most susceptible, accounting for 55.6% of the population. SCI occurred less frequently in people under 20 and over 50. In the 158 people, 86.1% had traumatic injuries and 13.9% had non-traumatic ones, resulting in 79.75% paraplegia and just 20.25% tetraplegia (Razzak et al. 2011). According to Singh et al. (2014), spinal cord injury (SCI) is a traumatic or non-traumatic occurrence that affects a patient's physical, psychological, and social well-being by impairing their normal sensory, motor, or autonomic function. In Bangladesh, this is a significant public health issue (Hoque et al., 2012). A significant level of personal handicap brought on by a spinal cord injury manifests itself in profound lifestyle adjustments (Kawanishi & Greguol 2013). According to Wyndaele (2007), the prevalence of SCI is rising due to higher survival rates and has been estimated to be

between 223 and 755 per million persons worldwide. The life expectancy of people with SCI has been demonstrated to grow over the previous 30 years based on a nationwide database of 30,822 SCI individuals in the United States, with mortality rates dropping by about 40% in the first 2 years following the injury (Saadat et al. 2010). Depending on the amount and severity, a spinal cord injury (SCI) can be a terrible occurrence. Regaining independence and a high quality of life are the affected areas for rehabilitation interventions. Understanding the incidence and frequency of spinal cord injury (SCI) is essential due to the serious bio-psychological effects, severe socio-economic effects, and severe short- and long-term consequences. The incidence rates reflect the level of SCI management and the possible need for improved prevention. On the other hand, prevalence rates have an effect on social and personal resources as well as health care (Wyndaele et al. 2016). According to Adhikari et al. (2021), the incidence of traumatic spinal cord injury is 13 to 53 cases per million worldwide and is rising. The American Association of Neurological Surgeons estimates that 11,000 spinal cord injuries (SCIs) occur in the United States each year, while the incidence varies from 10.4 per million to 29.7 per million in Europe (Moghimian et al. 2015), according to the National Spinal Cord Injury Association. Up to 450,000 people in the United States are estimated to be living with a SCI. The greatest incidence of SCI in the US, according to Lim et al. (2017) (Furlan et al. 2013), is 906 per million.

The signs of a spinal cord lesion vary depending on the severity of the damage or non-traumatic cause, and they can include loss of sensory or motor control in the lower, trunk, and upper limbs as well as loss of autonomic (involuntary) regulation of the body. This can stimulate breathing, heart rate, blood pressure, temperature control, bowel and bladder control, and sexual function. According to Nwankwo and Uche (2013), the age group of 31 to 45 is the most frequently afflicted by SCI, and men are more impacted than women (4.3:1). Of the injuries, 53% included the cervical spine, 22% the thoracic spine, and 25% the lumbar spine. According to Hoque et al. (2012), falling from a height accounts for 63% of SCI in Bangladesh. Another frequent reason for tetraplegia in Bangladesh (8%), according to Razzak et al. (2011), is falling while carrying a heavy load on the head. Both the incidence and prevalence of SCI are steadily rising globally. The range of reported global prevalence is between 236 and 1009 per million, according to Chen et al.'s (2013)

global mapping of the epidemiology of spinal cord injuries. The published Asian figures likely underestimate the overall incidence within this vast region, underrepresenting Asian nations in especially China and India. SCI is a major cause of death and morbidity and a life-changing event that affects not only the person with SCI but also their spouses, parents, siblings, and children. Following a spinal cord injury, there is a high likelihood of individual impairment, which shows itself as significant lifestyle adjustments (Kawanishi et al. 2013). According to Bickenbach et al. (2013), a spinal cord injury or damage can result in a wide range of disabilities, activity constraints, and participation restrictions, all of which have a negative effect on society.

A significant disability may come from spinal cord injury for both male and female, adolescence and the first few years of adulthood are the times when SCI risk is highest, with about 4:1 male-to-female ratio. Men are more vulnerable than women in Asia, where the incidence rate of SCI ranges from 12.06% to 61.6% per million persons. Motor vehicle collisions and falls are the leading causes of traumatic spinal cord injury (Ning et al. 2012). The chance of developing an emotional illness including physical disability following a spinal cord injury is unavoidable which can have a major negative impact on mental health (Guest et al. 2014). People with SCI typically report fewer feelings of well-being than people without disabilities. They perform worse in terms of their physical, mental, and social health, as well as in other areas of life that people value highly (Rabadi et al. 2013). Many SCI patients, even those who are young and healthy, are physically unable to carry out basic daily tasks, which increases the risk of difficulties down the road and decreases involvement in society and the workforce (Krause & Saunders 2011). Exercise and physical activity have long been acknowledged as essential components of treatment plans for those with spinal cord injuries. According to scientific research, engaging in physical activity can help injured people feel better physically and psychologically by reducing spasticity and pain and increasing bone mineral density, muscle endurance, and quality of life-related to physical health (Nicitopoulos et al. 2013). Physical inactivity can have a negative impact on quality of life, social engagement, and physical fitness. It can also increase the risk of secondary health issues like cardiovascular disease, obesity, and non-insulin-dependent diabetic mellitus. Pressure ulcers, urinary tract infections, autonomic dysreflexia, spasticity, joint contractures, depression, deconditioning and weight gain,

syringomyelia, poor cardiorespiratory function, chronic pain, and bowel and bladder issues are just a few secondary conditions that may be associated with a spinal cord injury (SCI). In some cases, the secondary disability may be more severe than the primary disability (Warburton et al. 2010).

SCI has larger implications for overseeing health care due to the challenges of the lived experience of the condition and the variations in that experience around the world, such as the impact that an individual with SCI will have on the quality of treatment they receive. To seek assistance from every clinical setting in his or her nation offers: urgent care, intensive care, surgery, stabilizing medical care, and especially rehabilitation, including return to the community, vocational rehabilitation, and ongoing primary care. It also aids clinicians, health professionals, researchers, and policymakers in understanding the advantages and disadvantages of their country's healthcare system [WHO] (2013).

After suffering from spinal cord injury (SCI), people must frequently deal with a variety of physical, psychological, and social challenges that develop as a result of their disabilities, such as decreased career options, limited social support, and worsening health. Those who have traumatic SCI are at higher risk than those who have non-traumatic SCI. Non-traumatic SCI patients benefit from improved retrieval in the injured areas. They spend less time in the hospital compared to people who suffer traumatic SCI, who have poorer prognoses and longer stays. For anybody with SCI, episodic examinations by a trained team of medical professionals are recommended. The best possible results for health and well-being can be achieved by preventing and treating SCI disorders (Rimmer et al. 2010).

As well as some invisible and conceptual barriers that result from the attitudes and beliefs of the individual with the SCI and from society at large that are affecting participation (Zinman et al. 2014). Rehabilitation is often able to promote the full inclusion and participation of persons with disabilities in physical and psychosocial surroundings (Gonçalves et al. 2020). Many rehabilitation specialists primarily interact with SCI patients in a clinical setting, which limits their understanding of the social context of disability. Understanding the environment to which people return after receiving acute rehabilitation is particularly challenging due to the condensed, post-injury patient rehabilitation stay

People with disabilities who often come into contact with these aids or barriers are the most important possibilities to recognize these aspects. Depending on the extent and severity of the damage. Currently, 87.9% of all people with SCI who are released live in the community in private homes rather than institutions (Newman 2017). The incidence rates reflect the level of SCI management and the possible need for improved prevention. On the other hand, prevalence rates have an effect on social and personal resources as well as health care (Wyndaele et al. 2016). People with spinal cord injuries (SCIs) are living longer, and as a result, numerous aging-related health issues are beginning to have a substantial impact on their general health. The prevalence is currently estimated to be 230,000 with a growing incidence of new SCI at 11,000 per year. Life expectancies following SCI have grown thanks to improved acute and long-term management strategies, however they are still below those of the general population of 15 years old. As a result, adopting new lifestyle habits to slow down the consequences of aging has gained popularity.

Families' and communities' responses to children and young people with disabilities are also influenced by how people anticipate those with impairments to contribute to society. More than 80% of spinal cord injury patients are men, and 55% of them are between the ages of 16 and 30 according to data from the National Institute of Neurological Disorders and Stroke in 2010. Men typically work during this period of their lives and contribute to the nation's progress. As spinal cord injuries require extensive rehabilitation, they may be a strain on the community, society, and the nation. Health experts frequently place more emphasis on a person's impairment than on the person as someone who needs advice on the proper advantages of a healthy lifestyle (Scelza et al. 2016). In particular, difficulty returning to work or school, adjusting to new social responsibilities, and gaining overall individual freedom have all been linked to sadness and a lower quality of life (Silver et al. 2012). Among the 150 SCI participants from Bangladesh, having more education was associated with happier lives and improved community inclusion (Ahmed et al. 2018).

Patients with spinal cord injuries may experience life-threatening consequences, requiring careful management and specialist rehabilitation. Despite traveling to many hospitals for treatment, SCI sufferers cannot receive adequate care there due to a lack of facilities. There

is just one non-governmental organization in Bangladesh, the Centre for the Rehabilitation of the Paralyzed, which has been running a rehabilitation program to help patients improve their quality of life for the past 32 years (Islam et al. 2011). The community-based, non-governmental organization CRP handled the patients using a multidisciplinary approach. There are enough people working there in an honest manner with support from transient volunteers from home and abroad (Hoque et al. 1999). The study will contribute to furthering our understanding of SCI in Bangladesh and aid in the development of effective programs and policies. Advanced treatment in intensive care units and proper, precise, long-term management and rehabilitation in underdeveloped nations have survival rates and life expectancies that are only accessible through non-governmental organizations (Islam et al. 2011). Physical activity has the power to enhance general health, wellbeing, and quality of life (QOL) for people with SCI in addition to preventing secondary health issues (Martin Ginis et al. 2015). Despite the advantages of physical activity (PA), people with SCI belong to the group of impaired people who are the least active (Letts et al. 2011). Individuals face several kinds of physical, emotional, and social issues shortly following an injury.

Individualized functional training before returning to the community, in addition to ongoing consultation and education following discharge, are all advantages of rehabilitation for recently injured people. Spinal cord injury (SCI) sufferers' health and well-being can benefit from physical activity. Despite these advantages, the group of disadvantaged people that includes those with SCI is the most physically inactive. For persons with disabilities, including those with SCI, health promotion has traditionally focused on basic disability prevention rather than secondary condition prevention. On the open questions relevant to the various things, the participants listed numerous obstacles to physical activity both in the present condition and shortly after discharge. Physical health issues, mental health issues, and issues with store and building accessibility were the biggest impediments in the current circumstances. On the open questions relevant to the various things, the participants listed numerous obstacles to physical activity both in the present condition and shortly after discharge. Physical health issues, mental health issues, and issues with store and building accessibility were the biggest impediments in the current circumstances.

3.1 Study design

A cross sectional study design was used. A cross sectional study was chosen as appropriate to achieve the aims. A cross-sectional study is a descriptive research in which the prevalence of a disease and its relationship to exposure are assessed in the same population. Cross-sectional study design was used for this study because those people were completed rehabilitation from specialized rehabilitation center and researcher collected data from them. For this study over a short period of time data was collected of the participants who have completed rehabilitation from specialized rehabilitation center after the injury. The sample used in a large cross-sectional study is often taken from the whole population. In this way this study was provided a snapshot of the characteristics associated with it. By this study it was trying to find out any association between ages, sex, educational status, and occupation. This study has been conducted through using cross sectional prospective survey under a quantitative study design. Survey methodology was selected to fulfil the study aim as an effective way to collect data.

3.2 Study site

This study was conducted among the spinal cord injury patient discharged from specialized rehabilitation center, Bangladesh.

Study area: The researcher selects the discharged Spinal Cord Injury (SCI) patients from the community around-

- ❖ Area near Savar, Dhaka.

3.3 Study population and sample population

The target population was the discharged patient with Spinal Cord Injury who has completed their rehabilitation program from Specialized rehabilitation center, Bangladesh.

A population is the total group or set of events or totality of the observation on which a research is carried out. In this study the people who had SCI and people who were receiving 6-month treatment and rehabilitation was selected to carry out the study. 40 sample were selected for this study.

3.4 Sampling Technique

Convenience sampling technique was used for sample selection due to the time limitation and as it was the one of the easiest, cheapest and quicker method of sample selection. After taking permission from the ethical body of BHPI, the investigator had to find out the people with spinal cord injury who lived in community. The researcher had chosen Savar Upazila of Dhaka as a study area for collecting data. The researcher explained every participant about the research aim and objectives. Participants were chosen purposively because the participants had some particular features or characteristics which was enable detailed exploitation of the research objecties. Only 40 numbers of participants have found physically and collected data through face to face interview.

3.5 Sample size

When the sample frame is finite,

The equation of finite population correction in case of cross sectional study is:

$$n = \frac{z^2 \times pq}{d^2}$$
$$= \frac{(1.9)^2}{(0.05)^2} \times 0.5 \times 0.5$$
$$= 384$$

Here,

Z (confidence interval) = 1.96

P (prevalence) = 50% (Geyh et al., 2010)

And

q = (1-p)

= (1-0.5)

=0.5

The actual sample size was, n= 384.

Actual sample size for the study was 384. As it is an academic thesis, self-funding and data was collected by considering the feasibility and time limitation. 40 sample were selected conveniently.

3.6 Inclusion criteria

- Patient with spinal cord injury.
- Rehabilitation program should be completed successfully from specialized center.
- People who had received 6-months treatment and rehabilitation.
- Both male and female were included.
- Easy to communicate with subject.

3.7 Exclusion criteria

- Medically unstable patient.
- Recently discharged patient
- Patients who lives far from Dhaka
- Patient with cognitive problem or typically injured and psychologically unstable.

3.8 Data collection tool

3.8.1 Data collection instrument

A structured questionnaire and demographic information chart were used as a data collection instrument. In that time some other necessary materials were used like pen, pencil, and white paper and clip board. The English questionnaires were converted into

Bengali to ask the participants during interviews. Researcher must take permission from each volunteer participant by using a written consent form in Bengali.

3.8.2 Data collection tools

A questionnaire survey was conducted to all the participants, which comprised questions regarding basic information about the patients, assessment of World Health Organization Disability Assessment Schedule (WHODAS) 2.0 followed by World Health Organization and the Spinal Cord Independence Measure (SCIM) is a disability scale developed specifically for patients with spinal cord lesions in order to make the functional assessments of patients with spinal cord injury. Sociodemographic information of the patient detailed age, sex, address, cause and type of injury, mobile number, education, occupation, family member number was conducted.

The SCIM is composed of 19 items that assess 3 domains. The total SCIM scores range from 0 to 100. The original SCIM was revised to address substandard reproducibility (< 80%, Kappa = 0.66-0.73) of bathing, dressing, bowel management and mobility in bed, resulting in the SCIM II (Catz, et al., 2001). For evaluation of the physical activity WHODAS 2.0 was assessed for it 36 items of 6 components like understanding and communication, getting around, self-care, getting along with people, life activities and social participation. Participants noted their disability by felt difficulties in terms of none, mild, moderate, severe, and extreme or cannot do at all.

3.8.3 Duration of data collection

Data were collected from 1 May 2023 to 1 July 2023. Each participant provided time to collected data. Each interview took approximately 15-20 minutes to complete.

3.8.4 Procedure of data collection

Data were collected directly using questionnaire. Data was collected in face to face conduct. At very beginning data collector clarified that the participant had the right to

refuse to answer of any question during completing questionnaire. They could withdraw from the study at any time. Researcher also clarified to all participants about the aim of the study. Participants were ensured that any personal information will not be published anywhere. After getting consent from the participants, standard questionnaire was used to collect demographic information and patients complain with factors. Questions will be asked according to the Bangla format. Researcher was ensured a quite environment to avoid distraction and environmental noise. The researcher explained the participants about the aim of the study. Then a consent from was given to participants. It was help to maintain the good rapport so that the researcher got the actual information from the participant's. Interview was conducted in Bangla so that participants can easily understand the questions. All the data were collected by the researcher himself to avoid mistakes.

3.9 Data analysis

The data was collected using WHODAS 2.0 and SCIM III Questionnaire. Data were analyzed using descriptive statistics and spearman test. Data were analyzed with the software named Statistical Package for the Social Science (SPSS) software version 16.0, analyze data that has been calculated as percentages and presented using bar, column, table. A complete and adaptable statistical analysis and data management tool is SPSS.

The evaluation of the physical activity and functional independence was done by the participant's response to WHODAS 2.0 and SCIM II. In WHODAS 2.0 each question had responses by expressing the difficulty in various task as 'none', 'mild', 'moderate', 'severe' and 'extreme or cannot do' labelled as 1, 2, 3, 4 and 5 respectively. There are 6 components. The total summation of items in a component can interpret the level of disability of a person. A higher overall score indicates a lower level of physical activity and a higher degree of physical impairment. Moreover, the greater the physical activity and the lesser the impairment, the lower the score. The SCIM is composed of 19 items that assess 3 domains. The total SCIM scores range from 0 to 100, where a score of 0 defines total dependence and a score of 100 is indicative of complete independence. Each subscale

score is evaluated within the 100-point scale (self-care: 0-20; respiration and sphincter management: 0-40; mobility: 0-40).

3.10 Statistical test

Data were analyzed using descriptive statistics and correlation by spearman test. Data were analyzed with the software named Statistical Package for the Social Science (SPSS) software version 20.0, analyze data that has been calculated as percentages and presented using bar, column, table. In the descriptive part, in the case of parametric data, the central tendency and the measure of dispersion were presented through mean and standard deviation. The categorical data were presented as frequency and percentage of proportion through different visualization tools such as pie charts, bar graphs. To find out the correlation, the Spearman test is done.

3.11 Informed Consent

The whole process of this research project was done by following the guidelines of the Institutional Review Board (IRB) of BHPI. All participants provided their written consent. The participants verbally received an explanation of the consent form. The researcher gave the participants an explanation of how they may participate in this study. Every participant signed a written consent form provided to the researcher. As a result, the participant confirmed that they were able to understand the permission form and that their participation was voluntary. The confidentiality of the participants' data was made very obvious to them. The researcher gave the subjects his word that the study wouldn't hurt them. The study may not have directly benefited the participants, but it may have done so in the future for cases similar to theirs, it was revealed. Participants are free to revoke their permission at any time. To maintain privacy, data from this study were coded anonymously. The study wouldn't make them feel awful.

3.12 Rigor of the study

In this study, the researcher consistently struggled to maintain integrity and trustworthiness. The investigation was directed to eliminate bias and error causes

understandably and methodically. There were no leading questions posed. The researcher did not contribute his viewpoints during the data analysis. The research supervisor carefully categorized and cross-referenced the participant's information to eliminate potential inaccuracies. The research supervisor double-checks every element of the study as it is being conducted. Every piece of raw data was gathered from reliable sources while keeping a reference system in place.

Demographic information:

Age of the participants: Total 40 participants participated in this study. They were aged between 20 years to 70 years.

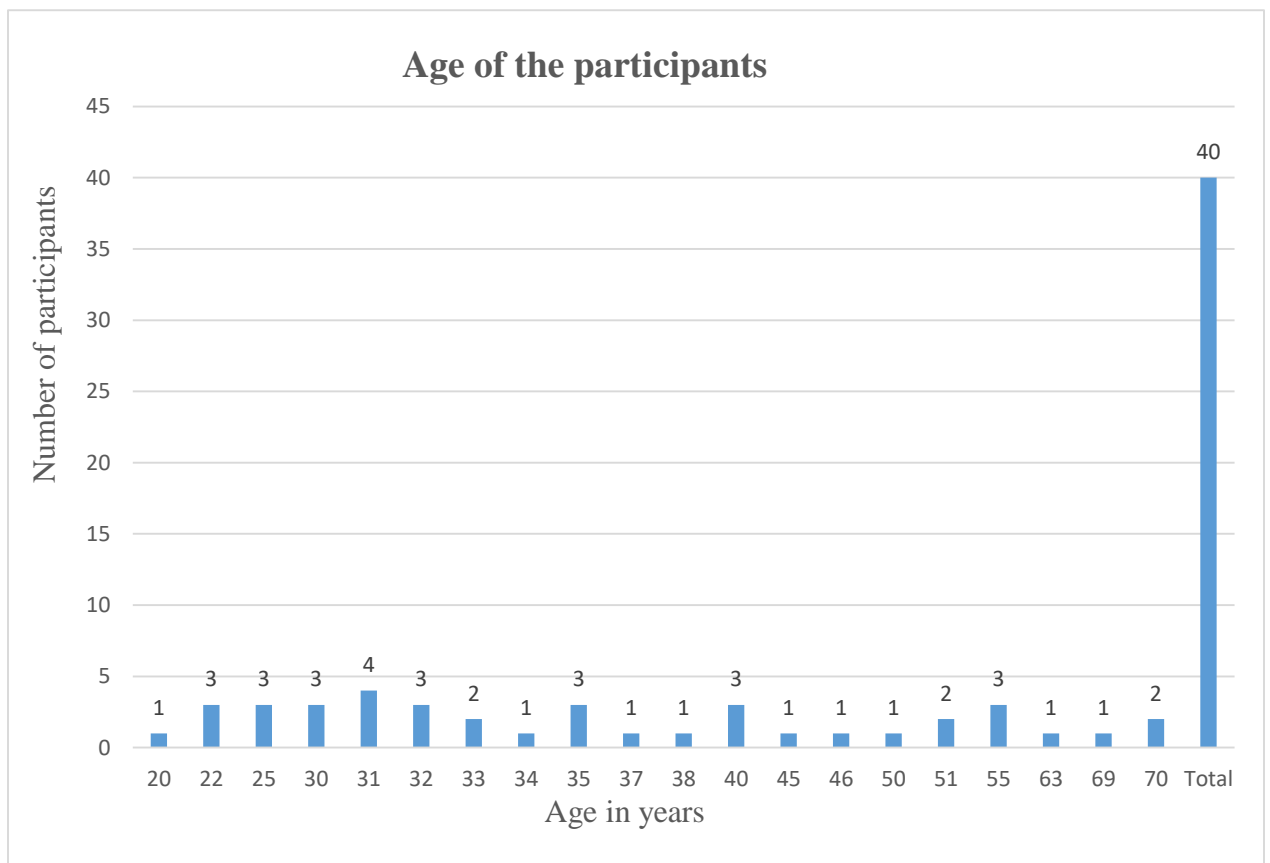


Figure-1.1: Age groups of the participants.

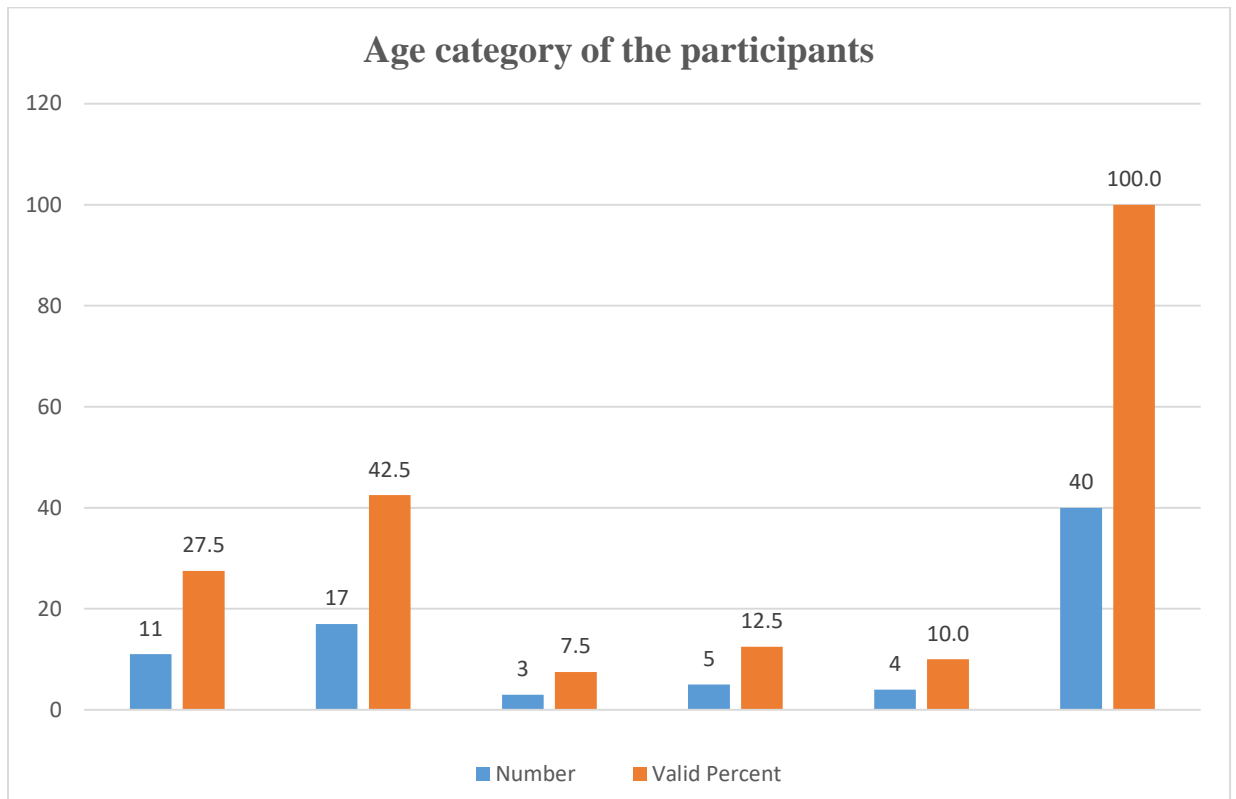


Figure 1.2: Age category of the participants

Table- 1: Sociodemographic information of 40 participants

Gender of the participants		Marital status of the participants	
Male	32	Unmarried	5
Female	08	Married	34
		Divorced	01
Living area of the participants		Educational level of the participants	
Urban	04	No formal education	02
Semi urban	11	Primary education	13
Rural	25	Secondary education	11
		Higher secondary education	13
		Graduate	01
Occupation before SCI		Occupation after SCI	
Housewife	03	Housewife	03
Agriculture	10	Agriculture	24
Service holder	04	Day labor	02
Business	09	Unemployed	07
Day labor	03	Others	04
Student	04		
Unemployed	04		
Others	01		
Retired	01		

Among 40 participants 32 participants were male and 8 were female. 5 were unmarried, 34 were married and 01 was divorced. 04 participants lived in urban area, 11 lived in semi-urban area and 25 participants lived in rural area. 02 had no formal education, 13 had primary education, 11 had secondary education, 13 had higher secondary education and 01 had graduation. Among 40 participants before SCI 03 participants were

housewife, 10 were agriculture, 04 were service holder, 09 were businessman, 03 were day labor, 04 participants were student, 04 participants were unemployed, 01 was retired and 01 was from other profession. After SCI 03 participants were housewife, 24 participants were agriculture, 01 was day labor, 07 were unemployed and 04 participants were from other profession.

Clinical information of the participants:

Table 2: Clinical information of participants

Health care received		Name of the facility		Causes of injury	
Hospital	32	CRP	31	Fall from height	13
Thana health complex	4	NITOR	7	Road Traffic accident	17
Private clinic	4	Others	2	Scarf injury	2
				Physical assault	5
				Spinal tumor	2
				Others	1

Diagnosis		Treatment received	
Traumatic paraplegia	28	Conservative and surgery 40	
Non traumatic paraplegia	2		
Traumatic tetraplegia	10		

Comorbidity before SCI		Comorbidity after SCI	
High blood pressure	5	Depression + bowel bladder	
Respiratory disease	1	disease + circulatory problem	9
Anemia or other blood disease	2	Bowel bladder disease + urinary	
High blood pressure + ulcer	2	incontinence + circulatory problem	19
Respiratory disease + kidney disease	7	Depression + postural hypotension	
None	23	+ spasticity	5
		Urinary incontinence + circulatory	
		problem	5
		None	2

As the cause of injury, 28 participants noted traumatic paraplegia, 2 noted non traumatic paraplegia and 10 noted traumatic tetraplegia. Among them 32 participants received health care from hospital, 4 were received from Thana health complex and 4 were received from private clinic. 31 participants received facility from CRP 7 received from NIOR and 2 received from other facility. 13 participants noted fall from height event, 17 noted road traffic accident, 2 noted scarf injury, 5 noted physical assault, 2 noted spinal tumor and 1 noted fall heavy object on the head. All the 40 participants received conservative and surgery treatment. Before SCI 5 participants had high blood pressure, 1 had respiratory disease, 2 had anemia, 2 had High blood pressure + ulcer, 7 had respiratory disease + kidney disease and 23 had no disease. After SCI 9 had Depression + bowel bladder, 19 had Bowel bladder disease + urinary incontinence + circulatory problem, 5 had Depression + postural hypotension + spasticity, 5 had Urinary incontinence + circulatory problem and 2 noted with no illness.

Functional examination of the participants:

Table 3: Spinal cord independence measure scale subtotal

SCIM self-care subtotal	Respiration and sphincter management subtotal	SCIM mobility subtotal
Minimum 02	Minimum 10	Minimum 06
Maximum 16	Maximum 47	Maximum 16
Mean 9.27	Mean 26.53	Mean 11.33
Standard deviation 4.350	Standard deviation 15.275	Standard deviation 3.075

Table 3.1: Getting around result of the participants

Getting around					
	None	Mild	Moderate	Severe	Can'tdo
Standing for 30 minutes					100%
Standing up				92.5%	7.5%
Walking along distance				92.5%	7.5%
Getting out home		45.0%	10.0%	45.0%	
Moving inside home		45.0%	10.0%	45.0%	

In the case of standing for 30 minutes respectively 100% people were getting severe difficulty. 92.5% (n=37) people had severe difficulty and 7.5% (n=3) had extreme difficulty in standing up. 92.5% (n=37) people had severe difficulty and 7.5% (n=3) were unable to do or extreme problem to walking along distance. 45% (n=18) people had mild difficulty, 10.0% (n=4) people had moderate difficulty and 45% (n=18) people had severe difficulty in getting out home, 45% (n=18) people had mild difficulty, 10.0% (n=4) people had moderate difficulty and 45% (n=18) people had severe difficulty in moving inside home.

Table 3.2: Self-care result of the participants

Self-care					
	None	Mild	Moderate	Severe	Can'tdo
Washing your whole body		40%	52.5%		7.5%
Getting dressed		40%	60%		
Eating		40%	52.5%		7.5%
Living along someday		77.5%	15%		7.5%

40% (n=16) of people had mild difficulty, 52.5% (n=21) had moderate difficulty and 7.5% (n=3) had extreme difficulty washing whole body. 40% (n=16) of people had mild difficulty, 60% (n=24) people had moderate difficulty in getting dressed. 40% (n=16) of people had mild difficulty, 52.5% (n=21) had moderate difficulty and 7.5% (n=3) had extreme difficulty to eat independently. 77.5% (n=31) people had mild difficulty, 15% (n=6) had people had moderate difficulty and 7.5% (n=3) had extreme difficulty to live along somedays.

Table 3.3: Getting alone with people result of the participants

Getting along with people					
	None	Mild	Moderate	Severe	Can'tdo
Dealing people do not know		87.5%	5.0%	7.5%	
Maintaining friendship		87.5%	5.0%	7.5%	
Getting along close to		85.0%	7.5%	7.5%	
Making new friends		60.0%	5.0%	27.5%	7.5%

87.5% (n=35) of people had mild difficulty, 5.0% (n=2) people had moderate difficulty and 7.5% (n=3) had severe difficulty dealing people do not know. 87.5% (n=35) of people had mild difficulty, 5.0% (n=2) people had moderate difficulty and 7.5% (n=3) had severe difficulty to maintain friendship. 87.5% (n=35) of people had mild difficulty, 5.0% (n=2) people had moderate difficulty and 7.5% (n=3) had severe difficulty to get close to people and 60% (n=24) had mild difficulty, 5.0% (n=2) had moderate difficulty, 27.5% (n=11) had severe difficulty and 7.5% (n=3) had extreme difficulty to make new friends.

Table 3.4: Life activities result of the participants

	Life activities				
	None	Mild	Moderate	Severe	Can't do
Taking care household		62.5%	30%	7.5%	
Doing important household		57.5%	7.5%	27.5%	7.5%
Getting household done that need		57.5%	7.5%	27.5%	7.5%
Getting household done quickly		57.5%	35.0%		7.5%
Day to day work		55.0%	37.5%		7.5%
Doing most important work		62.5%	30.0%		7.5%
Getting work you need		52.5%	12.5%	27.5%	7.5%

In the case of life activities, 62.5% (n=25) of people had mild difficulty, 30% (n=12) people had moderate difficulty, 7.5% (n=3) had severe difficulty to take care of the household activity. 57.5% (n=23) of people had mild difficulty, 7.5% (n=3) people had moderate difficulty, 27.5% (n=11) had severe difficulty and 7.5% (n=3) had extreme difficulty to do important household. 57.5% (n=23) of people had mild difficulty, 7.5% (n=3) people had moderate difficulty, 27.5% (n=11) had severe difficulty and 7.5% (n=3) had extreme difficulty to get household done that need. 57.5% (n=23) of people had mild difficulty, 35% (n=14) people had moderate difficulty, and 7.5% (n=3) had extreme difficulty to get household done quickly. 57.5% (n=23) of people had mild difficulty, 35% (n=14) people had moderate difficulty, and 7.5% (n=3) had extreme difficulty to complete day to day work. 62.5% (n=25) of people had mild difficulty, 30% (n=12) people had moderate difficulty, and 7.5% (n=3) had extreme difficulty to do most important work. 52.5% (n=21) of people had mild difficulty, 12.5% (n=5) people had moderate difficulty, 27.5% (n=11) had severe difficulty and 7.5% (n=3) had extreme difficulty to get work they need and 60%

(n=24) people had mild difficulty, 32.5% (n=13) had moderate difficulty and 7.5% (n=3) had severe difficulty to get work quickly.

Table 3.5: Participation in society result of the participants

Participation in society					
	None	Mild	Moderate	Severe	Can'tdo
Joining community activities		60.0%	32.5%		7.5%
Problem with barriers		55.0%	37.5%		7.5%
Problem living with dignity		55.0%	37.5%		7.5%
Time spend for health condition		50.0%	12.5%		37.5%
Emotionally affected by health		52.5%	40.0%		7.5%
Health drain to financial recourses		35.0%	15.0%	42.5%	7.5%
Problem doing relaxation		30.0%	32.5%	30.0%	7.5%
Problem with family		32.5%	22.5%	37.5%	7.5%

In the case of participation in the society, 60% (n=24) of people had mild difficulty, 32.5% (n=13) had moderate difficulty, 7.5% (n=3) had extreme difficulty to join community activities. 55% (n=22) of people had mild difficulty, 37.5% (n=15) had moderate difficulty and 7.5% (n=3) had severe difficulty to problem with barriers. 55% (n=22) of people had mild difficulty, 37.5% (n=15) had moderate difficulty and 7.5% (n=3) had severe difficulty to problem living with dignity. 50% (n=20) of people had mild difficulty, 12.5% (n=5) had moderate difficulty and 37.5% (n=15) had severe difficulty to time spend for health condition. 52.5% (n=21) of people had mild difficulty, 40% (n=16) had moderate difficulty and 7.5% (n=3) had severe difficulty to emotionally affected by health. 35% (n=14) of people had mild difficulty, 15% (n=6) had moderate difficulty and 42.5% (n=17) had severe difficulty and 7.5% (n=3) had extreme difficulty to health drain to financial

resources. 30% (n=12) of people had mild difficulty, 32.5% (n=13) had moderate difficulty and 30% (n=12) had severe difficulty and 7.5% (n=3) had extreme difficulty to problem doing relaxation and 32.5% (n=13) of people had mild difficulty, 22.5% (n=9) had moderate difficulty and 37.5% (n=15) had severe difficulty and 7.5% (n=3) had extreme difficulty to problem with family.

Table 4: Nonparametric correlations

Correlations between WHODAS total score and SCIM total score with age, gender, education and occupation of the participants by Spearman test:

Variable	WHODAS		SCIM	
	R	p	r	p
Age	-0.328	0.039*	-1.000	0.000*
Gender	-1.000	0.000*	-1.000	0.000*
Education	.301	.059	-.443	.004*
Occupation	.148	.362	0.24	.883

From the above table Age and Gender and total score of WHODAS and SCIM have good correlation but the correlation is negative. That means, if age is increase then WHODAS will be decrease whereas both gender male and female it's negatively correlated. Education and Occupation and total score of WODAS has no significant correlation but SCIM has significant correlation with education but has no significant correlation with occupation.

The purpose of the study was to determine and describe relationship between socio-demographic (i.e., age, sex, education, occupation) and different aspects of activity of daily livings according to SCIM III and WHODAS 2.0 (i.e., mobility, self-care, respiration and sphincter management, getting along with other people, household activities, work activities, participation and total score) in people with spinal cord injury (SCI). The aim of rehabilitation is to treat patients with spinal cord injuries in order to accomplish optimal independence and a satisfying lifestyle in their own community. Participation in meaningful activities has been proven to enhance health and well-being and is an essential aspect of the human condition and experience (Whiteneck et al. 2009).

According to the assessment of physical activity and functional independence, 71 people in the physical health domain have a high quality of life, 3 have a normal quality of life, and the remaining 1 have a low quality of life. 75 participants in the psychological domain have a good quality of life, while the remaining 5 have a regular quality of life. The social interaction domain, in contrast to the other three, revealed a distinct picture, with the majority of participants (n=96) having low quality of life, just one participant having high quality of life, and the other four people having normal quality of life. In this study, the average age of the participants was 38.78 years with a standard deviation of 13.656. A comparable study was carried out on 36 individuals with SCI in 2019 by Ioannis-Alexandros in Greece; of them, (n=32) were men and (n=4) were women, with a mean age of 45.1±9.8. Of them, 83.3 percentage were paraplegic.

In contrast, a study conducted in Sydney, Australia by De Wolf et al. (2012) reported a slightly younger sample with an average age of 34.7 years and a standard deviation of 14.6 among 63 participants. However, two separate studies conducted in Canada had a sample with a similar age range, where 145 participants had an average age of 48.7 years with a standard deviation of 17.4, as reported by Noonan et al. in 2010. People who have experienced a spinal cord injury (SCI) have significant challenges in adapting to the

physical aspect of the disability as well as potential changes to their lifestyle, relationships, and way of living.

In a similar study physical activity has been shown to improve the physical and psychological well-being of wounded individuals by decreasing pain and spasticity and improving bone mineral density, muscle endurance, and quality of life in relation to physical health (Nicitopoulos et al. 2013). Physical fitness, social interaction, and quality of life can all suffer from inactivity. The World Health Organization Disability Assessment Scale II (WHODAS II) is a tool designed to evaluate daily functioning in six domains that align with the activities and participation aspects outlined in the International Classification of Functioning, Disability, and Health (WHO, 2014). In WHODAS 2.0, both the domain and total scores are converted into a metric ranging from 0 to 100, where 0 signifies no disability, and 100 represents full disability (WHO, 2001). In this particular study, the most significant limitations were observed in the 'mobility' domain, with a mean \pm SD score of 19.87 ± 2.797 . In case of other domains, mean \pm SD were 10.30 ± 1.921 for self-care, mean \pm SD score 9.58 ± 3.286 for getting alone, mean \pm SD score 21.37 ± 6.586 for house activity and mean \pm SD score 23.19 ± 7.742 for participation and there is no correlation to WHOADAS 2.0 with age and gender. Numerous medical and non-medical factors, including age, body size and weight, related injuries, the degree of spasticity, motivation, family support, living situation, pre-morbid lifestyle, occupation, two educational backgrounds, and financial situation, will also have an impact on the level of functional independence that an individual ultimately achieves (Jongjit et al. 2004). It is often known that physical activity plays a significant role in maintaining good health. Generally speaking, people with impairments engage in less physical activity than people without disabilities. Momin (2003) claims that individuals in Bangladesh who suffer from spinal cord lesions either pass away quickly from their injuries or are unable to access care. Disability is a real problem in our society, and people with disabilities often lose out on social chances and legal rights (Barclay & colleagues 2015).

The spinal cord independence measure (SCIM) is a newly developed disability scale specific to patients with spinal cord lesions (SCL). Its sensitivity to functional changes in a whole cohort of SCL patients was found to be better than that of the functional

independence measure (FIM). The SCIM covers three areas of function: self-care (score range 0 ± 20), respiration and sphincter management (0 ± 40), and mobility (0 ± 40). Mobility was scored in the room and toilet and indoors and outdoors. The final score ranges between 0 and 100. In this study, the most significant limitations were observed in the 'respiration and sphincter management' domain, with a mean \pm SD score 26.53 ± 15.275 . In case of other domains, mean \pm SD score 9.27 ± 4.350 for self-care and mean \pm SD score 11.33 ± 3.075 for mobility and mean \pm SD score 48.88 ± 21.433 for SCIM total score. From the above table Age and Gender and total score of WHODAS and SCIM have good correlation but the correlation is negative. That means, if age is increase then WHODAS will be decrease whereas both gender male and female it's negatively correlated. From the above table Education and Occupation and total score of WODAS has no significant correlation but SCIM has significant correlation with education but has no significant correlation with occupation.

Limitations of the study

Limitations of the study 100% accuracy will not be possible in any research so that some limitation may exist. Regarding this study, there were some limitations or barriers to consider the result of the study. One significant limitation was the relatively small sample size, consisting of only 40 participants. This limited sample size hindered the ability to accurately assess the quality of life and the level of physical activity among individuals with spinal cord injuries who had completed their rehabilitation. Expanding the sample size through random selection was unfeasible due to a shortage of available subjects and the study's short duration. Another major constraint was time. The research project was conducted within a very limited timeframe, which further constrained the collection of a sufficient number of samples for the study. The limitations of time and available resources had a significant impact on the overall study.

The researcher was a 4th year B.Sc. in physiotherapy student and this was his first research project. He had limited experience with techniques and strategies in terms of the practical aspects of research. As it was the first survey of the researcher so might be there were some mistakes that overlooked by the researcher. As the study was conducted at some specific area which may not represent the whole country.

6.1 Conclusions

In Bangladesh, there is a lack of information and a shortage of maintaining a comprehensive database regarding spinal cord injuries. Furthermore, there is a significant absence of any reliable estimate concerning the number of individuals affected by spinal cord injuries in the country. There is a notable lack of awareness regarding spinal cord injuries. When someone experiences a spinal cord injury, they must endure these challenges for the rest of their lives, often leading to feelings of hopelessness and helplessness. They may perceive themselves as a burden to their society due to their disabilities and reduced functionality. This research introduces a standardized measure for assessing the impact of spinal cord injuries on activities of daily living (ADLs). Overall, the dissertation highlights that mobility, respiration and sphincter management and self-care activity barriers are more pronounced among individuals with spinal cord injuries in the community than in other domains. Males (78%) tend to be more affected than females (22%) due to their employment status. This study paves the way for designing and monitoring the effectiveness of health-related interventions for spinal cord injuries. It also serves as a foundation for identifying the types and levels of barriers faced by community-dwelling individuals with spinal cord injuries at the individual level, emphasizing the need for comprehensive disability data at the country level to inform policy and establish rehabilitation programs. Importantly, this study enables a direct focus on functioning and disability while allowing for the assessment of functioning independently from the presence of a spinal cord injury. This study introduces a standardized measure to assess the impact of spinal cord injuries on activities of daily living (ADLs). In summary, the dissertation helps to identify the level of physical disability and functional independence among individuals with spinal cord injuries in the community.

6.2 Recommendation

Recommendations are influenced by the specific context in which the study was conducted. It is advisable that, if possible, efforts be made to address the existing limitations in order to facilitate further research in this area. If it proves viable, conducting additional studies in this field is encouraged. Despite the research's inherent limitations, it has also identified potential steps that could enhance the overall quality of future research endeavors. To ensure the research's applicability across a wider spectrum, it is suggested that a larger sample be selected through random sampling for cross-sectional studies. This sample should be truly representative of the entire population. Moreover, conducting long-term studies is recommended, as this can lead to more significant findings. Finally, researchers are advised to consider a comprehensive nationwide approach, encompassing various settings throughout Bangladesh, to generalize the findings of this study. Generalizing the study's outcomes can facilitate the development of health and health-related interventions, as well as enable the monitoring of their impact on the spinal cord injury (SCI) population.

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APPENDIX

IRB Permission Letter

Permission Letter

Inform Consent (Bangla)

Inform Consent (English)

Questionnaire (Bangla)

Questionnaire (English)



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

Ref:

CRP/BHPI/IRB/03/2023/696

Date:

13/03/2023

To
Tasjide Tayeba Ratri
B.Sc. in Physiotherapy,
Session: 2017-2018, DU Reg. No: 8635
BHPI, CRP, Savar, Dhaka- 1343, Bangladesh

Subject: Approval of the dissertation proposal "**Physical Disability and Functional Independence of Spinal Cord Injury Patients in the Community after Completing Rehabilitation from Specialized Rehabilitation Hospital**"- by ethics committee.

Dear
Tasjide Tayeba Ratri,
Congratulations


The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application to conduct the above-mentioned dissertation, with yourself, as the Principal Investigator Ehsanur Rahman, Assistant Professor, Department of Physiotherapy & Rehabilitation, JUST, as dissertation supervisor. The following documents have been reviewed and approved:

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

The purpose of the study is to find out the physical disability & functional independence of spinal cord injury patients after getting discharge following complete rehabilitation from CRP. Should there any interpretation, typo, spelling, grammatical mistakes in the title, it is the responsibilities of the investigator. Since the study involves questionnaire that takes maximum 20- 25 minutes and have no likelihood of any harm to the participants. The members of the Ethics committee approved the study to be conducted in the presented form at the meeting held at 09:00 AM on January 9, 2023 at BHPI, 34th IRB Meeting.

The institutional Ethics committee expects to be informed about the progress of the study, any changes occurring in the course of the study, any revision in the protocol and patient information or informed consent and ask to be provided a copy of the final report. This Ethics committee is working accordance to Nuremberg Code 1947, World Medical Association Declaration of Helsinki, 1964 - 2013 and other applicable regulation.

Best regards,


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

Date: 16th February 2023
The Chairman
Institutional Review Board (IRB)
Bangladesh Health Professions Institute (BHPI), CRP
Savar, Dhaka-1343, Bangladesh

Subject: **Application for review and ethical approval.**

Dear sir,

With due respect, I am Tasjide Tayeba Ratri, student of B.Sc. in physiotherapy program at Bangladesh Health Professions Institute (BHPI) the academic institute of Centre for the Rehabilitation of the Paralyzed (CRP) under the Faculty of Medicine, University of Dhaka. As per the course curriculum, I have to conduct a dissertation entitled "**Physical disability and functional independence of spinal cord injury patients in the community after completing rehabilitation from Specialized Rehabilitation Hospital**" under the supervision of **Ehsanur Rahman, Assistant Professor, Department of Physiotherapy & Rehabilitation, JUST.**

The purpose of the study is to find out the level of physical disability & functional independence of spinal cord injury patients after getting discharge following complete rehabilitation from CRP. The study involves face-to-face interview by using structured questionnaire to find out the level of disability and functional independence of spinal cord injury patients in the community residing at Savar, Dhaka in Bangladesh that may take 20 to 25 minutes to fill in the questionnaire and there is no likelihood of any harm to the participants. Related information will be collected from the patients' guide books. Data collectors will receive informed consent from all participants and the collected data will be kept confidential.

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

Sincerely,

Dissertation date: 9th January 2023

Ratri

Tasjide Tayeba Ratri
4th Year B.Sc. in Physiotherapy
Session: 2017-2018 Student ID: 112170378
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Shofiq

Head, Department of Physiotherapy, BHPI

E. Rahman
Recommendation from the Dissertation supervisor
Ehsanur Rahman
Assistant Professor
Department of Physiotherapy & Rehabilitation, JUST.

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

Date: 30 March 2023

To

The Principal

Bangladesh Health Professions Institute

Chapain, Savar, Dhaka-1343

Through: Head, Department of Physiotherapy, BHPI

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

Sir,

With due respect and humble submission to state that I am Tasjide Tayeba Ratri, student of 4th year B.Sc. in Physiotherapy at Bangladesh Health Professions institute (BHPI). The Ethical committee has approved my research project entitled: **“Physical disability and functional independence of spinal cord injury patients in the community after completing rehabilitation from Specialized Rehabilitation Hospital”** under the supervision of Ehsanur Rahman, Assistant Professor, Department of Physiotherapy & Rehabilitation, JUST. Conducting this research project is partial fulfillment of the requirement for the degree of B.Sc. in Physiotherapy. I want to collect data for my research project from the community. So, I need your kind permission for data collection in community. Community area are near Savar. I would like to assure that nothing of the study would be harmful for the participants.

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

Sincerely,

Ratri

Tasjide Tayeba Ratri

4th Year B.Sc. in Physiotherapy

DU registration: 8635

Session: 2017-18

*Forwarded to Head of PT
E. Rahman*

*Recommended
Shofiq
21.05.23*

সম্মতিপত্র

(অংশগ্রহণকারীকে পড়ার জন্য অনুরোধ করা হলো)

আসসালামুআলাইকুম, আমি তাসজিদে তায়্যিবা রাত্রি, ঢাকা বিশ্ববিদ্যালয়ের চিকিৎসা অনুষদের অধীনে বাংলাদেশ হেলথ প্রফেশনস ইন্সটিটিউট (বি এইচ পি আই) এর ফিজিওথেরাপি কোর্সের ২০১৭-১৮ সেশনের শিক্ষার্থী। আমার বিএসসি ইন ফিজিওথেরাপি ডিগ্রী অর্জনের জন্য আমাকে একটি গবেষণা সম্পূর্ণ করতে হবে। আমার গবেষণার শিরোনাম হল, “স্পেশালাইজড রিহ্যাবিলিটেশন হাসপাতাল থেকে পুনর্বাসন সম্পন্ন করার পর কমিউনিটিতে মেরুদণ্ডে আঘাতপ্রাপ্ত রোগীদের শারীরিক অক্ষমতা এবং কার্যকরী স্বাধীনতার মান খুঁজে বের করা”। এই গবেষণাটি অধ্যয়নের মূল লক্ষ্য হচ্ছে পুনর্বাসন সম্পন্ন করার পর কমিউনিটিতে মেরুদণ্ডের আঘাতের রোগীদের শারীরিক অক্ষমতা এবং কার্যকরী স্বাধীনতার মাত্রা সম্পর্কে জানতে পারা। আপনাকে আশ্বস্ত করছি, আমার ও আমার প্রশ্নের দ্বারা আপনার কোনরূপ ক্ষতি হবে না। আপনার দেওয়া তথ্য গোপন রাখা হবে এবং শুধুমাত্র গবেষণার উদ্দেশ্যে ব্যবহার করা হবে। যে কোন সময় গবেষণায় আপনার অংশগ্রহন বন্ধ করার অধিকার রয়েছে। পাশাপাশি আপনি কোন প্রশ্নের উত্তর দিতে অস্বস্তি বোধ করেন তবে আপনি সেই প্রশ্ন এড়িয়ে যেতে পারেন। প্রশ্নাবলী পূরণ করতে ১৫ মিনিট থেকে ২০ মিনিট সময় লাগবে। অনুগ্রহ করে আমার প্রশ্নাবলীর সঠিক উত্তর দিন এবং আপনার স্বাস্থ্যের মূল্যায়ন করতে ডেটা সংগ্রহকারীকে যথাসাধ্য সহযোগিতা করুন। আপনার কোন প্রশ্ন থাকলে আমার সুপারভাইজারের সাথে যোগাযোগ করতে পারেন। এহসানুর রহমান, সহকারী অধ্যাপক, ফিজিওথেরাপি ও পুনর্বাসন বিভাগ, যশোর বিজ্ঞান ও প্রযুক্তি বিশ্ববিদ্যালয়, যশোর। আপনি যদি অনুগ্রহ পূর্বক আপনার সম্মতি দেন, তাহলে আমরা শুরু করতে পারি।

হ্যা

না

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

অংশগ্রহনকারীর স্বাক্ষর.....

তারিখ.....

তথ্য সংগ্রহকারীর স্বাক্ষর.....

তারিখ.....

Verbal Consent Form

I am Tasjide Tayeba Ratri I shall have to conduct a research and it is a part of my study. The participants are requested to participate in the study after reading the following. My research title is **“Physical disability and functional independence of spinal cord injury patients in the community after completing rehabilitation from Specialized Rehabilitation Hospital”**. Through this study I will know about the level of physical disability and functional independence of spinal cord injury patients in the community after completing rehabilitation. If I can complete the study successfully, the level of physical disability and functional independence of spinal cord injury patients may be explored. To implement my research project, I need to collect data from the community. Therefore, you could be one of my valuable subjects for the study.

I am committed that the study will not pose any harm or risk to you. You have the absolute right to withdraw or discontinue at any time without any hesitation or risk. I will keep all the information confidential which I obtained from you and personal identification of the participant would not be published anywhere. If you have any query about the study, you may contact with me and/or Ehsanur Rahman, Assistant Professor, Department of Physiotherapy & Rehabilitation, JUST.

Do you have any questions before I start?

So, may I have your consent to proceed with the interview? Yes....., No.....

Signature of the participant & Date.....

Signature of the researcher & Date.....

প্রশ্নাবলি (বাংলা)

রোগীর তথ্যাবলি

সাক্ষাতের তারিখ:

নাম:

আইডি নং:

মোবাইল নং:

ঠিকানা: গ্রাম:

পোস্টঅফিস:

থানা:

বিভাগ:

পার্ট-১: সামাজিক-জনতাত্ত্বিক তথ্য

[সঠিক উত্তরে (√) চিহ্ন দিন]

নং	প্রশ্ন	উত্তর
১	বয়স:	_____ বছর
২	লিঙ্গ:	০= পুরুষ ১= মহিলা
৩	বৈবাহিক অবস্থা:	০= অবিবাহিত ১= বিবাহিত ২= তলাকপ্রাপ্ত ৩= বিধবা/বিপত্নীক

৪	বসবাসের এলাকা:	০= শহর ১= মফস্বল ২= গ্রাম
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No.	Question	Response
৫	শিক্ষাগত যোগ্যতা:	০= অশিক্ষিত ১= প্রাথমিক ২= মাধ্যমিক ৩= উচ্চ-মাধ্যমিক ৪= স্নাতক ৫= স্নাতকোত্তর ৬= মাস্টার্স
৬	পেশা (মেরুরডজুতে আঘাতের আগে):	০= গৃহিনী ১= দোকানদার ২= কৃষক

		<p>৩= চাকুরিজীবী</p> <p>৪= ব্যবসায়ী</p> <p>৫= দিনমজুর</p> <p>৬= ছাত্র</p> <p>৭= বেকার</p> <p>৮= অন্যান্য</p> <hr/>
৭	পেশা (মেরুরজুর আঘাতের পর):	<p>০= গৃহিনী</p> <p>১= দোকানদার</p> <p>২= কৃষক</p> <p>৩= চাকুরিজীবী</p> <p>৪= ব্যবসায়ী</p> <p>৫= দিনমজুর</p> <p>৬= ছাত্র</p> <p>৭= বেকার</p>

		৪= অন্যান্য
৮	পরিবারে সদস্য সংখ্যা:	

পার্ট-২: মেরুরডুতে আঘাত সম্পর্কিত প্রশ্নাবলি

নং.	প্রশ্ন	উত্তর
০৯	আঘাতের পর প্রাপ্ত স্বাস্থ্য সেবা:	০= হাসপাতাল ১= থানা স্বাস্থ্য কেন্দ্র ২= বেসরকারি ক্লিনিক ৩= বাসায় চিকিৎসা নিয়েছি
১০	আঘাতের পর বিশেষ স্বাস্থ্য সেবা:	০= নিউরোসাইন্স হাসপাতাল ১= সিআরপি ২= নিটোর ৩= অন্যান্য: _____

নং.	প্রশ্ন	উত্তর
১১	আঘাতের কারণ:	<p>০= উঁচু থেকে পড়ে</p> <p>১= সড়ক দুর্ঘটনা</p> <p>২= অগভীর পানিতে লাফ</p> <p>৩= ওড়না পেচিয়ে আঘাত</p> <p>৪= শারীরিক নির্যাতন</p> <p>৫= মেরুর জুতে টিউমার</p> <p>৬= অন্যান্য আঘাতজনিত কারণ:</p> <hr/> <p>৭= অন্যান্য রোগজনিত কারণ:</p> <hr/>
১২	রোগ নির্ণয়:	<p>০= ট্রমাটিক পেরাণ্লেজিয়া</p> <p>১= ট্রমাটিক টেট্রাণ্লেজিয়া</p> <p>২= নন-ট্রমাটিক পেরাণ্লেজিয়া</p>

নং.	প্রশ্ন	উত্তর
		3= নন-ট্রমাটিক টেট্রাপ্লেজিয়া
১৩	যে সব চিকিৎসা নেয়া হয়েছে:	০= রক্ষনশীল ১= সার্জারি ২= সার্জারি এবং রক্ষনশীল
১৪	অন্যান্য রোগের সহাবস্থান (মেরুরজ্জুতে আঘাতের আগে):	০= হৃদরোগ ১= উচ্চ রক্তচাপ ২= শ্বাস-প্রশ্বাসজনিত সমস্যা ৩= ডায়বেটিস ৪= পাকস্থলিতে ঘা ৫= কিডনির রোগ ৬= যকৃতের রোগ ৭= রক্তশূন্যতা ৮= রোগ ছিল না
১৫	অন্যান্য রোগের সহাবস্থান (মেরুরজ্জুতে আঘাতের পরে):	০= চাপজনিত ঘা ১= দুর্শ্চিন্তা ২= অল্প-মুত্রাশয়ের কর্মহীনতা ৩= শ্বাস-প্রশ্বাসজনিত সমস্যা ৪= অবস্থানগত নিম্ন-রক্তচাপ ৫= মুত্রাশয়ের শিথিলতা ৬= রক্তসঞ্চালনের সমস্যা ৭= পেশির শক্তভাব

নং.	প্রশ্ন	উত্তর
		৮= রোগ নেই

পার্ট ৩: Functional examination

স্পাইনাল কর্ড ইনডিপেনডেন্স মেজার (স্কিম), হল একটি অক্ষমতা পরিমাপক স্কেল যা SCI জনসংখ্যার জন্য বিশেষভাবে তৈরি করা হয়েছে যাতে ব্যক্তিগত পরিচর্যা, শ্বাস-প্রশ্বাস ও মাংসপেশি (মুত্রাশয়/মলদ্বার) পরিচালনা এবং চলনক্ষমতা (রুম এবং টয়লেট) পরিমাপ করে দৈনন্দিন জীবনযাত্রার (ADLs) বিভিন্ন ক্রিয়াকলাপ এর মান মূল্যায়ন করা হয়।

ব্যক্তিগত পরিচর্যা	আইটেম স্কোর
<p>1. খাওয়া (কাটকুটি, কৌটা খোলা, পানি ঢালা, খাবার মুখের কাছে আনা, পানিসহ কাপ ধরা)</p> <p>০= অন্য করে সাহায্য প্রয়োজন, গেস্ট্রটমি টিউব অথবা খাওয়ার জন্য সম্পূর্ণ সাহায্যের প্রয়োজন হয়।</p> <p>১= সামান্য সাহায্য অথবা সহায়ক উপকারনের সাহায্যে খাবার খেতে এবং পানি পান করতে পারে।</p> <p>২= সহায়ক উপকারনের সাহায্যে নিজে নিজে খেতে পারে অথবা শুধুমাত্র কাটকুটি, কৌটা খোলা, পানি ঢালাআর জন্য সাহায্যের প্রয়োজন হয়।</p> <p>৩= সাহায্যের এবং সহায়ক উপকরণ ছাড়াই, পানি ও খাবার নিজে নিজে</p>	

<p>থেতে পারে।</p>	
<p>২. গোসল করা (সাবান লাগানো, ধোয়া, মাঠ ও শরীর মোছা, পানির কল ব্যবহার করা)</p> <p>ক. শরীরের উপরের অংশ:</p> <p>০= সম্পূর্ণ সাহায্যের প্রয়োজন হয়।</p> <p>১= সামান্য সাহায্যের প্রয়োজন হয়।</p> <p>২= গোসল করার জন্য সহায়ক উপকরণ অথবা রূপান্তরিত কোনো জায়গার(যেমন: চেয়ার) প্রয়োজন হয়।</p> <p>৩= গোসল করার জন্য সহায়ক উপকরণ অথবা রূপান্তরিত কোনো জায়গার(যেমন: চেয়ার) প্রয়োজন হয় না।</p>	

<p>খ. শরীরের নিচের অংশ ধোঁয়া</p> <p>০= সম্পূর্ণ সাহায্যের প্রয়োজন হয়।</p> <p>১= সামান্য সাহায্যের প্রয়োজন হয়।</p> <p>২= গোসল করার জন্য সহায়ক উপকরণ অথবা রূপান্তরিত কোনো জায়গার(যেমন: চেয়ার) প্রয়োজন হয়।</p> <p>৩= গোসল করার জন্য সহায়ক উপকরণ অথবা রূপান্তরিত কোনো জায়গার(যেমন: চেয়ার) প্রয়োজন হয় না।</p>	
<p>৩. জামাকাপড় পড়া (জামা, জুতা, পরিবর্তন করা যায় না এমন অর্থসিস- পড়া এবং খোলা)</p> <p>ক. শরীরের উপরের অংশ:</p> <p>০= সম্পূর্ণ সাহায্যের প্রয়োজন হয়।</p> <p>১= বোতাম, চেইন অথবা ফিতা ছাড়া জামাকাপড় পড়তে সামান্য সাহায্যের প্রয়োজন হয়।</p> <p>২= বোতাম, চেইন অথবা ফিতা ছাড়া জামাকাপড় পড়তে সহায়ক উপকরণ অথবা রূপান্তরিত কোনো জায়গার প্রয়োজন হয়।</p> <p>৩= সহায়ক উপকরণ অথবা রূপান্তরিত কোনো জায়গা ছাড়াই- বোতাম, চেইন অথবা ফিতা ছাড়া জামাকাপড় নিজে পড়তে পারে কিন্তু বোতাম, চেইন অথবা ফিতা লাগাতে সাহায্য ও সহায়ক উপকরণ অথবা বিশেষ জায়গার প্রয়োজন হয়।</p>	

<p>৪= সহায়ক উপকরন অথবা রূপান্তরিত কোনো জায়গা ছাড়াই নিজে নিজে যেকোনো জামাকাপড় পড়তে পারে।</p>	
<p>খ. শরীরের নিচের অংশ:</p> <p>০= সম্পূর্ণ সাহায্যের প্রয়োজন হয়।</p> <p>১= বোতাম, চেইন অথবা ফিতা ছাড়া জামাকাপড় পড়তে সামান্য সাহায্যের প্রয়োজন হয়।</p> <p>২= বোতাম, চেইন অথবা ফিতা ছাড়া জামাকাপড় পড়তে সহায়ক উপকরন অথবা রূপান্তরিত কোনো জায়গার প্রয়োজন হয়।</p> <p>৩= সহায়ক উপকরন অথবা রূপান্তরিত কোনো জায়গা ছাড়াই- বোতাম, চেইন অথবা ফিতা ছাড়া জামাকাপড় নিজে পড়তে পারে কিন্তু বোতাম, চেইন অথবা ফিতা লাগাতে সাহায্য ও সহায়ক উপকরণ অথবা বিশেষ জায়গার প্রয়োজন হয়।</p>	

<p>৪= সহায়ক উপকরন অথবা রূপান্তরিত কোনো জায়গা ছাড়াই নিজে নিজে যেকোনো জামাকাপড় পড়তে পারে।</p>	
<p>৪. পরিষ্কার- পরিচ্ছন্নতা (হাত- মুখ ধোয়া, দাঁত ব্রাশ করা, চুল আচড়ানো, শেভ করা, মেকআপ লাগানো)</p> <p>০= সম্পূর্ণ সাহায্যের প্রয়োজন হয়।</p> <p>১= সামান্য সাহায্যের প্রয়োজন হয়।</p> <p>২= সহায়ক উপকরণের সাহায্যে নিজে নিজে পরিষ্কার হতে পারি।</p> <p>৩= সহায়ক উপকরণের সাহায্যে ছাড়া নিজে নিজে পরিষ্কার হতে পারি।</p>	

<p>ব্যক্তিগত পরিচর্যার সাবটোটাল (০-২০)</p>	
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<p>শ্বাস-প্রশ্বাস ও মাংসপেশি (মূত্রাশয়/মলদ্বার) পরিচালনা</p>	<p>আইটেম স্কোর</p>
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৫. শ্বাস-প্রশ্বাস

০= সব সময় অথবা মাঝে মাঝে শ্বাস- প্রশ্বাস গ্রহণের জন্য কৃত্রিম শ্বাসনালী (ট্র্যাকিয়াল টিউব) প্রয়োজন হয়।

২= শ্বাসনালী তে লাগানো টিউবের মাধ্যমে সঠিকভাবে নিজে নিজে শ্বাস নিতে পারে, অক্সিজেন প্রয়োজন হয়, কাশি এবং শ্বাসনালির টিউব পরিচালনার জন্য সাহায্যের প্রয়োজন হয়।

৪= শ্বাসনালী তে লাগানো টিউবের মাধ্যমে সঠিকভাবে নিজে নিজে শ্বাস নিতে পারে, অক্সিজেন প্রয়োজন হয়, কাশি এবং শ্বাসনালির টিউব পরিচালনার জন্য অল্প সাহায্যের প্রয়োজন হয়।

৬= টিউব ছাড়া শ্বাসনালীর মাধ্যমে সঠিকভাবে নিজে নিজে শ্বাস নিতে পারে, অক্সিজেন প্রয়োজন হয়, কাশি এবং শ্বাসনালির টিউব পরিচালনার জন্য পর্যাপ্ত সাহায্যের প্রয়োজন হয়।

৮= শ্বাসনালীর মাধ্যমে সঠিকভাবে নিজে নিজে শ্বাস নিতে পারে, অক্সিজেন প্রয়োজন হয়, কাশি এবং শ্বাসনালির টিউব পরিচালনার জন্য সামান্য সাহায্যের প্রয়োজন হয়।

১০= কোন প্রকার সাহায্য ছাড়াই শ্বাস নিতে পারে।

৬. মাংসপেশি (মুত্রাশয়) পরিচালনা

০= অন্তরবর্তী কেথেটারের প্রয়োজন হয়।

৩= রিসিডিউয়াল ইউরিন ভলিউম- ১০০ সিসি এর চেয়ে বেশি, কেথেটারের প্রয়োজন মাঝে মাঝে হয়।

৬= রিসিডিউয়াল ইউরিন ভলিউম- ১০০ সিসি এর চেয়ে কম, মাঝে মাঝে নিজে কেথেটার করে, মূত্র নিষ্কাশনের জন্য সহায়ক কৃত্রিম নলের প্রয়োজন হয়।

৯= মাঝে মাঝে নিজে কেথেটার করে, মূত্র নিষ্কাশনের জন্য সহায়ক কৃত্রিম নলের প্রয়োজন হয় না।

১১= মাঝে মাঝে নিজে কেথেটার করে, কেথেটারাইজেশনের বিরতিতে মূত্র ধরে রাখতে পারে, মূত্র নিষ্কাশনের জন্য সহায়ক কৃত্রিম নলের প্রয়োজন হয় না।

১৩= রিসিডিউয়াল ইউরিন ভলিউম- ১০০ সিসি এর চেয়ে কম, মূত্র নিষ্কাশনের জন্য সহায়ক কৃত্রিম নলের প্রয়োজন হয় না কিন্তু বাইরে মূত্র নিষ্কাশনের প্রয়োজন হয়।

১৫= রিসিডিউয়াল ইউরিন ভলিউম- ১০০ সিসি এর চেয়ে কম, মূত্রের বেগ ধারনে সক্ষম, মূত্র নিষ্কাশনের জন্য সহায়ক কৃত্রিম নলের প্রয়োজন হয় না।

<p>৭. মাংসপেশি (মলদ্বার) পরিচালনা</p> <p>০= অনিয়মিতভাবে অথবা হঠাৎ (৩ দিনে একবার) মলত্যাগ করতে পারে।</p> <p>৫= নিয়মিত ভাবে হয়ে থাকে, কিন্তু কিছু সাহায্যের প্রয়োজন হয়, খুব কম দুর্ঘটনা ঘটে থাকে (১মাসে দুইবারের কম)</p> <p>৮= কোনো সাহায্য ছাড়াই মলত্যাগ হয়, খুব কম দুর্ঘটনা ঘটে থাকে (১মাসে দুইবারের কম)</p> <p>১০= দুর্ঘটনা ও সাহায্য ছাড়াই নিয়মিত মলত্যাগ করতে পারে।</p>	
<p>৮. টয়লেটের ব্যবহার (মলদ্বার পরিষ্কার করা, মলত্যাগের আগে জামাকাপড় সঠিকভাবে পরিধান করা ও খোলা, ন্যাপকিন অথবা ডায়পার এর ব্যবহার)</p> <p>০= সম্পূর্ণ সাহায্যের প্রয়োজন হয়।</p> <p>১= সামান্য সাহায্য প্রয়োজন হয়, নিজে নিজে পরিষ্কার হতে পারে না।</p> <p>২= সামান্য সাহায্য প্রয়োজন হয়, নিজে নিজে পরিষ্কার হতে পারে।</p> <p>৪= নিজে নিজে টয়লেট ব্যবহার করতে পারে কিন্তু সহায়ক উপকরণ অথবা রূপান্তরিত কোনো জায়গার প্রয়োজন হয়।</p> <p>৫= নিজে নিজে টয়লেট ব্যবহার করতে পারে এবং সহায়ক উপকরণ অথবা রূপান্তরিত কোনো জায়গার প্রয়োজন হয় না।</p>	

<p>শ্বাস-প্রশ্বাস ও মাংসপেশি (মুত্রাশয়/মলদ্বার) পরিচালনা সাবটোটাল</p>	
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চলাচল (ঘরে এবং টয়লেটে)	আইটেম স্কোর
<p>৯. বিছানায় পাশ পরিবর্তন এবং চাপজনিত ঘা প্রতিরোধে করণীয় কাজ</p> <p>০= সব কাজে সাহায্যের প্রয়োজন হয় (শরীরের উপরের অংশ ও নিচের অংশ নড়চড় করার জন্য, বিছানায় বসার জন্য, হুইলচেয়ারে বসে ধাক্কা দিয়ে নিজের শরীর তোলার জন্য সহায়ক উপকরণ সহ অথবা ছাড়া কিন্তু কোনো বৈদ্যুতিক উপকরণ দ্বারা নয়)।</p> <p>২= যেকোনো একটা কাজ সাহায্য ছাড়া করতে পারে।</p> <p>৪= যেকোনো দুইটা/তিনটা কাজ করতে পারে।</p> <p>৬= বিছানায় সব রকমের পাশ পরিবর্তন অথবা ঘা প্রতিরোধে সব কাজ সাহায্য ছাড়াই করতে পারে।</p>	
<p>১০. জায়গা পরিবর্তন: বিছানা-হুইলচেয়ার (হুইলচেয়ার লক করা, ফুটরেস্ট সরানো, হাতল সরানো ও ঠিক জায়গায় রাখা, স্থানান্তর, পা উপরে তোলা)</p> <p>০= সম্পূর্ণ সাহায্যের প্রয়োজন হয়।</p> <p>১= সামান্য সাহায্যের প্রয়োজন হয় অথবা তত্ত্বাবধান ঠবা সহায়ক উপকরণ (যেমন: কাঠের বোর্ড) প্রয়োজন হয়।</p> <p>২= স্বাধীনভাবে চলাচল করতে পারে (হুইলচেয়ার প্রয়োজন হয় না)।</p>	

<p>১১. জায়গা পরিবর্তন: হুইলচেয়ার থেকে টয়লেট (যদি টয়লেট থেকে হুইলচেয়ার ব্যবহার করে তাহলে স্থানান্তর হওয়া- হুইলচেয়ার অথবা হুইলচেয়ারে অথবা হুইলচেয়ার থেকে, সাধারণ হুইলচেয়ার ব্যবহারকারীর ক্ষেত্রে- হুইলচেয়ার লক করা, ফুটরেস্ট সরানো, হাতল সরানো ও ঠিক জায়গায় রাখা, স্থানান্তর, পা উপরে তোলা)</p> <p>০= সম্পূর্ণ সাহায্যের প্রয়োজন।</p> <p>১= সামান্য সাহায্যের প্রয়োজন হয় অথবা তত্ত্বাবধান অথবা সহায়ক উপকরণ (যেমন: ধরার জন্য উপকরণ) প্রয়োজন হয়।</p> <p>২= স্বাধীনভাবে চলাচল করতে পারে (হুইলচেয়ার প্রয়োজন হয় না)</p>	
<p>১২. চলাচল (ঘরের ভেতর চলাচল)</p> <p>০= সম্পূর্ণ সাহায্যের প্রয়োজন হয়।</p> <p>১= বৈদ্যুতিক হুইলচেয়ার লাগে খোব হ্যাট দিয়ে চালানো হুইলচেয়ার চলাতে সামান্য সাহায্য প্রয়োজন হয়।</p> <p>২= হ্যাট দিয়ে চালানো হুইলচেয়ারের মাধ্যমে নিজে কোলাকোল করতে পারে।</p> <p>৩= কোনো উপকরণ সহ অথবা ছাড়া</p> <p>৪= হাঁটার জন্য ব্যবহৃত ফ্রেম/ক্রাচ দিয়ে হাঁটতে পারে।</p> <p>৫= ক্রাচ অথবা হাঁটার জন্য ব্যবহৃত ফ্রেম/ক্রাচ দিয়ে হাঁটতে পারে।</p> <p>৬= হাঁটার জন্য ব্যবহৃত একটি লাঠি দিয়ে হাঁটতে পারে।</p>	

<p>৭= শুধু পায়ের জন্য অর্থসিস প্রয়োজন।</p> <p>৮= কোন প্রকার উপকরণ ছাড়া হাঁটতে পারে।</p>	
<p>13. সীমিত বা মাঝারি দূরত্বে চলাচল (১০-১০০ মিটার)</p> <p>০= সম্পূর্ণ সাহায্যের প্রয়োজন হয়।</p> <p>১= বৈদ্যুতিক হুইলচেয়ার লাগে অথবা হাত দিয়ে চালানো হুইলচেয়ার চালাতে সামান্য সাহায্য প্রয়োজন হয়।</p> <p>২= হাত দিয়ে চালানো হুইলচেয়ারের মাধ্যমে নিজে নিজে চলাচল করতে</p> <p>৩= কোনো উপকরণ সহ অথবা ছাড়া হাঁটার সময় দেখাশোনা</p> <p>৪= হাঁটার জন্য ব্যবহৃত ফ্রেম/ক্রাক দিয়ে হাঁটতে পারে।</p> <p>৫= ক্রাচ অথবা হাঁটার জন্য ব্যবহৃত দুটি লাঠির সাহায্যে হাঁটতে পারে।</p>	

<p>৬= হাঁটার জন্য ব্যবহৃত একটি লাঠির সাহায্যে হাঁটতে পারে</p> <p>৭= শুধু পায়ের জন্য অর্থসিস প্রয়োজন হয়।</p> <p>৮= কোনো প্রকার হাঁটার উপকরণ ছাড়াই হাঁটতে পারে।</p>	
<p>১৪. বাইরে চলাচল- (১০০ মিটারের বেশি)</p> <p>০= সম্পূর্ণ সাহায্যের প্রয়োজন হয়।</p> <p>১= বৈদ্যুতিক হুইলচেয়ার লাগে অথবা হাত দিয়ে চালানো হুইলচেয়ার চালাতে সামান্য সাহায্য প্রয়োজন হয়।</p> <p>২= হাত দিয়ে চালানো হুইলচেয়ারের মাধ্যমে নিজে নিজে চলাচল করতে</p> <p>৩= কোনো উপকরণ সহ অথবা ছাড়া হাঁটার সময় দেখাশোনা</p> <p>৪= হাঁটার জন্য ব্যবহৃত ফ্রেম/ক্রাক দিয়ে হাঁটতে পারে।</p> <p>৫= ক্রাচ অথবা হাঁটার জন্য ব্যবহৃত দুটি লাঠির সাহায্যে হাঁটতে পারে।</p>	

<p>৬= হাঁটার জন্য ব্যবহৃত একটি লাঠির সাহায্যে হাঁটতে পারে</p> <p>৭= শুধু পায়ের জন্য অর্থসিস প্রয়োজন হয়।</p> <p>৮= কোনো প্রকার হাঁটার উপকরণ ছাড়াই হাঁটতে পারে।</p>	
<p>১৫. সিঁড়িতে চলাচল</p> <p>০= সিঁড়িতে উঠতে এবং নামতে পারে না।</p> <p>১= অন্যকারো সাহায্য নিয়ে অথবা তত্ত্বাবধানের মাধ্যমে কমপক্ষে সিঁড়ির তিনটি ধাপ উঠা-নামা করতে পারে।</p> <p>২= সিঁড়ির হাতল/ক্রাচ/হাঁটার জন্য ব্যবহৃত লাঠির মাধ্যমে কমপক্ষে তিনটি সিঁড়ির ধাপ উঠানামা করতে পারে।</p> <p>৩= অন্যকারো সাহায্য ছাড়াই কমপক্ষে সিঁড়ির তিনটি ধাপ উঠা-নামা করতে পারে।</p>	

<p>১৬. জায়গা পরিবর্তন/স্থানান্তর: হুইলচেয়ার-গাড়ি (গাড়ির কাছাকাছি যেতে পারে, হুইলচেয়ার লক করা, ফুটরেস্ট সরানো, হাতল সরানো ও ঠিক জায়গায় রাখা, গাড়ি থেকে স্থানান্তর, হুইলচেয়ার গাড়ির ভেতরে ও বাইরে নেয়া)</p> <p>০= সম্পূর্ণ সাহায্যের প্রয়োজন হয়।</p> <p>১= সামান্য সাহায্যের প্রয়োজন হয় অথবা তত্ত্বাবধান অথবা সহায়ক উপকরণ (যেমন: ধরার জন্য উপকরণ) প্রয়োজন হয়।</p> <p>২= স্বাধীনভাবে চলাচল করতে পারে (হুইলচেয়ার প্রয়োজন হয় না)</p>	
<p>১৭. জায়গা পরিবর্তন/স্থানান্তর: মাটি/মেঝে- হুইলচেয়ার</p> <p>০= সম্পূর্ণ সাহায্যের প্রয়োজন হয়।</p> <p>১= নিজে স্থানান্তর হতে পারে, সহায়ক উপকরণ অথবা হুইলচেয়ার প্রয়োজন হয় না।</p>	

চলাচল সাবটোটাল (০-৪০)	
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টোটাল স্কিম স্কোর (০-১০০)

বিশ্ব স্বাস্থ্যসংস্থা অক্ষমতা মূল্যায়ন পদ্ধতি ২.০

ক্ষেত্র – ২ চলাফেরা

বিগত ৩০ দিনে আপনি কতটুকু সমস্যায় পড়েছেন?	কোন সমস্যা নাই	খুব অল্প সমস্যা	মাঝারি সমস্যা	তীব্র সমস্যা	প্রচণ্ড সমস্যা বা কিছুই করতে না পারা
০২.১ একটানা ৩০ মিনিট দাঁড়িয়ে থাকতে পারেন?	১	২	৩	৪	৫
০২.২ বসা থেকে দাঁড়াতে পারেন?	১	২	৩	৪	৫
০২.৩ বাড়ির ভিতর চলাফেরা করতে পারেন?	১	২	৩	৪	৫
০২.৪ বাড়ি থেকে বাইরে যেতে পারেন?	১	২	৩	৪	৫

০২.৫	একটানা এক কিলমিটার হাঁটতে পারেন?	১	২	৩	৪	৫
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ক্ষেত্র – ৩ নিজের যত্ন

বিগত ৩০ দিনে আপনি কতটুকু সমস্যায় পড়েছেন?		কোন সমস্যা নাই	খুব অল্প সমস্যা	মাঝারি সমস্যা	তীব্র সমস্যা	প্রচণ্ড সমস্যা বা কিছুই করতে না পারা
০৩.১	নিজে নিজে গোসল করতে পারেন?	১	২	৩	৪	৫
০৩.২	নিজে নিজে কাপড় পরতে পারেন?	১	২	৩	৪	৫
০৩. ৩	নিজে নিজে খেতে পারেন?	১	২	৩	৪	৫
০৩.৪	দিন কয়েক একা থাকতে পারেন?	১	২	৩	৪	৫

ক্ষেত্র – ৪ মানুষের সাথে মানিয়ে চলা

বিগত ৩০ দিনে আপনি কতটুকু সমস্যায় পড়েছেন?		কোন সমস্যা নাই	খুব অল্প সমস্যা	মাঝারি সমস্যা	তীব্র সমস্যা	প্রচণ্ড সমস্যা বা কিছুই করতে না পারা
০৪.১	অপরিচিত লোকের সঙ্গে আচরণে?	১	২	৩	৪	৫
০৪.২	বন্ধুত্ব রক্ষা করতে?	১	২	৩	৪	৫
০৪.৩	পরিচিত লোকের সাথে থাকতে?	১	২	৩	৪	৫

০৪.৪	নতুন বন্ধু তৈরি করতে?	১	২	৩	৪	৫
০৪.৫	যৌন কার্যকলাপে?	১	২	৩	৪	৫

ক্ষেত্র - ৫ জীবনযাপন প্রণালী

বিগত ৩০ দিনে আপনি কতটুকু সমস্যায় পড়েছেন?		কোন সমস্যা নাই	খুব অল্প সমস্যা	মাঝারি সমস্যা	তীব্র সমস্যা	প্রচলিত সমস্যা বা কিছুই করতে না পারা
০৫.১	গৃহস্থালি দায়িত্বগুলো পালন করতে পারেন?	১	২	৩	৪	৫
০৫.২	সবচেয়ে গুরুত্বপূর্ণ গৃহস্থালি কাজগুলো ভালভাবে করতে পারেন?	১	২	৩	৪	৫
০৫.৩	প্রয়োজনীয় সকল গৃহস্থালী কাজগুলো সমাপ্ত করতে পারেন?	১	২	৩	৪	৫
০৫.৪	গৃহস্থালি কাহগুলো যথাসম্ভব দ্রুত করতে পারেন?	১	২	৩	৪	৫
০৫.৫	আপনার দৈনন্দিন বা স্কুলের কাজ করতে?	১	২	৩	৪	৫
০৫.৬	আপনার পেশাগত বা স্কুলের জরুরি কোন কাজ সমাধান করতে?	১	২	৩	৪	৫

০৫.৭	আপনার প্রয়োজনীয় সকল কাজ করতে?	১	২	৩	৪	৫
০৫.৮	আপনার কাজগুলো নির্দিষ্ট সময়ে প্রয়োজনীয় দ্রুততার সাথে শেষ করতে?	১	২	৩	৪	৫

ক্ষেত্র – ৬ সামাজিক অংশগ্রহণ

বিগত ৩০ দিনে আপনি কতটুকু সমস্যায় পড়েছেন?	কোন সমস্যা নাই	খুব অল্প সমস্যা	মাঝারি সমস্যা	তীব্র সমস্যা	প্রচল্ড সমস্যা বা কিছুই করতে না পারা	
০৬.১	সামাজিক অনুষ্ঠানগুলোতে (যেমন উৎসব, ধর্মীয় অনুষ্ঠান বা অন্যান্য কর্মকান্ড) অন্যদের মত অংশগ্রহণ করতে গিয়ে কোন অসুবিধার মুখোমুখি হয়েছেন?	১	২	৩	৪	৫
০৬.২	আপনার পারিপার্শ্বিক বাধা-বিঘ্নের দরুন কতটুকু সমস্যায় পড়েছেন?	১	২	৩	৪	৫

০৬.৩	অন্যের দৃষ্টিভঙ্গি অ কাজের কারণে আপনি মর্যাদাপূর্ণ জীবনযাপনে কতটুকু সমস্যায় পড়েছেন?	১	২	৩	৪	৫
০৬.৪	আপনার শারীরিক সমস্যা ও এর ফলে উদ্ভূত সমস্যাগুলোর জন্য কতটুকু সময় ব্যয় করেন?	১	২	৩	৪	৫
০৬.৫	নিজের শারীরিক সমস্যার জন্য কতটুকু আবেগ তাড়িত হন?	১	২	৩	৪	৫
০৬.৬	আপনার শারীরিক সমস্যার কারণে আপনার বা আপনার পরিবারের কী পরিমাণ আর্থিক ক্ষতি হচ্ছে?	১	২	৩	৪	৫
০৬.৭	আপনার শারীরিক সমস্যার কারণে আপনার পরিবার কতটুকু ভুক্তভোগী?	১	২	৩	৪	৫
০৬.৮	বিশ্রাম বা বিনোদনের জন্য কিছু করতে গিয়ে আপনি কতটুকু সমস্যায় পড়েছেন?	১	২	৩	৪	৫

Questionnaires (English)

Date of interview:

Patient's name:

Patient's ID:

Patient's Mobile No:

Patient's address: Village:

P. O:

P.S:

District:

Part-I: Socio-Demographic Information

[Use tick (√) to mark the correct answer]

No.	Question	Response
1	Age:	_____ years
2	Gender:	0=Male 1=Female
3	Marital status:	0=Unmarried 1=Married 2=Divorced 3=Widow
4	Living area:	0= Urban 1= Semi-urban 2= Rural

No.	Question	Response
5	Educational level:	0= No formal education 1= Primary 2= Secondary 3= Higher Secondary 4= Graduate 5= Postgraduate 6= Master's
6	Occupation/Profession (before SCI):	0= Housewife 1= Shopkeeper 2= Farmer 3= Service holder 4= Business 5= Day-laborer 6= Student

No.	Question	Response
5	Educational level:	0= No formal education 1= Primary 2= Secondary 3= Higher Secondary 4= Graduate 5= Postgraduate 6= Master's
		7= Unemployed 8= Others
8	The number of earning members in the family:	0= Housewife 1= Shopkeeper 2= Farmer 3= Service holder 4= Business

No.	Question	Response
5	Educational level:	0= No formal education 1= Primary 2= Secondary 3= Higher Secondary 4= Graduate 5= Postgraduate 6= Master's
		5= Day-laborer 6= Student 7= Unemployed 8= Others

Part-II: Clinical information

No.	Question	Response
12	Health care received after trauma:	0= Hospital

No.	Question	Response
		1= Thana health complex 2= Private clinic 3= Home
13	Name of the facility where healthcare was received after trauma or injury:	0= NINS 1= CRP 2= NITOR 3= Others: _____
15	Causes of injury:	0= Fall from height 1= Road traffic accident 2= Shallow water diving 3= Scarf injury 4= Physical assault 5= Spinal tumor 6= Other traumatic causes:

No.	Question	Response
		<hr/> <p>7= Other non-traumatic causes:</p> <hr/>
16	Diagnosis:	<p>0= Traumatic paraplegia</p> <p>1= Traumatic tetraplegia</p> <p>2= Non-traumatic paraplegia</p> <p>3= Non-Traumatic tetraplegia</p>
19	Treatment received:	<p>0= Conservative</p> <p>1= Surgery</p> <p>2= Surgery and conservative</p>

No.	Question	Response
20	Comorbidity (Before SCI):	0= Heart disease 1= High blood pressure 2= Respiratory diseases 3= Diabetes 4= Ulcer and stomach disease 5= Kidney disease 6= Liver disease 7= Anaemia or other blood disease 8= None
21	Comorbidity (After SCI)	0= Pressure sore 1= Depression 2= Bowel bladder dysfunction 3= Respiratory complication 4= Postural hypotension 5= Urinary incontinence 6= Circulatory problem 7= Spasticity 8= None

Part-III: Functional examination

The Spinal Cord Independence Measure (SCIM), is a disability scale developed specifically for the SCI population to assess various activities of daily living (ADLs) by measuring self-care, respiratory and sphincter management & mobility (room and toilet).

Self-Care	Item score
<p>1. Feeding (cutting, opening containers, pouring, bringing food to mouth, holding cup with fluid)</p> <p>0= Needs parenteral, gastrostomy or fully assisted oral feeding.</p> <p>1= Needs partial assistance for eating and/or drinking, or for wearing adaptive devices</p> <p>2= Eats independently; needs adaptive devices or assistance only for cutting food and/or pouring and/or opening containers</p> <p>3= Eats and drinks independently; does not require assistance or adaptive devices</p>	
<p>2. Bathing (soaping, washing, drying body and head, manipulating water tap)</p> <p>A. Upper body:</p> <p>0= Requires total assistance</p> <p>1= Requires partial assistance</p> <p>2= Washes independently with adaptive devices or in a specific setting (e.g., bars, chair)</p> <p>3= Washes independently; does not require adaptive devices or specific setting (not customary for healthy people)</p>	

<p>B. Lower body</p> <p>0= Requires total assistance</p> <p>1= Requires partial assistance</p> <p>2= Washes independently with adaptive devices or in a specific setting (adss)</p> <p>3= Washes independently; does not require adss</p>	
<p>3. Dressing (clothes, shoes, permanent orthoses; dressing, wearing, undressing)</p> <p>A. Upper body</p> <p>0= Requires total assistance</p> <p>1= Requires partial assistance with clothes without buttons, zippers or laces (cwobzl)</p> <p>2= Independent with cwobzl; requires adaptive devices and/or specific settings (adss)</p> <p>3. Independent with cwobzl; does not require adss; needs assistance or adss only for buttons, zippers or laces (bzl)</p> <p>4. Dresses (any clothes) independently; does not require adaptive devices or specific setting</p>	

<p>B. Lower body</p> <p>0= Requires total assistance</p> <p>1= Requires partial assistance with clothes without buttons, zippers or laces (cwobzl)</p> <p>2= Independent with (cwobzl), requires adaptive devices and/or specific settings (adss)</p> <p>3= Independent with cwobzl without adss needs assistance or adss only for bzl</p> <p>4= Dresses (any clothes) independently does not require adaptive devices or specific setting</p>	
<p>4. Grooming (washing hands and face, brushing teeth, combing hair, shaving, applying makeup)</p> <p>0= Requires total assistance</p> <p>1= Requires partial assistance</p> <p>2= Grooms independently with adaptive devices</p> <p>3= Grooms independently without adaptive devices</p>	
<p>Self Care Subtotal (0-20)</p>	

Respiration and Sphincter Management	Item score
<p data-bbox="337 296 532 331">5. Respiration</p> <p data-bbox="298 415 1192 485">0= Requires tracheal tube (TT) and permanent or intermittent assisted ventilation (IAV)</p> <p data-bbox="298 569 1230 638">2= Breathes independently with TT; requires oxygen, much assistance in coughing or TT management</p> <p data-bbox="298 722 1235 791">4= Breathes independently with TT; requires little assistance in coughing or TT management</p> <p data-bbox="298 875 1239 945">6= Breathes independently without TT; requires oxygen, much assistance in coughing, a mask (e.g., peep) or IAV</p> <p data-bbox="298 1029 1151 1098">8= Breathes independently without TT; requires little assistance or stimulation for coughing</p> <p data-bbox="298 1182 1024 1209">10= Breathes independently without assistance or device</p>	

<p>6. Sphincter Management - Bladder</p> <p>0= Indwelling catheter</p> <p>3= Residual urine volume (RUV) > 100cc; no regular catheterization or assisted intermittent catheterization</p> <p>6= RUV < 100cc or intermittent self-catheterization; needs assistance for applying drainage instrument</p> <p>9= Intermittent self-catheterization; uses external drainage instrument; does not need assistance for applying</p> <p>11= Intermittent self-catheterization; continent between catheterizations; does not use external drainage instrument</p> <p>13= RUV <100cc; needs only external urine drainage; no assistance is required for drainage</p> <p>15= RUV <100cc; continent; does not use external drainage instrument</p>	
<p>7. Sphincter Management - Bowel</p> <p>0= Irregular timing or very low frequency (less than once in 3 days) of bowel movements</p> <p>5= Regular timing, but requires assistance (e.g., for applying suppository); rare accidents (less than twice a month)</p> <p>8= Regular bowel movements, without assistance; rare accidents (less than twice a month)</p>	

<p>10= Regular bowel movements, without assistance; no accidents</p>	
<p>8. Use of toilet (perineal hygiene, adjustment of clothes before/after, use of napkins or diapers)</p> <p>0= Requires total assistance</p> <p>1= Requires partial assistance; does not clean self</p> <p>2= Requires partial assistance; cleans self independently</p> <p>4= Uses the toilet independently in all tasks but needs adaptive devices or special setting (e.g., bars)</p> <p>5= Uses toilet independently; does not require adaptive devices or special setting</p>	

<p>Respiration and Sphincter Management Subtotal (0-40)</p>	
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<p>Mobility (room and toilet)</p>	<p>Item score</p>
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<p>9. Mobility in Bed and Action to Prevent Pressure Sores</p> <p>0= Needs assistance in all activities: turning upper body in bed, turning lower body in bed, sitting up in bed, doing push-ups in wheelchair, with or without adaptive devices, but not with electric aids</p> <p>2= Performs one of the activities without assistance</p> <p>4= Performs two or three of the activities without assistance</p> <p>6= Performs all the bed mobility and pressure release activities independently</p> <p>10= Breathes independently without assistance or device</p>	
<p>10. Transfers: bed-wheelchair (locking wheelchair, lifting footrests, removing and adjusting arm rests, transferring, lifting feet)</p> <p>0= Requires total assistance</p> <p>1= Needs partial assistance and/or supervision, and/or adaptive devices (e.g., sliding board)</p> <p>2= Independent (or does not require wheelchair)</p>	

<p>11. Transfers: wheelchair-toilet-tub (if uses toilet wheelchair: transfers to and from; if uses regular wheelchair: locking wheelchair, lifting footrests, removing and adjusting armrests, transferring, lifting feet)</p> <p>0= Requires total assistance</p> <p>1= Needs partial assistance and/or supervision, and/or adaptive devices (e.g., grab-bars)</p> <p>2= Independent (or does not require wheelchair)</p>	
<p>12. Mobility Indoors</p> <p>0= Requires total assistance</p> <p>1= Needs electric wheelchair or partial assistance to operate manual wheelchair</p> <p>2= Moves independently in manual wheelchair</p> <p>3= Requires supervision while walking (with or without devices)</p> <p>4= Walks with a walking frame or crutches (swing)</p> <p>5= Walks with crutches or two canes (reciprocal walking)</p> <p>6= Walks with one cane</p> <p>7= Needs leg orthosis only</p> <p>8= Walks without walking aids</p>	

13. Mobility for Moderate Distances (10-100 metres)

0=Requires total assistance

1= Needs electric wheelchair or partial assistance to operate manual wheelchair

2= Moves independently in manual wheelchair

3= Requires supervision while walking (with or without devices)

4= Walks with a walking frame or crutches (swing)

5= Walks with crutches or two canes (reciprocal walking)

6= Walks with one cane

7= Needs leg orthosis only

8= Walks without walking aids

<p>14. Mobility Outdoors (more than 100 metres)</p> <p>0= Requires total assistance</p> <p>1= Needs electric wheelchair or partial assistance to operate manual wheelchair</p> <p>2= Moves independently in manual wheelchair</p> <p>3= Requires supervision while walking (with or without devices)</p> <p>4= Walks with a walking frame or crutches (swing)</p> <p>5= Walks with crutches or two canes (reciprocal waking)</p> <p>6= Walks with one cane</p> <p>7= Needs leg orthosis only</p> <p>8= Walks without walking aids</p>	
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<p>15. Stair Management</p> <p>0= Unable to ascend or descend stairs</p> <p>1=Ascends and descends at least 3 steps with support or supervision of another person</p> <p>2= Ascends and descends at least 3 steps with support of handrail and/or crutch or cane</p> <p>3= Ascends and descends at least 3 steps without any support or supervision</p>	
<p>16. Transfers: wheelchair-car (approaching car, locking wheelchair, removing arm and footrests, transferring to and from car, bringing wheelchair into and out of car)</p> <p>0= Requires total assistance</p> <p>1= Needs partial assistance and/or supervision and/or adaptive devices</p> <p>2= Transfers independent; does not require adaptive devices (or does not require wheelchair)</p>	
<p>17. Transfers: ground-wheelchair</p> <p>0= Requires assistance</p> <p>1= Transfers independent with or without adaptive devices (or does not require wheelchair)</p>	

Mobility Subtotal (0-40)	
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TOTAL SCIM SCORE (0-100)

WHODAS 2.0

This questionnaire asks about difficulties due to health conditions. Health conditions include diseases or illnesses, other health problems that may be short or long lasting, injuries, mental or emotional problems, and problems with alcohol or drugs.

Think back over the past 30 days and answer these questions, thinking about how much difficulty you had doing the following activities. For each question, please circle only one response.

Getting around						
D2.1	<u>Standing for long periods</u> such as <u>30 minutes</u> ?	Non e	Mild	Moderat e	Sever e	Extrem e or cannot do
D2.2	<u>Standing up</u> from sitting down?	Non e	Mild	Moderat e	Sever e	Extrem e or cannot do
D2.3	<u>Moving around inside your home</u> ?	Non e	Mild	Moderat e	Sever e	Extreme or cannot do
D2.4	<u>Getting out</u> of your <u>home</u> ?	Non e	Mild	Moderat e	Sever e	Extreme or cannot do
D2.5	<u>Walking a long distance</u> such as a <u>kilometre</u> [or equivalent]?	Non e	Mild	Moderat e	Sever e	Extrem e or cannot do
In the past <u>30 days</u> , how much <u>difficulty</u> did you have in:						
Self-care						

D3.1	<u>Washing your whole body?</u>	No ne	Mild	Moderate	Severe	Extreme or cannot do
D3.2	Getting <u>dressed?</u>	No ne	Mild	Moderate	Severe	Extreme or cannot do
D3.3	<u>Eating?</u>	No ne	Mild	Moderate	Severe	Extreme or cannot do
D3.4	Staying <u>by yourself</u> for a <u>few days?</u>	No ne	Mild	Moderate	Severe	Extreme or cannot do
Getting along with people						
D4.1	<u>Dealing with people you do not know?</u>	No ne	Mild	Moderate	Severe	Extreme or cannot do
D4.2	<u>Maintaining a friendship?</u>	No ne	Mild	Moderate	Severe	Extreme or cannot do
D4.3	<u>Getting along with people who are close to you?</u>	No ne	Mild	Moderate	Severe	Extreme or cannot do
D4.4	<u>Making new friends?</u>	No ne	Mild	Moderate	Severe	Extreme or cannot do
D4.5	<u>Sexual activities?</u>	No ne	Mild	Moderate	Severe	Extreme or cannot do
Life activities						
D5.1	Taking care of your <u>household responsibilities?</u>	No ne	Mild	Moderate	Severe	Extreme or

						cannot do
D5.2	Doing most important household tasks <u>well</u> ?	No ne	Mild	Moderate	Severe	Extreme or cannot do
D5.3	Getting all the household work <u>done</u> that you needed to do?	No ne	Mild	Moderate	Severe	Extreme or cannot do
D5.4	Getting your household work done as <u>quickly</u> as needed?	No ne	Mild	Moderate	Severe	Extreme or cannot do
Because of your health condition, in the past <u>30 days</u> , how much <u>difficulty</u> did you have in:						
D5.5	Your day-to-day <u>work/school</u> ?	No ne	Mild	Moderate	Severe	Extreme or cannot do
D5.6	Doing your most important work/school tasks <u>well</u> ?	No ne	Mild	Moderate	Severe	Extreme or cannot do
D5.7	Getting all the work <u>done</u> that you need to do?	No ne	Mild	Moderate	Severe	Extreme or cannot do
D5.8	Getting your work done as <u>quickly</u> as needed?	No ne	Mild	Moderate	Severe	Extreme or cannot do

Participation in society						
In the past <u>30 days</u> :						
D6.1	How much of a problem did you have in <u>joining in community activities</u> (for example, festivities, religious or other activities) in the same	No ne	Mild	Moderate	Severe	Extreme or cannot do

	way as anyone else can?					
D6.2	How much of a problem did you have because of <u>barriers or hindrances</u> in the world around you?	No ne	Mild	Moderate	Severe	Extreme or cannot do
D6.3	How much of a problem did you have <u>living with dignity</u> because of the attitudes and actions of others?	No ne	Mild	Moderate	Severe	Extreme or cannot do
D6.4	How much <u>time</u> did <u>you</u> spend on your health condition, or its consequences?	No ne	Mild	Moderate	Severe	Extreme or cannot do
D6.5	How much have <u>you</u> been <u>emotionally affected</u> by your health condition?	No ne	Mild	Moderate	Severe	Extreme or cannot do
D6.6	How much has your health been a <u>drain on the financial resources</u> of you or your family?	No ne	Mild	Moderate	Severe	Extreme or cannot do
D6.7	How much of a problem did your <u>family</u> have because of your health problems?	No ne	Mild	Moderate	Severe	Extreme or cannot do
D6.8	How much of a problem did you have in doing things <u>by yourself</u> for <u>relaxation or pleasure</u> ?	No ne	Mild	Moderate	Severe	Extreme or cannot do
H1	Overall, in the past 30 days, <u>how many days</u> were these difficulties present?	<i>Record number of days</i> _____				
H2	In the past 30 days, for how many days were you <u>totally unable</u> to carry out your usual activities or work because of any health condition?	<i>Record number of days</i> _____				
H3	In the past 30 days, not counting the days that you were totally unable, for how many days did you <u>cut back</u> or <u>reduce</u>	<i>Record number of days</i> _____				

	your usual activities or work because of any health condition?	
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