

**OUTCOME OF PHYSICAL ACTIVITY AFTER COMPLETING
REHABILITATION SERVICES FROM A SPECIALIZED
REHABILITATION CENTRE (CRP)**

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Bangladesh

August, 2018


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

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Submitted by **Md. Shafiqul Islam Sazib** for partial fulfillment of the requirements for the degree of Bachelor of Science in Physiotherapy (B. Sc. PT)



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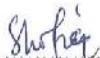
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DECLARATION

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 decline that for any publication, presentation or dissemination of information of the study. I would bound to take written consent from the department of physiotherapy of Bangladesh Health Professions Institute (BHPI).

Signature: *Md. Shafiqul Islam Sazib.* Date: *05.10.2018*

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Acknowledgement

The first gratitude goes to Almighty Allah for giving me passion enough ability and intelligence to complete study successfully. I wish to express my sincere indebtedness to my supervisor, **Ehsanur Rahman** , Assistant Professor, Department of Physiotherapy, Bangladesh Health Professions Institute (BHPI), Savar, Dhaka and also thanks to clinical physiotherapists of Physiotherapy Department, CRP, Savar, Dhaka for their constant and sympathetic guide and valuable suggestion at all stages to complete this study. I am also very great full to **Mohammad Habibur Rahman**, Associate professor, department of physiotherapy ,BHPI, CRP, Savar, Dhaka and **Mohammad Anwar Hossain**, Associate Professor, Head of Physiotherapy Department, BHPI, CRP, Savar, Dhaka to give permission for data collection.

I also would like to thanks teachers of BHPI especially my greatest gratitude to the respectable Vice Principal **Prof. Md. Obaidul Haque** and other respected teachers of Bangladesh Health Professions Institute (BHPI), Department of Physiotherapy, who facilitated me and given contribution to complete this studies smoothly. I remain ever grateful to help for their guidance and support without that I could not have come to this stage. And I would also like to give gratitude **Md. Shofiqul Islam** , Assistant professor, Department of physiotherapy , for sanctioning my thesis.

I also wish to express my heartiest love to my junior brothers and sisters who played a great role in data collections for my research and librarians of BHPI who helped me to providing information and using internet.

I am grateful to others who were engaged at any time for giving me valuable suggestion and helping me in different stages of the study that made my work easy and inspired me to work with enthusiasm.

I am grateful to my participants who gave me their valuable time and spend more time with me.

Abbreviations

BHPI: Bangladesh Health Professions Institute

BMRC: Bangladesh Medical Research Council

CRP: Centre of the Rehabilitation for the Paralyzed.

IRB: Institutional Research Board

NHIS: National Health Interview Survey

PASIPID: Physical Activity Scale Individual With Physical Disability.

SCI: Spinal Cord Injury

SPSS: Statistical Package for the Social Sciences

WHO: World Health Organizations.

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Abstract

Objective: To find out the outcome of physical activity after completing rehabilitation services from a specialized rehabilitation centre (CRP). **Methodology:** A cross sectional study was conducted with a structured and close ended interviewer administered questionnaire to collect information from 70 spinal cord injury patients in respects through purposive sampling procedure. Data was numerically coded and captured in Microsoft excel, using an SPSS 20 version software program. **Results:** Study revealed that, among 70 participants 59% (n=40) were male and 41% (n= 30) were female, most of the participants 69% were middle aged people. Majority of cases 60% (n=42) participants were traumatic injury and rest of the participants 40% (n=28) were non traumatic injury. Out of 70 participants 74% (n=72) were paraplegic and 26% (n=18) were tetraplegic participants. According to ASIA scale 30% (n=21) were complete A injury participants , 45.7% (n=29) were incomplete B participants, 21.4% (n=15) were incomplete C participants and 7.1% (n= 5) were incomplete D participants. From PASIPID score out of fifty two paraplegic participants , n=17 had mild level activity, n= 30 had moderate level of activity, and n= 5 participant had high level of activity and compare to tetraplegic participants (n=18), n=3 had mild level activity, n=15 had moderate level activity .There is strong relationship between the type of paralysis and household activities e.g yard caring, lawn work etc ,and there was less association with the outdoor activity and type of paralysis. **Conclusion:** physical activity is a major important issue in people with SCI. It provided qualitative descriptions of the physical activity experiences and the perceived benefits of their participation as well as their motives to sustain participation. The present study also explored the reciprocal relationship between participation, socio-demographic information and motives to participate.

Key Words: Physical Activity, Spinal cord injury.

1.1: Background

Spinal Cord Injury (SCI) is a relatively uncommon yet devastating cause of disability. A person who newly acquires a spinal cord injury is often faced with the sudden loss of all physical independence and has to be cared for by others. Impairments caused by SCI such as a loss of sensation, motor function and bladder and bowel function can have a severe impact on participation in life and can lead to a loss of social roles e.g. loss of job and income, loss of sport and leisure activities. All this can have a profound emotional and psychological effect on the person (Eng & Miller 2008).

Due to loss of motor, sensory and/or autonomic innervations below the level of injury, persons with a spinal cord injury (SCI) are at risk for developing a hypoactive lifestyle. Hypoactivity may have negative effects on physical fitness, social participation and quality of life. Furthermore, a hypoactive lifestyle may increase the risk of developing secondary health problems, such as cardiovascular diseases, obesity and non-insulin-dependent diabetes Mellitus (Vissers et al., 2008).

Regular physical activity and exercise are associated with numerous physical and mental health benefits in men and women. All-cause mortality is delayed by regularly engaging in physical activity; this is also the case when an individual increases physical activity by changing from a sedentary lifestyle or a lifestyle with insufficient levels of physical activity to one that achieves recommended physical activity levels. Exercise and physical activity decrease the risk of developing CHD, stroke, type 2 diabetes, and some forms of cancer e.g., colon and breast cancers (Garber et al., 2011).

Activity refers to the type and level of functioning displayed at the individual level. For instance it could refer to a person's ability to take care of him or herself, walking, or communicating. Also, the term handicap has been replaced by participation. Participation describes the level and degree of a person's involvement in life situations;

An individual's level of participation can be affected by personal or environmental factors (Block et al., 2009).

To facilitate physical independence once again and assist an individual with SCI to perform the former roles he/she played in society, a coordinated, comprehensive, outcome oriented and cost effective rehabilitation program is necessary (Landrum et al., 2006).

Spinal Cord Injury (SCI) is defined as an insult to the spinal cord resulting in a change, either temporary or permanent, in its normal motor, sensory or autonomic function (Dawodu, 2007). Severe traumatic SCI, although not common, is a serious condition with life changing implications for the individual and his family. It often results in profound and long term disability with major effects on the injured person's functional, medical, financial and psychosocial well-being (Pickett et al., 2006).

Therefore rehabilitation of persons with SCI is essential, to return them to their previous level of function or as close to it as possible. Rehabilitation, according to the World Health Organization (WHO) “ Aims not only at training disabled and handicapped persons to adapt to their environment, but also at intervening in their immediate environment and society as a whole in order to facilitate their social integration”

The incidence of spinal cord injuries has increased globally over the last three decades. In the United States the incidence has increased from 30 to 40 per million population in 1995 (Go, DeVivo & Richards, 1995) to 30 to 60 per million population per year as reported by Dawodu (2007). The incidence of this serious and disabling condition in this country is not known(Hodge, 2004) The causes of SCI vary from country to country, depending on social and economic factors (Burt, 2004). The main causes of traumatic SCI globally are motor vehicle accidents and falls (Dawodu *et al.*, 2010). However, a study conducted by Hart and Williams (1994) found that violence (56%) was the most common cause of traumatic SCI in South Asia (Hodge, 2004).

Maclachan 2012 stated that ,For persons living with SCI, return to work is regarded as one of the most important outcomes of reintegration in society. For those people unable to return to work, participation in non-vocational activities must also be considered as a successful rehabilitation outcome .In their study on participation and satisfaction after SCI, most of the participants were satisfied with their lives, as most of them were able to return to work or to compensate for the time formerly spent on work by being involved with other activities such as sport and leisure. Reduced quality of life was particularly associated with an unsatisfactory vocational and leisure situation. Few studies have investigated the relation between (a) quality of life or (b) community reintegration after SCI and participation in sport and recreational activities.

SCI cause enormous changes in biopsychosocial life: physical, psychological and social functioning is determined by the interaction between health conditions and factors related to personal and nvironmental aspects. Personal aspects include features of health condition, physical and functional state. Environmental aspects include physical, social and attitudinal factors that can facilitate or hinder an individual's performance (Šidlauskienė et al.,2017).

As the social aspect of functioning, participation is achieved through a person's roles in family, community, and the larger society and, as such, is a highly valued rehabilitation outcome for people with disabilities, including those with SCI, their care partners, and society at large (Gómara et al., 2014).

Physical therapy (PT) interventions potentially have targets across all three functioning domains of the ICF: body functions/structures, activities, and participation. Modifying specific body impairments such as strength, cardiovascular fitness, joint mobility, muscle extensibility, bone loss, pain, and spasticity may improve the ability to perform activities without assistance from a caregiver, or to perform tasks using compensatory methods with or without equipment. By reducing activity limitations, PT interventions may address the ultimate aim of rehabilitation, namely increased participation and thereby

improved overall Quality of life (Gómara et al., 2014). To fully understand the impact of a disability, it is essential to understand how daily functioning is affected. Spinal cord injury (SCI) substantially alters activity patterns. For example, men with SCI spend more time participating in personal care activities and less time engaged in work-related activities than men without an SCI. Although it has been established that SCI affects participation in activities of daily living (ADL), 2–4 it remains to be determined whether there is variation in patterns of ADL within the SCI population (Hetz et al.,2009).

Due to the disabling nature of SCI and its high personal, bio-psychological and socio-economic impact, information on the epidemiology of SCI is essential for successful outcomes after this devastating condition. However, it is evident in the existing literature that epidemiology factors such as the severity of a spinal cord injury, age, gender, race or level of education are not the best predictors of most long-term outcomes after SCI.(Maclachan ,2012)

It has been well established that physical activity is an important contributor to good health . In general, people with disabilities are less physically active than those without disabilities . People who use wheelchairs tend to have lower physical activity levels than a number of able-bodied populations, including adolescents, college students, blue-collar workers, and older women . Physical inactivity in people associated with an increase in hypo kinetic conditions, such as cardiovascular disease (CVD) and diabetes . However, many of these risks can be reduced for people who use wheelchairs by increasing their levels of physical activity . Even small increases in physical activity have been shown to reduce the cardiovascular risk in this population (Conger, 2011).

Consequences of this reduction in physical activity include detrimental changes in body composition and metabolic profiles leading to significantly poorer health outcomes in this population. The World Health Organization's International Classification of Functioning, Disability and Health (ICF) provides a valuable framework for understanding the complex interaction between the various factors that can affect

impairments (fitness), function (activity), and participation (barriers/ facilitators to community-based fitness) after a SCI. Secondary health conditions are indirectly related to the primary deficit (e.g., SCI and spasticity) and result in conditions such as obesity, cardiovascular disease, reduced pulmonary capacity, and de-conditioning. We will address these conditions, and their impact on fitness and activity (Sisto & Evans, 2014).

First, each considers activity and participation critical outcomes among persons with SCI. Furthermore, appropriate measures for persons with SCI are lacking, primarily because of measures containing content that is a poor fit for someone who does not mobilize by walking or a lack of empirical study of the measures among persons with SCI. Those measures that have been utilized among persons with SCI often show limitations such as ceiling effects or weak and inconsistent associations with other relevant constructs. Finally, activity and participation are highly individualized constructs and it may be necessary to assess or account for influential environmental factors. In fact, participation is defined by interaction with environmental factors in some quarters (Ullrich et al., 2012).

Over the past decade, much attention has been devoted to understanding the relationship between exercise participation, physical activity, and physical fitness and their impact on health-related outcomes following SCI. Physical fitness consists of a specific set of attributes that an individual may have or may achieve that enhances the ability to carry out daily tasks without undue fatigue and with ample energy. Physical fitness interventions are of great importance to the consumer and clinicians whose goals are to halt the de-conditioning process, increase functional capacity, and decrease secondary health complications associated with chronic SCI. Evidence indicates that strategies to promote exercise and improve the components of fitness positively affect the overall health of individuals with SCI and can reduce the risk of secondary health complications associated with chronic disability (Sisto & Evans, 2014)

1.2 : Rationale

Spinal cord injury has been described as one of the greater calamities that can befall a human being (Dijkers, 2005) because SCI tends to occur to people in their early adulthood, in the prime of their lives, when they are attending school or developing their careers or establishing a home and starting a family. From a life course perspective, SCI derails people with disabilities leaving them off-track and off-time in regard to socially expectable normative activities and social roles (Pickett et al., 2006). The extent of life disruption experienced after traumatic SCI cannot be explained by injury severity or demographic factors alone. Patients with spinal cord injury may face a range of problems or barriers in their community like as environmental, physical, emotional/psychological, perceptions and attitudes. Environmental & physical barriers are commonly seen in our country after spinal cord injury and it is increasing day by day. In recent past some studies have dealt with spinal cord injury patients in our countries, but the exact barriers of people with spinal cord injury patients in community has not been studied in Bangladesh. This study formulates to fill the gap of knowledge & ideas in this area. The purposes of the study are to find out Activity limitation of people with spinal cord injury patients in community. This study also helps to explore the patient's physical, emotional/psychological, perceptions, attitudes and environmental barriers. This study also helps to discover the lacking area of a career, especially after doing any activities in community. By doing this research, the problem may be drawn out & gives proper education about accessibility barriers of people with spinal cord injury patients. This study is helpful in making physiotherapist to aware about the accessibility barriers of people with SCI patients. Physiotherapy plays a vital role in the management of SCI patients, so it is helpful for physiotherapist in working in this area for delivering service. As a result patients become more benefited. Thus the study might create a future prospect of physiotherapy profession in Bangladesh (Whiteneck et al., 2005). So, my personal interest to work in this area and to aware the people and professionals about the activity limitation of people with SCI people in community. It helps to discover the role and importance of physiotherapy in every sector of Bangladesh.

1.3: Research Question:

What are the outcome of physical activity after completing rehabilitation services from a specialized rehabilitation Centre (CRP)?

1.4 Objectives :

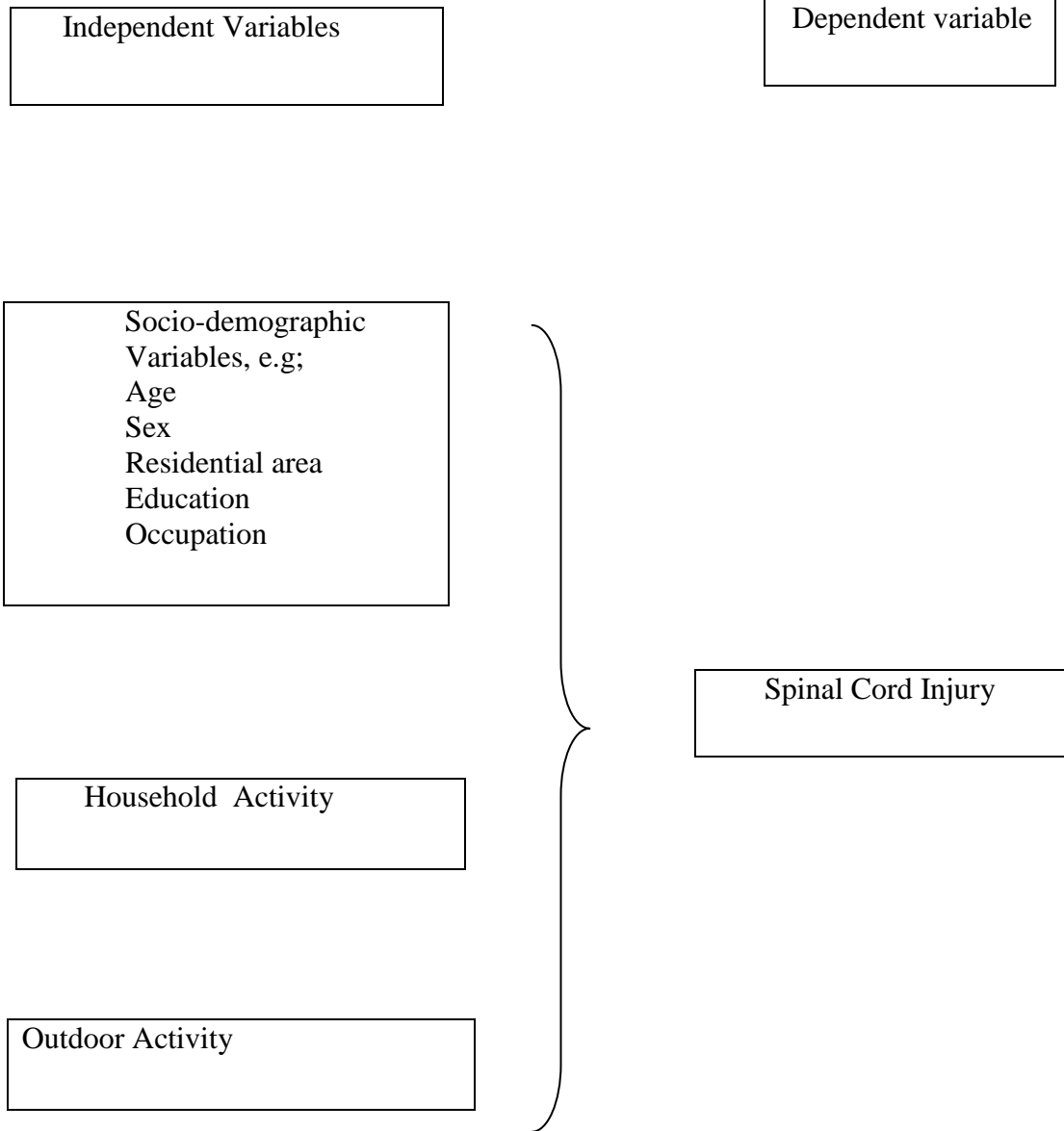
1.4. 1. General Objective:

To identify physical activity level in individuals with physical disabilities.

1.4.2. Specific Objectives:

- To identify socio-demographic information of patient with spinal cord lesion.
- To identify association between type of paralysis and involvement both in household and outdoor activities.
- To identify association between gender and household activity.
- To identify association between level of paralysis and household activity.

1.5 Conceptual framework:



1.6: Operational Definition:

Physical activity:

Physical activity simply means movement of the body that uses energy. Walking, gardening, briskly pushing a baby stroller, climbing the stairs, playing soccer, or dancing the night away are all good examples of being active.

Spinal Cord Injury

Any injury to the spinal cord that can cause paralysis of both upper and lower limb called Spinal Cord Injury. Spinal cord injury is an enormous devastating condition often affecting young and male healthy individuals and which result negatively at all the parameters of their life.

Activities of daily living:

Task that enable individual to meet basic needs in style.

Paralysis

Injury or disease to the nervous system can affect the ability to move a particular part of the body. This reduced motor ability is called paralysis.

Neurological level

Up to the level where both sensory and motor function is remains intact.

The spinal cord is part of the central nervous system (CNS), which extends caudally and is protected by the bony structures of the vertebral column. It is covered by the three membranes of the CNS, i.e., the dura mater, arachnoid and the innermost pia mater. In most adult mammals it occupies only the upper two thirds of the vertebral canal as the growth of the bones composing the vertebral column is proportionally more rapid than that of the spinal cord. According to its rostrocaudal location the spinal cord can be divided into four parts: cervical, thoracic, lumbar and sacral, two of these are marked by an upper or cervical) and a lower or lumbar (Nogradi & Vrobova, 2010).

Damage to the spinal cord can occur if the blood supply is cut off, or if it is bruised by a bone fragment, or if it is crushed or severed (Eng & Millar 2008).

Injuries and diseases affecting the spinal cord and complicated by neurological damage are an important health problem in Bangladesh as they carry high rates of morbidity and mortality, however life expectancy of patients with SCI continues to increase and the median survival time of patients sustaining an SCI between the age of 25 and 34 years has been predicted to be 38 years post injury, with 43% surviving for at least 40 years (Wyndaele & Wyndaele, 2006). Spinal cord injury (SCI) occurs suddenly, primarily to young people, and result in different degrees of impairment (Kreuter et al., 2008).

Spinal cord injury is an enormous devastating condition often affecting young and male healthy individuals and which result negatively at all the parameters of their life including physical, emotional, financial and social cost, which can result in paralysis or paresis of the affected areas of the body and the extent of this injury determined by how high or low on the spine the damage occurs, leading finally to tetraplegia or paraplegia, with an estimated annual incidence of 11,000 cases per year in the United States . In India, approximate 20,000 new cases of spinal cord injury are added every year 60-70% of them are illiterate, poor villagers (Singh et al., 2010).

Spinal cord injury is a demoralizing event on a person and family level, as well as a tremendous financial burden to the society as because of its attendant morbidity, expense and prolonged treatment is required. Near about 40% of patients with spinal cord injury are Complete SCI, 40% with incomplete injury and about 20% with either no cord or root lesions, In Bangladesh the overall age group for SCI is ranged from 10-70 years. The majority of the patient's aged from between 10-40 years, with 19% between 10-20 years, 42% between 20-30 years, 20% between 30-40 years, 15% between 40-50 years and 4% between 50-60 years. The spinal cord lesions are considered to be either traumatic or non-traumatic. In case of traumatic injury, there were three main causes in our country. Resulted from a fall from a height are 43%, 20% are associated with falling while carrying a heavy load on the head which one is a common practice in Bangladesh, 18% are resulted of a road traffic accident and 6% formed a diverse group which included assault, stab injury, sports injury and bull attack. In the 'non-traumatic' spinal cord lesion group the main causes are Pott's disease with a tumor, transverse myelitis, prolapsed inter-vertebral disc and Guillain Barre Syndrome (Rahman, 2008).

Inactivity may have negative effects on physical fitness, social participation and quality of life; it may increase the risk of developing secondary health problems, such as cardiovascular diseases, obesity and non-insulin-dependent diabetes mellitus, person with a spinal cord injury(SCI) might be at risk for such secondary conditions as 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 problems and in some cases, the secondary disability may be more limiting than the primary disability (Warburton et al., 2010).

The difficulties of the lived experience of SCI and the differences in that experience around the world mean that, although it is a relatively low-prevalence condition, SCI has wider inferences for supervising health care, such as an individual with SCI will have to seek help from every clinical setting of his or her country provides: emergency services, intensive care, surgery, stabilizing medical care, and particularly rehabilitation,

including return to the community, vocational rehabilitation and ongoing primary care and it also help clinicians, health professionals, researchers and policymakers to understand the strengths and weaknesses of their health-care system (WHO, 2013). In an attempt to reduce health care costs & barriers and to improve the quality of life in persons with SCI, health professionals, advocates, and consumers are calling for a development of health endorsement services for this section of the inhabitants (Rimmer et al., 2010).

Individuals must often cope with various physical, psychological, and social issues, after sustaining a spinal cord injury (SCI) that occurs as a result of their injuries such as poorer health as a result of the injury, reduced employment opportunities, limited social support and family role functioning, limited access to recreational and leisure activities, and a lack of accessible transportation & also some invisible and conceptual barriers that arise from the attitudes and beliefs of the individual with the SCI and from society as a whole that are affect participation (Zinman et al., 2014).

According to disability in Bangladesh (2002) the total figure of disability is increasing with population growth and aging. With such a large number of disables people it is quite possible to achieve national development. But it is real phenomenon of our society that disable people are very often deprived of their social opportunity and their rights. National Institute of Neurological Disorders and Stroke, (2010) shows that Most spinal cord injuries affect bladder and bowel functions because the nerves that control the involved organs originate in the segments near the lower termination of the spinal cord and are cut off from brain input. Without coordination from the brain, the muscles of the bladder and urethra can't work together effectively, and urination becomes abnormal.

Always such beliefs are not negative. For example, God often gives children with a disability to couples who are able to show them special compassion and care influences the way the surrounding community responds to these children in northern Mexico that the belief. The manner in which families and communities, how people expect individuals with disabilities to contribute to society also shapes respond to children and

youth with disabilities. National Institute of Neurological Disorders and Stroke, (2010) found that More than 80 percent of spinal cord injury patients are men and 55 percent of spinal cord injury victims are between 16 and 30 years old. In this duration of life men are normally engage on the employment as well as contribute the national development of the country. As spinal cord injury needs long period of time for rehabilitation so it may create burden in the community, society as well as the country.

Saulino (2009) found that traumatic Spinal cord injury (SCI) is perhaps the most devastating orthopedic injury possible. With prolonged survival being the rule, rehabilitation of these injuries has an increasingly important role. The primary goals of rehabilitation are prevention of secondary complications, maximization of physical functioning, and reintegration into the community. Long term disability or death is the cause of Spinal cord injury (SCI). Leading to permanent paralysis by modern man, it is one of the most catastrophic lesions. The Spinal cord injury patients, the victims who are usually young and in their most productive stage of life multiple medical, social and vocational complications affect to them. Spinal cord injury causes burden and suffering not only of the victim but also to their families, to the health care system and to the community.

Henn (2009) stated that ,Spinal cord injuries are devastating occurrences in people's lives with life-changing results. Acquiring a sudden traumatic SCI renders the person paralysed and dependent on others for all care. Due to the nature of such an injury, patients with SCI need a comprehensive rehabilitation program to regain physical independence and prepare them to be reintegrated into the community. While the ultimate goal of rehabilitation for SCI individuals is successful reintegration into the community, rehabilitation programs internationally and locally seem to focus mostly on physical independence and preparation for community integration does not always get the attention it needs during an in-patient rehabilitation program. Rehabilitation for SCI in South Africa is mostly done in institutions with little attention to out-patient programs or community based rehabilitation to assist patients to reintegrate into the community .

Spinal Cord Injury, shows that medical rehabilitation needs accurate methods of measuring human function in a reasonable period of time. Saulino (2009) suggested that Rehabilitation following SCI is most effectively undertaken with a multidisciplinary, team-based approach. Momin (2003) found that According to WHO (2013) “Rehabilitation involves the combined and coordinated use of medical, social, educational and vocational measures for training or retraining the individual to the highest possible level of functional activity”. (Brown et al., 2008) showed that It is estimated that in the United States each year there are about 11,000 new cases of spinal cord injury (SCI) and that there are currently about 250,000 persons alive with SCI. Because of improvements in medical care and survival, the prevalence of people living with SCI has increased, and it is predicted that there will be greater and greater numbers of older patients with SCI. Currently the average age at injury is 37.6 years, and about 80% of those affected are male. The racial distribution appears to be changing. Between 1973 and 1979, 76.9% were white and 14.2% were African American. Since 2000, 62.9% of those injured have been white and 22% have been African American. The cause of this apparent trend is unclear, but it may be due to actual race-specific incidence rates rather than changing location of centers collecting data or changing referral patterns to those centers. There is a wide-ranging variety of barriers, and most people with SCI experience at least some of these barriers to partaking each day of their lives, in Bangladesh people with spinal cord injury in community facing several barriers like as environmental, physical, emotional, perceptions and attitudes, the physical environment that surrounds people with SCI can either facilitate or obstruct their contribution and inclusion in social, economic, political and cultural life, Vissers et al., (2008) statement a large number of barriers were found in the current situation, the 3 most important barriers were problems with the accessibility of stores and buildings ICF: Environmental factor, physical health problems and mental health problems, ICF: Body Functions and Structures.

The impact of the environment on the lives of people with SCI has been a focus of attention, the ability to empirically quantify what effect environmental barriers and facilitators have on a person’s participation in society has been limited, it is important that the impact of the environment is understood in an interactive context because the

primary tenet of the disability rights movement proposes that environmental factors place important restrictions on the degree to which people with SCI can fully participate rehabilitation – then ongoing with transport, which will be fundamental to take part in the community, and finishing with public buildings – such as schools and workplaces where admittance is needed to fulfill rights to education and employment (Whiteneck et al., 2005).

In society and these barriers are discovered progressively; start with housing – where a person who recently developed SCI will have to return after rehabilitation – then ongoing with transport, which will be fundamental to take part in the community, and finishing with public buildings – such as schools and workplaces where admittance is needed to fulfill rights to education and employment (Whiteneck et al., 2005). After leaving the rehabilitation hospital SCI people may have some difficulties in accessing their accommodation due to some barriers such as stairs, small bathrooms and inaccessible kitchens which in effect make them prisoners in their own homes and as a result they become bed-blocking and that's why when patients healthy enough to go home are enforced to stay in the hospital due to unsatisfactorily accessible housing and also transportation barriers are one of the most important barriers because it's necessary to participate in education, employment and social activities outside the home, public transport is often inaccessible to people with SCI and ramps, lifts & safety lock-down systems may be absent, poorly maintained or hazardous, and transport personnel may not be trained in the accessibility features.

But the fundamental problems are systemic failures such as a discontinuation in the travel chain can make wheelchair users cannot reach their destination (Wee & Paterson, 2009). The attitudes and behaviors of family members, friends, health-care providers, neighbors and strangers contribute to the environmental factors that influence the lives of people with spinal cord injury (SCI), both as barriers and as facilitators; in fact physical, attitudinal, and policy barriers in the environment are viewed as having as great an impact or greater than the underlying organ system impairments in determining a person's activity limitations, participation restrictions and the development of many

secondary conditions. Because of this, disability advocates often are more interested in modifying or adapting the environment to meet the unique needs of people with disabilities than in following the medical model which assumes the problem is in the person rather than the environment (Rimmer et al., 2010).

Perceptions of health limitations, particularly as related to pressure ulcers, appear to be more substantial barriers to employment than previously believed, such that return to work among participants who endorsed any one of these three items was negligible. These findings suggest that self-perceptions of poor health and perhaps health itself ultimately serve as a prominent barrier to employment (Krause & Pickelsimer, 2008).

Krause & Pickelsimer, (2008) reported that people with spinal cord injury facing social ignorance & low employment rates ranging from 13% to 69%. A study in the 12 Netherlands reported that early after injury participant's expectations of their ability to return to a former job, find other work or be retrained were highly predictive of return to work Among participants with SCI who were unemployed and indicated that the most prominent barriers endorsed included inability to physically perform the same type of work following injury, health and stamina and financial and health benefit disincentives.

Spinal cord injury presents a substantial barrier to return to gainful employment, relatively few individuals return to their pre-injury job after SCI, with recent estimates suggesting that only about 12% return to their pre-injury job Further, although individuals who are gainfully employed at the time of injury are more likely to work in the first few years after SCI, this advantage disappears after about 10 years post injury, When looking at all people with SCI, studies have generally suggested that less than 30% with SCI are working at any given point in time (Krause & Pickelsimer,2008). Exercise rates among persons with SCI are partly low attributed to both real and perceived barriers to exercise participation (Rimmer et al., 2010). Some barriers are common to persons with and without disabilities, including time constraints, lack of internal motivation and lack of knowledge of what to do Persons with SCI experience added challenges such as locating facilities with 13 accessible exercise equipment, lack of disability aware fitness

professionals and needing accessible facilities to shower post-exercise .Few studies have attempted to identify perceived barriers to exercise in the spinal cord injury (SCI) population, however mixed disability focus groups have revealed 10 major groups of exercise participation barriers like as environmental, cost, equipment, laws and regulations, information, psychosocial, education and training, perceptions and attitudes, policies and procedures, and resource availability (Cowan et al., 2013).

The people with spinal cord injuries facing information-related barriers, there is a lack of information regarding available and accessible facilities and programs in their community, it also indicated that they need more information about adaptive equipment, professional knowledge, education and training in order to make it more accessible to people with disabilities, SCI people also faces equipment-related barriers like as not enough space between equipment for wheelchair access, poor equipment maintenance and lack of adaptive and/or accessible equipment (Rimmer et al., 2010).

One of the primary goals of the early recovery period of rehabilitation is to convey that life with an SCI can be fulfilling and ensure the further functioning in daily life after discharge and in long-term context. Functional goals expected for a person with SCI during rehabilitation and after discharge also depend of biopsychosocial variables: functioning restriction, activity limitations in daily life caused the medical comorbidities, recourses of physical and social environment, family support, occupations opportunities(Šidlauskienė et al.,2017).

Many studies find a higher risk of divorce after the SCI that can have a negative impact on relationships, and sexuality is an important element of partner relationships that is often depressingly affected by SCI (Kreuter et al., 2008).

Persons with spinal cord lesions are confronted with motor and sensory impairments as well as bladder and bowel dysfunction, which cause activity limitations and participation restrictions. The nature and severity of activity limitations and participation restrictions

are dependent on the severity and site of the lesion as well as the person's social roles and contextual factors (McKinley et al., 2007).

To put the effect of these impairments and complications on disability and function into perspective it is necessary to picture them within a larger framework that incorporates both the person's social roles and contextual barriers and facilitators. Such a conceptual framework is provided by the World Health Organization's International Classification of Functioning, Disability and Health (ICF) (WHO 2013).

With an impairment such as loss of motor function, as caused by SCI, the activity of walking is completely compromised, which means that the person is dependent on a wheelchair for mobility, in which case an environmental barrier like stairs at the entrance to the person's site of employment can cause a complete participation restriction in the area of employment. SCI often results in severe impairments which usually cause severe participation restrictions especially in the lives of persons where contextual barriers such as poverty, poor educational levels, poor infrastructure and poor access to health services are common (Henn, 2009).

3.1 Study design

A cross sectional study design was used. A cross sectional study was chosen as appropriate to find out the objectives. This design involves identifying group of people and then collecting the information that requires when they use the particular service. All the measurements on each person were made at one point in time. The data were collected all at the same time or within a short time frame. A cross-sectional design provides a snapshot of the variables included in the study, at one particular point in time (Fraenkel, 2005). The data were collected from CRP through a standard questionnaire.

3.2 Study area

Spinal Cord Injury (SCI) Unit of CRP was selected for data collection.

3.3 Study population

The target population was the patient with Spinal Cord Injury who has completed rehabilitation services from CRP ,spinal cord injury unit, Savar, Dhaka.

3.4 Sample size

The equation of sample size calculation are given below-

$$n = \frac{Z^2 pq}{d^2}$$

Here,

$$z = 1.96$$

$$p = 0.50 \text{ (Here, } p = \text{Prevalence} = 0.5)$$

$$q = 1 - 0.5 \\ = 0.5$$

$$d = 0.05$$

The actual sample size for this study is calculated as 384, but as the study is a part of academic research project and there were time limitation. So, 70 spinal cord injury patients were considered as the sample of this study considering the inclusion and exclusion criteria.

3.5.1 Inclusion criteria of the study

1. Patient with spinal cord lesion who were completed rehabilitation services from CRP.
2. Traumatic and non traumatic spinal cord lesion patient.
3. People who agree willingly participate in the study as maintaining ethical rules.
4. Age Range (10-70)
5. Both male and female were included.

3.5.2 Exclusion criteria of the study

1. Mentally ill & medically unstable patient.
2. Patient with cognitive problem as they won't cooperate with researcher.
3. Patient suffering from serious pathological disease e.g. tumors, tuber sclerosis etc.
4. Undiagnosed patient.

3.6 Data collection tools

The tools that needed for the study were- Consent paper, questionnaire, paper, pen, file, calculator, computer, and printer.

3.7 Data collection procedure

Data was collected by using a structured questionnaire paper set, a structured questionnaire (physical activity scale individual with physical disability) , to identify the activity level of the spinal cord injury patient. The data was collected from half way hostel from CRP after completing rehabilitation service .

3.8 Data Analysis

The data that was collected is descriptive data. The graph technique was used for analyzing data, calculated as percentages and presented this using bar and pie charts by SPSS (Statistical Package of Social Science) software version 20.0. SPSS is a comprehensive and flexible statistical analysis and data management solution. SPSS can take data from almost any type of file and use them to generate tabulated reports, charts, and plots of distributions and trends, descriptive statistics and conduct complex statistical analyses.

Chi-Square (χ^2) test

Chi-Square (χ^2) test is the most popular discrete data hypothesis testing method. It is a nonparametric test of statistical significance for bivariate tabular analysis with a contingency table. Chi-Square test helps to analyze data come in the form of counts. This test can be applied to nominal or categorical data which can't be analyzed using the ranking technique.

Calculation of Chi-Square

Chi square (χ^2) is the sum of the square difference $(O - E)^2$ between observed (O) and the expected (E) data divided expected (E) in all possible data completing by the following equation;

$$\frac{(\text{Observed count} - \text{Expected count})^2}{\text{Expected count}}$$

$$\chi^2 = \frac{(O - E)^2}{E}$$

The mathematical notation, the formula looks like this:

$$X^2 = \sum_{i=1}^k \frac{(O - E)^2}{E}$$

3.9 Ethical consideration

The research proposal was submitted to the Institutional Review Board (IRB) of Bangladesh Health Profession Institute (BHPI) and after defense the research proposal approval was taken from the IRB. A written/ verbal consent was taken from participate before collecting of data. The necessary information has been approved by the ethical committee of CRP and was permitted to do this research. Also the necessary permission was taken from the in-charge of the rehabilitation division of CRP. The participants were explained about the purpose and goal of the study before collecting data from the participants. The World Health Organization (WHO) and Bangladesh Medical Research council (BMRC) guideline was always followed to conduct the study. During the course of the study, the samples who were interested in the study had given consent forms and propose of the research and the consent forms were explained to them verbally. The study did not interfere with their jobs. They were informing that their participation was fully voluntary and they had the right to withdraw or discontinue from the research at any time. They were also informed that confidentiality was maintained regarding their information. It should be assumed the participant that his or her name or address would not be used. The participants will also be informed or given notice that the research result would not be harmful for them.

3.10 Informed Consent

The researcher obtained informed consent to participate from every subject. A signed informed consent was taken by an informed consent letter to the participant. Consent was obtained by providing each participant a clear description of the study purpose, the procedure involves in the study and also informing them that if they wish they can withdraw themselves any time from the study, participant were explained about his/her role in the study and it was explained that there is no direct benefit from the study but in future, cases like these may be benefited from it. Participants are also advised that they are free to decline answering any questions during interview. The necessary information

has been kept in a secure place to ensure confidentiality. They are also assured that it would not cause any harm to them. Then they signed the consent form.

4.1 Socio-demographic Status:

4.1.1 Age of the participants:

Among 70 participants, 14% (n= 10) were between 10-20 years age range, 37% (n= 26) were between 20-30 years age, 32% (n= 22) were between 30-40 years age, 7% (n=5) were between 40-50 age range, 7% (n=5) were between 50-60 age range and 3%(n=2) were between 60-70 years range. The mean age was 31 and standard deviation was 11.38.

Table No 1: Age group of the participants.

| Age Group | Frequency (n) | | Percentage (%) | |
|-------------|---------------|-------------|----------------|-------------|
| | Paraplegic | Tetraplegic | paraplegic | Tetraplegic |
| 10-20 years | 8 | 2 | 11.4% | 2.85% |
| 20-30 years | 22 | 4 | 31.4% | 5.71% |
| 30-40 years | 14 | 8 | 20% | 11.4% |
| 40-50 years | 4 | 1 | 5.7% | 1.4% |
| 50-60 years | 3 | 2 | 4.28% | 2.85% |
| 60-70 years | 1 | 1 | 1.4% | 1.4% |

4.1.2 Gender of the participants: Among 70 participants, 59% (n=40) were male and 41% (n=30) were female.

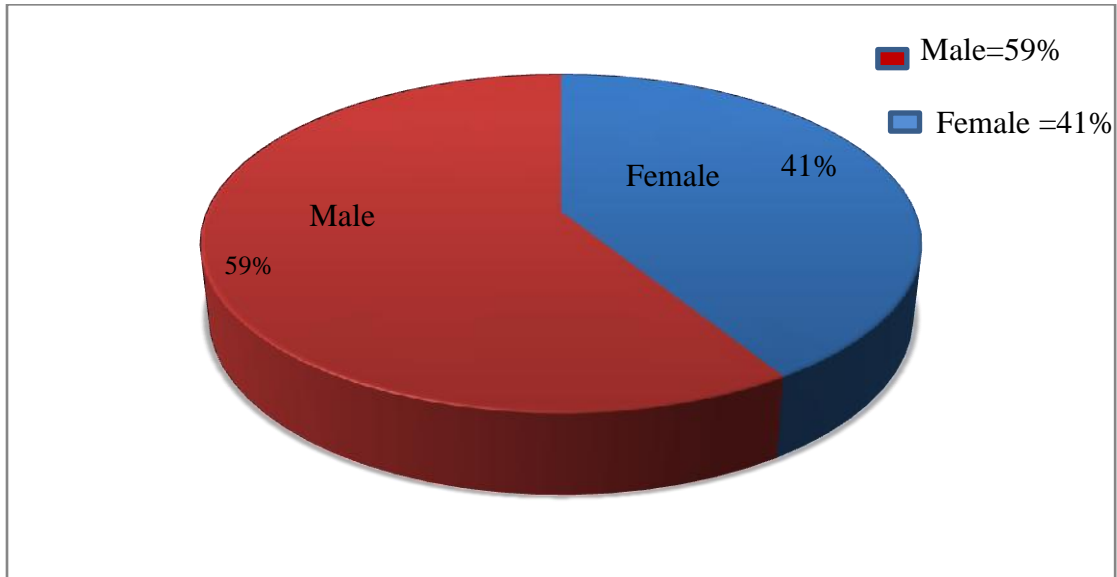


Figure 1 : Gender of the participants.

4.1.3 Residential area: Among 70 participants 51.4% (n=36) were urban people and 48.6% (n=34) were rural people.

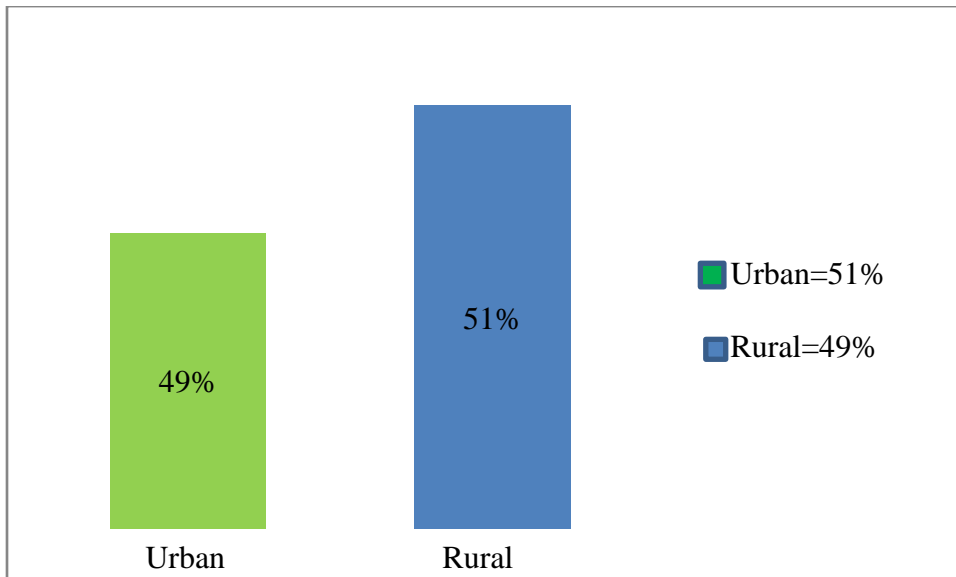


Figure 2: Residential area of the participants.

4.1.4 Occupation: Among the participant 31 were jobless and 69% were in their job. The figure shows the occupation of the participant.

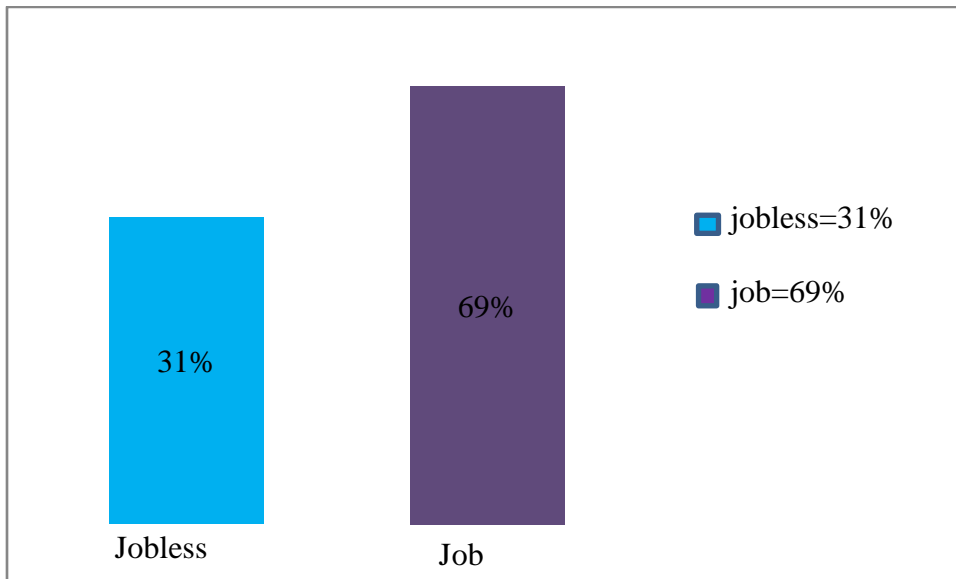


Figure 3: Occupation of the participants

4.1.5 Educational level: Study participants were 70. Among them 10% (n=7) were illiterate, 49% (n=34) participants completed the primary school, 24% (n=17) participants completed the secondary school certificate programme and 17% (n=12) participants Completed their graduation level.

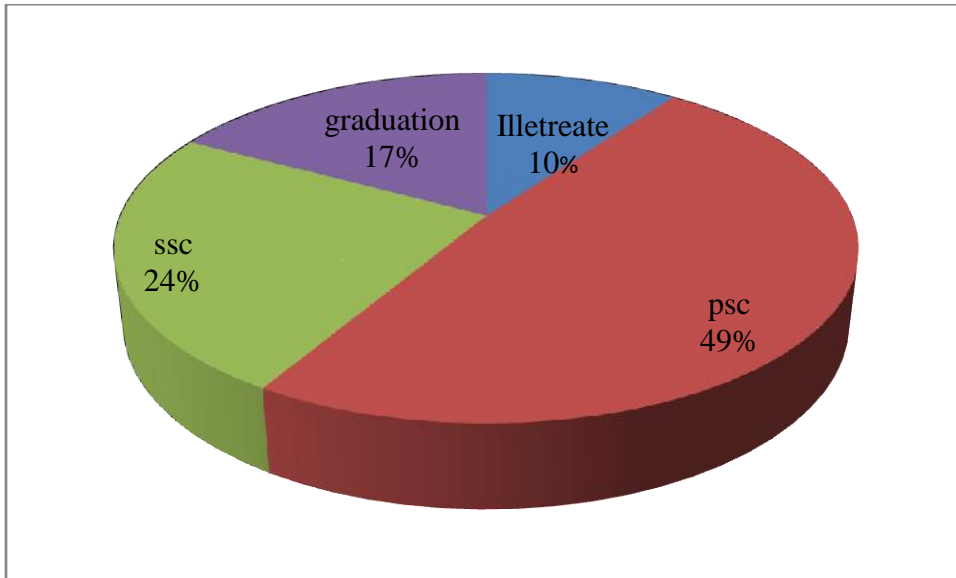


Figure 4: Educational Status of the participants.

4.1.6 Cause of the injury: Among 70 participant 60% (n=42) were traumatic patient and 40% (n=28) were the non traumatic patient.

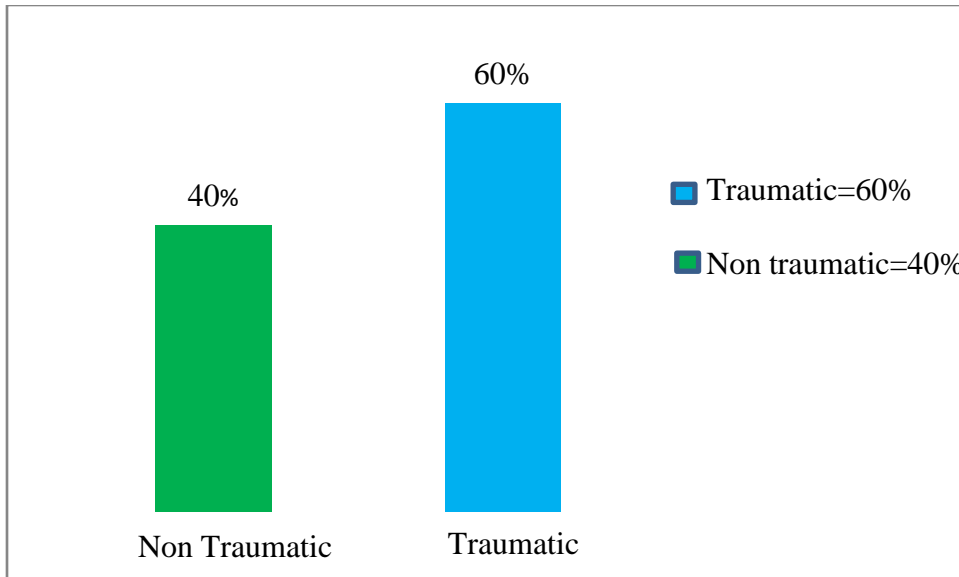


Figure 5: Cause of the injury of the participants.

4.1.7 Type of paralysis of the participant: Among 70 participants 74% were paraplegic and 26% were tetraplegic.

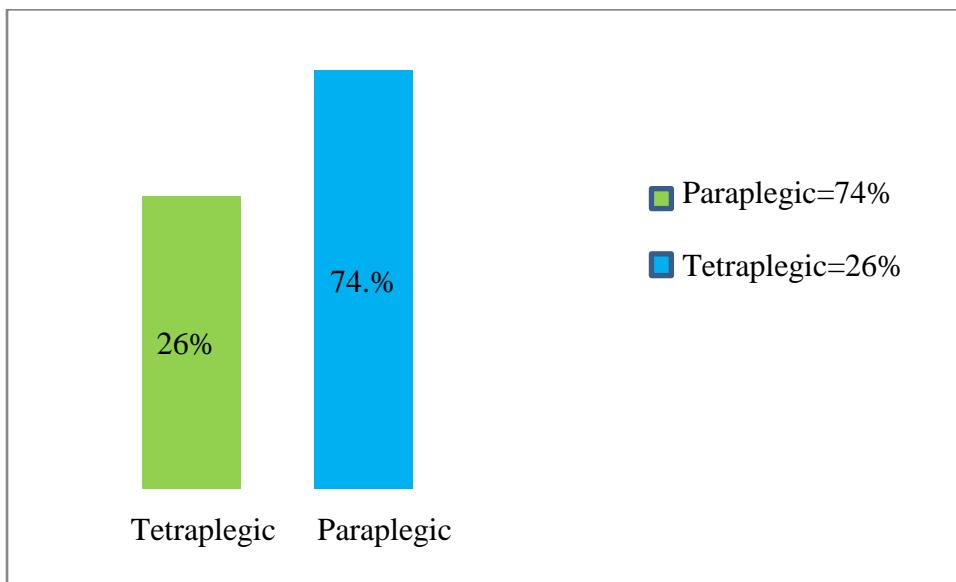


Figure 6: Type of paralysis of the participants.

4.1.9 Level of injury according to (ASIA scale):

Among 70 participants, 30% (n=21) were complete A injury patient according to ASIA scale , 45.7% (n=29) were incomplete B participants, 21.4% (n=15) were incomplete C participants and 7.1% (n= 5) were incomplete D participants.

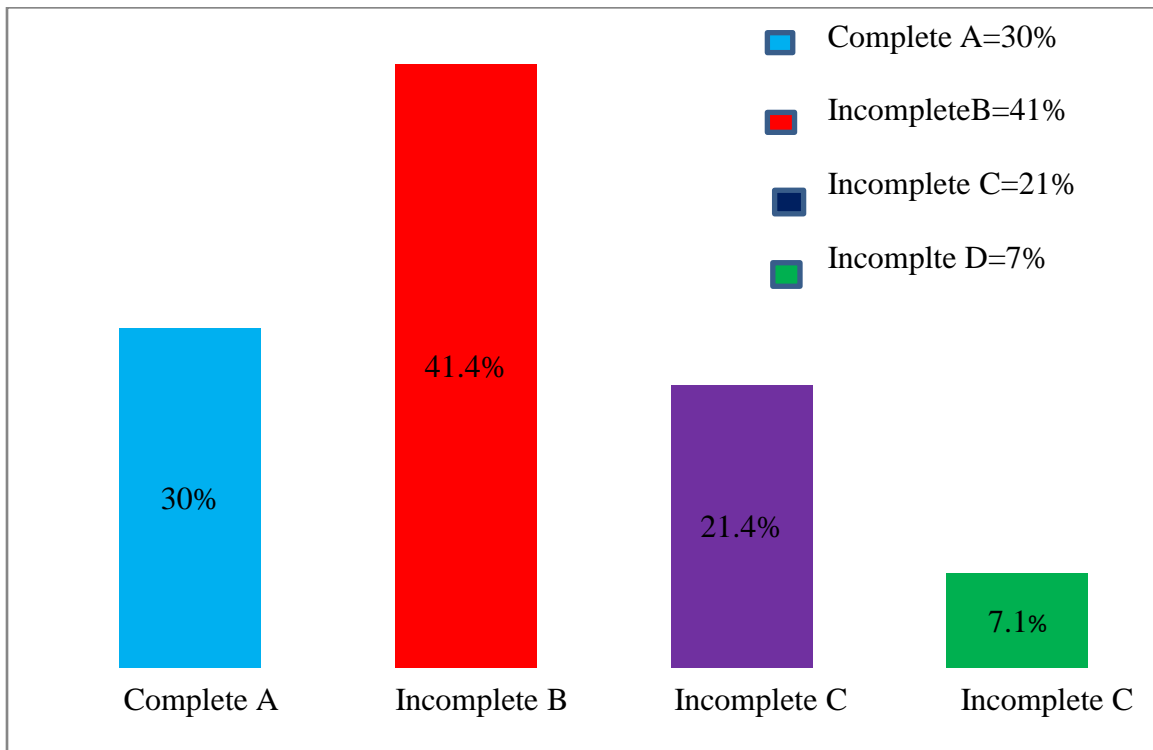


Figure 7: Level of injury (ASIA scale) of the participants.

4.2 Association Between type of paralysis and both household and outdoor activity.

4.2.1 Association between type of paralysis and outside activity such as walk wheel, push outside, muscle strength, sports and recreational activity, stationary activities etc.

Table No 2: Association between type of paralysis and outdoor activity.

| | Outdoor activity | Chi-square value | P – value | Significance |
|--------------------|--|------------------|-----------|-----------------|
| Types of paralysis | Walk wheel , push outside etc. | .562 | .755 | Non significant |
| | Light sports and recreational activity | .781 | .854 | Non significant |
| | Moderate sports and recreational activity | 1.461 | .691 | Non significant |
| | Exercise for increase muscle strength | 3.128 | .209 | Non significant |
| | Stationary activities such as reading etc. | 1.480 | .477 | Non Significant |
| | | | | |

The above table shows the association between types of paralysis (paraplegic and tetraplegic) and outdoor activities such as wheeling, push outside, exercise for muscle strength and endurance, sports and recreational activities, stationary activities. Among 52 paraplegic participants, n= 9 are seldomly, n= 37 are sometimesly, and n=6 were oftenly and also among 18 tetraplegic n= 3 were seldomly, n= 14 were sometimes, and n= 1 were oftenly doing their outside home exercise and the found p value = 0.755. The result is not significant. Because the values is more than 0.05. So there is no strong relationship between types of paralysis and outside exercise. Therefore outside of exercise didn't depend on whatever the type of paralysis.

Association between type of paralysis and the light sports and recreational activities . n= 4 participants has never, n= 36 seldom, n= 28 sometimes and n= 2 had doing their light sports and recreational activities. The found p- value is .854. The result is not significant because the found p- value is more than .05. So there is no relationship between the type of paralysis (paraplegic and tetraplegic) and light sports and recreational activity. So type of paralysis was not depend on light sports and recreational activities.

Association between moderate sports and recreational activities with type of paralysis is also non significant because the observed values is more than 0.05. So there is no relationship between the type of paralysis and moderate sports and recreational activity. Type of paralysis (paraplegic or tetraplegic) was not depend on moderate sports and recreational activities.

Association between increase muscle strength and endurance and type of paralysis is seen here. Among 52 paraplegic patient, n= 19 had never, n= 28 seldom and n=5 had sometimes doing their work. And also 18 tetraplegic participants, n= 10 had never, n= 8 seldomly doing their muscle strength activities. The p- value is .209. The result is not significant, the found value is more than 0.05. So there is no relationship. Type of paralysis (paraplegic or tetraplegic) was not depend on increase muscle strength type of activities

4.2.2 Association between type of paralysis and household activity

Table No 3 : Association between type of paralysis and household activity.

| Type of paralysis | Household activity | Chi-square | P –value | Significance |
|-------------------|---------------------------------------|------------|----------|-----------------|
| | housework or chores activity | 1.957 | .581 | Non significant |
| | Home repairs, carpeting, painting etc | 3.446 | .028 | Significant |
| | Lawn work or yard care | 8.957 | .030 | Significant |
| | Outdoor gardening | 2.059 | .560 | Non significant |
| | | | | |

Among 52 paraplegic patient, n=1 had never, n= 15 seldom, n=30 sometimes n= 6 had often doing their housework or chores. And among 18 tetraplegic patient n=8 seldom, n= 9 sometimes, 1 had often doing their housework or chores. The found values is .581. And the result is not significant because the found p values is more than 0.05.so there is no relationship between house work and type of paralysis . Type of paralysis (paraplegic or tetraplegic) was not depend on housework or chores activities.

Association between home repairs and type of paralysis (paraplegic and tetraplegic participants). Among 52 paraplegic participants , n=14 had never, n=28 seldom, n=9 sometimes, n= 1 often doing their home repairs. And among 18 tetraplegic participants n=8 had never, n=8 seldomly, n=1 sometimes , n=1 often doing their home repairs activity. As the found value is $p=.028$. So the result is significant. So there is a relationship between home repairs and type of paralysis . Type of paralysis (paraplegic or tetraplegic) was depend on home repairs type of activities.

Association between lawn work and yard care with types of paralysis is seen . Among the 52 paraplegic participants, n= 31 seldom, n= 19 sometimes, n= 2 often doing their lawn work and yard care. And tetraplegic participants , n= 1 had never, n=5seldom n= 12 sometimes doing their work. The found p value is 0.030. the result is significant. So there is a relationship between lawn work , yard care activity and type of paralysis. Type of paralysis (paraplegic or tetraplegic) was depend on yard care or lawn work type of activities.

The association between type of paralysis and outdoor gardening is non significant. Because the found p-value is .560 which is more than 0.05. So there is no relationship between two of this. Type of paralysis (paraplegic or tetraplegic) was not depend on outdoor gardening type of exercise.

4.3 Association between level of injury and house hold activity

Table No 4: Association between level of injury and house hold activity.

| | Household activity | Chi-square value | p-value | Significance |
|---|-----------------------------------|------------------|---------|-----------------|
| Level of injury (Complete and incomplete) | Home repairs, carpeting, Painting | 1.401 | .791 | Non significant |
| | Heavy housework or chores | .772 | .856 | Non significant |
| | Lawn work or yard caring | 2.401 | .493 | Non significant |
| | Outdoor gardening | 1.835 | .607 | Non significant |
| | | | | |

Home repairs activity is a type of house hold activity, such as carpeting, painting, furniture refinishing etc. Among 23 complete participants n=8 were never, n=10 seldom, n=4 sometimes , n= 1 often doing this work. And among 47 incomplete participants n=14 were never, n= 26 seldom, n= 6 sometimes and n= 1 often done their home repairs activity. The found p – value is $=.791$, and this is not significant because the value is more than $.05$. There is no relationship. So the level of injury was not depend on home repairs activity.

Heavy house work or chores and level of injury association . Here the observed value is $.856$. and there is no significance between the heavy housework and level of injury(complete and incomplete participants). So home repairs activity was not depend on level of injury

Association between level of injury and lawn work, yard care. Among 23 complete participants , n= 1 never, n=11 seldom, n=10 sometimes , n=1 often doing this work. And among 47 incomplete participants n= 25 seldom, n=21 sometimes, n=1 often doing this yard care activity. The p- value is 0.493 . so there is no relationship between yard care and level of injury. So the level of injury was not depend on yard care or lawn work type of activity.

Outdoor gardening is also one type of household activity. Among 23 complete participants, n=1 never, n=11seldom, n=11 sometimes doing this work. And also 47 incomplete participants , n= 1 never, n=23 seldom, n=20 sometimes, n=3 often doing this work. There is no relationship between this type of outdoor gardening and level of injury. So the level of injury was not depend on outdoor gardening type of exercise.

4.4 .1 Distribution of respondents with gender and household activity

Table no 5: Distribution of respondents with gender and household activity.

| valid | | Household activities | | | Total |
|--------|--------|----------------------|-----------------|-------------|-------|
| | | Seldom(1-2d) | Sometimes(3-4d) | Often(5-7d) | |
| Gender | Male | 10 | 29 | 1 | 40 |
| | Female | 4 | 17 | 7 | 30 |

Total 40 male participant and 30 female patient doing their work. Among them 46 participant done their household activity in sometimes (3-4d), 14 participant seldom(1-2d), and often(5-7d) 10 participant done their activity.

4.4.2 Association between gender and household activity

Table No 6: Association between gender and household activity:

| Association between gender and household activity. | Chi square | p value |
|--|------------|---------|
| | 10.896 | .004 |

The table showed chi- square test for gender of the participant and household activities of the participants. The test showed that the result is p value = 0.004. The result is significant because the found p -value of this domain is less than 0.05. So there is a relationship between type of gender and household activities of the participant . so household activities was depend on gender of the participants.

4.5 Distribution of respondents with type of paralysis and PASIPID score

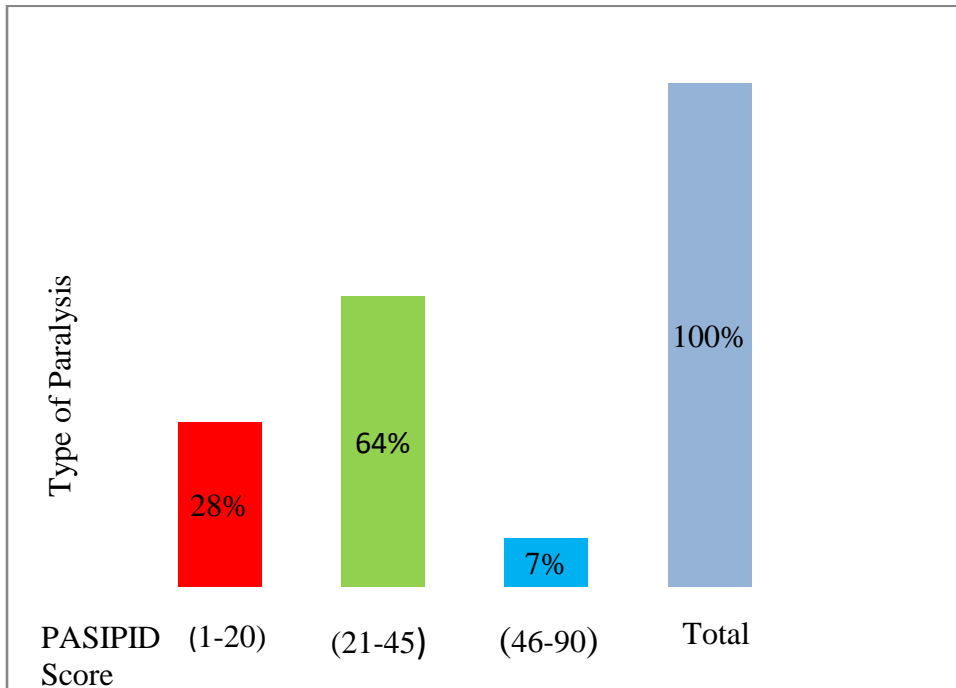


Figure No 8 : Association with type of paralysis and PASIPID score.

Among the 52 paraplegic participants, 24% (n=17) have mild level activity, 43% (n= 30) are moderate level of activity, and 7% (n= 5) participant are high level of activity. And also among tetraplegic participant 4% (n=3) have mild level activity, 21% (n=15) have moderate level and there is no high level activity performer of tetraplegic participants .

5.1 Discussion

The investigator used a cross sectional study to find out the outcome of physical activity after completing Rehabilitation services from a specialized rehabilitation centre(CRP)

The Physical Activity Scale for Individuals with Physical Disabilities (PASIPD). The PASIPD is a 13-item scale developed and validated to measure physical activity, health, and 49 function for individuals with physical disabilities (Washburn et al., 2002). This instrument consisted of five subscales: home repair/lawn and garden work, housework, vigorous sport and recreation, moderate sport and recreation, and occupational activities. The PASIPD requested respondents to indicate how often during the past seven days they participated in various activities at home and outside the home as never, seldom (1-2 days/week), sometimes (3-4 days/week), or often (5-7 days/week) and on average how many hours a day they participated (<1hour, 1 but <2 hours, 2-4 hours, >4 hours. With regard to the occupational item 13, the response categories include <1 hour, 1 but < 4 hours, 5 but < 8 hours, > 8 hours. Scores for the PASIPD are computed by multiplying the average hours per day by an estimated MET value based upon the intensity of the activity.

Washburn et al. (2002) demonstrated preliminary evidence of the construct validity of the PASIPD. The focus of this thesis included determining activity levels of the participants. The PASIPD broke down activity level into several different categories. These categories were physical activity, household activity, lawn and garden activity, caring for another person, and work activity. Physical activity was broken down further into the subscales reported by (Washburn et al.,2002) that included a total score, home repair/gardening, housework, vigorous sport, light/moderate sport, and occupational activities. This latter category includes general wheeling not intended for exercise.

Among 70 participants, 14% were between 10-20 years range, 37% were between 20-30 years age, 32% were between 30-40 years range, 7% were between 40-50 age range, 7% were between 50-60 age range and 3% were between 60-70 years range. The mean age was 31 and standard deviation was 11.38. On another study, The mean age of the study population was 32 years with ages ranging from 21 to 47 years. It is clear from that the majority of participants (87%) were young adults with ages from 21 to 40 years. These findings correlate with recent literature reviews.

Wyndaele & Wyndaele (2006) report in a study that the mean age of new SCI injured patients is 33 years, while (Vissers et al., 2008) found it to be 31.7 years. On the study found that 59% are male and 41% are female. The Indian research showed that 53.95% were from rural areas and 40.51% from the urban areas (Chhabra & Arora, 2012). Among 70 participants, 59% are male and 41% are female. On another study found that Wyndaele and Wyndaele (2006) report a distribution of 3.8:1 males to females and (Blackwell et al., 2001) report the ratio between male and female as 4:1. The Canadian Paraplegic Association (CPA) (1997) also reports in a study that education is a key factor in returning to employment.

Educational status of the participants ,10% were illiterate , 49% patient completed the primary school , 24% patient completed the secondary school certificate programme and 17% patient Completed their graduation level. On another study, according to (Hart 2000), Although a very small group of participants, their educational levels and employment status differs strongly from general figures in Gauteng as well as international figures on patients with spinal cord injuries . International figures report that 40% of SCI patients have less than a high school education, 50% have a high school education and only 6% have a tertiary education (Dawudu 2010). The level of the lesion is 30% were complete A injury patient according to ASIA scale , 45.7% were incomplete B participants, 21.4% were incomplete C participants and 7.1% were incomplete D participants. The most common lesion in the thoracic area is at the level of T12, which accounts for nearly 50% of all thoracic lesions. (Pickett *et al.*, 2006) confirmed the findings of this study that the majority of lumbar lesions are incomplete.

According to (Washburn et al., 2002) , The mean total score for males on this measure was 20.5 + 15.1 while the average for females was 19.9 + 13.5. Finally, individuals who self reported no activity at all had a mean of 13.2 + 12.1, those who reported moderate activity had a mean of 19.8 + 12.7, and individuals who self-reported extreme activity had a mean score of 30.7 + 14.0. These means will allow me to group participants for this thesis by their level of activity.

In this study found that most of the paraplegic participants, (n=17) have mild level activity, (n= 30) are moderate level of activity, and(n= 5) participant are high level of activity. And also among tetraplegic participant (n=3) have mild level activity, (n=15)have moderate level and there is no high level activity performer of tetraplegic participants . In this study found that there was no strong relationship between the type of paralysis (both paraplegic and tetraplegic) and the outdoor activity such as wheeling , outside exercise for muscle strength and endurance ,sports and recreational activities. On the otherhand some of the house hold activity like lawnwork or yard care, homerepairs activity had a strong association with type of paralysis. There is also strong association with the gender of the participants and household activity.

5.2 Limitation of the study

There were some situational limitations and barriers while considering the study. Those are as follows:

Though the expected sample size was 384 for this study but due to resource constrain researcher could manage just 70 samples which is very small to generalize the result for the population .

Time and resources were limited which have a great deal of impact on result.

The researcher was able to collect data from the spinal cord injury department (half way hostel) who had completed rehabilitation service from CRP for a short period of time which will affect the result of the study to generalize population of Bangladesh.

The research was carried out in CRP , Savar such a small environment, So it was difficult to keep confidential the aims of the study for blinding procedure. Therefore, double blind method was used in this study.

SCI is one of the foremost causes of morbidity, mortality and a socioeconomic challenge. This is particularly true for developing countries like Bangladesh, where health support system including the rehabilitation system is not within the reach of ordinary people. It is crystal clear that, this devastating condition not only affects the patient but also their family. Physical activity is a major important issue in SCI people. It tends to require for every person in activities of daily living especially for people with disability like SCI people require very much. Literature showed that 30%-72% SCI people faces barrier in activities of daily living. From this study, it was found that among the participants in the domains of household activity and outdoor activity. The purposes of the present study were to explore the level of physical activity plays in the subjective quality of life in individuals with physical disabilities. Also investigated were the demographic characteristics of the participants, to compare individuals who are more active and who are less active in their daily life events, spinal cord injury patients involvement both in household and outdoor activity. Among the participant 21 participant (30%) had mild or no activity, 44 participant (62.9%) had moderate level of activity, 5 person (7%) had extreme activity according to PASIPID score. According to the participant view some socio-demographic characteristic (age, living area, gender, educational status, level of the injury, occupation, type of paralysis etc) among the SCI patients.

The purpose of the study was to find out the physical activity level of people with SCI. Though the study had some limitations but investigator identified some further step that might be taken for the better accomplishment of further research. The main recommendations would be as follow:

The random sampling technique rather than the convenient would be chosen in further in order to enabling the power of generalization the results, the duration of the study was short, so in future wider time would be taken for conducting the study, investigator use only 40 participants as the sample of this study, in future the sample size would be more.

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Permission letter

July 19, 2018

Head of Physiotherapy Department

Centre for the Rehabilitation of the Paralyzed (CRP)

CRP-Chapain Savar, Dhaka- 1343

Through Head, Department of physiotherapy, BHPI

Subject: Regarding permission to collect data from SCI unit to conduct a research project.

Sir,

With due respect and humble submission I am Shafiqul Islam Sazib student of 4th Professional B.Sc in Physiotherapy at Bangladesh Health Professions Institute (BHPI). In 4th year we have to do a research project for the partial fulfillment of the requirement for the degree of B.Sc in physiotherapy. My Research Project title is, "Physical activity limitation after completing rehabilitation services from specialized rehabilitation centre (CRP)". It is a cross sectional study. I have chosen spinal cord injury unit from department of physiotherapy, CRP to collect required data. Now I am looking for your kind approval to start data collection. I would like to assure that anything of my research project will not harmful for the participants and department as well.

Therefore, I look forward to your cooperation by giving me permission for data data collection at SCI unit, CRP, Savar.

Yours faithfully
Md. Shafiqul Islam Sazib

checked
E. Rahman
19/7/18

Md. Shafiqul Islam Sazib

Roll no: 14

Session: 2013-2014

Student of 4th year B.Sc in physiotherapy

Department of Physiotherapy

Recommended &
Forwarded
Prof. Md. Ghulam Haque
Head, Department of Physiotherapy
Bangladesh Health Professions Institute (BHPI)
CRP, Saver, Dhaka- 1343

Approved
Mohammad Anwar Hossain
Associate Professor & Head
Physiotherapy Dept., CRP
CRP-Chapain, Saver, Dhaka-1343

সংঘটিপত্র

অপনমন্য আগাইয়ুন

এটি শক্তিশালী ইচ্ছায় সজীব, বাংলাদেশ ফেডারেল ডেমোক্রেটিক ফ্রন্ট (বি.এফ.ডি.ফ্রন্ট), সি.আ.সি. এর বি.এস.সি.ইন. সিনিয়োরসিপি কোর্সের অর্থায়ন পিতকর্তী ও অন্য প্রতিষ্ঠানিক কাজের জাশ হিসেবে আমাকে একটি গবেষণা করতে হলে আমার গবেষণার বিষয় হলো, একটি পুনর্বাসন কেন্দ্র (সিআরপি) থেকে পুনর্বাসন সেবা সম্পূর্ণ করার পরে শারীরিক কার্যকলাপের সীমাবদ্ধতা। এই গবেষণার মাধ্যমে আমি যুঁজে যেতে অর্থ পুনর্বাসন কেন্দ্র (সিআরপি) থেকে পুনর্বাসন সেবা সমাপ্ত করার পর শারীরিক কার্যকলাপের সীমাবদ্ধতা গবেষণাটি সম্পাদনের জন্য, আমার সময় সংগ্রহ করা প্রয়োজন হবে। একদম, আমি আমার গবেষণার একজন সম্মানিত সংশোধনকারী হতে পারেন। এই আমি আপনাকে অনুরোধ করছি, আমার গবেষণার একজন সংশোধনকারী হতে। আমি নিশ্চিত করছি যে, এই বাস্তবতা আপনাকে মৌলিকভাবে কোন ধরনের সমস্যা ঘটাবে না। আমি আপনাকে অনুরোধ করছি যে, এটি একটি সম্পূর্ণ প্রাথমিক গবেষণা এবং এটি অন্য কোনো উদ্দেশ্যে ব্যবহার হবে না। আমি আপনাকে আবেদন করছি যে, আপনার সময় মূল্য তথ্য গোপন রাখা হবে। আপনার অংশগ্রহণন হলে উচ্চাকাঙ্ক্ষা এই গবেষণা থেকে আসলি যে কোনো দুর্ভাগ্যের পরিস্থিতি প্রত্যাহার করতে পারবেন।

আপনার যদি এই গবেষণা সম্পর্কে এবং সংশোধনকারী হিসেবে আপনার অধিকার সম্পর্কে কোন জিজ্ঞাসা থাকে তবে আপনি আমার সাথে যথেষ্ট আমার পত্রিকার প্রধানের সহায়ত (সহকারী অধ্যাপক, সিনিয়র সিনিয়র সিনিয়র, সি.এইচ.পি.আই.সি. অফিস, সেক্টর, ঢাকা-১২১৩৩, বাংলাদেশ) এর সাথে যোগাযোগ করতে পারবেন।

উপাত্ত সংগ্রহের পূর্বে আপনার বিবেচনা গ্রহণ আছে:

আমি কি আপনার শর্তাঙ্কন গ্রহণের সম্মতি দেতে পারি?

হ্যাঁ না

সংশোধনকারীর নাম: তারিখ:

অংশগ্রহণকারীর স্বাক্ষর: তারিখ:

বাণীর স্বাক্ষর: তারিখ:

প্রশ্নপত্র

একটি বিশেষায়িত হাসপাতাল (সিআরপি) থেকে পুনর্বাসন সেবা সম্পূর্ণ হওয়ার পরে শারীরিক কার্যকলাপের সীমাবদ্ধতা

রোগীর নামঃ

তারিখঃ

রোগীর কোড নম্বরঃ

ঠিকানাঃ

মোবাইল নম্বরঃ

একটি বিশেষায়িত হাসপাতাল (সিআরপি) থেকে পুনর্বাসন সেবা সম্পূর্ণ হওয়ার পরে শারীরিক কার্যকলাপের সীমাবদ্ধতা

বের করতে এই প্রশ্নপত্রটি ধার্য করা হয়েছে। এটা মনে হতে পারে যে, আপনি একক প্রশ্নের এবাধিক উত্তর লিখে সন্তুষ্টি অনুভব করতে পারেন দয়া করে একক উত্তরটি টিক (✓) চিহ্ন দিন যেটা আপনি একাধিকের মধ্যে সন্তুষ্টিজনক মনে করেন যা আপনার সমস্যাটিকে সঠিকভাবে নির্দেশ করে।

পর্ব ১: সামাজিক ও বৈশ্বিক বিষয়ক বৈশিষ্ট্য

| ক্রমিক নং | প্রশ্ন | উত্তর |
|-----------|---|---|
| ১. | অংশগ্রহণকারীর বয়স | বছর |
| ২. | লিঙ্গ | <input type="checkbox"/> পুরুষ <input type="checkbox"/> মহিলা |
| ৩. | বসবাসের এলাকা | <input type="checkbox"/> গ্রাম <input type="checkbox"/> শহর |
| ৪. | পেশা | |
| ৫. | শিক্ষা | |
| ৬. | আঘাতের কারণ | ক.) অ-ঘাত খ.) অন্য কোন কারণ |
| ৭. | আঘাতের অবস্থান | |
| ৮. | আঘাতের স্তর | |
| ৯. | আঘাতের আগে কোন ধরনের রোগ ছিল কিনা | ক. হ্যাঁ..... খ. না..... |
| ১০. | আঘাতের পরে কোন ধরনের প্রাথমিক চিকিৎসা নিয়েছিলেন কিনা | ক. হ্যাঁ..... খ. না..... |

অবসর সময়ের কার্যকলাপ

| প্রশ্ন নম্বর | প্রশ্ন / তথ্য | কোডিংবিভাগ |
|--------------|---|--|
| ১ | বিগত ৭ দিনে আপনি কতবার পড়া, টিভি দেখা, কম্পিউটার গেমস বা হ গুশিদের ন্যায় স্থিরকর্মকাণ্ডে জড়িয়েছেন? | ১)কখনোনা = ১ ২)কদাচিৎ (১-২দিন) = ২ ৩)মারোমারো (৩-৪দিন) = ৩ ৪)প্রায়ই (৫-৭দিন) = ৪ |
| | গড়ে, দৈনিক কত ঘণ্টা করে স্থির কর্মকাণ্ডে ব্যয় করেছেন? | ১)১ঘণ্টারকম = ১ ২)১কিন্তু২ঘণ্টারচেয়েকম = ২ ৩)২-৪ঘণ্টা = ৩ ৪)৪ঘণ্টারচেয়েবেশি = ৪ |
| ২ | বিগত ৭ দিনে আপনি কতবার এয়ারশাইজের জন্য ছাড়া হেঁটেছেন, ছইল-চেয়ার চালিয়েছেন বা ঘরের বাইরে গিয়েছেন? উদাহরণস্বরূপ, কাজে বা ক্লাসে যাওয়া, বাজার করা বা অন্য কোন কাজে যাওয়া। | ১)কখনোনা = ১ ২)কদাচিৎ (১-২দিন) = ২ ৩)মারোমারো (৩-৪দিন) = ৩ ৪)প্রায়ই (৫-৭দিন) = ৪ |
| | গড়ে দৈনিক কত ঘণ্টা ছইল চেয়ার চালিয়ে বাঘরের বাইরে কাটিয়েছেন? | ১)১ঘণ্টারকম = ১ ২)১কিন্তু২ঘণ্টারচেয়েকম = ২ ৩)২-৪ঘণ্টা = ৩ ৪)৪ঘণ্টারচেয়েবেশি = ৪ |
| ৩ | বিগত ৭দিনে, আপনি কত বারবোলিং, শস্ত কাগজে গলফ খেলা, শিকার করা বা মছ ধরা, বিলিয়ার্ড বা পুল খেলার মত হালকা খেলাধুলা বা বিনোদনমূলক কাজ, খেরাপিউটিক এয়ারনাইজ (ফিজিক্যাল বা অকুপেশনাল থেরাপি, স্ট্রেচিং, দাঁড়ানোর প্রোগ্রাম ব্যবহার) বা একই রকম অন্যান্য কর্মকাণ্ডে যুক্ত হয়েছেন? | ১)কখনোনা = ১ ২)কদাচিৎ (১-২দিন) = ২ ৩)মারোমারো (৩-৪দিন) = ৩ ৪)প্রায়ই (৫-৭দিন) = ৪ |
| | গড়ে দৈনিক কত ঘণ্টা আপনি খেলাধুলা বা বিনোদনমূলক কাজে ব্যয় করেছেন? | ১)১ঘণ্টারকম = ১ ২)১কিন্তু২ঘণ্টারচেয়েকম = ২ ৩)২-৪ঘণ্টা = ৩ ৪)৪ঘণ্টারচেয়েবেশি = ৪ |
| ৪ | বিগত ৭দিনে, আপনি কত বার ডাবল টেনিস, সফটবল, কাঠিহাড়াগাফ, বলক্রম ডাবলিং এর মত মাঝারি খেলাধুলা বা বিনোদনমূলক কাজ বা আনন্দের জন্য ছইল-চেয়ার চালানো অথবা একই রকম অন্যান্য কর্মকাণ্ডে যুক্ত হয়েছেন? | ১)কখনোনা = ১ ২)কদাচিৎ (১-২দিন) = ২ ৩)মারোমারো (৩-৪দিন) = ৩ ৪)প্রায়ই (৫-৭দিন) = ৪ |
| | গড়ে আপনি কত ঘণ্টা করে মাঝারি খেলাধুলা বা বিনোদনমূলক কর্মকাণ্ডেব্যয় করেছেন? | ১)১ঘণ্টারকম = ১ ২)১কিন্তু২ঘণ্টারচেয়েকম = ২ ৩)২-৪ঘণ্টা = ৩ ৪)৪ঘণ্টারচেয়েবেশি = ৪ |
| ৫ | বিগত ৭দিনে, আপনি কতবার জাগিং, ছইল-চেয়ার রেসিং (ট্রেনিং), অফ রোড পুশিং, সঁতার কাটা, আর্ম ক্রেকিং, সাইক্লিং (হাত বা পা), একক টেনিস, রাগবি, বাস্কেটবল, ক্রাচ এবং রেস নিয়ে হাঁটার মত শ্রমসাধ্য খেলাধুলা বা বিনোদনমূলক কাজ বা একই রকম অন্যান্য কাজে | ১)কখনোনা = ১ ২)কদাচিৎ (১-২দিন) = ২ ৩)মারোমারো (৩-৪দিন) = ৩ ৪)প্রায়ই (৫-৭দিন) = ৪ |

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| | যুক্ত হয়েছেন? | |
| | গড়ে, দৈনিক কত ঘণ্টা করে আপনি শ্রমসাধ্য খেলাধুলা বা বিনোদনমূলক কর্মকাণ্ডে ব্যয় করেছেন? | ১) ১ ঘণ্টার কম = ১ ২) ১ কিস্তি ২ ঘণ্টার চেয়ে কম = ২ ৩) ২-৪ ঘণ্টা = ৩ ৪) ৪ ঘণ্টার চেয়ে বেশি = ৪ |
| ৬ | বিগত ৭ দিনে, আপনি কতবার নির্দিষ্ট ভাবে মাসপেশির শক্তি এবং সহনশীলতা বৃদ্ধির জন্য ভারউত্তোলন, পুশ-আপ, পুলআপ, ডিপস, অথবা ছইল-চেয়ার পুশ-আপ ইত্যাদির মত এক্সারসাইজ করেছেন? | ১) কখনোনা = ১ ২) কদাচিৎ (১-২ দিন) = ২ ৩) মাঝেমাঝে (৩-৪ দিন) = ৩ ৪) প্রায়ই (৫-৭ দিন) = ৪ |
| | মাস পেশির শক্তি এবং সহনশীলতা বৃদ্ধির জন্য এক্সারসাইজ করে গড়ে দৈনিক কত ঘণ্টা করে ব্যয় করেছেন? | ১) ১ ঘণ্টার কম = ১ ২) ১ কিস্তি ২ ঘণ্টার চেয়ে কম = ২ ৩) ২-৪ ঘণ্টা = ৩ ৪) ৪ ঘণ্টার চেয়ে বেশি = ৪ |

গৃহস্থালিকর্মকাজ

| প্রশ্ন নম্বর | প্রশ্ন / তথ্য | কোডিং/বিভাগ |
|--------------|---|---|
| ৭ | বিগত ৭ দিনে, আপনি কত বার পরিষ্কার করা, মেঝে মোছে বা বাসন মাজার মত ঘরের হালকা কাজে যুক্ত হয়েছেন? | ১) কখনোনা = ১ ২) কদাচিৎ (১-২ দিন) = ২ ৩) মাঝেমাঝে (৩-৪ দিন) = ৩ ৪) প্রায়ই (৫-৭ দিন) = ৪ |
| | গড়ে দৈনিক কত ঘণ্টা করে ঘরের হালকা কাজে ব্যয় করেছেন? | ১) ১ ঘণ্টার কম = ১ ২) ১ কিস্তি ২ ঘণ্টার চেয়ে কম = ২ ৩) ২-৪ ঘণ্টা = ৩ ৪) ৪ ঘণ্টার চেয়ে বেশি = ৪ |
| ৮ | বিগত ৭ দিনে আপনি কতবার করে ভ্যাকুয়ামিং, মেঝে পরিষ্কার করা, জামাল বা বেয়াল ধোয়ার মত ভারী গৃহস্থালি কাজ করেছেন? | ১) কখনোনা = ১ ২) কদাচিৎ (১-২ দিন) = ২ ৩) মাঝেমাঝে (৩-৪ দিন) = ৩ ৪) প্রায়ই (৫-৭ দিন) = ৪ |
| | ভারী গৃহস্থালিকাজ করে গড়ে দৈনিক আপনি কত ঘণ্টা ব্যয় করেছেন? | ১) ১ ঘণ্টার কম = ১ ২) ১ কিস্তি ২ ঘণ্টার চেয়ে কম = ২ ৩) ২-৪ ঘণ্টা = ৩ ৪) ৪ ঘণ্টার চেয়ে বেশি = ৪ |
| ৯ | বিগত ৭ দিনে, আপনি কত বার কাঠের কাজ, পেইন্টিং, ফিনিশারির ফিনিশিং, বৈদ্যুতিক কাজ ইত্যাদির মত ঘরমেরামতের কাজে যুক্ত হয়েছেন? | ১) কখনোনা = ১ ২) কদাচিৎ (১-২ দিন) = ২ ৩) মাঝেমাঝে (৩-৪ দিন) = ৩ ৪) প্রায়ই (৫-৭ দিন) = ৪ |

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| | ঘর মেঝেমতের কাজে আপনি গড়ে দৈনিক কত ঘন্টা করে ব্যয় করেছেন? | ১) ১ঘন্টারকম = ১ ২) ১কিছু২ঘন্টারচেয়েকম = ২ ৩) ২-৪ঘন্টা = ৩ ৪) ৪ঘন্টারচেয়েবেশি = ৪ |
| ১০ | বিগত ৭ দিনে আপনি কত বার উঠানের যন্ত্র যেমন: কাণ্ডে দ্বারা ছেদন, পাতা বা ডুয়ার সরানো, গাছ বা বীশ ছাঁটাই, অথবা কাঠ কাটার মত কাজে যুক্ত হয়েছেন? | ১) কখনোনা = ১ ২) কদাচিৎ (১-২দিন) = ২ ৩) মাঝেমাঝে (৩-৪দিন) = ৩ ৪) প্রায়ই (৫-৭দিন) = ৪ |
| | উঠানের যন্ত্র নিতে আপনি গড়ে দৈনিক কত ঘন্টা করে ব্যয় করেছেন? | ১) ১ঘন্টারকম = ১ ২) ১কিছু২ঘন্টারচেয়েকম = ২ ৩) ২-৪ঘন্টা = ৩ ৪) ৪ঘন্টারচেয়েবেশি = ৪ |
| ১১ | বিগত ৭দিনে, আপনি কত বার বাইরে বাগানের কাজ করেছেন? | ১) কখনোনা = ১ ২) কদাচিৎ (১-২দিন) = ২ ৩) মাঝেমাঝে (৩-৪দিন) = ৩ ৪) প্রায়ই (৫-৭দিন) = ৪ |
| | বাইরে বাগানের কাজ কবে আপনি গড়ে দৈনিক কত ঘন্টা ব্যয় করেছেন? | ১) ১ঘন্টারকম = ১ ২) ১কিছু২ঘন্টারচেয়েকম = ২ ৩) ২-৪ঘন্টা = ৩ ৪) ৪ঘন্টারচেয়েবেশি = ৪ |
| ১২ | বিগত ৭দিনে আপনি কতবার অন্য কারো যেমন শিশু, একজন নির্ভরশীল ছাত্র বা স্ত্রী অথবা কোন বৃদ্ধের খেয়াল রেখেছেন? | ১) কখনোনা = ১ ২) কদাচিৎ (১-২দিন) = ২ ৩) মাঝেমাঝে (৩-৪দিন) = ৩ ৪) প্রায়ই (৫-৭দিন) = ৪ |
| | অন্য কারো খেয়াল রাখার জন্য আপনি গড়ে দৈনিক কত ঘন্টা ব্যয় করেছেন? | ১) ১ঘন্টারকম = ১ ২) ১কিছু২ঘন্টারচেয়েকম = ২ ৩) ২-৪ঘন্টা = ৩ ৪) ৪ঘন্টারচেয়েবেশি = ৪ |

Work-Related Activity

| প্রশ্ন নম্বর | প্রশ্ন / তথ্য | কোডিংবিভাগ |
|--------------|---|--|
| ১৩ | বিগত ৭দিনে, আপনি কত বার টাকার বিনিময়ে অথবা স্বেচ্ছাসেবী হয়ে কাজ করেছেন? (বসা অবস্থায় হাতের অল্পকাজ হয় যেমন অফিসে কাজ, কম্পিউটারের কাজ, হালকা সমাবেশে লাইনে কাজ, বাস বা স্থান চালানোর মত কাজ বাদে) | ১) কখনোনা = ১ ২) কদাচিৎ (১-২দিন) = ২ ৩) মাঝেমাঝে (৩-৪দিন) = ৩ ৪) প্রায়ই (৫-৭দিন) = ৪ |
| | টাকার বিনিময়ে বা স্বেচ্ছাসেবী হিসেবে আপনি গড়ে দৈনিক কত ঘন্টা করে ব্যয় করেছেন? | ১) ১ঘন্টারকম = ১ ২) ১কিছু২ঘন্টারচেয়েকম = ২ ৩) ২-৪ঘন্টা = ৩ ৪) ৪ঘন্টারচেয়েবেশি = ৪ |

A Questionnaire on

Physical activity limitation after completing rehabilitation service from a specialized rehabilitation centre (centre for the rehabilitation of the paralyzed)

Name of the patient :

Reg. No:

Patient code no:

Mobile no:

Ward no :

Date :

Bed no:

Address:

This questionnaire was developed to identify physical activity limitation after completing rehabilitation service from a specialized rehabilitation centre (CRP).

Part A:

Socio demographic status:

| SL No. | Question | Response |
|--------|------------------------|--------------------|
| 1. | Age of the participant |(years) |
| 2. | Gender | 1.Male 2.Female |

| | | |
|----|---|--|
| 3. | Residential setting | <input type="checkbox"/> 1. Rural <input type="checkbox"/> 2. Urban |
| 4. | Occupation | 1. Jobless 2. job |
| 5. | Education | 1.Illiterate 2.PSC 3.SSC 4.Graduation |
| 6. | Cause of injury | A) Traumatic B) Non traumatic |
| 7. | Any remarkable disease condition prior to SCI | Yes..... No..... |

| SL No. | Question | Response |
|--------|---|---------------------|
| 8. | Location of injury | |
| 9. | Level of injury | |
| 10. | Did you receive first aid immediately post injury | Yes..... No..... |

Part B: Leisure time activity and house hold activity :

| Portion no | Portion \information | coding |
|------------|--|--|
| 1. | During the past 7 days how often did you engage in <i>stationary activities</i> such as reading, watching TV, computer games, or doing handcrafts? | 1. Never (Go to END) 2. Seldom (1–2d) 3. Sometimes (3–4d) 4. Often (5–7d) |
| | What were these activities? On average, how many hours? | 1. Less than 1hr 2. 1 but less than 2hr 3. 2–4hr 4. More than 4hr |
| 2. | During the past 7days, how often did you <i>walk, wheel, push outside</i> your home <i>other than specifically for exercise</i> . For example, getting to work or class, walking the dogs hopping, or other errands? | 1. Never (Go to END) 2. Seldom (1–2d) 3. Sometimes (3–4d) 4. Often (5–7d) |
| | On average, how many hours per day did you spend wheeling or pushing outside your home? | 1. Less than 1hr 2. 1 but less than 2hr 3. 2–4hr 4. More than 4hr |

| | | |
|----|--|--|
| 3. | During the past 7 days, how often did you engage in <i>light sport or recreational activities</i> such as bowling, golf with a cart, hunting or fishing, darts, billiards or pool, therapeutic exercise (physical or occupational therapy, stretching, use of a standing frame) or other similar activities? | <ol style="list-style-type: none"> 1. Never (Go to question #4) 2. Seldom (1–2d) 3. Sometimes (3–4d) 4. Often (5–7d) |
| | <p>What were these activities?</p> <p>On average, how many hour per day did you spend in these <i>light sport or recreational activities</i>?</p> | <ol style="list-style-type: none"> 1. Less than 1hr 2. 1 but less than 2hr 3. 2–4hr 4. More than 4hr |
| 4. | During the past 7 days, how often did you engage in <i>moderate sport and recreational activities</i> such as doubles tennis, softball, golf without a cart, ballroom dancing, wheeling or pushing for pleasure or other similar activities? | <ol style="list-style-type: none"> 1. Never (Go to question #5) 2. Seldom (1–2d) 3. Sometimes (3–4d) 4. Often (5–7d) |
| | <p>What were these activities?</p> <p>On average, how many hours per day did you spend in these <i>moderate sport and recreational activities</i>?</p> | <ol style="list-style-type: none"> 1. Less than 1hr 2. 1 but less than 2hr 3. 2–4hr 4. More than 4hr |
| 5. | During the past 7 days, how often did you engage in <i>strenuous sport and recreational activities</i> such as jogging, wheelchair racing | <ol style="list-style-type: none"> 1. Never (Go to question #4) 2. Seldom (1–2d) 3. Sometimes (3–4d) 4. Often (5–7d) |

| | | |
|----|--|---|
| | (training), off-road pushing, swimming, aerobic dance, arm cranking, cycling (hand or leg), singles tennis, rugby, basketball, walking with crutches and braces, or other similar activities | |
| | <p>What were these activities?</p> <p>On average, how many hours per day did you spend in these <i>strenuous sport or recreational</i> activities?</p> | <p>1. Less than 1hr</p> <p>2. 1 but less than 2hr</p> <p>3. 2–4hr</p> <p>4. More than 4hr</p> |
| 6. | <p>During the past 7 days, how often did you do any exercise <i>specifically to increase muscle strength and endurance</i> such as lifting weights, push-ups, pull-ups, dips, or wheelchair push-ups, etc?</p> | <p>1. Never (Go to question #4)</p> <p>2. Seldom (1–2d)</p> <p>3. Sometimes (3–4d)</p> <p>4. Often (5–7d)</p> |
| | <p>What were these activities?</p> <p>On average, how many hours per day did you spend in these <i>exercises to increase muscle strength and endurance</i>?</p> | <p>1. Less than 1hr</p> <p>2. 1 but less than 2hr</p> <p>3. 2–4hr</p> <p>4. More than 4hr</p> |
| 7. | <p>During the past 7 days, how often have you done any <i>light housework</i>, such as dusting, sweeping floors or washing dishes?</p> | <p>1. Never (Go to question #4)</p> <p>2. Seldom (1–2d)</p> <p>3. Sometimes (3–4d)</p> <p>4. Often (5–7d)</p> |
| | <p>On average, how many hours</p> | <p>1. Less than 1hr</p> |

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| | per day did you spend doing <i>light housework</i> ? | 2. 1 but less than 2hr 3. 2–4hr 4. More than 4hr |
| 8. | During the past 7 days, how often have you done any <i>heavy housework or chores</i> such as vacuuming, scrubbing floors, washing windows, or walls, etc? | 1. Never (Go to question #9) 2. Seldom (1–2d) 3. Sometimes (3–4d) 4. Often (5–7d) |
| | On average, how many hours per day did you spend doing <i>heavy housework or chores</i> ? | 1. Less than 1hr 2. 1 but less than 2hr 3. 2–4hr 4. More than 4hr |
| 9. | During the past 7 days, how often you done <i>home repairs</i> like carpentry, painting, furniture refinishing, electrical work, etc? | 1. Never (Go to question #10) 2. Seldom (1–2d) 3. Sometimes (3–4d) 4. Often (5–7d) |
| | On average, how many hours per day did you spend doing <i>home repairs</i> ? | 1. Less than 1hr 2. 1 but less than 2hr 3. 2–4hr 4. More than 4hr |
| 10. | During the past 7 days how often have you done <i>lawn work or yard care</i> including mowing, leaf or snow removal, tree or bush trimming, or wood chopping, etc? | 1. Never (Go to question #10) 2. Seldom (1–2d) 3. Sometimes (3–4d) 4. Often (5–7d) |
| | On average, how many hours per day did you spend doing <i>lawn work</i> ? | 1. Less than 1hr 2. 1 but less than 2hr 3. 2–4hr 4. More than 4hr |

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| 11. | During the past 7 days, how often have you done <i>outdoor gardening</i> ? | 1. Never (Go to question #10) 2. Seldom (1–2d) 3. Sometimes (3–4d) 4. Often (5–7d) |
| | On average, how many hours per day did you spend doing <i>Outdoor gardening</i> ? | 1. Less than 1hr 2. 1 but less than 2hr 3. 2–4hr 4. More than 4hr |
| 12. | During the past 7 days, how often did you <i>care for another person</i> , such as children, a dependent spouse, or another adult? | 1. Never (Go to question #10) 2. Seldom (1–2d) 3. Sometimes (3–4d) 4. Often (5–7d) |
| | On average, how many hours per day did you spend <i>caring for another person</i> ? | 1. Less than 1hr 2. 1 but less than 2hr 3. 2–4hr 4. More than 4hr |
| 13. | During the past 7 days, how often did you <i>work for pay or as a volunteer</i> ? (Exclude works that mainly involved sitting with slight arm movement such as light office work, computer work, light assembly line work, driving bus or van, etc.) | 1. Never (Go to question #10) 2. Seldom (1–2d) 3. Sometimes (3–4d) 4. Often (5–7d) |
| | On average, how many hours per day did you spend <i>working For pay or as a volunteer</i> ? | 1. Less than 1hr 2. 1 but less than 2hr 3. 2–4hr 4. More than 4hr |