Faculty of Medicine

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EVALUATION OF PHYSICAL ACTIVITY AND QUALITY OF LIFE OF THE SPINAL CORD INJURY PATIENTS AFTER COMPLETING REHABILITATION FROM CENTRE FOR THE REHABILITATION OF THE PARALYSED

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"EVALUATION OF PHYSICAL ACTIVITY AND QUALITY OF LIFE OF THE SPINAL CORD INJURY PATIENTS AFTER COMPLETING REHABILITATION FROM CENTRE FOR THE REHABILITATION OF THE PARALYSED"

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

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Contents

Acronyms

&	: And
BHPI	: Bangladesh Health Profession Institute
BMRC	: Bangladesh Medical Research Council
BTEB	: Bangladesh Technical Education Board
CRP	: Centre for the Rehabilitation of the Paralysed
IRB	: Institutional Review Board
NGO	: Non-governmental Organization
SCI	: Spinal Cord Injury
VR	: Vocational Rehabilitation
WHO	: World Health Organization

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Abstract

Purpose*:** The purpose of the study was to discover the level of physical activity and quality of life of people with spinal cord injury who completed rehabilitation from CRP. ***Objectives: The objectives were to find out the quality of life and level of physical activity of people with spinal cord injury completing rehabilitation. To find out the factor that can influence their quality of life; to know if there has any suggestion by the participant's regarding their experience in social participation. To gather ideas from persons with SCI about physical activity. To find out about their current health condition. To find out their cognition and social participation level. ***Methodology:*** This study was conducted by using quantitative descriptive analysis. Cross sectional was chosen to conduct this study among 100 participants who were selected according to inclusion criteria. ***Measurement tools:*** The "WHOQOL-BREF" and "WHODAS 2.0", these two standard structured questionnaires were used to assess the QOL and physical activity level on 100 participants. ***Analysis:*** Analysis was done using SPSS version 22. ***Results:*** Out of 100 participants with SCI were enrolled during discharge who completed rehabilitation from CRP. Among 100 participants the median (IQR) score was 28 (20-40) years. Among the participants 57 were married and 43 participants were unmarried. Majority of participants (n=42) had primary education, higher secondary education and bachelor level of education have been obtained by respectively by 17 and 8 persons while 17 of them never had attended school. Among them physically 91 participants, psychologically 95 participants, environmentally 96 participants had high QOL and socially 96 participants were leading low QOL. In the assessment of physical activity they showed more difficulty in social participation section. ***Conclusion:*** This study comprehends about the quality of life and physical capability of people with SCI. So, finding out of quality of life and their physical activity will help to do further betterment of spinal cord injury people.

Key words: Spinal cord injury; Quality of life; Physical activity.

CHAPTER-I	INTRODUCTION

1.1 Background:

Spinal cord injury (SCI) is an event which can be traumatic or non-traumatic that results in disturbances to normal sensory, motor or autonomic function and ultimately impacts a patient's physical, psychological and social well-being (Singh et al., 2014). This is a major public health problem in Bangladesh (Hoque et al., 2012).Spinal cord injury (SCI) origins numerous health harms affectng negatively not only the patient's physical condition but all phases of their lives including their aims and communications, and more importantly their health-related quality of life (Blanes et al., 2009).

Spinal cord injury (SCI) effects in a partial or total loss of neural signal transmission at and below the level of injury, regarded as motor and sensory loss; The harm of somatic and autonomic control consequences in a drop of physical activity and blunted cardiovascular response to exercise and results of this reduction in physical activity include negative 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 realizing the complex contact between the various factors that can affect impairments (fitness), function (activity), and participation (barriers/ facilitators to community-based fitness) after a SCI (Sisto et al., 2014).

Spinal decompression surgery is beneficial for decreasing the probability of post spinal cord injury (SCI) neurological impairments. Findings of experimental and clinical studies have confirmed that it improves patient outcomes by preventing the activation of secondary injury mechanisms. However, there is an ongoing controversy regarding the best time for surgical intervention. Some clinical trials are indicative of better motor and neurologic recovery with early surgical decompression compared to late interventions (Yousefifard et al., 2017)

As proportional to human activities enlargement, the incidence of SCI also amplified increasingly. The worldwide incidence is wide-ranging from 13.0 (Lofvenmark et al.,

2015) to 163.4 (Pickett et al., 2006) per million people. The proportions of non-developed countries diverse between 13.0 and 220.0 (Sabre et al 2015) per million people.

United States have the yearly numbers of traumatic SCI is 40 cases per million or 1200 new cases (Rabadi et al., 2013). In Australia, male is more affected than female in non-traumatic SCI and the ratio is 197:169 and the prevalence of paraplegia is more about 269 per million than tetraplegia (98 per million) (New et al., 2013). And 2.5 million people live with SCI around the world (Oyinbo, 2011). In Asia the incidence rates of SCI is extended from 12.06 to 61.6 per million and the typical age is 26.8 to 56.6 years old, men are more vulnerable than women also in traumatic spinal cord injury main causes are motor vehicle collisions (MVCs) and falls (Ning et al., 2012). In CRP, Bangladesh, 25-29 years aged peoples are most commonly affected among them males are more 83% than female and 92% came from rural area and 8% came from urban area also majority of the patients are paraplegia 56%, Cervical lesion present in 44% cases, thoracic lesion 27% and lumber lesion 29% (Islam et al., 2011).

By year, about 40 million people globally suffer from SCI and most are young men, typically aging from 20 to 35, although 1% of this people are children; in children, motor vehicle accidents are the most mutual mechanism of injury. Sports-related injuries are accountable for the major number of spinal injuries after children begin school and start participating in organized sports where football reasons the highest number of injuries. Sixty to eighty percent of spinal injuries in children occur in the cervical region and the remaining 20%-40% are evenly split between the thoracic and lumbar region. Boys are more prone to experience spinal trauma than girls. The most collective sources of SCI in the world are traffic accidents, gunshot injuries, knife injuries, falls and sports injuries. Diving was stated to be the most common sport injury. Injury is typically produced by flexion, compression, hyperextension or flexion-rotation mechanisms. This is called "primary damage'' that happens as a result of these mechanisms. The reactions of the body in order to overcome the primary damage, such as haemorrhage, inflammation and the release of various chemicals, are labelled as secondary damage. There is a strong association between functional status and whether the injury is complete or not complete,

as well as level of the injury. A complete injury means full loss of motor and sensory functions at the distal level of injury (Nas et al., 2015).

Life expectancy after such an injury is markedly reduced due to complications proportional to the severity of injury or remaining neurologic functions. A number of surgical modalities are available for both traumatic and myelopathic conditions of cervical spine. Despite having good radiological results, their impact on socioeconomic status of an individual in developing nations is little known (Goel et al., 2018).

Both specific spinal cord lesion centers and general hospitals in Bangladesh deliver facilities for people with SCL, although the level of medical care, rehabilitation and support services is usually viewed as inadequate and below the values of similar services in India (Sinha 2000).

When SCL patients are discharged from general hospitals, there is little or no follow-up treatment or advice, despite its clear importance to their good; In contrast, India has pointedly more hospital services for patients with SCI that contains a reputable protocol of treatment (acute care) and rehabilitation (physical, emotional, social and economic) through to discharge into the community (Sinha 2000).

Patients suffering from spinal cord injury often face life threatening complications so they need suitable management and particular rehabilitation. The patients of SCI are going into the different hospital for the treatment but they do not have enough services for their treatment. In Bangladesh there is only one non-government organization is Centre for the Rehabilitation of the Paralysed, which has directing a rehabilitation program for the last 32 years through which the patients can advance their life style (Islam et al., 2011).

Forccheimer et al 2004 reported that, following the accomplishment of inpatient rehabilitation, most patients with SCI are discharged and are expected to recommence their lives and find means of managing with their disability.

Rita et al., (2008) noted that people having SCI are the sophisticated risk of emerging a hypoactive lifestyle with likely disadvantageous effects on physical fitness, social participation and quality of life and some additional complications for hypoactive lifestyle is cardiovascular problem and it is the chief cause of morbidity and mortality. Some study

examine that hypoactive lifestyle directly create an influence in physical activity level. And poor physical activity level is related with poor quality of life.

Quality of life means many things to many people. Some emphasize material belongings; others emphasis on the integrity and functioning of the body; some refer to the quantity and quality of interpersonal relations and others again focus on life satisfaction or mental and spiritual well-being. Whatever one's idea, most people will approve that a spinal cord injury (SCI) establishes a noteworthy challenge to quality of life (QOL).

1.2 Rationale:

The aim of the study was to evaluate the level of physical activity and quality of life among the SCI patients after completing the rehabilitation from Centre for the rehabilitation of paralysed.

Nearly all people with SCL return to their own homes after being discharged, with only a few staying in specialist homes or rehabilitation centres for a short time. CRP accepts 88 per cent of its users either as referrals from general hospitals, or when patients themselves choose to leave hospital in search of better care (CRP 2002). Subconsciously it appears understandable that level of physical activity would play an important role in quality of life for this population. It could be claimed that the ability to provide oneself with basic care, perform the tasks of everyday living, and be physically active figure heavily into how a person rates their life quality.

It is imperative that researchers continue examining the antecedents and consequences of physical activity with this population. Due to an apparent lack of qualitative research in the area, it is necessary that we attain an occupied understanding of concepts such as quality of life and how they relate to physical activity and individuals with disabilities. Individuals with disabilities stand to gain the most from regular physical activity and it is important that the physical and mental benefits of physical activity be explored in an in-depth manner.

When a person is injured with SCI, it affects all aspects of the person's life. SCI is a life altering experience for the patients. Patients require assistance in managing medications, therapy, and medical emergencies; provide supervision, emotional support, assist in personal care, mobility and other basic daily living activities.

Research makes a profession strongest and there is no alternative option to do research as a professional to develop the profession. In our country there is no such study about level of physical activity and quality of life of persons with spinal cord injury.
In this study there will be an evaluation of physical activity and quality of life among the SCI patients after completing the rehabilitation from the Centre for the Rehabilitation of the Paralysed. The study will help us with better understanding of the level of the physical activity along with patients' quality of life.

1.3 Research Question:

What is the level of physical activity and quality of life of the paraplegic patients after completing rehabilitation from Centre for the Rehabilitation of the Paralysed (CRP) at discharge?

1.4 (a) Aim:

To evaluate the physical activity and quality of life of the paraplegic patients after completing rehabilitation from Centre for the Rehabilitation of the Paralysed (CRP) at discharge.

1.4 (b) Objectives:

1.4.1 General objectives:

To explore the present situation of physical activity and quality of life among the SCI patients after completing rehabilitation program from Centre for the Rehabilitation of Paralysed.

1.4.2 Specific objectives:

1. To find out about their current health condition.
2. To find out their quality of life in physical health.
3. To identify their psychological health status.
4. To identify social health status of the participants.
5. To identify the environmental condition of the participants.
6. To identify the understanding and communicating ability.
7. To identify self-care and life-activity ability among the participants.
8. To find out ability of getting around and getting along with people of the participants.
9. To evaluate the social participation capability of the participants.

1.5 Variables

Conceptual Framework

Independent Variables	Dependent Variables

Socio-demographic Information

Physical health

Psychological Factors

Social Relationship

Environment

→ | Quality of Life |

Self-care, transfer and locomotion

Emotional role functioning

Social role functioning

→ | Physical Activity |
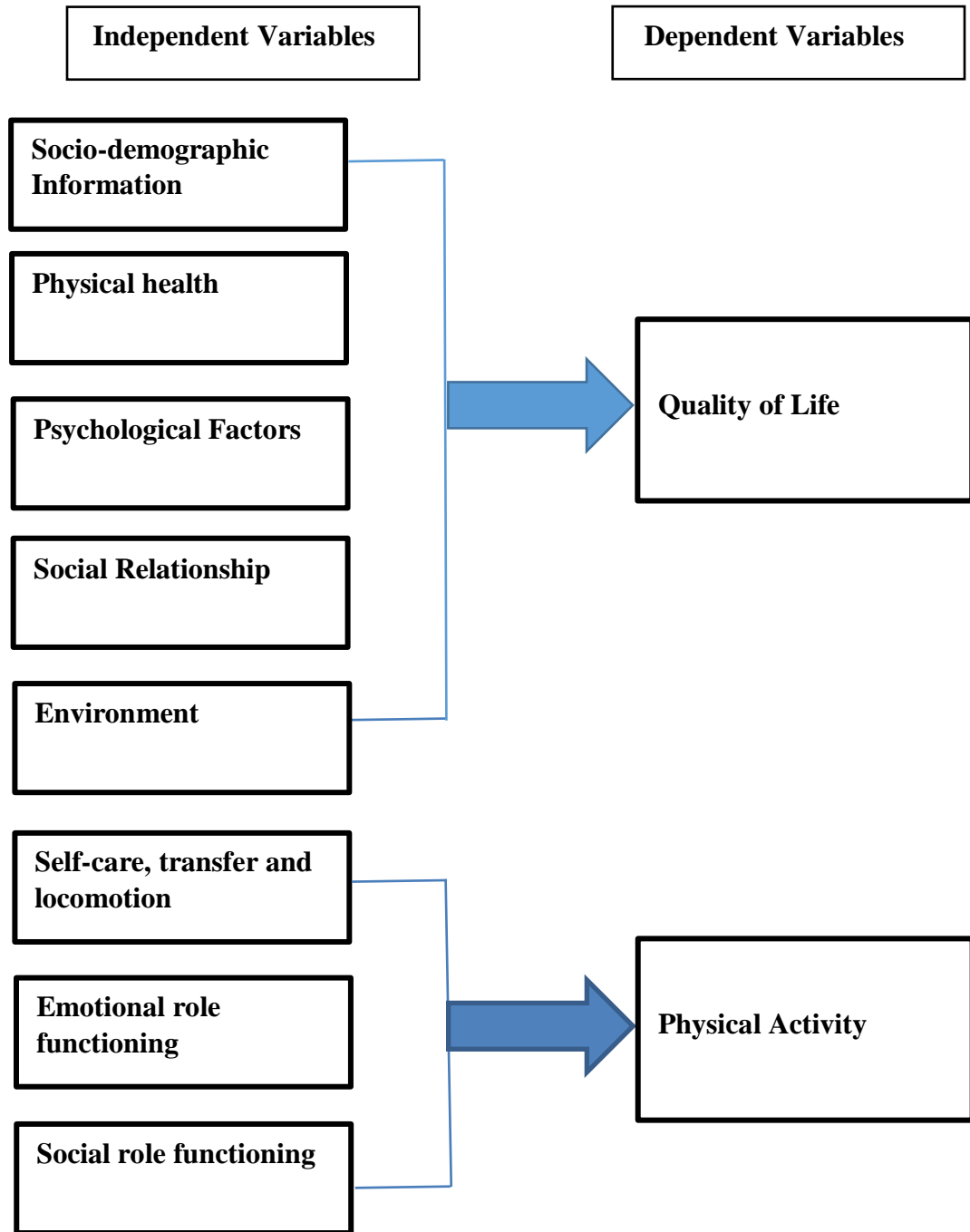
1.6 Operational Definition

Spinal cord injury

Spinal cord injury (SCI) is defined as damage to the neural elements in the spinal canal (spinal cord and cauda equina) which can be traumatic or non-traumatic that results in temporary or permanent loss of motor and/or sensory function.

Quality of life

Quality of life (QOL) is the general well-being of individuals and societies, outlining negative and positive features of life. It observes life satisfaction, including everything from physical health, family, education, employment, wealth, religious beliefs, finance and the environment.

Physical activity

Physical activity is defined as any bodily movement produced by skeletal muscles that requires energy expenditure.

Paraplegia

Impairment or loss of motor or sensory function / partial or complete paralysis of the lower half of the body with involvement of both legs that is usually due to damage to the spinal cord in the thoracic or lumber or sacral regions.

Tetraplegia

Tetraplegia is also known as Quadriplegia. It means paralysis of all four limbs, motor and/or sensory function in the cervical spinal segment is impaired or lost due to damage to that part of the spinal cord resulting in impaired or loss of function in the upper limbs, lower limbs, trunk and pelvic organs.

Spinal cord injury (SCI) is one of the major health problem because still now there is no way to repair the central nervous system (CNS) and restore function. (McDonald et al., 2013).

A spinal cord injury (SCI) effecting sensorimotor and autonomous role, stands a devastating event, relying on the level and severity. In affected subjects the objective of rehabilitative interventions focuses on the repossession of independence and accordingly a good quality of life (Barbeu et al., 1999).

The spinal cord injury reasons severe injuries and lasting damages because of inadequate documentation and handovers to tertiary institutions and generates a life threatening situation (Phalkey et al., 2011).

As a result of recent advances in medical technology, persons surviving a spinal cord injury (SCI) are living longer, and often require varied degrees of assistance over their life span (Ebrahimzadeh et al., 2014).

The reason of spinal cord injury may perhaps traumatic or non-traumatic. Auto crash, including jeep, truck and bus, fall: including jumping and being pushed accidentally (not as an act of violence), gunshot wound motorcycle crash: 2-wheeled, diving, medical/surgical complications: impairment of spinal cord function resultant from hostile effects of medical, surgical or diagnostic actions and treatment, bicycle, tricycles, Pedestrian, including falling/jumping into the path of a vehicle, auto racing, glider kite, slide, swimming, bungee jumping, scuba diving, lightning, kicked by an animal, machinery accidents, tractor, bulldozer, go-cart, steamroller, train, road grader, forklift, sledding, snow tubing, tobogganing, playing ice hockey, snowboarding. Personal contact, with being hit with a blunt object, falls as a consequence of being pushed. Football and other penetrating wounds: stabbing, impalement, boat and parachuting, para-sailing, etc. gymnastic activities other than trampoline baseball/softball, water skiing, basketball/volleyball, high jump, bomb, grenade, dynamite and gasoline. These are traumatic reason. The non-traumatic sources are spinal tumour, TB spine, transverse myelitis, physical assault, physical weakness etc. (Chen et al., 2013).

The foremost origins of spinal cord injuries are the auto and motorbike accidents. In USA a study showed that more than 40 percent spinal cord injuries happen in annually. According to the National Institute of Neurological Disorders and Stroke 1.5 percent of spinal cord injuries coming from violent encounters, gunshot and knife wounds. 9 Caused by fall is most common among the old age about 65. One-quarter of spinal cord injuries arises by falls. About 8 percent happen by the athletic activities, such as effect of sports and diving in shallow water. About 1 out of each 4 spinal cord injuries takes place by consumption of alcohol. Spinal cord injuries also may triggered by cancer, arthritis, osteoporosis and inflammation of the spinal cord. (Coppla & Marlin., 2013).

A person with traumatic or non-traumatic SCI, the probable deviations are similar regarding their capability to feel, transfer, regulation of their bladder and bowel and other possible problems. Traumatic SCI has sophisticated hazard than those having non-traumatic SCI. Non-traumatic SCI patients gains an enhanced retrieval in affected areas and stay for smaller periods in hospital matched with those with a traumatic SCI who have worse prediction and long lengths. A specialized team of health care professionals it is best to have episodic evaluations for anyone with SCI. Prevent and treat SCI problems aid to attain the best conceivable outcomes for health and well-being (Spinal Hub, 2010). Loss of function is the symptom of spinal cord injury. Impaired functioning occurs by spinal cord injury. Severe headache, backache, tingling or loss of sensation in the hand, fingers, feet, or toes, feeling of pain or pressure in the neck, partial or complete loss of possession over any part of the body, impaired breathing after injury, urinary or bowel incontinence, or retention, difficulty with balance and walking, unusual lumps on the head or spine (Medtronic., 2013).

Lasting impression on physical and mental health through paralysis is conjoint roots of spinal cord injury. Secondary complications may get attention erstwhile and the difficulties are the key reason of life altering effect (Bellon et al., 2013).

The longer period of spinal cord injury (SCI) on the health care system executes a demand for superior efficacy in the usage of resources and the accomplishment of care. Access Care of Training project is portion of a wider revelation to form a methodological outline to

assess clinical practices, and in precise to grow a certification process for SCI Programs (Noonan et al., 2012).

Acute hospital care is required afterward instantly following a SCI where all medical and surgical treatment is done. After accomplishing acute care, they should be measured for rehabilitation. Rehabilitation care is the utmost effective for traumatic or non-traumatic events. A research showed that specialist spinal rehabilitation unit has great outcomes for people with a SCI. Specialist rehabilitation unit are enhanced than a general rehabilitation unit (Spinal Hub, 2010).

A spinal cord injury (SCI) mimics a shocking incident that, hinge on the level and severity. The affected area mark for rehabilitative interventions is the retrieval of independence and thus a good quality of life. It is now broadly acknowledged that the central nervous system is capable to recover following incomplete SCI with functional training (Hubli & Dietz, 2013).

Traditional health pointers deliver a degree of the effect of disease but do not evaluate quality of life (QOL) in the setting of an individual's culture, value systems, goals, expectations, standards and concerns. Wilson et al. stated that QOL should be regularly assessed among individuals with SCI along with neurological and functional outcomes. Subjective QOL is considered by some researchers to be the only applicable measure of QOL among individuals with SCI as it reproduces their own insight of their well-being. The inclusion of QOL assessments in healthcare will promote a holistic treatment approach and encourage healthcare professionals to account for the personal perceptions and values of their patients. Hence, the estimation of QOL is a vital question for future national health planning (Ganesh et al., 2016)

Living with a spinal cord injury (SCI) in low and middle income countries (LMICs) is thought-provoking. Care for people with SCI is often inadequate and wheelchair access may be identically limited. Our impression, based on clinical experience, is that many people alive with SCI in Bangladesh and other LMICs have a high incidence of secondary complications and a limited quality of life (QOL). Many studies have inspected QOL and incidence or prevalence of complications after SCI in high income countries. Some studies have also examined these issues in LMICs. However, few studies sample in a

representative way—most, instead, rely on samples of convenience. Therefore, we sought to govern the psychological and socioeconomic status, complications, and QOL in people living with SCI in Bangladesh after discharge from hospital (Hossain et al., 2016).

Spinal cord injury (SCI) is an extremely disrupting incident in the lifespan of a person and involves an extensive handling procedure. Before long after the damage, all consideration is put into stabilizing the patient and from that moment the individual has to manage challenges at physical, social, environmental, and psychological levels. The institutionalized setting of the rehabilitation delivers a largely homogenous supportive setting that aids the person with SCI to be acquainted with the newly acquired disability. The health care professionals in collaboration with the patients and their nearby persons, that is, relatives or significant others, work jointly to make the alteration back to standard of living. One prospect of rehabilitation is that the person with SCI will recapture an acceptable level of well-being and achieve his or her aims in life. Many factors may ease the recovery of a good quality of life (QOL). Some features of SCI are everlasting or only prone to small alterations (e.g., the paralysis and other irrevocable neurological problems related to the injury), but many others (e.g., psychological and social aspects) can be more or less actively influenced by the person with SCI. A number of recent studies regarding QOL in SCI highlight that QOL is not intensely affected by physical variables. Age and gender are also weakly connected to the QOL of the persons with SCI. Physical health features explaining differences in QOL are pain or secondary conditions such as pressure sores and dysreflexia (Lude et al., 2014).

Underneath a spinal cord injury (SCI) not only reasons major variations to an individual's physical and functional independence but also the lengthy rehabilitation period means that the patient's individual life style is likewise interrupted. Though the person relearns modest tasks or masters new skills, they must also regulate to and accommodate to life with a SCI. Quality-of-Life (QOL) ratings occupied from SCI populations are usually found to be lower than those gotten from the general population. Still, detailed study of these findings has exposed that QOL ratings are related to secondary complications, activity limitations and obstacles to participation rather than to factors relating to the injury itself or degrees of physical ability. In fact, the majority of people with SCI report a high level of life

satisfaction, with research specifying that life satisfaction is directly linked to involvement in productive activities, such as employment and leisure pursuits. Qualitative studies highlight the position of meaningful relationships, responsibility, a sense of control over one's own life and commitment in meaningful activity in increasing the individual's QOL. Psychological difficulties (for example, depression and anxiety) behind SCI also appear to be connected to individual assessments and handling responses rather than level of injury or functional loss. Social support has been found to be related to psychosomatic results and modification afterward SCI has been found as an interpreter of early mortality and is allied with little hopelessness and depression scores (Kennedy et al., 2012).

After spinal injury numerous people are not directly treated and an individual acquiring a spinal cord injury remains at home and desires to a traditional treatment. Thus, many people face medical complications such as urine infections and bedsores. In other hand, the other hospital refers the patient to a dedicated hospital or medical college hospital or to CRP for additional treatment while there is no specialized government hospitals for the treatment and rehabilitation of SCL patients. Most of the patients arise from the rural area and their career is also illiterate accordingly they do not know about the lesion of spinal cord. So they assume the patient will improve by day to day. The patient trusts that he will return to his normal life and render care to his/her family. CRP has enriched a complete and regular scheme to offer facilities for people with SCL. CRP is all-time prepared to play a spirited contribution to the rehabilitation of paralyzed people. A social worker or a Community Based Rehabilitation (CBR) worker visits the patient's residence, since completing rehabilitation they need some essential things which they delivered. CRP wishes to provide the entirely care to people with SCL, thus the people can maintain a normal, happy and peaceful life (Momin, 2005).

Bodily capability decreases in persons with spinal cord injuries due to loss of muscle control and loss of autonomic regulator beneath the level of injury. A reduced physical activity is a vital determination of the health position of SCI patients as it reveals them to upsurge the risk of impediment and linked to condensed functional level and quality of life. And it makes a bad influence in their rehabilitation cycle. Following discharge the patients need to do more ADLs but due to their underprivileged rehabilitation platform resulting in

poor level of physical activity. So it builds an association between level of physical activity and quality of life (Haisma et al., 2006).

Gupta et al., 2008 established that persons having neurological illnesses, containing SCI, defined compromised QOL in all domains of life; besides, the social activities domain of QOL was noted to adversely affect functional abilities.

The inclusion of QOL assessments in healthcare will promote a holistic treatment approach and encourage healthcare professionals to account for the personal perceptions and values of their patients. Hence, the evaluation of QOL is a crucial issue for future national health planning.

CHAPTER-III	METHODOLOGY

3.1 Study Design

A cross sectional survey assembles data from a sample that has been strained from a predetermined population (Jack and Norman, 2000). The study was directed through cross sectional study design that epitomise the entire population of SCI. Levin (2006) specified that Cross-sectional studies are carried out at one time point or over a short period. Cross-sectional study design is used for this study because those people were completed rehabilitation from CRP 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 CRP after the injury. Data also collected on individual characteristics, including information about the outcome. 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, monthly income and occupation.

Through cross sectional study it is easily correlating the results among those of different features. In other hand Quantitative research method aids to use a large number of participants and therefore assemble the data accurately through this way, data was reduced to numbers for statistical analysis so as to draw conclusion. 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

Data was collected from patients with spinal cord injury attending at Centre for the Rehabilitation of the Paralysed (CRP), Savar, Dhaka in SCI Unit; the only specialized & largest hospital in Bangladesh .

3.3 Study population and sample population

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

treatment and rehabilitation was selected to carry out the study. About 100 sample were selected for this study.

3.4 Sampling Technique

Sample were selected through convenience sampling method for conducting this study. A convenience sample is a group of individuals who (conveniently) were available for study.

3.5 Sample Size

When the sample frame is finite,

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

$n = \frac{z^2\,pq}{d^2}$

$= \frac{(1.96)^2}{(0.05)^2} \times 0.5 \times 0.5$

$= 384$

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.

As it is an academic thesis, self-funding and data was collected from a single specialized hospital by considering the feasibility and time limitation. 100 sample were selected conveniently.

3.6 Inclusion criteria

- Participants those had completed rehabilitation from Center for the Rehabilitation of the Paralysed (CRP), Savar, Dhaka, Bangladesh
- Both male and female were selected.
- Subject who were willing to participate.
- Easy to communicate with subject.
- Age more than 18 years (Ustun et al., 2010).

3.7 Exclusion criteria

- Subject who were not willing to participate.
- Subject who had psychological problem.
- Subject who were less than 18 years of age.

3.8 Data collection

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 Quality Of Life Questionnaire-BREF (WHOQOL-BREF). Sociodemographic information of the patient detailed age, sex, address, cause and type of injury, mobile number, occupation, monthly income, family member number was conducted.

QOL measurement tools was an established tool at SCI-related research; assessing QOL by using the WHOQOL-BREF, which was a 26-item version of the WHOQOL-100 assessment. The WHOQOL-BREF questionnaire was developed in the context of overall rate of QOL and satisfaction. The WHOQOL-BREF contains a total of 26 questions, distributed in four domains such as Physical health, Psychological health, Social health and Environmental health. The WHOQOL-BREF was available in 19 languages. The WHOQOL-BREF should be self-administered if respondents have sufficient reading ability; otherwise, interviewer-assisted or interview-administered forms should be used.

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 1st December 2018 to 5th August 2019. Each participant provided time to collected data. Each interview took approximately 20-30 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. Researcher took permission from each volunteer participant by using a written consent form. 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. Information was collected after going to halfway

hostel in CRP when the patient was in integration phase. Firstly, interviewer was ensured a quite environment in halfway hostel to avoid distraction and environmental noise. The interviewer explained about the aim of the study. Then a consent from was provided 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 and recorded by recorder of mobile phone. All the data were collected by the researcher himself to avoid the errors.

3.9 Data Analysis

Descriptive statistics was used to analyse data. Descriptive statistics refers methods describing a set of results in terms of their most interesting characteristics. Data were analysed with the software named Statistical Package for the Social Science (SPSS) version 20. The variables were labelled in a list and the researcher established a computer based data definition record file that consist of a list of variables in order. The researcher put the name of the variables in the variable view of SPSS and defined the types, values, decimal, label alignment and measurement level of data.

For assessment of quality of life by WHOQOL-BREF, scores for each of the four domains were calculated through an equation described by WHOQOL Scoring instruction, 1997. Difference of actual raw score and lowest possible raw score divided by possible raw score is then multiplied by 100. It reveals the domain score for all domains.

The equation is,

$$\text{Domain Score} = \left\{\frac{(\textbf{Actual Raw Score} - \textbf{lowest possible raw score})}{\textbf{Possible raw score range}}\right\} \times 100$$

Example: A Facet 1 "Pain and discomfort" raw score of 15 would be transformed as follows:

Domain Score $= \{\frac{(15-4)}{16}\} \times 100 = 68.75$

There is also instructions for calculating the raw score for each domain from the response of the participants. The equations for each domains are following,

Actual Raw scores(N) for	Equations
Domain 1 (Physical Health)	N=(6-Q3)+(6-Q4)+Q10+Q15+Q16+Q17+Q18
Domain 2 (Psychological Health)	N=Q5+Q6+Q7+Q11+Q19+(6-Q26)
Domain 3 (Social Health)	N=Q20+Q21+Q22
Domain 2 (Environmental Health)	N=Q8+Q9+Q12+Q13+Q14+Q23+Q24+Q25

The interpretation of the score are as if a participants scores lower than 45 in any domain, it means he is leading low Quality of life in that domain. Moreover, when anyone scores from 45 to 65 in any domain, it means he is having normal Quality of life in that domain. And it is also noted that score above 65 means having high Quality of life in any domain.

The evaluation of the physical activity was done by the participant's response to WHODAS 2.0. Here, 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. Higher total score means the higher level of physical disability and lower level of physical activity. Additionally, the lower the score, the lower the disability and the higher the physical activity.

The next step was cleaning new data files to check the inputted data set to ensure that all data had been accurately transcribed from the questionnaire sheet to the SPSS data view. Then the raw data are ready for analysis in SPSS. Data are analysed by descriptive statistics and calculated as percentages as well as frequency (n=100) and presented by using table, bar graph, pie charts etc. Microsoft office Excel 2013 is used to decorating the bar graph

and pie charts. The result of this survey is consisted of quantitative data. By this survey a lot of information is collected.

3.10 Statistical test

As a descriptive statistics, Interquartile Range (IQR) and Median Score is measured for the collected data.

Interquartile range is the set of position of the data which shows the distribution of them. The interquartile range (IQR) is the range of values within which reside the middle 50% of the scores. The lower bound of the interquartile range is called the first quartile (Q1) -- 25% of the scores have a value lower than Q1 and 75% of the scores have a value larger than Q1. The upper bound of the interquartile range is called the third quartile (Q3) -- 75% of the scores have a value lower than Q3 and 25% of the scores have a value larger than Q3.

Here, IQR = Third Quartile Positioned Data – First Quartile Positioned Data
　　　　 = Q3-Q1

As 25% data lies below Q1 and 25% data lies above Q3, the rest 50% data lies within the Interquartile range.

The Median Score is the value that is in the middle of the distribution, with 50% of data having a value larger than the median, and 50% of data having a value lower than the median. The value of the second quartile that is in middle of the data set is the median score. Median score is the value of second quartile.

If the sample data are arranged in increasing order, the median is

     (i)   the middle value if n is an odd number, or

     (ii)   midway between the two middle values if n is an even number

Equation for median score is,

$$\text{Median} = L_1 + \frac{\frac{n}{2} - CF}{fm} \times i$$

Here,

L_1 = Lower limit of the median class

CF = Cumulative frequency prior to median group

fm = frequency of the median group

i = Class interval of the median group

n = total frequency

3.11 Ethical consideration

The researcher upheld ethical consideration in each facet of the study. Prior to start the study, an official project proposal was given in to the department of physiotherapy and afterwards validating the application, consent was taken from Institutional Review Board (IRB) of BHPI to continue the study. This study trailed the World Health Organization (WHO) and Bangladesh Medical Research Council (BMRC) standard and firmly preserved the confidentiality. Informed consent was used to take permission from all participants. Participant's rights and privileges were confirmed. All the participants were conscious about the aim and purposes of the study. Afterward they were interrogated following signing the consent from. The investigator has been guaranteed the confidentiality of participant's information and shares the information only with the research supervisor.

The aims and objectives of the study should be well-versed to the participants vocally. Beforehand taking part in the study, the investigator had shown them an on paper consent from and clarified them about it and then requested to sign as well as the researcher had

also signed in the consent form. It was declared that the subjects had the rights to extract themselves from the research at any times. It was presumed to the participant that his or her name or address would not be used. Participation number and code name were used in the notes and transcripts throughout the study. The information might be published in any normal presentation or seminar or written paper but they would not be identified and these would not cause any herm to them. It was also ensured that every participant has the right to discuss about her problem with senior authority as related to this project.

3.12 Rigor of the study

Researcher always strained to uphold trust worthiness and honesty in this study. The study was steered in a clear and systematic way to dropping the sources of error and bias. No leading questions were inquired. During the data analysis the researcher did not submit his own perspectives. The participant's information was coded precisely and crisscrossed by the research supervisor to abolish any likely errors. Throughout conducting the study all section of the study is checked and re–checked by the research supervisor. All the raw data was collected from appropriate sources and maintaining referencing system.

Demographic Data:

Age of the participants:

Total 100 participants participated in this study. They were aged between 18 years to 65 years. The Median of the age was 28 years, and Inter Quartile Range was 19.50 (20.50-40). It means 25 persons age were below the 20.50 and the rest 75 persons age were above 20.50.
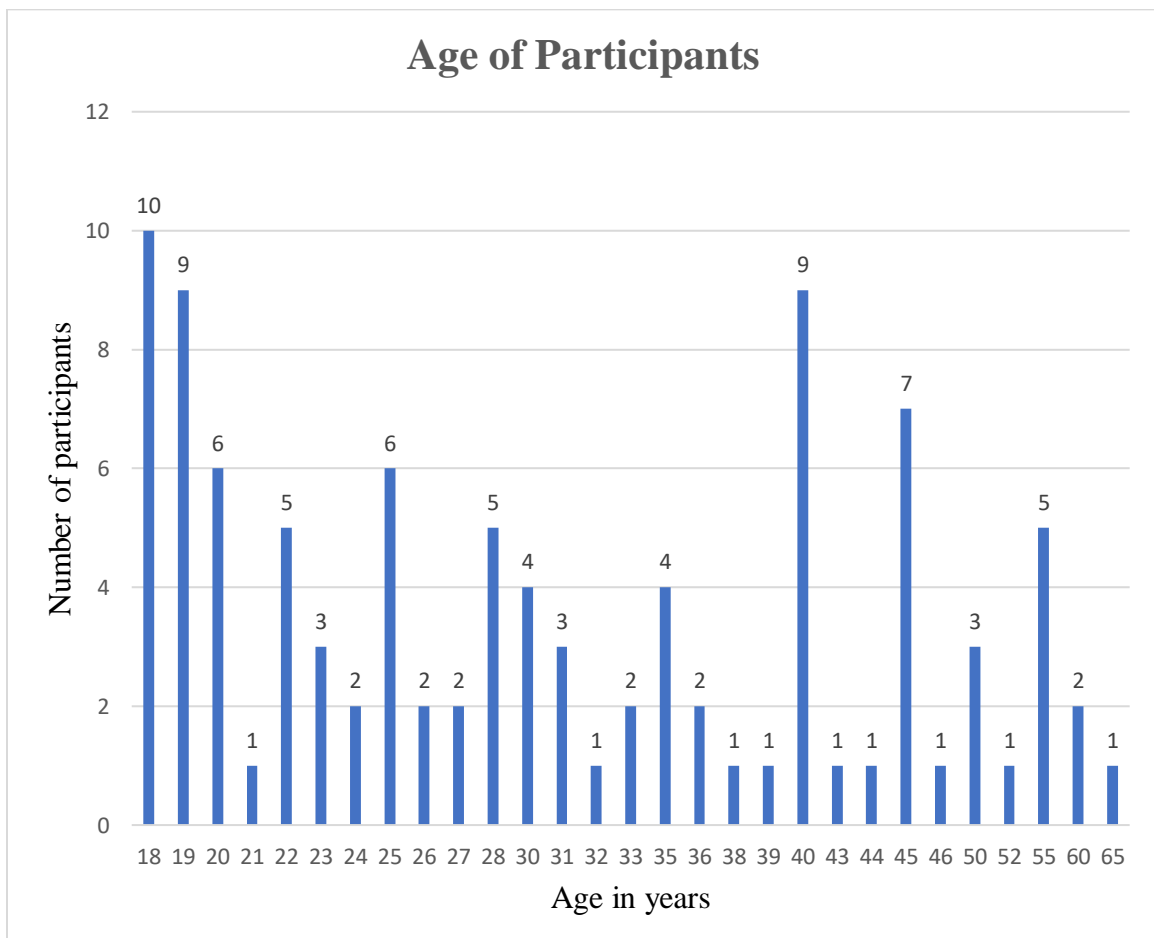
Figure-1: Age groups of the participants.

Gender of the participants:
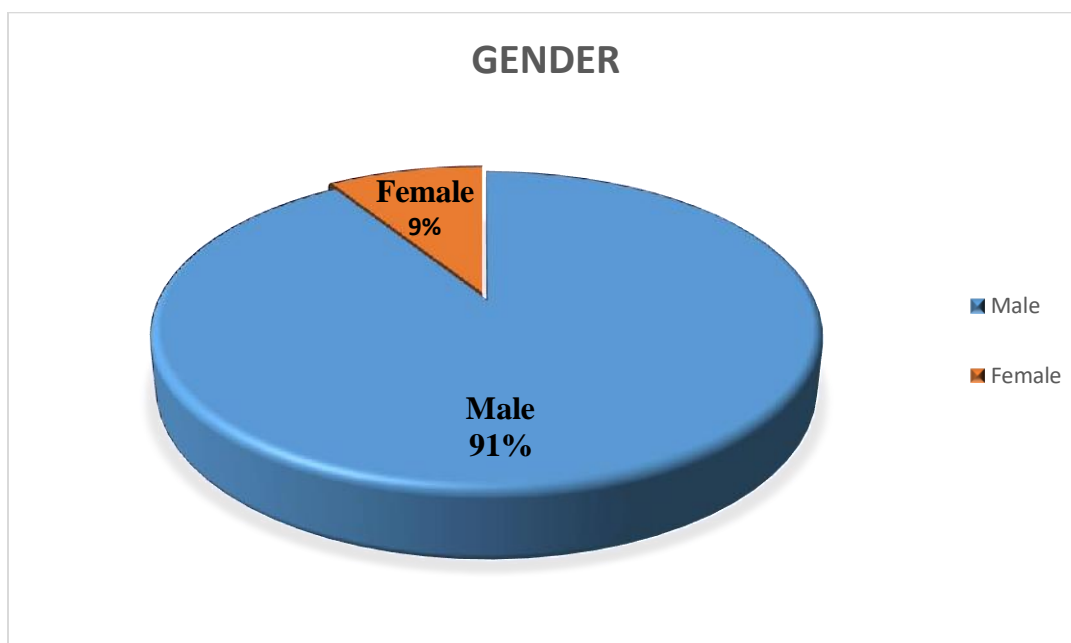
Figure-2: Sex of the participants

Among 100 participants, 91 were male and 9 were female.

Sociodemographic Situations:

Table- 1: Sociodemographic information of 100 participants.

Religion		Family members' number	
Muslim	94	1-5	65
Hindu	05	6-10	33
Buddhist	01	>10	02
Occupation		**Monthly income**	
Service holder	23	Nil	01
Businessman	15	1-10000 Taka	56
Housewife	07	10001-20000 Taka	39
Others (Student, labor, carpenter etc)	55	More than 20000 Taka	04

Here, among 100 participants 94 were Muslims, 05 were Hindus and 01 was Buddhist. 23 participants were service holder, 15 were businessman, and 07 were housewives where

other 55 participants were students, labors, carpenters etc. There were family members' number within (1-5) of 65 participants, within (6-10) of 33 participants and only 2 participants had family member more than 10 persons. Moreover, monthly income of 01 participant was nill, 56 participants had less than 10000 Taka monthly, 39 participants had monthly income between 10001 to 20000 Taka and 04 had more than 20000 taka monthly.

Clinical information of the participants:

Table 2: Clinical information of participants.

Cause of injury		Type of Injury		Marital Status	
Traumatic	97	Paraplegic	60	Married	57
Non-traumatic	03	Tetraplegic	40	Single	43

ASIA Scale		Educational Background	
Complete A	74	Never attended school	17
Incomplete B	16	Primary Education	42
Incomplete C	07	Secondary Education	17
Incomplete D	03	Higher Secondary Education	16
		Bachelor or above	08

As the cause of injury, 97 participants noted traumatic incidents and 03 participants noted non-traumatic events. Amonf 100 participants 60 were paraplegic and the rest 40 were tetraplegic, 57 were married and 43 were unmarried. According to ASIA Scale 74 paricipants had complete A, 16 had Incomplete B, 07 had Incomplete C and 03 had Incomplete D type of Spinal Cord Injury. Edducational status was like 17 out of 100 participants never attended school, 42 participants had primary education, 17 had secondary education, and 08 had bachelor or above degree.

Quality of life:

Physical health domain:

Physical health domain scoring shows that 91% (n=91) participants have the high QOL, 5% (n=5) participants have the normal and 4% (n=4) participants have the low Quality of life in the spectrum of physical conditions. Because 4 of them scored below 45, another 5 scored between 45 to 65 and the rest of participants scored above 65.
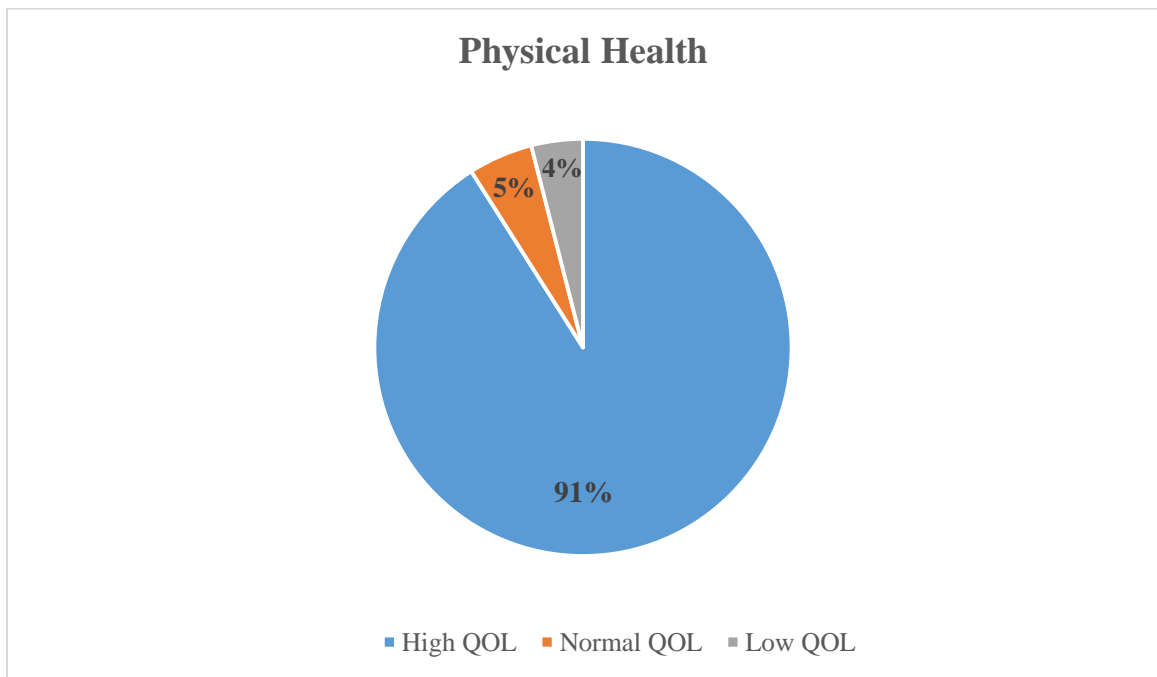
Figure-3: Physical health status of the participants.

Figure-4 revealed the lowest score was 43.75 and highest score was 206.25. The interquartile range is 35.94 (89.062-125) and the median of the score is 109.38. It means 25 participants scores are lower than 89.062, other 25 participants scores are larger than 125 and the middle 50 participants score lie within the interquartile range.

There is a below line graph showing the data distribution of physical health domain score:
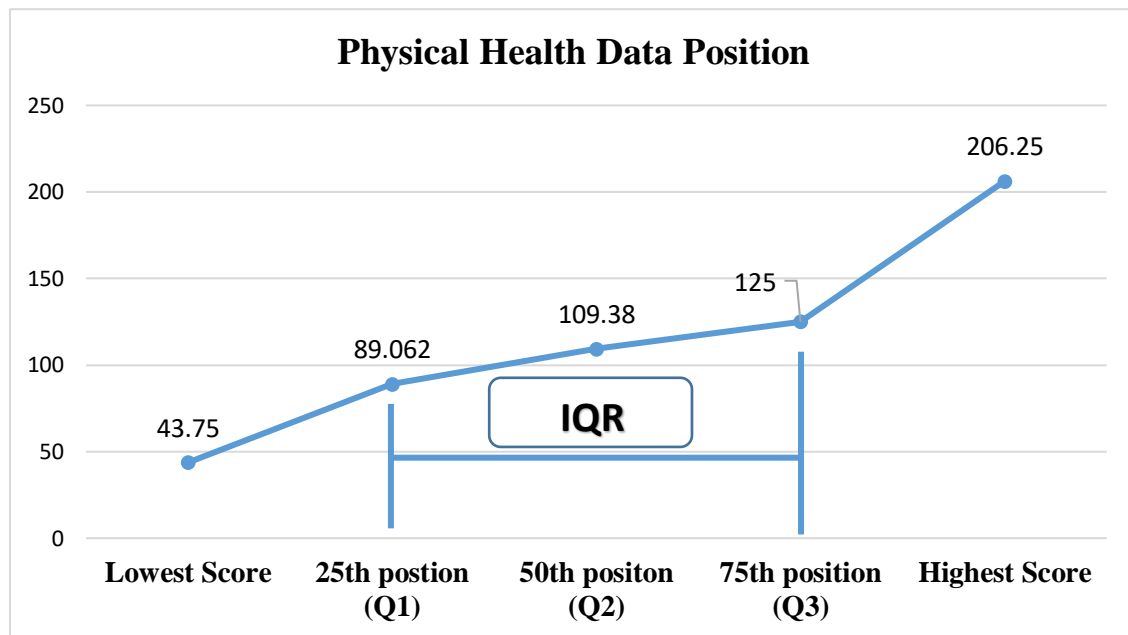
Figure-4: Data positions of Physical health domain.

Psychological health domain:

Among all participants 95% have the high quality of life and 5% have the normal quality of life in the consideration of psychological health.
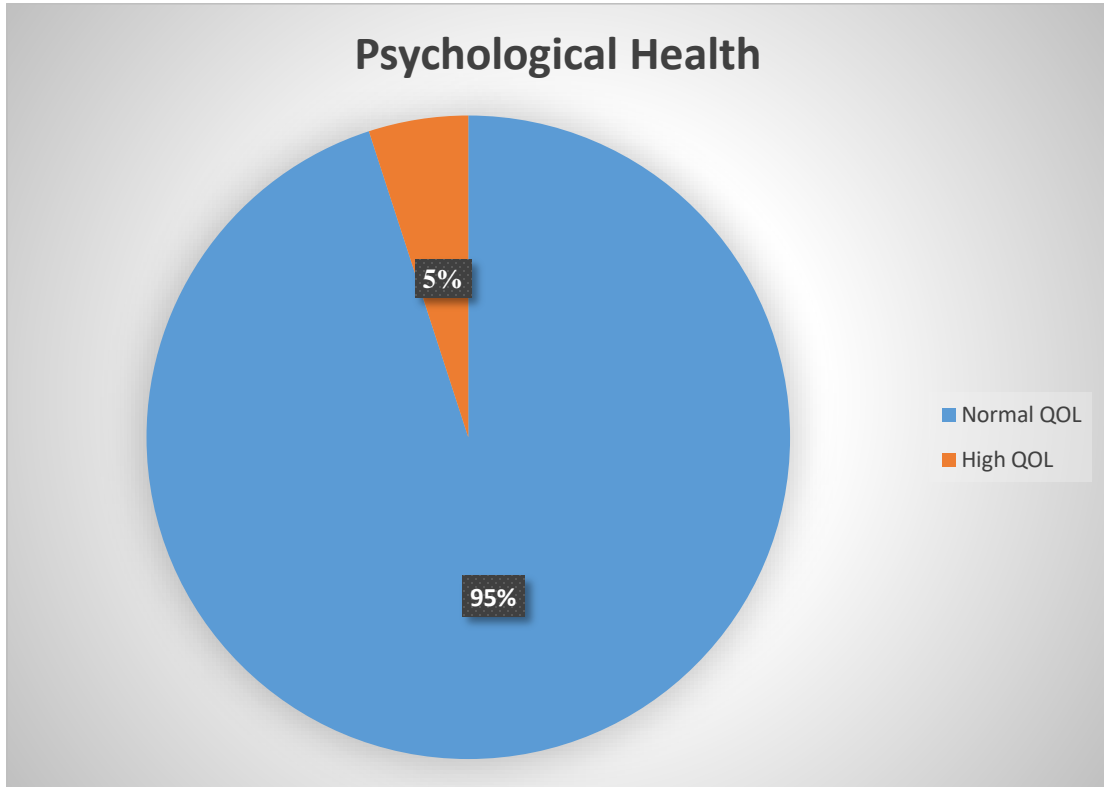
Figure-5: Psychological health status of the participants.

The lowest score was 50 and highest score was 150. The interquartile range is 18.75 (81.25-100) and the median of the score is 87.50. It means 25 persons scores are lower than 81.25, other 25 persons scores are larger than 100 and the middle 50 persons score lie within the interquartile range.

PSYCHOLOGICAL HEALTH DATA POSITION
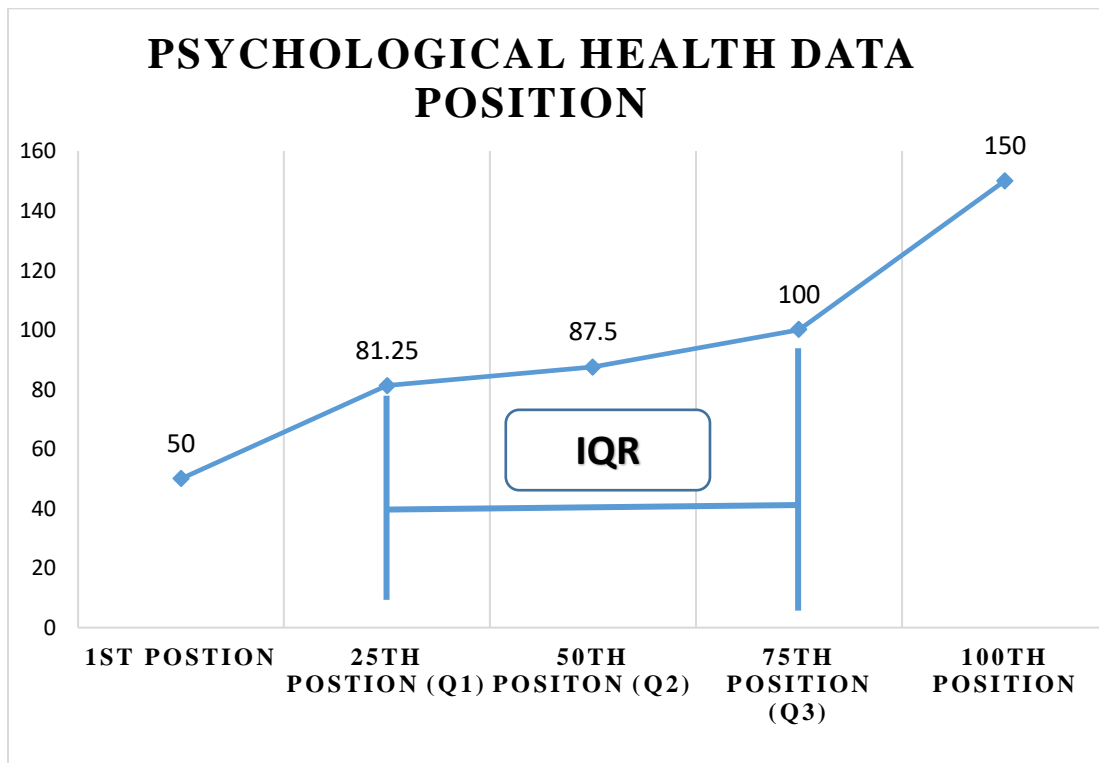
Figure–6: Data positions of psychological health domain.

It seems that most of the participants scored more than 50, so there was no low quality of life for the participants.

Social relationship domain:

The figure-7 given below according to the analysis, shows that the social health is very devastating for those participants that 96 persons of them leading low quality of life, 3 have normal and only 1 has high quality of life.
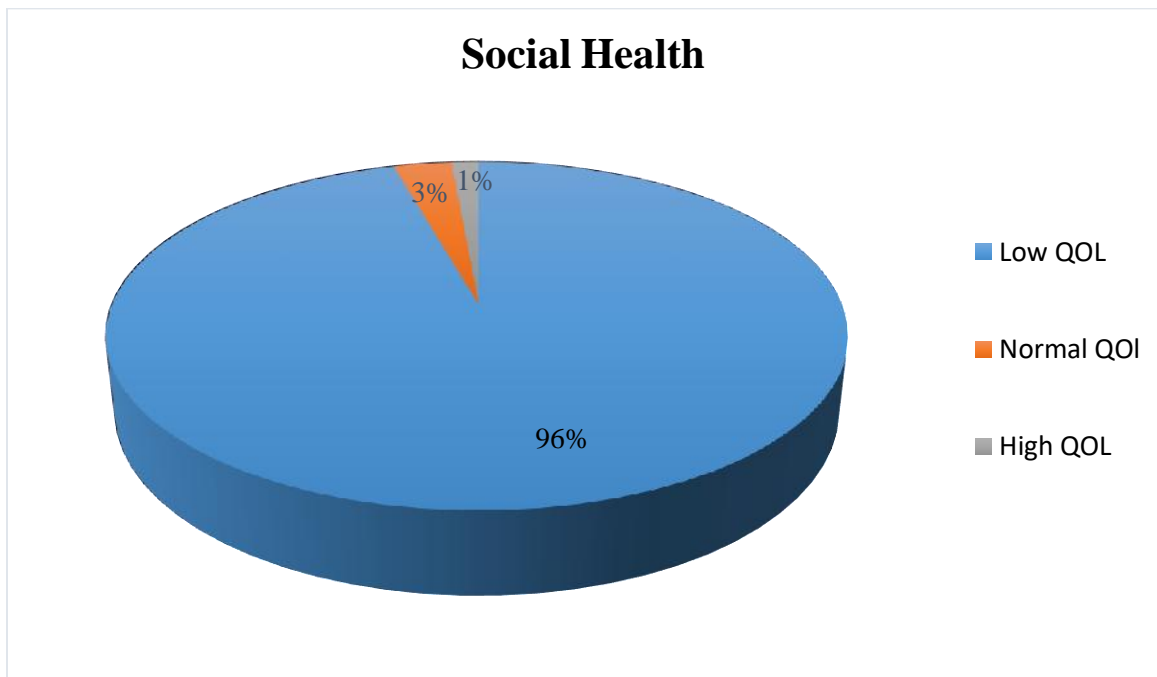
Figure-7: Social health status of the participants.

Figure-8 showed the lowest score was 12.5 and highest score was 125. The interquartile range is 12.50 (18.75-31.25) and the median of the score is 25. It means 25 participants scores are lower than 18.75, other 25 participants scores are larger than 31.25(Q3) and the middle 50 participants scores lie within the interquartile range. As most of the data lie below 45, the quality of life in social health domain was low for most of participants (n=96).
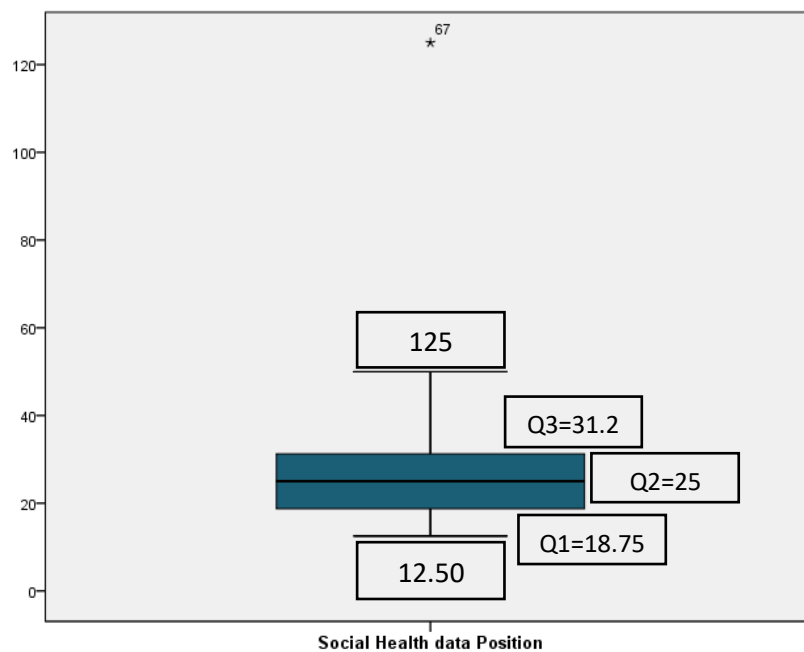
Figure–8: Data positions of social health domain.

Environmental health domain:

In figure-9 it seems that among 100 participants high quality of life belongs to 96 persons and the rest 4 have normal quality of life in Environmental Health Domain. As according to WHOQOL-BREF scoring below 45 is low Quality of life, scoring from 45 to 65 is normal quality of life and scoring more than 65 is high quality of life.
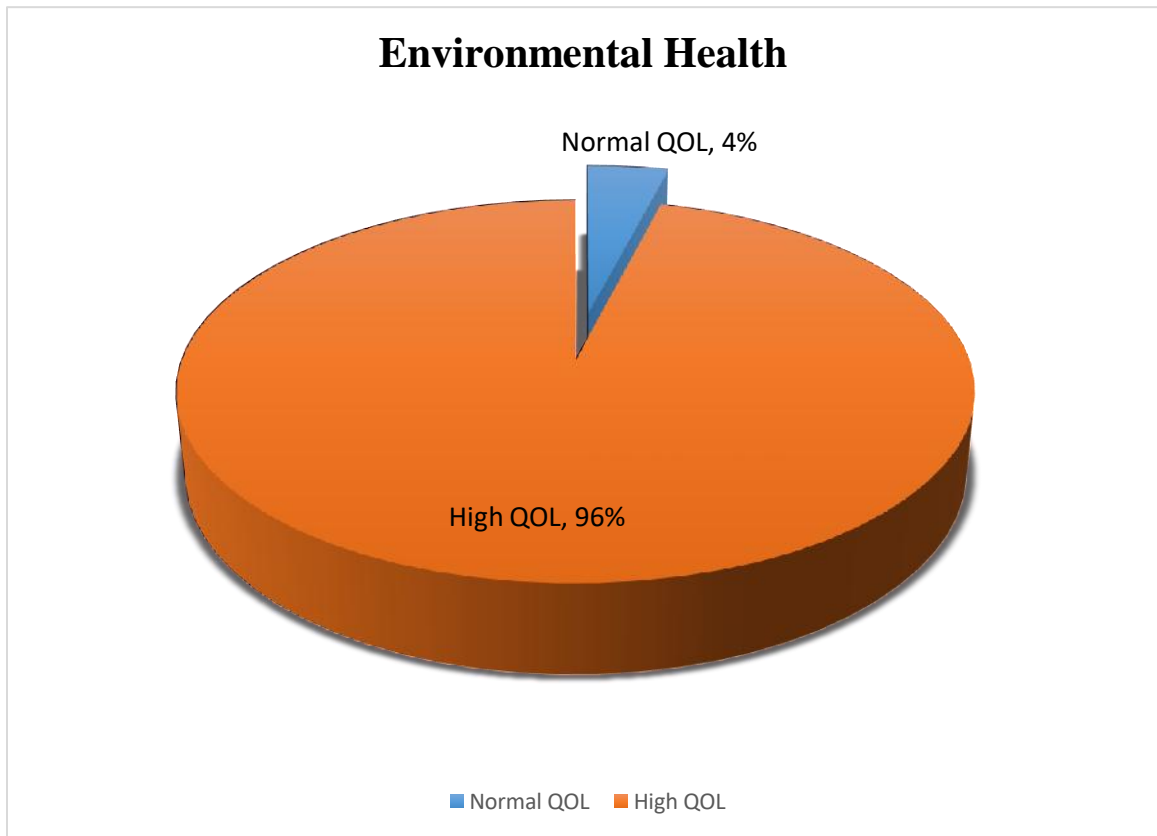
Figure-9: Environmental health status of the participants.

The figure-10 shows that the lowest score was 50 and highest score was 112.50. The interquartile range is 37.50 (106.25-143.75) and the median of the score is 125. It means 25 persons scores were lower than 106.25, other 25 persons scores were larger than 187.50 and the middle 50 persons score lie within the interquartile range. Since there was no score below 45, no participant had low quality of life. Rather, they had normal quality of life scoring within 45 to 65 and high quality of life scoring more than 65.
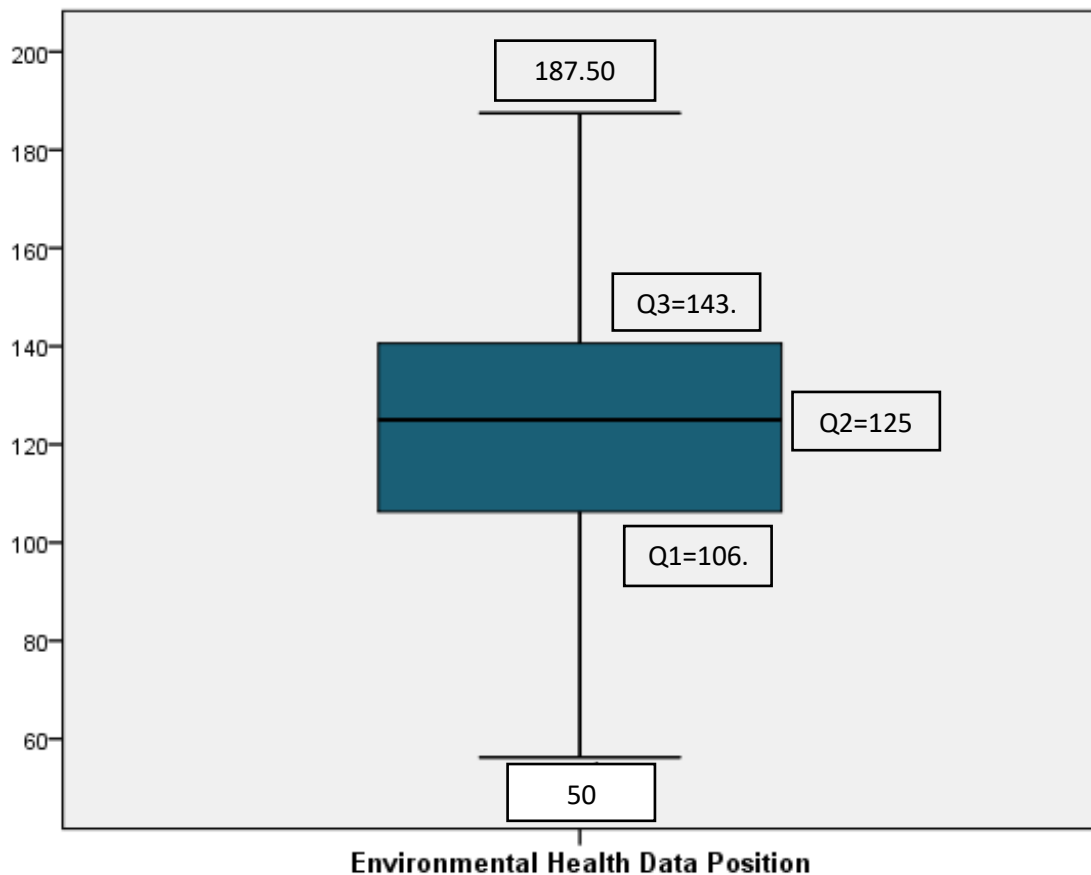
Figure–10: Data positions of Environmental health domain.

Physical activity:

Understanding and communicating:

In the understanding and communicating section, no difficulty was felt by 87% (n=80) patients on concentrating for 10 minutes, 60% (n=60) patients on remembering important things, 43% (n=43) patients on analysing and finding solutions, 55% (n=55) patients on learning new tasks, 91% (n=91) patients on both general understanding and Starting and maintaining a conversation.

UNDERSTANDING AND COMMUNICATING

Legend: ■ None ■ Mild ■ Moderate ■ Severe ■ Extreme

FREQUENCY

Category	None	Mild	Moderate	Severe	Extreme
CONCENTRATION TEN MINUTES	87%	3%	9%	1%	0
REMEMBERING IMPORTANT THINGS	60%	33%	5%	2%	0
ANALYZING AND FINDING SOLUTIONS	43%	48%	7%	2%	0
LEARNING NEW TASK	55%	36%	5%	2%	2%
GENERALLY UNDERSTANDING	91%	8%	1%	0	0
STARTING AND MAINTAIN CONVERSATION	91%	8%	0	0	1%

Figure-11: Results of the understanding and communicating items on WHODAS 2.0 for 100 participants. The *y*- axis shows the frequency of responses and the *x*- axis shows the each items.

In concentrating for 10 minutes, 3% and 9% participants felt mild and moderate difficulty respectively. 5% and 7% participants felt moderate difficulty in remembering and analysing respectively. 2% people felt that they cannot learn a task. The median score of this section was 8 and the IQR was 3 (6-9).

Getting around:

In this section 25% (n=25) participants were feeling no difficulty, 10% (n=10) were feeling mild difficulty, 32% (n=32) participants were feeling moderate difficulty, 13% (n=13) participants were feeling severe difficulty in moving inside the home and 20% (n=20) people were completely unable to move inside the home. 6% (n=6) participants are feeling no difficulty, 2% were feeling mild difficulty, 7% people were feeling moderate difficulty, 5% people were feeling severe difficulty in walking a long distance and 80% people were completely unable to walk. In case of standing up and standing for 30 minutes respectively 8% and 14% participants were feeling no difficulty, 4% and 7% participants feeling mild difficulty, 8% and 16% people were getting severe difficulty and 65% and 67% people were totally unable to do. The Median score for 'getting around' component was 20 and the Inter quartile Range was 6 (16-22)

Figur-12: Results of the getting around items on WHODAS 2.0 for 100 participants. The y- axis shows the frequency of responses and the x- axis shows the each items.

Self-care:

In the spectrum of self-care no difficulty was felt by 47% participants in living some days alone, 62% participants in eating, 49% participants in getting dressed, and 51% participants in washing their whole body. Mild difficulty is felt by 23% participants in living some days alone, 20% participants in eating, 24% participants in getting dressed, and 17% participants in washing their whole body. Moderate and severe difficulty was felt by respectively 10% and 6% participants in living some days alone, 4% and 3% participants in eating, 12% and 3% participants in getting dressed, and 14% and 3% participants in washing their whole body. 14%, 11%, 12% and 14% participants were respectively unable to live alone for some days, eat, get dressed and wash their whole body. The Median score (IQR) is 6 (4-11).
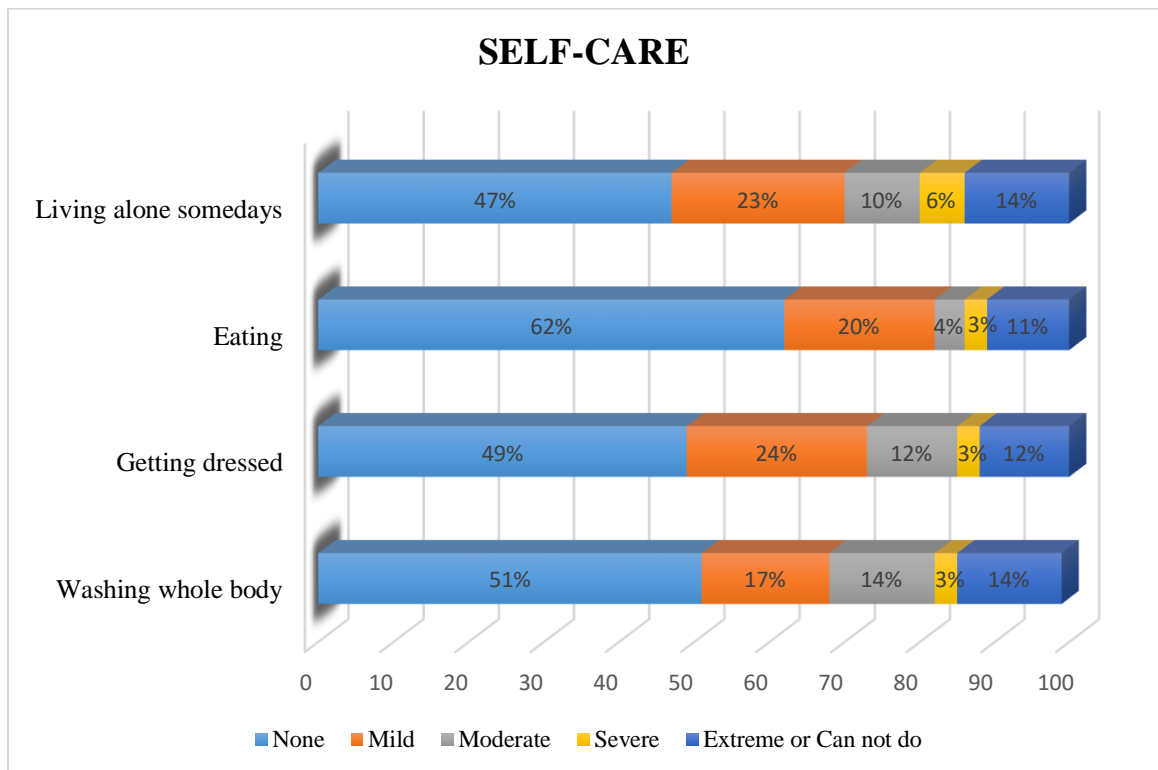
Figure-13: Results of the self-care items on WHODAS 2.0 for 100 participants. The *x*- axis shows the frequency of responses and the *y*- axis shows the each items.

Getting along with people:

59% participants in dealing with unknown people, 56% people in maintaining friendship, 64% participants in getting along with closed to people and 45% participants in making new friends feel no difficulty. 2, 5, 3 and 4 participants were respectively not able to deal with unknown people, maintain friendship, get along with close people and make new friends. Mild difficulty was felt by 30% persons in dealing with new people, 31% in maintaining friendship, 25% in getting along with close people and 38% persons in making new friends. The component has the median score of 6 and IQR of 4 (4-8).

GETTING ALONG WITH PEOPLE

	Dealing with unknown people	Maintaining friendship	Getting along close to	Making new friends
■ None	59	56	64	45
■ Mild	30	31	25	38
■ Moderate	7	7	8	10
■ Severe	2	1	0	3
■ Extreme or Can not do	2	5	3	4

■ None ■ Mild ■ Moderate ■ Severe ■ Extreme or Can not do

Figure-14: Results of the getting along with items on WHODAS 2.0 for 100 participants. The *y*- axis shows the frequency of responses and the *x*- axis shows the each items.

Life activities:

In case of life activities like taking household tasks responsibility, doing the household tasks and doing them quickly, 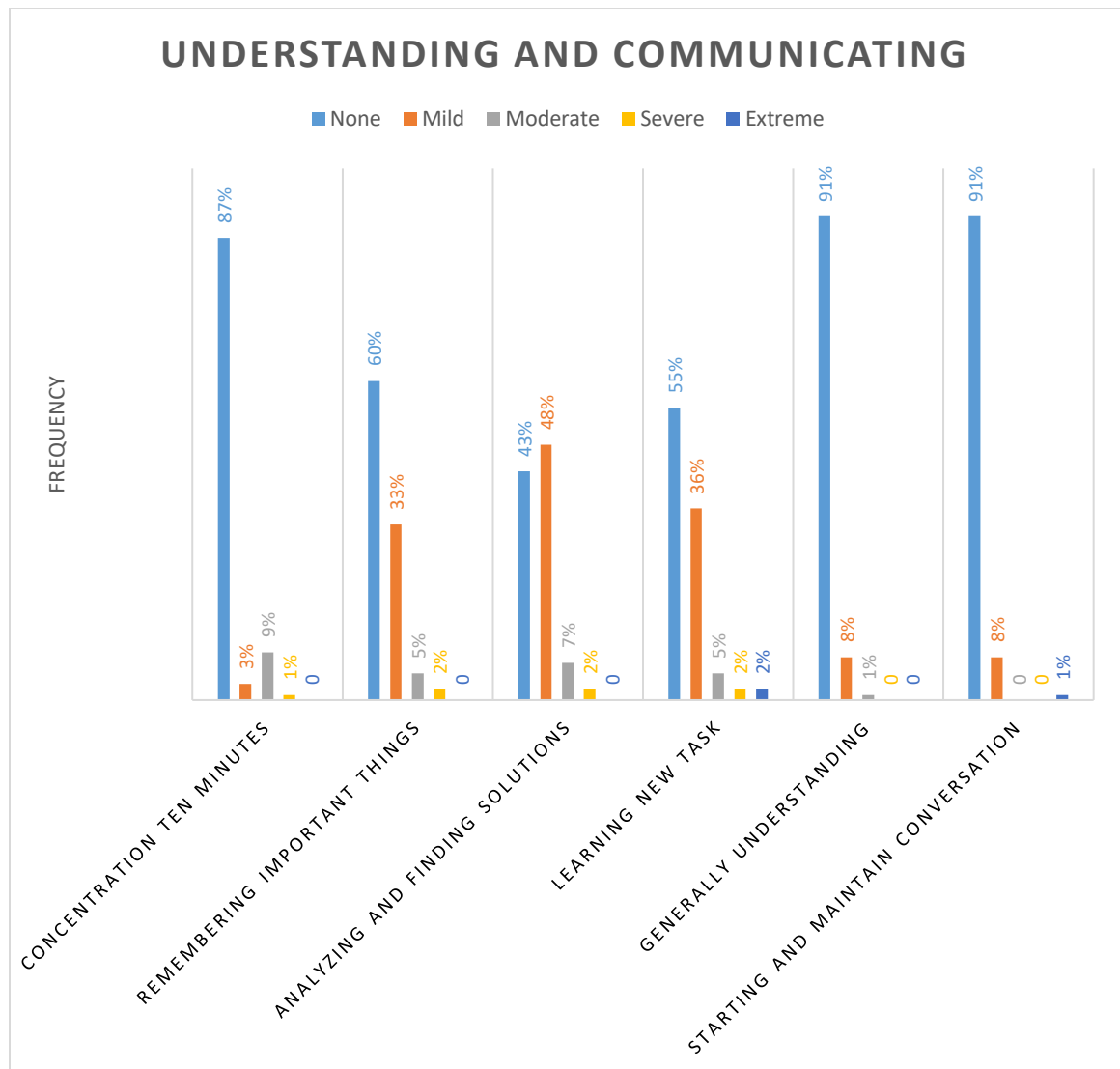respectively 13%, 16% and again 16% participants completely denied the ability to perform. In taking the household tasks responsibility mild, moderate and severe difficulties were felt respectively by 26%, 27% and 24% participants, and additionally 10% persons had no difficulty. In doing the household tasks and doing them quickly 16% people were completely unable to do. Respectively 4% and 6% persons had no limitation, 27% and 22% persons had mild limitations, 31% and 27% participants had moderate limitation and severe limitations were for 22 and 29 persons. The median score was 9 and the IQR was 5 (7-12).
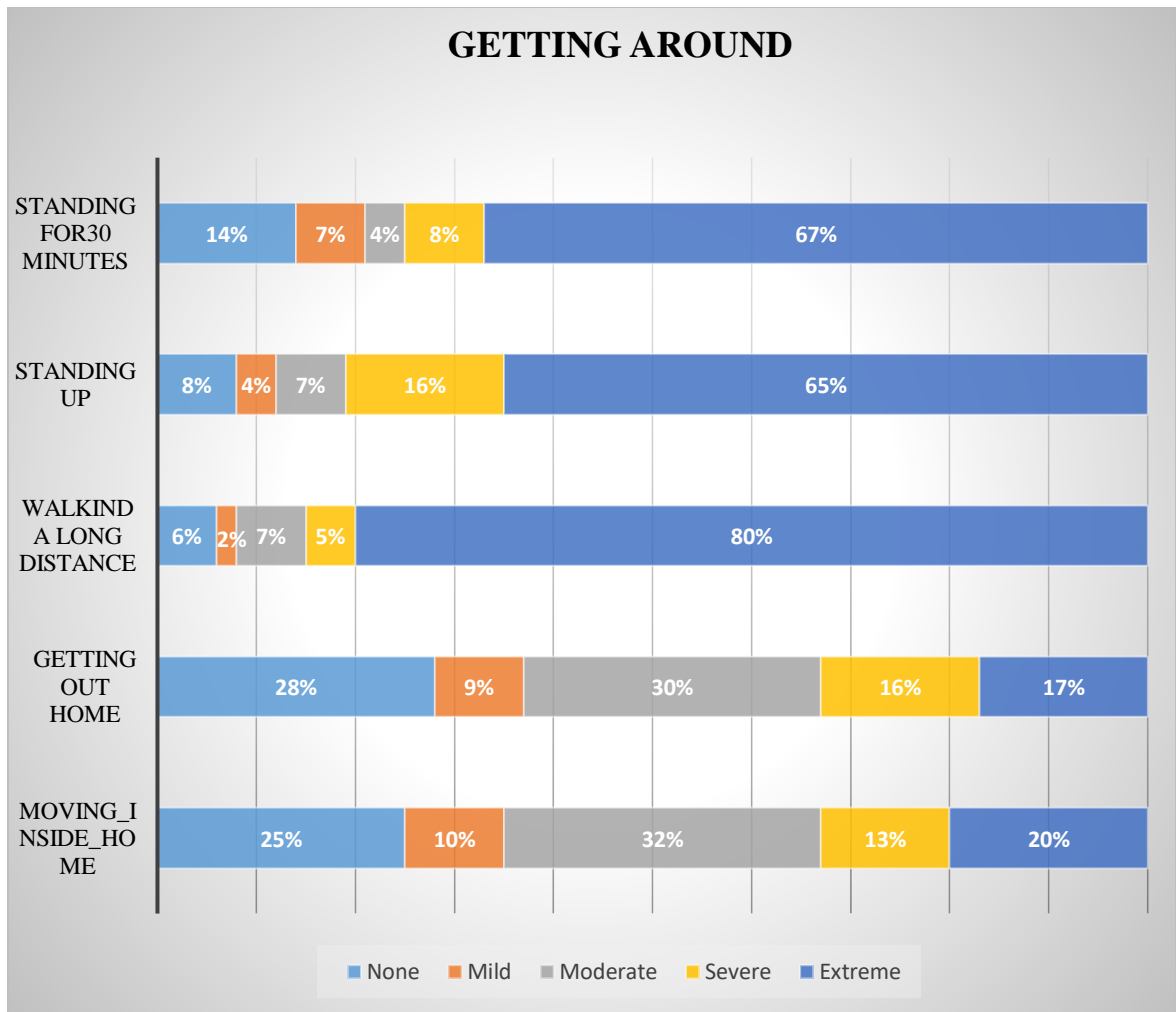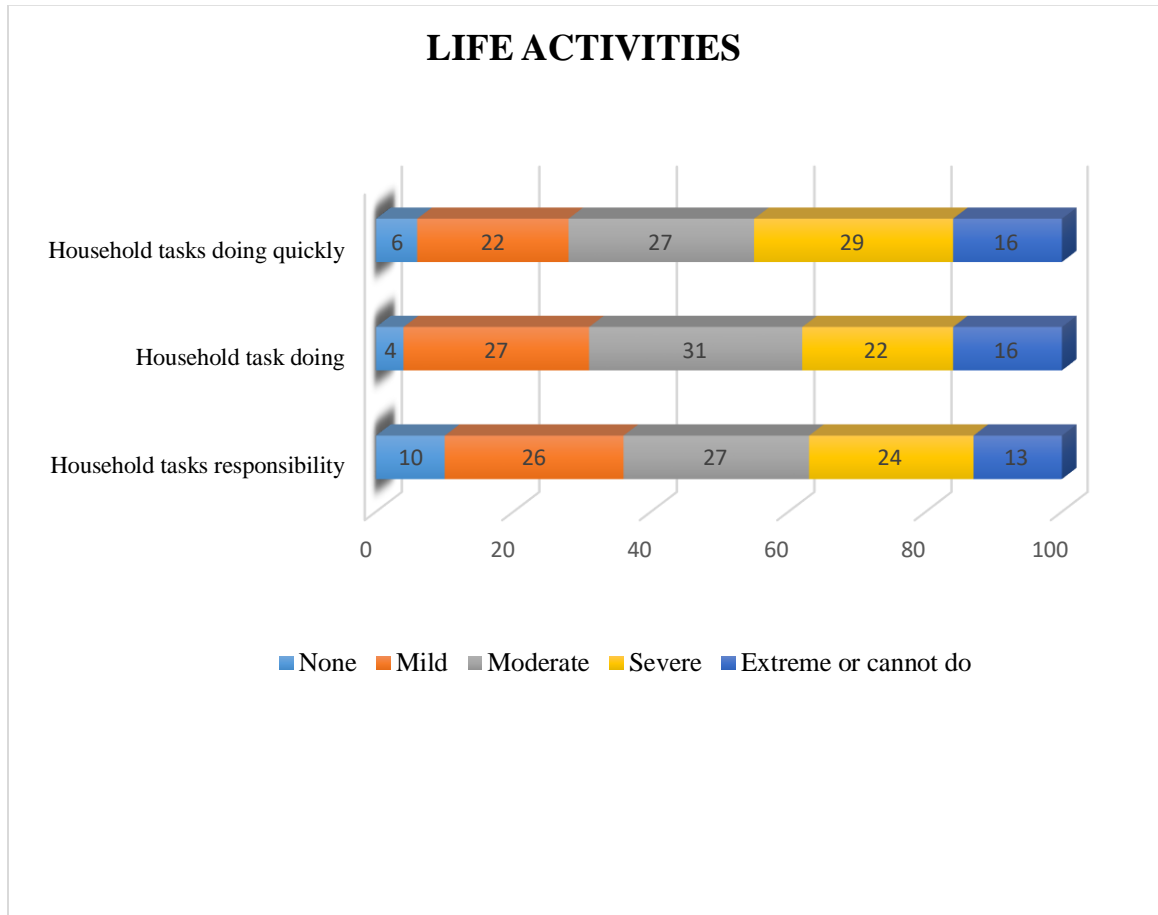

Figure-15: Results of the life activities with items on WHODAS 2.0 for 100 participants. The *y*- axis shows the frequency of responses and the *x*- axis shows the each items.

Participation in society:

The component of participation in society is comprised of items like joining community activities, barriers or hindrance to participate, living with dignity, time spent on health condition, emotionally affected, drain on financial resources, family problems, and relaxation and pleasure. The median score of the component is 22 and the IQR is (21-25). However the least difficulty noted as mild was felt by 10% participants in joining community activities and 5% participants cannot participate at all, where 72% had no problem. 57% of them felt mild problem to participate due to barriers, 12% had no difficulty. In case of living with dignity 8% participants told that they had no difficulty, whereas 54% of them noted mild difficulty, and 4 had extreme difficulty. A large number of them, reported on draining their financial resources as 53% participants faced severe difficulty and 31% faced extreme difficulty due to their disability. They also expressed their family members' sufferings as severe for 64% persons and extreme for 24%. Moreover, as a disabled person they had also difficulty in their relaxation and pleasure. 6% of them had no difficulty, 16% had mild difficulty, 40% faced moderate difficulty, 34% had severe difficulty, and 4% were totally unable to get a proper chance for relaxation and pleasure as well as entertainment.

PARTICIPATION IN SOCIETY

Item	None	Mild	Moderate	Severe	Extreme or Can not do
Relaxation and pleasure	6%	16%	40%	34%	4%
Family problems	3%	2%	7%	64%	24%
Drain on financial resources	3%	4%	9%	53%	31%
Emotionally affected	5%	23%	45%	19%	8%
Time spent on health condition	6%	39%	46%	5%	4%
Living with dignity	8%	54%	26%	8%	4%
Barriers or hindrance	12%	57%	22%	5%	4%
Joining community activities	72%	10%	13%	0%	5%

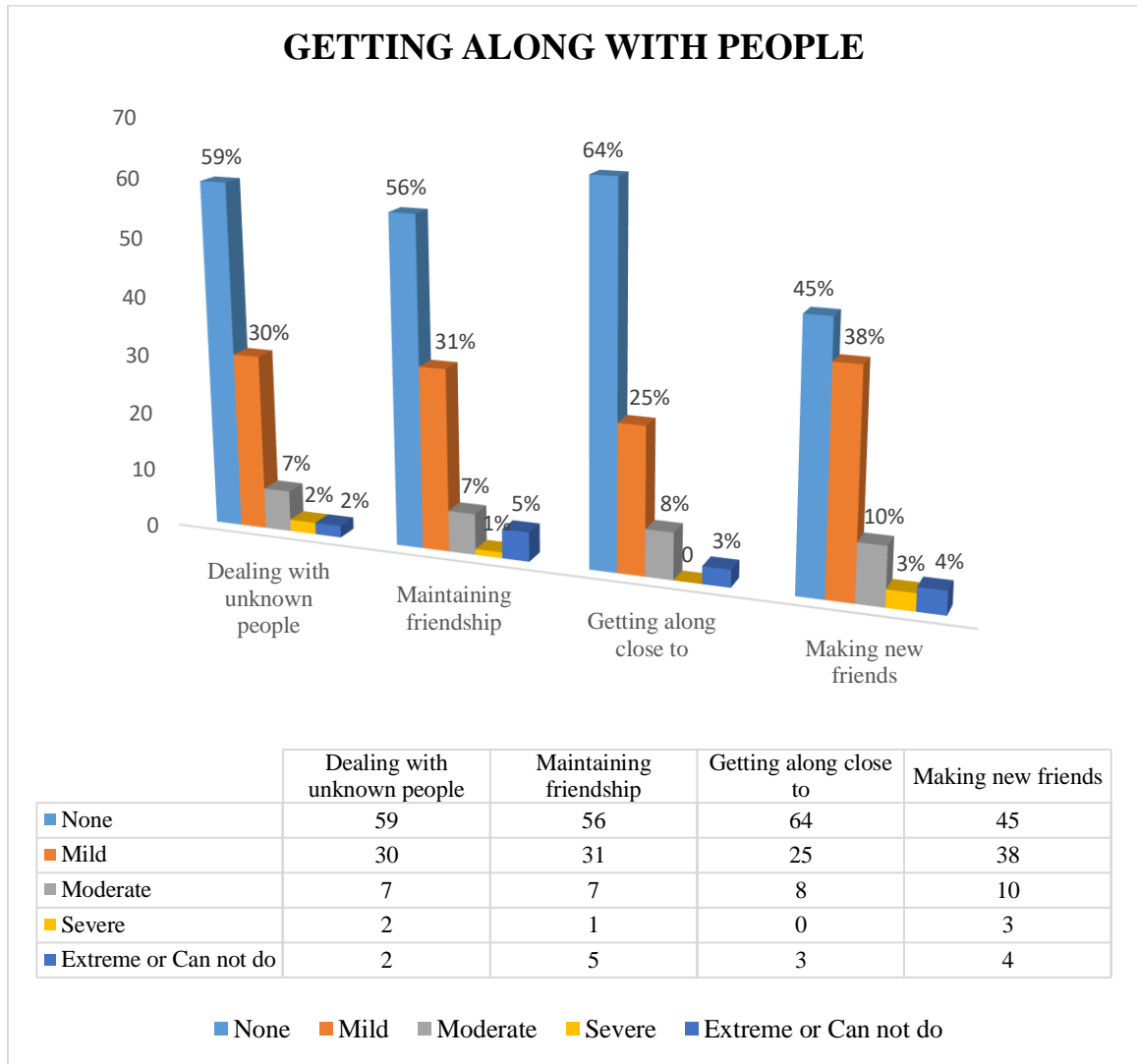■ None ■ Mild ■ Moderate ■ Severe ■ Extreme or Can not do

Figure-16: Results of the participation in society items on WHODAS 2.0 for 100 participants. The *x*- axis shows the frequency of responses and the *y*- axis shows the each items.

Quality of life (QOL) is a vital module in evaluating people's health. It commonly focuses on physical and mental health and functional performance of individuals, however, QOL can be measured in a broad range. The World Health Organization Quality of Life: Brief Version (WHOQOL-BREF) assesses QOL in four domains including physical health, psychological, social relationships and Environment (WHOQOL-BREF 2017). Gender, place of residence, occupation status, level of injury, AIS, presence of PUs or urinary incontinence, involvement in physical activity, age, and pain intensity had no statistically significant correlation with any of the four QoL domains of WHOQOL-BREF scale. (Tzanos et al., 2019)

In the evaluation of Quality of life, it is revealed that in the physical health domain 91 have high quality of life, 5 have normal and rest 4 have low quality of life. In the sector of psychological domain, it is found that 95 participants have high quality of life and the rest 5 have normal quality of life. Another one, the environmental domain shows that 96 of participants have high quality of life and the rest 4 have normal quality of life. In contrast to these three domains, the social relationship domain showed a different scenario that most of the participants (n=96) are having low quality of life, of the rest 4, high quality of life belongs to only 1 and normal quality of life is for 3.

In a recent study of 2019 by Ioannis-Alexandros in Greece a similar study conducted on 36 people living with SCI where 89% (n=32) persons were male and 11% (n=4) were female having the mean age 45.1±9.8, and among them 83.3% were paraplegic. They were also primarily graduates of primary or secondary school (83.3%) and they resided mainly in urban territories (72.2%). However, the majority of the participants were unmarried (61.1%) and only the 16.7% of the sample was professionally active (students and working people).

The mean values of QoL parameters in this sample according to WHOQOL-BREF scale were 56.6±16.6 up to 100 (physical health), 65±18.2 up to 100 (psychological), 65.5±24.8 up to 100 (social relationships) and 67.7±18.1 up to 100 (environment). This results means that the participants had high quality of life in all four domains of WHOQOL-BREF as

Another study in Hong Kong published 2018 by Wong et al. over 317 residents with SCI was conducted in July-September 2015 where the majority of them were Chinese, 44% (n=139) participants were male and rest were 66% (n=178) were female. This study using one SD below the as the standard cut-off standards for low Quality of life, among those residents 18.9% participants had low quality of life in the physical domain, 16.7% participants had low quality of life in environmental domain, low quality of life belonged to 14.5% participants in psychological domain, followed by 10.4% participants in the sphere of social relationship domain. These two studies shows the similarly high QOL in various domains of the participants.

In the meantime, a cohort study conducted in Turkey compared the disability and the quality of life by using Craig Handicap Assessment and Reporting, WHOQOL-BREF questionnaire and Becker Depression Inventory. The study published in 2017 compared 40 SCI paraplegic patients conditions by splitting them equally in two groups based on the age below or above 18 years during the incidence of spinal cord injury. The mean ages for group 1 and group 2 were respectively 23.9±5.8 (18-44) years and 43.85±12.77 (30-79). It showed that group 1 participants had higher quality of life than group 2 participants in the physical domain, psychological domain and social domain. Only environmental domain of group 2 was higher than group 1 participants (Düzgün et al., 2017).

In the evaluation of physical activity WHODAS 2.0 is used as this is a generic assessment instrument for the evaluation of health and disability based on the International Classification of Functioning (ICF) system (Garin et al., 2010). In this segment there was 6 components to find out level of physical activity as they noted there difficulty on doing various functions. The higher the score of the components, the higher the level of disability or the lower the level of physical activity of an individual.

The most recent cohort study conducted in Bangladesh published in February, 2019 was published showing health status, quality of life and socioeconomic situation of 260 SCI patients 6 years following discharge from hospital. The median (IQR) age was noted as 30 years (22-40) during the time of injury for the 59% (n=154) traumatic paraplegic and 37% (n=95) traumatic tetraplegic participants. In measurement of Short Form Health Survey (SF-12), the physical and mental components were respectively 44 points (40-51) and 54

(49-57). The WHODAS 2.0 was used to identify level of social participation and it finds the median (IQR) as 8 (4-13) (Hossain et al., 2019).

The median score and interquartile range for understanding and communicating component is 8 and 3 (6-9). The getting around component has the median (IQR) score of 20 (16-22). The self-care and getting along with people have respectively the median (IQR) of 6 (4-11) and 6 (4-8). In the meantime, the median score and interquartile range for life activities is 9 and 5 (7-12) along with the median score of 22 and interquartile range of 4 (21-25) for the social participation component.

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. The limitation of this study was small sample size. It was taken only 100 samples. The quality of life and level of physical activity of the people with spinal cord injury after completing rehabilitaion could not be measured through small sample size. More samples could not able to collect by random selection because, there were not adequate subjects and study period was short. The one of major limitation was time. To conduct the research project on this topic, time period was very limited. As the study period was short so the adequate number of samples could not arrange for the study. Time and resources were limited which have a great deal of impact on the study.

CHAPTER-VI	CONCLUSION AND RECOMMENDATION

6.1 Conclusions

Spinal cord injury is one of the most devastating conditions in human life. Millions of people in every year face spinal cord injury. In Bangladesh there is lack of information and proper database about spinal cord injury. Even there in no estimating number of spinal cord lesion people in Bangladesh. Bangladesh is a developing country. Most of them live with low economic level and poor educational status. In these countries there is also lack of awareness about injury especially caused by spinal cord lesion. After spinal cord lesion the sufferers survive their whole life. They become hopeless and helpless. They think they are burden of their own society because of their disability and functional impairment. This study provides a common metric of the impact of spinal cord injury in terms of functioning of ADLS. Overall in this dissertation shows that the mobility and self-care activity barrier among the SCI people in the community is greater than all domain. Male (91) are more sufferer then female (9) because of their earning status. This study makes possible to design and monitor the impact of health and health-related interventions in case of spinal cord injury. This study provides the basis for identifying quality of life and levels of physical activity of spinal cord injured people at individual perspective during discharge which open the need of the foundations for country level disability data to inform policy and setup rehabilitation. This study makes it possible to focus directly on the way of life, functioning and disability and allows the assessment of functioning separately from the spinal cord injury.

6.2 Recommendation

A recommendation evolves out of the context in which the study was conducted. It is recommended that if possible someone would overcome the existing limitation for further study. If it is possible than conducted further studies in this area. Though the research has some limitations but it identified some further step that might be taken for the better accomplishment of further research. For ensuring of the generalizability of the research it is recommended that a larger sample should be chosen randomly for the cross sectional study. The sample should be representative from the whole population. If the researcher will take long term study, the result will be more significant. Last of all entire researcher recommended to take setting in whole Bangladesh to generalize this study. The study makes it easier to design health and health related interventions, and to monitor their impact on SCI population if it would be generalized.

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<u>সম্মতিপত্র</u>

আসসালামু আলাইকুম / নমস্কার,

আমি নিরুপম বর্ধন, ৪র্থ বর্ষ, ঢাকা বিশ্ববিদ্যালয়ের চিকিৎসা অনুষদের অধীনে বাংলাদেশ হেলথ প্রফেশন ইন্সটিটিউট (বিএইচপিআই) এর বিএসসি ইন ফিজিওথেরাপি বিভাগের একজন শিক্ষার্থী । অধ্যয়নের অংশ হিসেবে আমাকে একটি গবেষণা সম্পাদনা করতে হবে এবং এটা আমার প্রাতিষ্ঠানিক কাজের একটি অংশ । নিম্নোক্ত তথ্যাদি পাঠ করার পর অংশগ্রহণকারীদের গবেষণায় অংশগ্রহণের জন্য অনুরোধ করা হল ।

আমার গবেষণার শিরোনাম **"পক্ষাঘাতগ্রস্তদের পুনর্বাসন কেন্দ্র থেকে পুনর্বাসনের পর মেরুরজ্জুতে আঘাতপ্রাপ্ত রোগীদের শারীরিক কার্যকলাপ এবং জীবন মান নির্ণয়"।** এই গবেষণার মাধ্যমে আমি দুই পা প্যারালাইসিস রোগীদের পুনর্বাসনের পর শারীরিক কার্যকলাপ এবং জীবন মান নির্ণয় করতে চেষ্টা করব । যদি আমার গবেষণাটি সফলভাবে করতে পারি তবে রোগীদের শারীরিক কার্যকলাপ এবং জীবন মান উন্মোচিত হবে এবং তা হবে পরীক্ষামূলক প্রমাণ ।

আমার গবেষণা প্রকল্প বাস্তবায়নের জন্য রোগীদের কাছ থেকে তথ্য সংগ্রহের প্রয়োজন । আমার গবেষণায় অংশগ্রহণে আপনার কোন বিপদ বা ক্ষতি হবে না । আপনি যেকোন সময় নিজেকে এ গবেষণা থেকে প্রত্যাহার করতে পারেন । এই গবেষণার প্রাপ্ত তথ্য সম্পূর্ণভাবে গোপনীয় থাকবে এবং অংশগ্রহণকারীর ব্যক্তিগত তথ্য অনুমতি ব্যতিরেকে অন্য কোথাও প্রকাশ করা হবে না ।

এই গবেষণা সম্পর্কে আপনার যদি কোনো জিজ্ঞাসা থাকে তবে আপনি অনুগ্রহপূর্বক যোগাযোগ কারতে পারেন - এহসানুর রহমান, সহকারী অধ্যাপক, ফিজিওথেরাপি বিভাগ, বিএইচপিআই, সি আর পি, সাভার, ঢাকা-১৩৪৩ ।

শুরু করার পূর্বে আপনার কোন প্রশ্ন আছে কি?

আমি কি শুরু করতে পারি?   হ্যাঁ

অংশগ্রহণকারীর স্বাক্ষর এবং তারিখ ....

গবেষকের স্বাক্ষর এবং তারিখ ....

স্বাক্ষীর স্বাক্ষর এবং তারিখ ....

রোগীর তথ্যঃ   **কোড নংঃ**

নাম :   **বয়স :**

লিঙ্গ :

১. পুরুষ   ২. মহিলা

ঠিকানা :

গ্রাম/বাড়ি নং :   পোস্ট অফিস :

থানা :   জেলা :

মোবাইল নাম্বার :

সাক্ষাতের তারিখ : .... (দিন/মাস/বছর)

ইঞ্জুরির কারন :

১। আঘাতজনিত

২। আঘাতজনিত নয়

ইঞ্জুরির ধরন :

১। প্যারাপ্লেজিক

২। টেট্রাপ্লেজিক

এশিয়া স্কেল অনুসারে প্রাথমিক নিউরোলজিকাল অবস্থা :

১। কমপ্লিট এ   ২। ইনপকমপ্লিট বি

৩। ইনকমপ্লিট সি   ৪। ইনকমপ্লিট ডি

ধর্ম :

১। মুসলিম

২। হিন্দু

৩। খ্রীস্টান

৪। বৌদ্ধ

৫।অন্যান্য (উল্লেখ করুন)...

শিক্ষা :

১। কখনো স্কুলে যায় নি
২। প্রাথমিক শিক্ষা
৩। এস এস সি
৪। এইচ এস সি
৫। ব্যাচেলর বা তার বেশি
৬। অন্যান (উল্লেখ করুন)...

পেশা :

১। চাকুরিজীবি
২। ব্যাবসায়ী
৩। ফ্রীল্যান্সার
৪। গৃহিণী
৫। অন্যান্য (উল্লেখ করুন)...

বৈবাহিক অবস্থা :

      ১। বিবাহিত

      ২। অবিবাহিত

      ৩। অন্যান্য (উল্লেখ করুন)...

পরিবারের সদস্যসংখ্যা :

পারিবারিক মাসিক আয় :

প্রতিবন্ধিতার সময়কাল :

WHOQOL-BREF QUESTIONNAIRE

এই প্রশ্নাবলির উদ্দেশ্য হচ্ছে আপনি আপনার জীবন, স্বাস্থ্য ও জীবনের অন্যান্য দিক সম্পর্কে কি ভাবেন তা নির্ণয়। দয়া করে সকল প্রশ্নের উত্তর দিন। যদি কোন প্রশ্নের উত্তর কি হবে তা আপনি বুঝতে না পারেন তবে যেটিকে আপনার সবচেয়ে সঠিক মনে হবে সেই উত্তরটি দিন। এটি প্রায়ই প্রথম উত্তর হতে পারে।

আপনার মান, আশা, আনন্দ ও বিবেচ্য বিষয় সমূহ মনে রাখুন। আপরা আপনার জীবনের গত দুই সপ্তাহের কথা স্মরণ করতে বলব।সবগুলো প্রশ্ন পড়ুন, আপনাত অনুভূতি যাচাই করুন এবং পাশের ছকে যে উত্তরটি সঠিক মনে হবে সে নম্বরটিতে টিক (√) চিহ্ন দিন।

		খুব খারাপ	খারাপ	ভালও নয় খারাপও নয়	ভাল	খুব ভাল
১।	আপনার জীবন যাত্রার মান কেমন?	১	২	৩	8	৫

		খুব অসন্তুষ্ট	অসন্তুষ্ট	সন্তুষ্টও নয় অসন্তুষ্টও নয়	সন্তুষ্ট	খুব সন্তুষ্ট
২।	আপনার স্বাস্থ্য নিয়ে আপনি কি সন্তুষ্ট?	১	২	৩	8	৫

নিচের প্রশ্নগুলো গত দুই সপ্তাহে নিম্নবর্ণিত অভিজ্ঞতাগুলো কি পরিমানে হয়েছে সে সম্পর্কে।

		একদম না	কম	মোটামুটি	বেশী	খুব বেশী
৩।	শারীরিক ব্যথার জন্য আপনি কি পরিমান প্রয়োজনীয় কাজ থেকে বিরত ছিলেন?	৫	8	৩	২	১

		৫	৪	৩	২	১
৪।	আপনার দৈনন্দিন কাজকর্ম ঠিক রাখতে চিকিৎসা কতটুকু প্রয়োজন?	৫	৪	৩	২	১
৫।	আপনি জীবনকে কতটুকু উপভোগ করেন?	১	২	৩	৪	৫
৬।	জীবনকে আপনার কতটুকু অর্থপূর্ণ মনে হয়?	১	২	৩	৪	৫

		একদম না	কম	মোটামুটি	বেশী	খুব বেশী
৭।	আপনি কাজে কতটুকু মনযোগ দিতে পারেন?	১	২	৩	৪	৫
৮।	আপনি দৈনন্দিন কাজে কতটুকু নিরাপত্তা অনুভব করেন?	১	২	৩	৪	৫
৯।	আপনার ভৌত পরিবেশ কতটুকু স্বাস্থ্যকর?	১	২	৩	৪	৫

নিচের প্রশ্নগুলোতে জানতে চাওয়া হয়েছে গত দুই সপ্তাহে আপনি কতটুকু সম্পূর্ণভাবে কোন কাজ করতে বা অভিজ্ঞতা লাভ করতে পেরেছেন।

		একদম না	কম	মোটামুটি	অধিকাংশ	পরিপূর্ণভাবে
১০।	আপনার কি প্রতিদিন কাজ করার মত শক্তি আছে?	১	২	৩	৪	৫
১১।	আপনি কি শরীরের গঠন নিয়ে সন্তুষ্ট?	১	২	৩	৪	৫
১২	আপনার কি প্রয়োজন মেটাতে যথেষ্ট টাকা আছে?	১	২	৩	৪	৫
১৩	আপনি কি দৈনন্দিন জীবন যাপনের জন্য প্রয়োজনীয় তথ্য পান?	১	২	৩	৪	৫
১৪	অবসর কাটানোর/ বিনোদনের সুযোগ আপনার কতটুকু আছে?	১	২	৩	৪	৫

		খুব খারাপ	খারাপ	ভালও নয় খারাপও নয়	ভাল	খুব ভাল
১৫	আপনি কতটা ভালভাবে চলাফেরা করতে পারেন?	১	২	৩	8	৫

নিচের প্রশ্নতে জানতে চাওয়া হয়েছে- গত দু'সপ্তাহে আপনার জীবনের বিভিন্ন দিক নিয়ে আপনি কতটুকু সন্তুষ্ট?

		খুব অসন্তুষ্ট	অসন্তুষ্ট	সন্তুষ্টও নয় অসন্তুষ্টও নয়	সন্তুষ্ট	খুব সন্তুষ্ট
১৬।	আপনার ঘুম নিয়ে আপনি কতটা সন্তুষ্ট?	১	২	৩	8	৫
১৭।	দৈনন্দিন কাজ করার ক্ষমতা নিয়ে আপনি কতটুকু সন্তুষ্ট?	১	২	৩	8	৫
১৮।	আপনার কাজ করার ক্ষমতা/দক্ষতা নিয়ে আপনি কতটুকু সন্তুষ্ট?	১	২	৩	8	৫

		খুব অসন্তুষ্ট	অসন্তুষ্ট	সন্তুষ্টও নয় অসন্তুষ্টও নয়	সন্তুষ্ট	খুব সন্তুষ্ট
১৯।	নিজেকে নিয়ে আপনি কতটুকু সন্তুষ্ট?	১	২	৩	৪	৫
২০।	অন্যদের সাথে আপনার ব্যক্তিগত সম্পর্ক নিয়ে আপনি কতটুকু সন্তুষ্ট?	১	২	৩	৪	৫
২১।	আপনার যৌন জীবন নিয়ে আপনি কতটুকু সন্তুষ্ট?	১	২	৩	৪	৫
২২।	বন্ধুদের হতে পাওয়া সাহায্য নিয়ে আপনি কতটুকু সন্তুষ্ট?	১	২	৩	৪	৫

		খুব অসন্তুষ্ট	অসন্তুষ্ট	সন্তুষ্টও নয় অসন্তুষ্টও নয়	সন্তুষ্ট	খুব সন্তুষ্ট
২৩।	আপনি আপনার বাসস্থানের অবস্থা নিয়ে কতটুকু সন্তুষ্ট?	১	২	৩	৪	৫
২৪।	আপনি যে স্বাস্থ্যসেবা পান, তাতে কি সন্তুষ্ট?	১	২	৩	৪	৫
২৫।	আপনি যাতায়াত ব্যবস্থা নিয়ে কতটুকু সন্তুষ্ট?	১	২	৩	৪	৫

নিচের প্রশ্নতে জানতে চাওয়া হয়েছে- গত দু'সপ্তাহে ঐ নির্দিষ্ট বিষোয় সমূহ কতবেশী/ঘন ঘন অনুভব করেছেন?

		কখনো না	কখনো কখনো	মাঝে মাঝে	প্রায়শই	সব সময়
২৬।	আপনার হতাশা, উদ্বেগ, অবসন্নতা এই সব নেতিবাচক অনুভূতি কত ঘন ঘন হয়?	১	২	৩	৪	৫

আপনার সাহায্যের জন্য ধন্যবাদ।

ক্ষেত্র – ১ বোধশক্তি

বিগত ৩০ দিনে আপনি কতটুকু সমস্যায় পড়েছেন?		কোন সমস্যা নাই	খুব অল্প সমস্যা	মাঝারি সমস্যা	তীব্র সমস্যা	প্রচন্ড সমস্যা বা কিছুই করতে না পারা
০১.১	কোন কিছু করতে ১০ মিনিট মনযোগ দিতে পারেন?	১	২	৩	৪	৫
০১.২	গুরুত্বপূর্ণ কোন কিছু করার কথা মনে থাকে?	১	২	৩	৪	৫
০১.৩	দৈনন্দিন কাজে সমস্যা হলে বিশ্লেষণ অ সমাধান করতে পারেন?	১	২	৩	৪	৫
০১.৪	নতুন কিছু শেখা (যেমন নতুন স্থানে কিভাবে যেতে হয়)	১	২	৩	৪	৫
০১.৫	সচরাচর মানুষ যা বলে তা বুঝতে পারেন?	১	২	৩	৪	৫
০১.৬	কোন বিষয়ে আলোচনা শুরু করতে এবং চালিয়ে যেতে পারেন?	১	২	৩	৪	৫

ক্ষেত্র – ২ চলাফেরা

বিগত ৩০ দিনে আপনি কতটুকু সমস্যায় পড়েছেন?	কোন সমস্যা নাই	খুব অল্প সমস্যা	মাঝারি সমস্যা	তীব্র সমস্যা	প্রচন্ড সমস্যা বা কিছুই

		কোন সমস্যা নাই	খুব অল্প সমস্যা	মাঝারি সমস্যা	তীব্র সমস্যা	প্রচন্ড 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 কিলিমিটার হাঁটতে পারেন?	১	২	৩	৪	৫

ক্ষেত্র – ৩ নিজের যত্ন

বিগত ৩০ দিনে আপনি কতটুকু সমস্যায় পড়েছেন?		কোন সমস্যা নাই	খুব অল্প সমস্যা	মাঝারি সমস্যা	তীব্র সমস্যা	প্রচন্ড 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	প্রচন্ড সমস্যা বা কিছুই করতে না পারা

		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	প্রচণ্ড 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 সমাধাণ করতে?	১	২	৩	৪	৫

		কোন সমস্যা নাই	খুব অল্প সমস্যা	মাঝারি সমস্যা	তীব্র সমস্যা	প্রচন্ড সমস্যা বা কিছুই করতে না পারা
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	প্রচন্ড 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 কারনে 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	8	৫
০৬.৫	নিজের শারীরিক সমস্যার জন্য কতটুকু আবেগ তাড়িত হন?	১	২	৩	8	৫
০৬.৬	আপনার শারীরিক সমস্যার কারনে আপনার বা আপনার পরিবারের কী পরিমাণ আর্থিক ক্ষতি হচ্ছে?	১	২	৩	8	৫
০৬.৭	আপনার শারীরিক সমসায়র কারনে আপনার পরিবার কতটুকু ভুক্তভোগী?	১	২	৩	8	৫
০৬.৮	বিশ্রাম বা বিনোদনের জন্য কিছু করতে গিয়ে আপনি কতটুকু সমস্যায় পড়েছেন?	১	২	৩	8	৫

১	সব মিলিয়ে, গত ৩০ দিনে, মোত কতদিন উপরোক্ত সমস্যা গুলো হয়েছে?	দিনগুলোর হিসাব রাখুন
২	বিগত ৩০ দিনের মধ্যে কতদিন আপনি আপনার সাধারণ কাজে সম্পূর্ণ অপারগ ছিলেন?	দিনগুলোর হিসাব রাখুন
৩	বিগত ৩০ দিনের অসুস্থতার কারণে কতদিন স্বাভাবিক কাজকর্ম করেছেন?	দিনগুলোর হিসাব রাখুন

Verbal Consent Form

Assalamuaalaikum\ Namashker,

I am Nirupom Bardhan, the 4th year B.Sc. (Hon's) in Physiotherapy student of Bangladesh Health Professions Institute (BHPI) under Medicine faculty of University of Dhaka. To obtain my Bachelor degree, 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 "**Evaluation of physical activity and quality of life among the Patients with Spinal Cord Injury (SCI) after completing rehabilitation services from Center for the Rehabilitation of Paralysed (CRP)**". Through this study I will find the level of physical activity and QoL of persons with paraplegia. If I can complete the study successfully, the level of physical activity and QoL of paraplegic patients may be explored. To implement my research project, I need to collect data from the persons with paraplegia. 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 of Physiotherapy department, Bangladesh Health Professions Institute (BHPI), Savar, Dhaka. Do you have any questions before I start?

So, may I have your consent to proceed with the interview? Yes……..

Signature of the participant & Date…………………………….

Signature of the researcher & Date……………………………..

Signature of the witness & Date………………………………...

QUESTIONNAIRE

Patient's Sociodemographic Information   Code no:

Name: **Age:**

Sex:

1. Male   2. Female

Address:

Village/House no: Post office:

Thana: District:

Contact no:

Date of interview: ……………….. (dd/mm/yy)

Cause of injury:

1. Traumatic
2. Non-traumatic

Type of injury:

1. Paraplegic
2. Tetraplegic

Initial Neurological Condition according to ASIA scale:

1. Complete A   2. Incomplete B
3. Incomplete C   4. Incomplete D

Religion:

1. Muslim
2. Hindu
3. Christian
4. Buddhist
5. Others (specify)…………………………………….

Education:

1. Never attended school
2. Completed Primary Education
3. Completed Secondary Education
4. Higher Secondary
5. Bachelor or above
6. Others (specify)…………………………………

Occupation:

1. Service holder
2. Businessman
3. Freelancer
4. Housewife
5. Others (specify)…………………………………………

Marital Status:

1. Married
2. Single
3. Others (specify)…………………………………………

Numbers of family members:

Monthly family Income:

Length of disability:

WHOQOL-BREF QUESTIONNAIRE

The questionnaire asks how you feel about your quality of life, health and other areas of your life. Please answer all the questions. If you are unsure about which response to give to a question, please choose the one that appears most appropriate. This can often be your first response.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life in the last two weeks.

Please read each question, assess your feelings and tick (√) the number.

		Very poor	Poor	Neither poor nor good	Good	Very good
1	How would you rate your Quality of life?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about **how much** you have experienced certain things in the last two weeks.

		Not at all	A little	A moderate amount	Very much	An extreme amount
3	To what extent do you feel that physical pain prevents you from doing what you need to do?	5	4	3	2	1
4	How much do you need any medical treatment to function in your daily life?	5	4	3	2	1
5	How much do you enjoy life?	1	2	3	4	5
6	To what extent do you feel your life to be meaningful?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	Extremely
7	How well are you able to concentrate?	1	2	3	4	5
8	How safe do you feel in your daily life?	1	2	3	4	5

		Not at all	A little	Moderately	Mostly	Completely
9	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about **how completely** you experience or were able to do certain things in the last two weeks.

		Not at all	A little	Moderately	Mostly	Completely
10	Do you have enough energy for everyday life?	1	2	3	4	5
11	Are you able to accept your bodily appearance?	1	2	3	4	5
12	Have you enough money to meet your needs?	1	2	3	4	5
13	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

		Very poor	Poor	Neither poor nor	Good	Very good

				good		
15	How well are you able to get around?	1	2	3	4	5

The following questions ask you to say **how good or satisfied** you have felt about various aspects of your life over the last two weeks.

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16	How satisfied are you with your sleep?	1	2	3	4	5
17	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18	How satisfied are you with your capacity for work?	1	2	3	4	5
19	How satisfied are you with yourself?	1	2	3	4	5
20	How satisfied are you with your personal	1	2	3	4	5

	relationship?					
21	How satisfied are you with your sex life?	1	2	3	4	5
22	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24	How satisfied are you with your access to health services?	1	2	3	4	5
25	How satisfied are you with your transport?	1	2	3	4	5

The following questions refers to **how often** you have felt or experienced certain
things in the last two weeks

		Never	Seldom	Quite often	Very often	Always
26	How often do you have negative feelings such as	5	4	3	2	1

	blue mood, despair, anxiety, depression?	76				

THANK YOU FOR YOUR HELP

WHODAS 2.0

WORLD HEALTH ORGANIZATION

DISABILITY ASSESSMENT SCHEDULE 2.0

Understanding and communicating

In the past 30 days, how much difficulty did you have in		None	Mild	Moderate	Severe	Extreme or cannot do
1.1	Concentrating on doing something for ten minutes?	1	2	3	4	5
1.2	Remembering to do important things?	1	2	3	4	
1.3	Analysing and finding solutions to problems in day-to-day life?	1	2	3	4	5
1.4	Learning a new task, for example, learning how to get to a new place?	1	2	3	4	5
1.5	Generally understanding what people say?	1	2	3	4	5
1.6	Starting and maintaining a conversation?	1	2	3	4	5

Getting around

In the past 30 days, how much difficulty did you have in		None	Mild	Moderate	Severe	Extreme or cannot do
2.1	Standing for long periods such as 30 minutes?	1	2	3	4	5
2.2	Standing up from sitting down?	1	2	3	4	
2.3	Moving around inside your home?	1	2	3	4	5
2.4	Getting out of your home?	1	2	3	4	5

2.5	Walking a long distance such as a kilometre?	1	2	3	4	5

Self-care

In the past 30 days, how much difficulty did you have in		None	Mild	Moderate	Severe	Extreme or cannot do
3.1	Washing your whole body?	1	2	3	4	5
3.2	Getting dressed?	1	2	3	4	
3.3	Eating?	1	2	3	4	5
3.4	Staying by yourself for a few days?	1	2	3	4	5

Getting along with people

In the past 30 days, how much difficulty did you have in		None	Mild	Moderate	Severe	Extreme or cannot do
4.1	Dealing with people you do not know?	1	2	3	4	5
4.2	Maintaining a friendship?	1	2	3	4	5
4.3	Getting along with people who are close to you?	1	2	3	4	5
4.4	Making new friends?	1	2	3	4	5
4.5	Sexual activities?	1	2	3	4	5

Life activities

In the past 30 days, how much difficulty did you have in		None	Mild	Moderate	Severe	Extreme or cannot do
5.1	Taking care of your household responsibilities?	1	2	3	4	5

5.2	Doing most important household tasks well?	1	2	3	4	5
5.3	Getting all the household work done that you needed to do?	1	2	3	4	5
5.4	Getting your household work done as quickly as needed?	1	2	3	4	5
5.5	Your day-to-day work/school?	1	2	3	4	5
5.6	Doing your most important work/school tasks well?	1	2	3	4	5
5.7	Getting all the work done that you need to do?	1	2	3	4	5
5.8	Getting your work done as quickly as needed?	1	2	3	4	5

Participation in society

In the past 30 days, how much difficulty did you have in		None	Mild	Moderate	Severe	Extreme or cannot do
6.1	How much of a problem did you have in joining in community activities (for example, festivities, religious or other activities) in the same way as anyone else can?	1	2	3	4	5
6.2	How much of a problem did you have because of barriers or hindrances in the world around you?	1	2	3	4	
6.3	How much of a problem did you have living with dignity because of the attitudes and actions of others?	1	2	3	4	5
6.4	How much time did you spend on your	1	2	3	4	5

	health condition, or its consequences?					
6.5	How much have you been emotionally affected by your health condition?	1	2	3	4	5
6.6	How much has your health been a drain on the financial resources of you or your family?	1	2	3	4	5
6.7	How much of a problem did your family have because of your health problems?	1	2	3	4	5
6.8	How much of a problem did you have in doing things by yourself for relaxation or pleasure?	1	2	3	4	5

18th April, 2019

The Chairman

Institutional Review Board (IRB)

Bangladesh Health Professions Institute (BHPI)

CRP-Savar, Dhaka-1343, Bangladesh

Subject: Application for review and ethical approval.

Sir,

With due respect and humble submission to state that I am Nirupom Bardhan, student of 4th Professional B.Sc. in Physiotherapy at Bangladesh Health Professions Institute (BHPI)- an academic institute of CRP under faculty of Medicine of University of Dhaka (DU).This is a 4(four) year full time course. Conducting thesis project is partial fulfillment of the requirement for the degree of B.Sc. in physiotherapy. I have to conduct a thesis entitled, **"Evaluation of physical activity and quality of life of the SCI patients after completing rehabilitation from Center for the Rehabilitation of the Paralysed (CRP) during discharge"** under the supervision of Ehsanur Rahman, Assistant Professor, BHPI, CRP, Savar, Dhaka-1343, Bangladesh. The purpose of the study is to find out the quality of life of SCI patients and their level of physical activity after completing rehabilitation from CRP. I would like to assure that anything of my study will not be harmful for the participants. Informed consent will be received from all participants, data will be kept confidential.

May I, therefore pray and hope that you would be kind enough to approve the thesis proposal and to start data collection. I can assure you that I will maintain all the requirements for study.

Sincerely,

Nirupom Bardhan

Nirupom Bardhan

4th professional B.Sc. in Physiotherapy

Roll: 02, Session: 2014-15

BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Recommendation from the thesis supervisor:

Ehsanur Rahman,

Assistant Professor,

Bangladesh Health Professions Institute, CRP, Savar, Dhaka-1343,

Attachment: Thesis proposal including process and procedure for maintaining confidentiality, Questionnaire (English & Bangla version), Informed consent.

Forwarded
E.Rah
18.09.19

Ref: CRP-BHPI/IRB/09/19/1345   Date: 18/09/2019

To
Nirupom Bardhan
B.Sc. in Physiotherapy
Session: 2014-15, Student ID:112140233
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Subject: Approval of the thesis proposal **"Evaluation of physical activity and quality of life of the SCI patients after completing rehabilitation from Center for the Rehabilitation of the Paralysed (CRP) during discharge"** by ethics committee.

Dear Nirupom Bardhan,

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

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

The study involves use of a questionnaire to explore physical activity and quality of life of the SCI patients after completing rehabilitation from Center for the Rehabilitation of the Paralysed (CRP) during discharge that may take 15 to 20 minutes to answer the questionnaire and there is no likelihood of any harm to the participants. The members of the Ethics committee have approved the study to be conducted in the presented form at the meeting held at 10.00 AM on 11th August 2018 at BHPI.

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

Best regards,

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

Permission letter

18 April 2019

The Head of Department

Department ofPhysiotherapy

Centre for the Rehabilitation of the Paralysed(CRP),

Chapain, Savar,Dhaka-1343.

Through: Head, Department of Physiotherapy, BHPI

Subject: Seeking permission for data collection of 4[th]year physiotherapy research project.

Respected Sir,

With due respect and humble submission to state that I am Nirupom Bardhan, student of 4[th]Professional B.Sc. in Physiotherapy at Bangladesh Health Professions Institute (BHPI). The ethical committee has approved my research project entitled on "**Evaluation of physical activity and quality of life among the patients with Spinal Cord Injury (SCI) after completing rehabilitation services from Center for the Rehabilitation of the Paralysed (CRP)**" under the supervision of Ehsanur Rahman, Assistant Professor, Bangladesh Health Professions Institute, CRP, Savar, Dhaka-1343, Bangladesh. Conducting this research project is partial fulfillment of the requirement for the degree of B.Scin physiotherapy. I want to collect necessary data for my research project from the patients attending at SCI unit, department of Physiotherapy, CRP-Savar. Therefore, I need to obtain your kind written permission to initiate data collection from the targeted patients. I would like to assure that ethical principles would be followed as per guidelines of my institution/department.

I therefore, pray and hope that you would be kind enough to grant my application & permit me to collect required data to accomplish my research objectives.

Yours faithfully,

Nirupom Bardhan

Nirupom Bardhan

4[th]professional B.Sc in Physiotherapy

Session: 2014-15

Bangladesh Health Professions Institute (BHPI)

(An academic Institute of CRP)

CRP, Chapain, Savar, Dhaka-1343.

Forwarded
E. Reh
18/04/19

Forwarded & Recommended
18.04.19
Prof. Md. Obaidul Haque
Head, Department of Physiotherapy
BHPI, CRP, Savar, Dhaka-1343

Appoved
please contact with
mozaffor Hosain incharge
SCI Unit, PT Dept, CRP.

Anwar Hossain
Associate Professor & Head
physiotherapy Dept., CRP
pain, Savar, Dhaka-1343

Allow to data collection
from SCI unit.
MUZAFFOR HOSSAIN 25/04/19
Junior Consultant & Incharge, SCI Unit
Physiotherapy Department
CRP, Savar, Dhaka