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FUNCTIONAL AND DISABILITY STATUS OF PERSONS WITH STROKE IN A SPECIALIZED REHABILITATION CENTRE

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

FUNCTIONAL AND DISABILITY STATUS OF PERSONS WITH STROKE IN A SPCIALIZED REHABILITATION CENTRE

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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 Department of Physiotherapy of Bangladesh Health Professions Institute (BHPI).

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Contents

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Acronyms

ADL	Activity of Daily Living
BHPI	Bangladesh Health Professions Institute
CRP	Centre for the Rehabilitation of the Paralysed
CVA	Cerebro Vascular Accident
DALYs	Disability-Adjusted Life Years
FIM	Functional Independent Measure
GBD	Global Burden of Disease
HS	Hemorrhagic Stroke
IS	Ischemic Stroke
ICD	International Classification of Disease
ICF	International Classification of Functioning, Disability and Health
IRB	Institutional Review Board
OPU	Outpatient Unit
SPSS	Statistical Package for the Social Sciences
SDI	Stroke Dybiosis Index
TIA	Transient Ischemic Attack
WHO	World Health Organization
WHODAS 2.0	World Health Organization Disability Assessment Schedule 2.0

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Abstract

Purpose: The purpose of the study was to find out the overall functional and disability status of the persons with stroke. ***Objectives:*** To assess the Socio-demographic information, existing functional ability after stroke, level of difficulties of understanding and communicating with others, level of difficulties in mobility, self-care, socialization, life activities, and social participation, the association between different socio-demographic features, stroke parameters, and functional and disability status. ***Methodology:*** It was a cross-sectional study. 121 samples were conveniently selected from Neurology OPU of CRP, Savar, and Dhaka. The interviewer-administered Bengali version of The World Health Organization Disability Assessment Scale 2.0 (WHODAS 2.0) 36 items was applied to people with stroke. Data were analyzed through descriptive and inferential statistics. The Chi-square test for independence and Pearson correlation coefficient test were applied. ***Results:*** In this study age of the participants (mean ± SD) was 50.05±9.008 years. Among them 74% (n=89) was male and 26% (n=32) was female. According to FIM scoring among all gross motor functional activities of the participants, most of those were modified independent and were need moderate assistance. The domains mostly affected with severe difficulty were household activities (49%), mobility (44%) and self-care (45%). Getting along with others was the domain that most (44%) of the participants had no difficulty with. Strong and weak significant association of age and stages of stroke with gross motor function category and significant positive and medium correlation found in every domain individual score and subtotal score with age. Here, cognition (r=.331, p=.0002*), mobility (r=.388, p=.00001*), self care activities (r=.374, p=.00002*), getting along with people (r=.379, p=.00002*), life activities (r=.455, p=.0001*), participation (r=.378, p=.00002*) and WHODAS subtotal (r=.460, p=.0001*). ***Conclusion:*** This study is explained the overall functional and disability status of the stroke survivors. In future, clinicians can take help from this study for knowing the existing functional and disability status so that they can make their appropriate rehabilitation program according to the difficulties of the stroke survivors.

Keyword: Stroke, Functional status, Disability status, Rehabilitation.

CHAPTER – I INTRODUCTION

1.1 Background

Stroke is a world healthcare problem that is common, serious, and disabling. In most countries, stroke is the second or third most common cause of death and one of the foremost causes of acquired adult disability (Langhorne et al., 2011). "The word stroke used to be possibly first introduced into medicine through William Cole in 1689 in a physico-medical article regarding the late frequencies of apoplexies". Before Cole, the most popular phrase used to describe acute non-traumatic brain damage used to be apoplexy. It was used by Hippocrates circa 400 BC for more than 2000 years (Alharbi et al., 2019).

The world health organization (WHO) defines stroke as" rapidly developing clinical sign of focal/global disturbance of cerebral functions with symptoms lasting for 24 hours or longer or leading to death with no apparent cause different than vascular origin". Published studies have shown that 80% of strokes are ischemic and 20% of strokes are hemorrhagic. Nearly twenty million human beings every year will suffer from stroke and of those five million will die. Death due to stroke is no longer in the developed world. In developing countries, 85.5% of total stroke death occurs. The morbidity of stroke in developing countries used to be about seven times that in developed countries. Stroke is a common reason for emergency admission which is related to increased mortality, morbidity, and poor quality of life. In the elderly, stroke is the third most common reason of death after coronary artery sickness and cancer (Kumar et al., 2019).

The Risk factors of stroke are divided into non-modifiable and modifiable factors. Non-modifiable risk factors cannot be modified by way of lifestyle changes or clinical therapy such as gender, race and ethnicity, family history, preceding stroke, sex, and Transient Ischemic Attack (TIA). Modifiable risk factors can be modified via lifestyle modifications or clinical treatment. It is divided into Medical Conditions and Lifestyle Factors. Medical conditions include heart disorder (myocardial infarction, and atrial fibrillation), hypertension, carotid stenosis (asymptomatic) and diabetes mellitus, and

hyperlipidemia. Lifestyles include obesity, excessive alcohol use, bodily inactivity, and cigarette smoking (Alharbi et al., 2019). The outcome of stroke is influenced by using a variety of factors which include severity, type of stroke, predisposing factors, and associated problems and care facilities (Kumar et al., 2019).

Published studies have reported that the incidence of stroke disease increases with age, in both men and women with approximately 50% of all strokes occurring in people over age 75 and 30% over age 85. Studies also suggest that Stroke is among the top leading causes of disability and reduced quality of life (Lui &Nguyen, 2018).

Universally, stroke is the main motive of mortality and disability and there are significant financial costs for post-stroke care. Results from the 2015 cycle of the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) showed that even though the age-standardized death rates and prevalence of stroke have decreased over time, the entire burden of stroke has remained high (Johnson et al., 2019).

In Bangladesh, stroke has been positioned as the third driving reason for death after coronary illness and infectious sicknesses, for example, influenza and pneumonia. The death rate of stroke expanded from 6·00% (in 2006) to 8·57%, (in 2011) with an age-changed death rate of 108·31 per 100 000 individuals (in 2011). The World Health Organization (WHO) positions mortality because of stroke in Bangladesh as number 84 on the planet. The untreated death rate per 1000 individuals in Bangladesh is accounted for at 5·8%; the female and male futures are accounted for as 64·4 years old and 65·1 years old, respectively (Islam et al., 2013).

For some, survivors, stroke applies a negative impact on their lives by influencing numerous capacities, including speech, swallowing, vision, ambulation, coordination, and cognition, hampering their capacity to perform regular activities (Luengo-Fernandez et al., 2013). After the stroke, most stroke survivors experience some disturbance of cognitive functioning, and many have enduring difficulties in unique cognitive domains, such as attention and concentration; memory; spatial awareness; perception; 6 praxis; and executive functioning. Although it is feasible to have a deficit in one cognitive domain only, generally stroke survivors experience deficits across various domains. Cognitive

impairment has a substantial impact on Activities of Daily Living (ADL) and self-rated quality of life, and it is among the most challenging losses to manage, with high ranges of unmet need (Gillespie et al., 2015).

Restricted mobility, depressive symptomatology, apathy, cognitive impairment, fatigue, absence of social association, and absence of self-adequacy for engagement all act to restrict participation (Mayo et al., 2015). Rehabilitation for stroke patients underlined self-care activities and can discharge from hospital to home with no efforts for preparation to work rehabilitation or social involvement. Self-care is wide-ranging; it demonstrates individual accountabilities for healthy lifestyle activities required for their improvement and activities, for example dealing with health circumstances. The conception of self-care is associated with independence, self-rule, and individual tasks for healthy performance, as well as for the improvement of activities needed to observe and control health cases (AL-Abedi and Hanza, 2016).

Stroke caries emergency to patients and families because of sudden changes in health status, functional capability, and degraded quality of life (QOL). Social consequences of stroke include a negative impact on family relationships, crumbling in sexual life and leisure activities, and economic difficulties (Lee et al., 2015).

The persons with stroke have difficulties with social cooperation in social activities and activities of daily living (ADL) because of different limitations such as physical and mental problems, diminished quality of life and functioning, and communication impairment (Yoon et al., 2015). Recovery after stroke is influenced by different components, including initial disability, the volume of the infarct or hemorrhage, the anatomic area, pre-stroke functional status, conjugal status, and a social support network, and access to rehabilitation services (Willey et al., 2010).

As it was found from existing literature that globally stroke survivors have a profound negative impact on functional and disability status. Therefore, this study was conducted to find out the functional and disability status of Bangladeshi stroke survivors of a selected rehabilitation center.

1.2 Justification

Stroke is one of the most common neurological conditions that result from the interruption of the cerebral vascular flow, with the ischemic or hemorrhagic origin, and is characterized by histopathological changes in certain brain areas that lead to neuronal death. Physical, cognitive, and behavioral impairment depends on the affected brain areas.

In Bangladesh, we have very few Rehabilitation centers where a person with stroke finds their appropriate physiotherapy treatment. According to existing studies, Physiotherapy treatment and rehabilitation play a significant role to improve the functional and mental ability of the patient, improve their quality of life, and better reintegration into their community. Knowing the existing Quality of life can guide the rehabilitation professional to devise their treatment and rehabilitation strategies in more scientific ways. From the different studies, it is evident that Functional status is a significant part of the rehabilitation of a person with a stroke. It is very important to find out the functional and disability status while a physiotherapy management team does work towards the improvement or the recovery of the functional and disability status of stroke patients; otherwise, the outcome of physiotherapy is not significant.

From the literature review, it is also evident that there is lacking literature regarding the functional and disability status of the person with stroke. Very few studies have been found regarding this area. In Bangladesh, no study has been found in this area. The individual functional and disability status may be varied according to age, gender, type of stroke, phases of the stroke, and chronicity of stroke. This study will give valuable information about the functional and disability status of stroke survivors. The results of the study may help to guide the physiotherapists which will be beneficial for both stroke survivors and for developing the platform of the physiotherapy profession.

1.3 Research Question

What is the Functional and Disability status of persons with Stroke in a Specialized Rehabilitation Centre?

1.4 Study Objectives

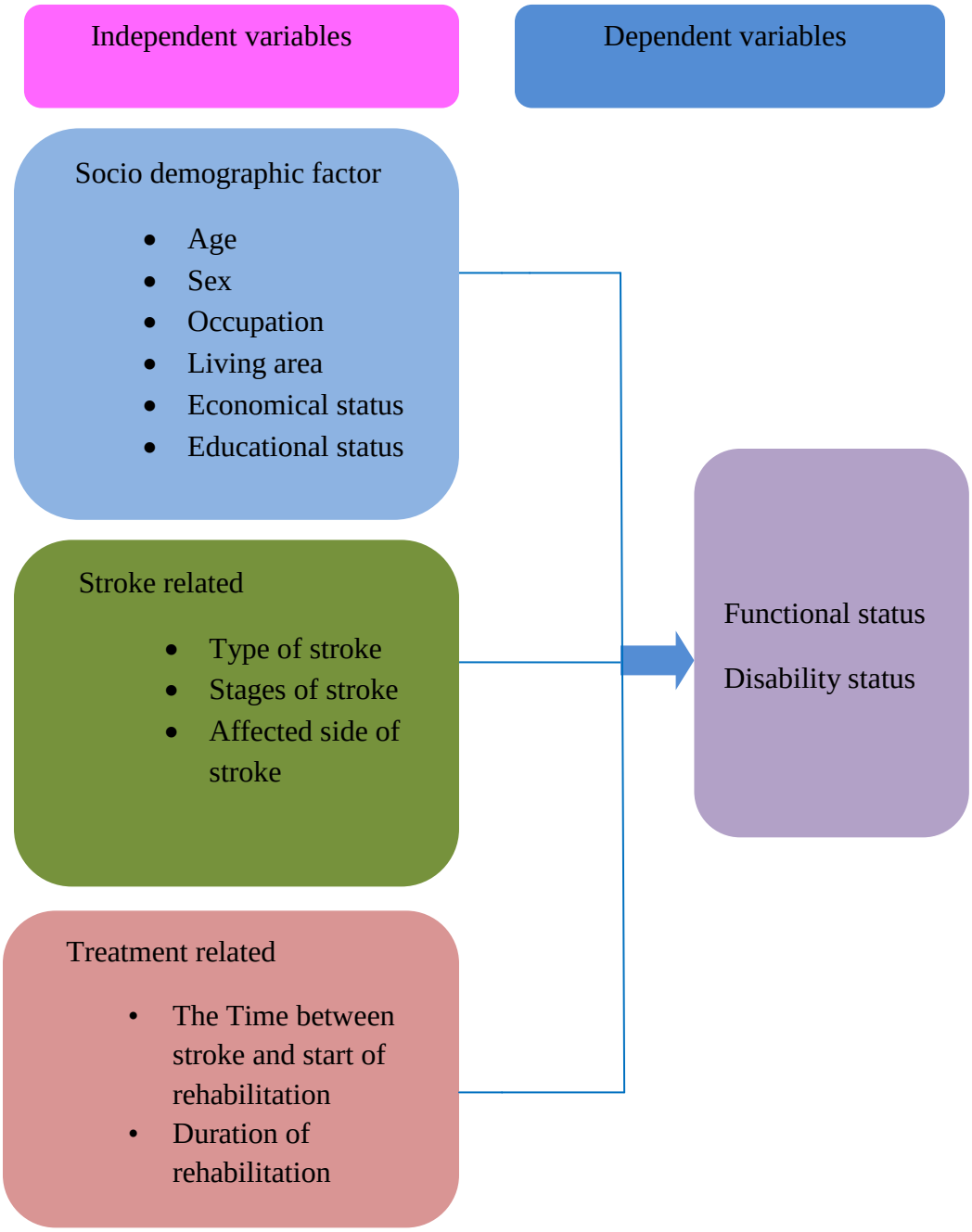
1.4.1 General Objectives

To determine the overall functional and disability status of the persons with stroke.

1.4.2 Specific objectives

1. To evaluate the socio-demographic information of the persons with stroke.
2. To explore their existing functional ability after stroke.
3. To identify their level of difficulties of understanding and communicating with others.
4. To detect their level of difficulties in mobility, self-care, socialization, life activities, and social participation.
5. To find out the association between different socio-demographic features, stroke parameters, and functional and disability status.

1.5 Conceptual Framework



1.6 Operational definition

Stroke

The World Health Organization (WHO) definition of stroke is: “rapidly developing clinical signs of focal (or global) disturbance of cerebral function, with symptoms lasting 24 hours or longer or leading to death, with no apparent cause other than of vascular origin”.

Stroke Rehabilitation

Stroke Rehabilitation is a progressive, dynamic, goal-orientated process aimed at enabling a person with impairment to reach their optimal physical, cognitive, emotional, communicative, and social functional level.

Functional status

It typically refers to the ability to physically perform activities such as self-care, being mobile, and independence at home or in the community.

Disability status

It is a physical or mental impairment that has a real and long-term adverse effect on the person’s ability to carry out normal day-to-day activities.

Functional Independent Measurement scale (FIM)

The FIM instrument refers to a scale that is used to measure one's ability to function with independence. The FIM is used worldwide in medical rehabilitation units. The FIM score is collected within 72 hours after admission to the rehabilitation unit. The FIM score ranges from 1 to 7 with 1 (Total Assistance) being the lowest possible score and 7 (Complete Independence) being the best possible score.

World Health Organization Disability Assessment Schedule (WHODAS) 2.0-36-item version, interviewer-administered

The World Health Organization Disability Assessment Schedule (WHODAS 2.0) is a generic assessment instrument developed by WHO to provide a standardized method for measuring health and disability across cultures. It was developed from a comprehensive set of International Classification of Functioning, Disability, and Health (ICF) items that are sufficiently reliable and sensitive to measure the difference made by a given intervention.

CHAPTER – II LITERATURE REVIEW

An extensive literature review was conducted through the use of the keywords of the title and the associated area of interest. Google, Google Scholar, PubMed, PEDro, Hinari, and BHPI library were the sources of the information. The literature was taken from the different scholarly articles and general scientific articles from 2010 to 2020. The review results are as follows:

2.1 Stroke

In 1970, the World Health Organization defined stroke as 'rapidly developed clinical signs of focal (or global) disturbance of cerebral function, lasting more than 24 hours or leading to death, with no apparent cause other than of vascular origin' (Coupland et al., 2017).

In 2013, there is an update regarding the definition of stroke by the American Heart Association/American Stroke Association they have added the silent pathology of stroke along with the traditional clinical definition, and this definition was mainly determined by radiological demonstration (infarction/hemorrhage) (Coupland et al., 2017).

In the new definition of American Heart Association/American Stroke Association, ischemic stroke is defined on the foundation of clinical and tissue criteria as brain, spinal cord, or retinal cell death attributable to ischemia, based totally on neuropathological, neuroimaging, and scientific proof of permanent injury and intracerebral hemorrhage is described as rapidly creating clinical signs and symptoms of neurological dysfunction attributable to a focal collection of blood within the brain parenchyma or ventricular system that is not caused with the aid of trauma; and subarachnoid hemorrhage as rapid symptoms of neurological dysfunction and headache due to the fact of bleeding into the subarachnoid space (the space between the arachnoid membrane and pia mater of the brain or spinal cord), which is not induced through trauma (Feigin et al., 2018).

According to the World Health Organization (WHO) International Classification of Disease (ICD)-11 definition of stroke requires the presence of acute neurological dysfunction and encompasses the entities cerebral ischemic stroke, intracerebral

hemorrhage, subarachnoid hemorrhage, and stroke not acknowledged to be ischemic or hemorrhagic (Feigin et al., 2018).

2.2 Prevalence

According to Global Burden of Disease (GBD) 2013, among adults aged 20-64 years, the worldwide prevalence of hemorrhagic stroke (HS) in 2013 was 3,725,085 and the prevalence of ischemic stroke (IS) was 7,258,216. The worldwide prevalence rates were 90.3 and 176 per 100,000 for hemorrhagic stroke and ischemic stroke, respectively. In 2013, the prevalence rate of ischemic and hemorrhagic stroke were considerably higher in developed countries in contrast to that in developing countries (Krishnamurthi et al., 2015).

In Global Burden of Disease (GBD) 2016, there were 80.1 million prevalent cases of stroke: 41.1 million prevalent cases in females and 39.0 million prevalent cases in males. Of the total quantity of prevalent strokes, 84.4% were ischemic. In 2016, there were 13.7 million new stroke cases. In East Asia, the highest age-standardized incidences of stroke were found, particularly in China 354 per 100 000 person-years, accompanied through Eastern Europe, ranging from 200 per 100 000 person-years in Estonia to 335 per 100 000 person-years in Latvia. Age-specific stroke incidence was similar between males and females younger than 55 years but notably greater for males than females at ages 55–75 years (Johnson et al., 2019).

From 1990 to 2016, Age-standardized incidence declined from globally (–8.1%), in all SDI groups without the middle SDI group, and in most regions. In age-standardized stroke incidence, the area with the greatest decrease was once southern Latin America (–33.3%), and the region with the greatest enlargement was once East Asia (4.9%). The greatest decrease was in southern Latin America (–38.0%), and the greatest increase used to be in East Asia (17.5%), for ischemic stroke. In all regions, hemorrhagic stroke incidence diminished. In the high-income Asia Pacific, the largest decrease was (–32.5%), and in southern sub-Saharan Africa, the smallest decrease was (–5.1%) (Johnson et al., 2019).

From Global Burden of Disease (GBD) 2017, the global crude number of new stroke occasions has increased by way of 76% from 6.8 million new occasions in 1990 to 11.9 million in 2017. The global rate of age-standardized stroke prevalence has increased by 3% from 1990 to 2017 to attain 1300.6 per 100,000 in 2017; mainly in UMICs (Upper Middle-Income Countries). Contrarily, both LICs (Lower-Income Countries) and HICs (Higher Income Countries) have exhibited a respective 3% and 8% minimize in the age-standardized rates of stroke prevalent cases by 2017. Of note, in contrast to ischemic strokes, the age-standardized rates of hemorrhagic strokes have extensively reduced global from 1990 to 2017 (Avan et al., 2019).

In India, based totally upon an annual incidence of stroke of 135 to 145 per 100,000, and early case fatality of between 27% and 41%, it has been estimated that 1.5 million human beings experience a stroke every year, and similarly, 500,000 human beings survive with stroke-related disability. The long-term impacts of stroke on families in India, mainly in rural areas, are likely to be significant (Lindley et al., 2017).

In Pakistan, there was once a crude age and sex-adjusted stroke incidence of 95 per 100,000 people per year for the following Years 2000 to 2016, with the highest incidence being 584,000 of 650,000, stated among men and women aged 75 to 85 (Khan et al., 2019).

In Bangladesh, Stroke prevalence's were accounted for as 0·20%, 0·30%, 0·20%, 1·00%, and 1·00% for the age bunches 40–49 years, 50–59 years, 60–69 years,70–79 years, and 80 years or more, separately. The general prevalence for stroke was 0·30%, and the proportion of male: female participants was 3·44: 2·41 (Islam et al., 2013).

2.3 Clinical features

Depending on the affected region of the brain, common symptoms of stroke in the left hemisphere include aphasia, right hemiparesis, and right hemianopia, and in the right hemisphere, left hemispatial neglect, left hemiparesis, and left hemianopia. The majority (90%) of strokes is supratentorial; as such, the public can be taught to recognize and act

upon stroke using the acronym FAST, for facial droop, arm drop, speech disturbance, and time. Posterior circulation or infratentorial stroke has a multitude of additional symptoms, including diplopia, bulbar palsies, dysphagia, unilateral dysmetria, and incoordination, as well as reduced levels of consciousness. Although headache or head, facial, or neck pain may be an ancillary symptom, stroke is typically painless. The most important historical feature of stroke is the suddenness of its onset (Musuka et al., 2015).

2.4 Rehabilitation

A recently published study has defined Stroke Rehabilitation as a progressive, dynamic, goal-orientated process that aims at enabling stroke survivors to reach their optimal physical, cognitive, emotional, communicative, social, and functional activity levels. When the stroke survivor is medically stable and can identify goals for rehabilitation and recovery, it begins after the initial stroke event as soon as possible. specially trained rehabilitation team members are consist of physicians, physiotherapists, occupational therapists, speech-language therapists, and nurses who assist the stroke survivors by using different types of rehabilitation interventions to recovery from their post-stroke distress (Hebert et al., 2016).

To assist the stroke survivors in reducing complications and residual post-stroke functional disabilities, Rehabilitation initiated early after a stroke has been shown. By reducing functional disability and incidence of complications, it helps to increase the quality of life for stroke survivors and a decrease in potentially expensive long-term care costs (Whitehead & Baalbergen, 2019).

There are 3 types of therapeutic disciplines traditionally involved in post-stroke rehabilitation such as physiotherapy, occupational therapy, and speech and language therapy. Often the roles of a physiotherapist and an occupational therapist seem to overlap. Even though both disciplines work predominantly with the motor impairments of stroke survivors, their approaches to and focus on the impairments differ. In hemiplegic stroke survivors, Physiotherapists focus on the correct positioning, early mobilization, and mobility, on the contrary, an occupational therapist focuses on the resumption of activities of daily living as grooming and dressing, often incorporating the use of assistive

devices. Speech and language therapists are highly trained to manage and treat cognitive, communicative, and swallowing impairments (Whitehead & Baalbergen, 2019).

After being discharged from the hospital, many of the stroke survivors experience permanent problems. The stroke survivors have suffered from muscle weakness, balance disorder, cognitive impairment, immobility, and dependence on activities of daily living. To deal with these problems, stroke survivors are referred to physiotherapy and rehabilitation programs (Demir et al., 2015).

Published studies have reported that Rehabilitation is a team effort. During the rehabilitation stage of the stroke, three parties or groups have to work together. The first part comprises the stroke survivors, who suffer from functional deficits. The second part is the family member who stays with the stroke survivor in the course of the life changes and the third party is the physiotherapist who plays a key role in the rehabilitation programs (Demir et al., 2015).

Recent evidence suggests that exercise therapy is the main component of Stroke rehabilitation. Exercises carried out after stroke may vary with regards to their goals such as goal-directed, task-oriented, repetitive task training, or their technical traits as duration, training load, and kind of feedback. To guide sufferers through the starting and ending of intended tasks, the Bobath treatment aims at the normalizing tone and facilitating volitional movement through dealing with specific points such as trunk, pelvis, shoulders, hands, and feet. During the treatment, both the affected person and the therapist need to participate actively (Hatem et al., 2016).

For the paretic arm, Muscle strengthening techniques are progressive active exercises in opposition to resistance. These exercises can be performed in opposition to a manual resistance exerted by the therapist. For years, the prevention of a range of joint motion loss, highly due to spasticity, has led to the application of arms stretch positioning during regular physiotherapy. Stretching may additionally be performed by hands-on physical therapy or with the aid of the application of devices such as cast, splint, and taping. Bilateral training can be carried out with or without the assistance of an external device,

the therapist instructs the stroke survivors to move the impaired upper extremity concurrently or alternating. In stroke rehabilitation, Constraint-induced movement therapy (CIMT) is a therapeutic approach that applies motor skill learning principles. It is a specialized task-oriented training approach (Hatem et al., 2016).

Published studies have found that the Swiss ball (physio ball) is widely used for recreational and rehabilitation training programs. By reducing impaired balance & coordination by maintaining interaction between the nervous system, musculoskeletal system & contextual effects, Swiss exercises facilitate postural control, trunk control, sitting & dynamic balance control. By maintaining the synergy between groups of muscles, Swiss ball exercises are effective in improving functional mobility, Trunk control, in promoting anticipatory activation. Stretching and flexibility are facilitated by Exercise. It improves proprioception, visual sensory feedback and thus, restores function after stroke and helps to create significant body awareness and sense of symmetry and it also improves equilibrium reaction, strength, and endurance of weak muscles (Muniyar & Darade, 2018).

Evidence suggests that conventional physiotherapy was also used with Swiss ball training which included Gait training, stretching, strengthening, icing or Cryotherapy, passive movements, and (Proprioceptive Neuro-muscular Facilitation Techniques) PNF techniques (Muniyar & Darade, 2018).

Some researchers have mentioned that core stability training could improve not only trunk function but also balance and mobility. Core stability training in an upright, anti-gravity position is more effective than that in a lying position and used to be safe and easy to implement in a clinical setting (Haruyama et al., 2017).

Published studies have shown that gait performance is an indicator of mobility impairment and disability after stroke. They added that it predicts mortality, morbidity, and risk of future stroke. After the stroke, proximal lower limb control plays a key role in improving gait speed and walking performance. For gait restoration after stroke, body weight supported treadmill training (BWSTT) is a task-oriented technique (Mao et al., 2015).

2.5 Disability

According to the International Classification of Functioning, Disability and Health (ICF) of the World Health Organization (WHO, 2001), defining disability is a complex concept with multiple dimensions. Disability is "the umbrella term for impairments, activity limitations, and participation restrictions, referring to the negative aspects of the interaction between an individual (with a health condition) and that individual's contextual factors (environmental and personal factors)" (Vornholt et al., 2018).

Another definition of disability, according to the U.N. (United Nations) Convention on the Rights of Persons with Disabilities, "persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others" (Vornholt et al., 2018). In the elderly population, Cerebrovascular accident (CVA) is the third most common cause of death worldwide, and one of the most common causes of disability. In addition, stroke survivors undergo lifelong disabilities about 15 to 30% and return to work only 13% (Rayegani et al., 2016).

Published studies have shown that in hemiplegic stroke survivors, the level of disability and likelihood of institutionalization is determined by walking ability and ambulatory independence. Evidence suggests that the degree to which gait can be restored after stroke is associated with both the initial impairment in walking ability and the severity of lower extremity paresis. They also added that early intervention with physical therapy to restore walking after stroke was recommended to improve motor function and decrease disability (Mao et al., 2015). The estimation of the 2011 World Health Organization (WHO) reports more than 1 billion people were living with some form of disability worldwide, and they added that nearly 200 million facing considerable difficulties in functioning and a significant proportion of them reside in developing countries. The available estimation suggests that the world prevalence (15%) of disability is expected to increase with the growing aging population, as disability is consistently associated with older age (Islam et al., 2016).

According to the age and sex-adjusted prevalence of disability in Lower Middle-Income Countries (LMICs) was 15.1% which was significantly higher than that observed in higher-income countries (10.8%). Followed by India (24.9%), the highest prevalence of disability was reported in Bangladesh (32%). It is noticeable that the prevalence of disability in most LMICs is higher in rural areas than in urban areas. In Bangladesh, they added that there are different estimates of the prevalence of disability, and the reported prevalence ranges from a minimum of 0.5% to a maximum of 31.9%. They also added that older age, lower socioeconomic status, and lower level of education are consistently associated with a higher prevalence of disability in Bangladesh (Islam et al., 2016).

Published studies have reported, in Bangladesh, the prevalence rate of stroke equals 0.3%, and disability-adjusted life-years are lost due to stroke approximately 485 per 10000. Besides, in terms of disability, the majority (80%) of stroke survivors live with either minor or major physical, emotional, and cognitive disabilities (Shaikhul et al., 2020).

2.6 Functional limitation

Published studies have shown that Stroke is a leading cause of disability and is often associated with impaired motor function. They added that not only motor impairment but also people who have had a stroke often experience sensory, cognitive, and visual impairment impacting on their ability to perform activities of daily living, for example, self-care tasks and participation in work and leisure roles. They also added that Stroke has some effects resulting in reduced postural stability and gait imbalance. Depending on the disease severity, the influences in the upper extremities lead to dependence on self-care activities (Simnek & Cekok, 2016).

Trunk function disorders are most common in stroke survivors. Previous studies have mentioned that muscle weakness and delayed activity of the trunk muscles, significant error of trunk position sense, the inadequate center of pressure control when sitting, that decreased trunk performance, and produced trunk asymmetry during gait. In stroke survivors, trunk function is associated with balance and walking ability and has also been found to offer a useful indicator of balance and walking ability and activities of daily

living (ADL) outcomes (Haruyama et al., 2017).

Recently published studies have reported that impairment of balance regulation is the major disability of stroke survivors that occurs due to neural injury. In addition to balance impairment, there is muscular weakness, shortening of muscle with loss of Range of Motion (ROM), abnormal muscle tone, and stiffness. They added that there will be sensory and motor impairments. As a result, there will be reduced functional mobility in stroke sufferers (Muniyar & Darade, 2018).

In Hemiplegic stroke sufferers frequently suffer from balance & mobility abnormalities and they are diagnosed with poor balance and falls. With the hemiplegic limb muscles, the trunk muscles also get impaired which affects the core muscle stability of the body. Stroke patients show disturbances in gait patterns. They show kinematic deviations which affect the daily functional activities. They suffer from reduced walking speed, inability to walk independently, reduced cadence, endurance, stride length & symmetry leading to pro- longed stance duration on the non-paretic side & reduced step length on the paretic side (Muniyar & Darade, 2018).

Stroke survivors have compromised functions approximately 90%. For reducing this impact of stroke survivors, it is essential for healthcare professionals, that includes physiotherapists, for recover their health and functionality, they provide adequate follow-up and assistance to patients and thereby they also prevent further diseases and disability, and promote health and functionality (Carvalho-Pinto & Faria, 2016).

A recently published study indicates that age, sex, stroke severity, type of stroke, baseline status, mood, and social risk appear to influence functional status as measured by scores on the Barthel Index. On the other hand comorbid conditions, socioeconomic level, and area of residence did not seem to affect patients' functional status (Lopez-Espuela et al., 2016).

2.7 FIM Scale

18 items are included by the FIM scale, of which physical domains are 13 objects and cognition domains are 5 objects. Self-care, sphincter control, locomotion, and transfer are measured by Motor items. Cognitive ones evaluate the subject's conversation and social cognition. Based on the stage of independence, every item is scored from 1 to 7, where 1 suggests complete dependence and 7 represents complete independence. Possible scores range from 18 to 126. Obtaining a higher score means more independence in ADL (Rayegani et al., 2016).

The reliability and validity for the measurement properties of FIM have been well established in adults with various neurological conditions and stroke (Naghdi et al., 2016). For the FIM approach, clinically appropriate validity and reliability have been reported. Such as, interrater reliability, test-retest reliability, and internal consistency (Cronbach's alpha coefficient) were reported eligible. For FIM, a high internal coefficient correlation (ICC), that indicates a strong agreement among group scores and an agreement between evaluators (kappa coefficient) was found. The predictive validity of motor FIM has been confirmed by several studies. The independence in cognitive functioning to the possible rate is included from the cognitive dimension of FIM (Dehnadi-Moghadam et al., 2017).

2.8 WORLD HEALTH ORGANIZATION DISABILITY ASSESSMENT SCHEDULE (WHODAS) 2.0 (36-item version, interviewer-administered)

The World Health Organization was developed the WHODAS 2.0 and for disability, which is used widely as an assessment tool (Arowoiya et al., 2017). At the population level or in clinical practice, WHODAS 2.0 is a practical, generic assessment instrument that can measure health and disability. In terms of functioning, it presents a common metric of the impact of any health condition. Being a generic measure, the instrument does not target a specific disease, it can for that reason be used to compare disability due to different diseases (Ustin et al., 2010). There are 6 domains of functioning, such as cognition, mobility, self-care, interpersonal relationships, life activities, and participation

in society are assessed disability by the instrument (Arowoiya et al., 2017). WHODAS 2.0 was developed by the 3 versions as a 36-item, 12-item, and 12+24-item version. The full version has been made by 36 questions and the short version has been made by 12 questions. 81% of the variance of the more detailed 36-item version is explained by the 12-item. Within the three versions, the 36-item version of WHODAS 2.0 is the most detailed. It allows users to generate scores for the six domains of functioning and to calculate an overall functioning score. The 36-item version is available in three different forms such as interviewer-administered, self-administered, and proxy-administered. The average interview time for the interviewer-administered 36-item version is 20 minutes (Ustin et al., 2010).

A demographic component consists of this instrument, where participants are required to think of the past 30 days only when attempting to answer followed by 36 questions. From the recommendations of the instrument, with any given task participants are asked how much difficulty they have, and based on a 5-point Likert scale(1-5) requested to rate each item, where 1 indicates no difficulty and 5 indicates extreme difficulty (Arowoiya et al., 2017).

In WHODAS 2.0 interviewer versions, two flashcards are used. The purpose of the flashcards is to provide a visual cue or reminder to the respondent about important portions of information to remember whilst answering questions. In the interview, flashcard #1 and flashcard #2 is the second card to be used. WHODAS 2.0 has outstanding psychometric properties. Test-retest research of the 36-item scale in nations (Ustin et al., 2010). Both the reliability (intra-class correlation coefficient: 0.98) and validity (Cronbach's alpha, α 0.86) with the high internal consistency of the WHODAS 2.0 has been found (Arowoiya et al., 2017).

There are two simple selections for computing the summary scores for the WHODAS 2.0 short and full versions – simple and complex. In "simple scoring", the ratings assigned to each of the items– "none" (1), "mild" (2), "moderate" (3), "severe" (4), and "extreme" (5) – are summed. This technique is referred to as easy scoring due to the fact the ratings from each of the objects are added up except recoding or collapsing of response categories; thus, there is no weighting of personal items. This method is practical to use

as a hand scoring approach, and may also be the strategy of preference in busy medical settings or paper-pencil interview situations. The psychometric properties of WHODAS 2.0 permit this additive calculation. The more complex method of scoring is referred to as "item-response-theory" (IRT) based scoring; it takes into account multiple stages of a challenge for each WHODAS 2.0 item. This variety of scoring for WHODAS 2.0 allows for greater fine-grained analyses that make use of the full records of the response classes for comparative contrast during populations or subpopulations. In WHODAS 2.0 in each domain and total scores, converting the summary score into a metric ranging from 0 to 100 (where 0 = no disability; 100 = full disability) (Ustin et al., 2010).

CHAPTER – III METHODOLOGY

3.1 Study design

A cross-sectional study was chosen to conduct the study and as it was found to be an appropriate design to find out the objectives. Cross-sectional studies measure simultaneously the exposure and health outcome in a given population and in a given geographical area at a certain time.

This study included the maximum proportion of the population who came for receiving treatment at the Neurology OPU of CRP from July to September 2021. Moreover, this design was cost and time-effective for the researcher compared to an experimental study. According to Hemed and Tanzania (2015) stated that cross-sectional study is relatively cheap among the observational studies and can be conducted in a short time.

3.2 Study site and study area

The researcher collected data from the Neurology OPU of Centre for the Rehabilitation of the Paralysed (CRP), Savar and Dhaka.

3.3 Study Population

The study populations were stroke patients who came to receive treatment at CRP neurology OPU from July to September 2021.

3.4 Sampling technique

A convenient sampling technique was selected by the researcher to draw out the sample from the population and as it is one of the easiest, cheapest and quicker methods of sample selection. It is a type of nonprobality or nonrandom sampling where members of the target population that meet certain practical criteria, such as easy accessibility, geographical proximity, availability at a given time, or the willingness to participate are included in the study (Etikan et al., 2016).

3.5 Sample size Calculation (Cross-sectional): (Hannan, 2016)

Sampling procedure for a cross-sectional study done by the following equation-

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

Where

d is the precision

p is the expected prevalence

q is 1-p

If p = 0.3 now let's say we want 95% confidence, and at least 5% plus or minus precision.

A 95% confidence level gives us Z values of 1.96, per the normal tables,

Sample size

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

$$n = \frac{(1.96)^2 \times 0.3 \times 0.7}{(0.05)\text{^}2}$$

= 322.56

=323

According to this equation, the sample should be 323 people. Due to the pandemic situation, the academic activities were closed and interrupted for a few months. The unavailability of the patients, lack of opportunity, and the interruption during the data collection period caused in reduction of the sample size, therefore only 121 patients were selected.

3.6 Selection Criteria

3.6.1 Inclusion criteria

1. Age more than 18 years as WHODAS 2.0 is not administered below 18 years of age (Ustun et al., 2010).
2. First incidence of stroke at least 1 month due to instruction of WHODAS 2.0.
3. Both male and female.
4. All types of stroke.

3.6.2 Exclusion criteria

1. Mentally ill and medically unstable participants.
2. Lack of interest to participate in research activities.

3.7 Outcome measurement Tool

- FIM scoring
- WHODAS 2.0 -36-item version, interviewer-administered

3.8 Data collection

3.8.1 Data collection tool

- A consent form.
- Questionnaire (Bangla) containing personal, socio-demographic information, FIM scoring, and the original version of WHODAS 2.0-36-item version.
- In that time some other necessary materials are used like pen, pencil, and white paper, and clip board**.**

3.8.2 Data collection period: July to September 2021

3.8.3 Procedure of data collection

Written consent was taken from the participants. A Questionnaire was used to accumulate data by face-to-face conversation. Before collecting data, the researcher clarified to all data collectors about the Procedure of data collection. Every questionnaire was rechecked by the researcher for missing or unclear information. According to WHODAS instruction, two flashcards are used in WHODAS 2.0 -36-items interviewer versions. The purpose of the flashcards is to provide a visual cue or reminder to the respondent about important pieces of information to remember while answering questions. Data collectors showed the flashcards to the participants before every question's answer during the data collection period (Ustin et al., 2010).

3.8.4 Data analysis

After completing the initial data collection, every answer was cross-checked to find out the missing or unclear information. Then data were analyzed through the Statistical package of social science (SPSS) Version 20. Microsoft Excel worksheet 16 was used to create most of the graphs and charts. Then data were analyzed through descriptive and interferential statistics. In the descriptive part, in the case of parametric data, the central tendency and the measure of dispersion were presented through mean and standard deviation. The categorical data were presented as frequency and percentage of proportion through different visualization tools such as pie charts, bar graphs. To find out the relationship between sociodemographic, stroke parameters, and functional and disability status, the Chi-square test for independence and Pearson correlation coefficient test was applied. In the case of two categorical variables, Pearson chi-square test and two continuous variables Pearson correlation coefficient tests were applied.

3.9 Ethical consideration

The whole process of this research project was done by following the Bangladesh Medical Research Council (BMRC) guidelines, Institution Review Board (IRB), and World Health Organization (WHO) Research guidelines. The proposal of the dissertation including methodology was approved by Institutional Review Board and obtained permission from the concerned authority of the ethical committee of Bangladesh Health Professions Institute (BHPI). Informed consent was used to take permission from all participants. Participants' rights and privileges were ensured. All the participants were aware of the aim and objectives of the study. Findings of the study were disseminated with the approval of regarding authority. The researcher strictly maintained the confidentiality regarding participant's condition and treatment.

3.10 Rigor of the study

A rigorous manner was maintained to conduct the study. The study was conducted cleanly and systemically. During the data collection, it was ensured participants were not influenced by experience. The answer was accepted whether they were in a negative or positive impression. No leading questions were asked or no important questions were avoided. The participant information was coded accurately and checked by the supervisor to eliminate any possible errors. The entire information was handled with confidentiality. In the result section, the outcome was not influenced by showing any personal interpretation. Every section of the study was checked and rechecked by the research supervisor.

CHAPTER- IV RESULTS

Variables	Categories	Frequency (n=121)	Percentage
Age Range	30-40 years	18	15
	41-50 years	31	26
	51-60 years	41	34
	61-70 years	31	26
Gender	Male	89	74
	Female	32	26
Living area	Rural	65	54
	Semi urban	31	26
	Urban	25	21
Educational status	No formal education	9	75
	Primary education	33	27
	Secondary education	40	33
	Higher secondary	13	11
	Bachelor degree or above	26	22
Occupation	Businessman	54	45
	Housewife	27	22
	Teacher	6	5
	Banker	3	3
	Doctor	2	2
	Day labor	5	4
	Immigrant	9	7
	Employee	15	12
Marital status	Married	120	99
	Unmarried	0	0
	Widow	1	1

Table-1: Baseline characteristics of the sample (socio-demographic)

A descriptive and inferential statistics were conducted to find out the result. In the descriptive section, the categorical variables were measured in percentage and had been shown in different pie charts, bar graphs, and tables. The continuous variable's central tendency and measure of dispersion were calculated through mean and standard deviation. In the inferential section, the Pearson chi-square test for independence and Pearson correlation coefficient test were conducted to find out the association between different dependent and independent variables.

Socio-demographical information

4.1 Age range

The study was conducted on 121 participants of had a stroke. In the study, the minimum age of a participant was 35 and the maximum age of a participant was 70. Their mean age was 50.05 and the standard deviation was 9.008. Participants in between 30-40 years 18%, participants in between 41-50 years 31%, participants in between 51-60 years 41% and 31% participants in between 61-70 years.

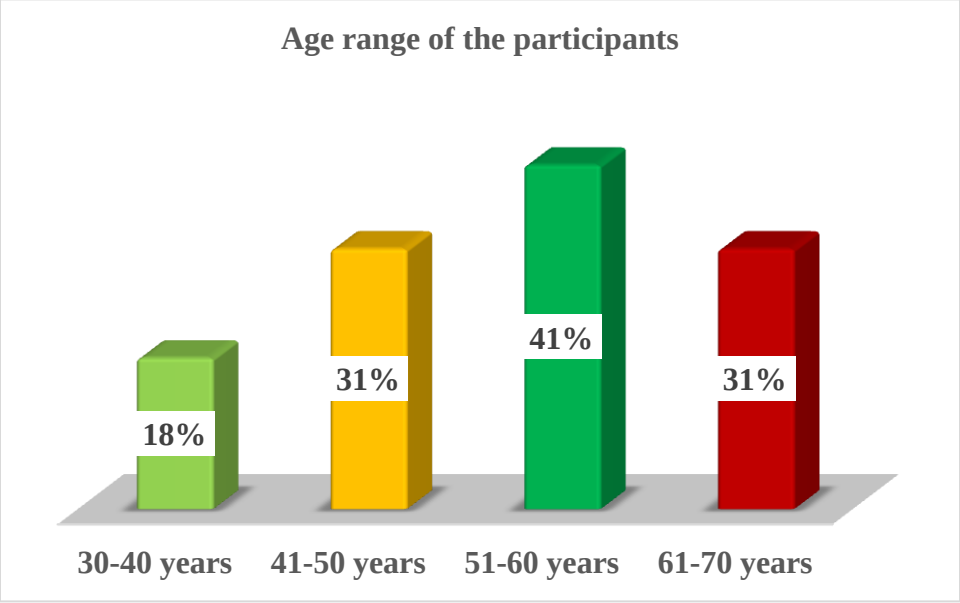


Figure-1: Age range of the participants

4.2 Gender of the participants: Among the 121 participants 74% (n=89) were male and 26% (n=32) were female.

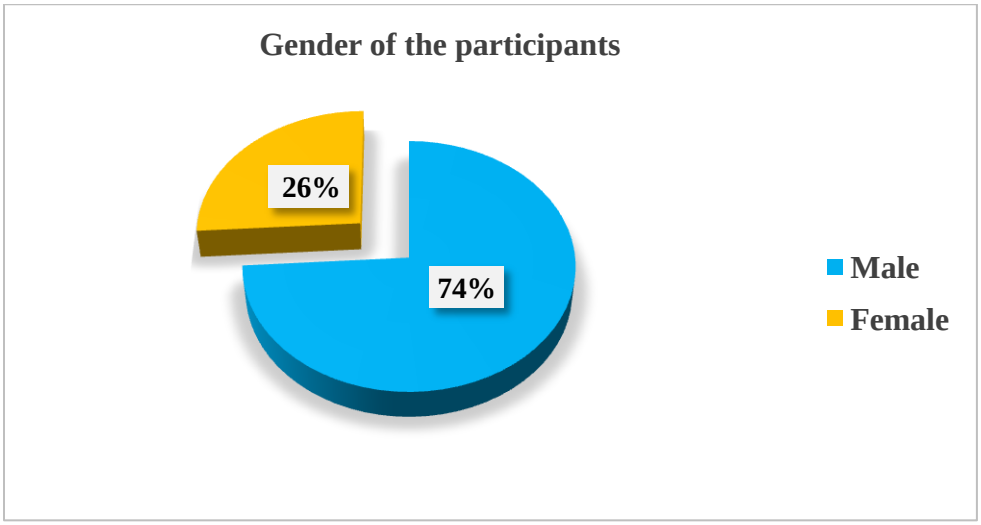


Figure-2: Gender of the participants

4.3 Comorbidity status of the participants: Among the 121 participants, it was found that 21% (n=25) had no comorbidity, 32% (n=39) had Single comorbidity and 47% (n=57) had multiple comorbidities (Hypertension, Diabetes mellitus, Heart disease, Lung Disease, and Kidney disease).

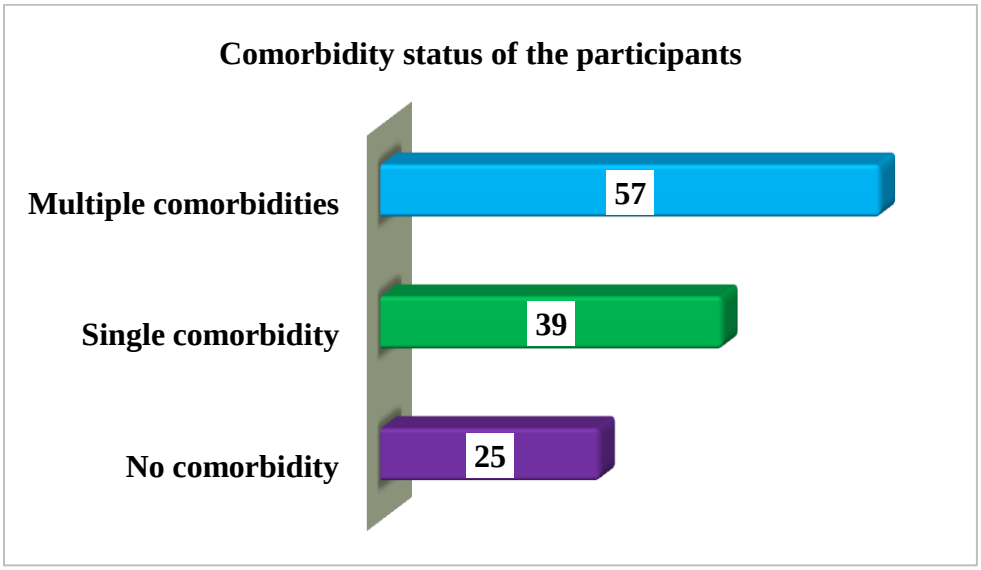


Figure-3: Comorbidity status of the participants

4.4 Stroke related physiological information

4.4.1 Type of stroke: Among 121 participants of stroke patients, 77% (n=93) were ischemic stroke and 23% (n=28) were hemorrhagic stroke.

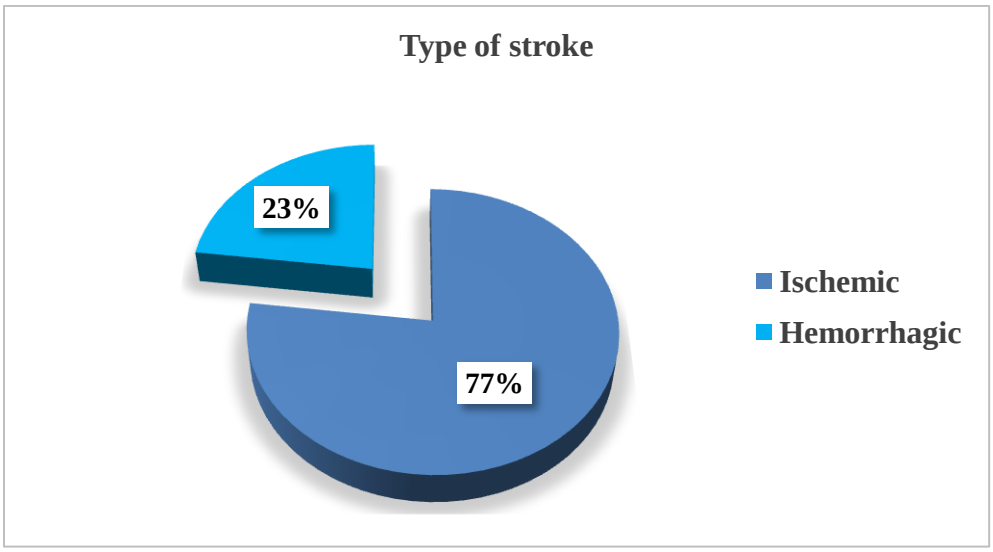


Figure-4: Type of stroke

4.4.2 Affected side of the participants: Among 121 of the participants, 43% (n= 52) were left-sided hemiplegic (LSH), 57% (n=69) were right-sided hemiplegic (RSH).

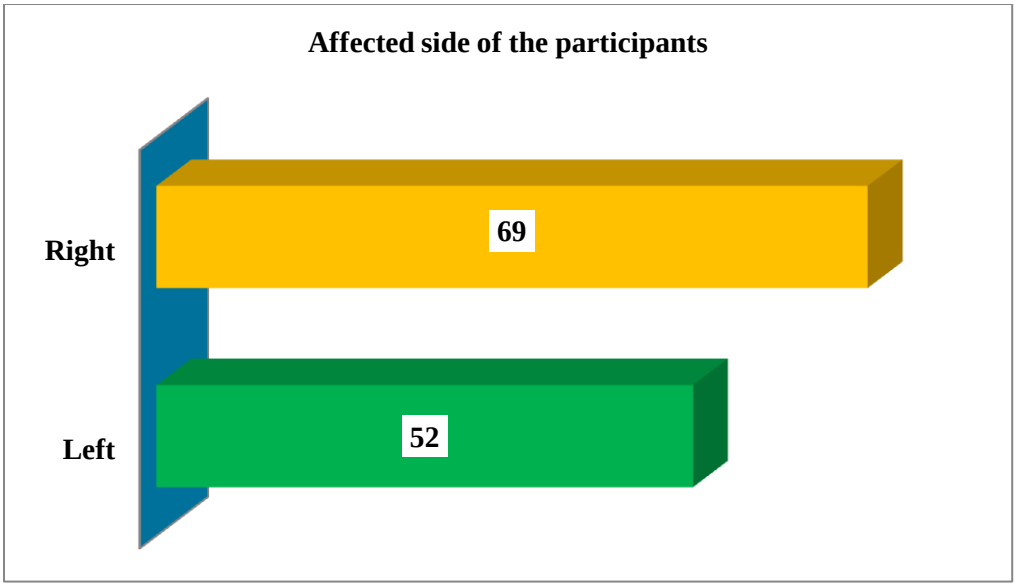


Figure-5: Affected side of the participants

4.4.3 Stages of stroke

Among 121 participants, 58% (n=70) were sub acute stages and 42% (n=51) were chronic stages.

Categories	Frequency(n=121)	Percentage
Sub acute	70	58
Chronic	51	42

Table-2: Stages of stroke

4.5 Rehabilitation related information

Among 121 of the participants, the time between stroke and start of rehabilitation where 19% (n=23), 43% (n=52), 9% (n=11) and 29% (n=35) were 1 month, 2-6 month, above 6 month and above 1 year. Duration of Rehabilitation where 48% (n=58) were 2 weeks, 19% (n=23) were 4 weeks, 14% (n=17) were 8 weeks and 19% (n=23) were 12 weeks.

Variables	Categories	Frequency (n=121)	Percentage
The time between stroke and start of rehabilitation	1 month	23	19
	2-6 month	52	43
	Above 6 month	11	9
	Above 1 year	35	29
Duration of Rehabilitation	2 weeks	58	48
	4 weeks	23	19
	8 weeks	17	14
	12 weeks	23	19

Table-3: Rehabilitation related information

4.6 Gross Motor Functional Activities (according to FIM scoring)

4.6.1 Rolling right to left and Rolling left to right

The study found that 2% (n=2) were independent, 40% (n=48) were modified independent, 20% (n=25) were need minimal assistance and 38% (n=46) were need moderate assistance in rolling right to left. 3% (n=4) were completely independent, 36% (n=43) were modified independent, 39% (n=47) were need moderate assistance, 21% (n=26) needed minimal assistance and 1% (n=1) were need total assistance in rolling left to right.

FIM Scoring	**Rolling right to left**		**Rolling left to right**	
	Frequency (n=121)	**%**	**Frequency (n=121)**	**%**
Total Assistance (1)	0	0	1	1
Maximum Assistance (2)	0	0	0	0
Moderate Assistance (3)	46	38	47	39
Minimal Assistance (4)	25	20	26	21
Supervision (5)	0	0	0	0
Modified Independent (6)	48	40	43	36
Complete independent (7)	2	2	4	3
Total	**121**	**100**	**121**	**100**

Table-4: Rolling right to left and Rolling left to right

4.6.2 Bridging

Among the 121 participants, 1% (n=1) were need total assistance, 43% (n=52) were need moderate assistance, 17% (n=20) were need minimal assistance, 1% (n=1) were need supervision, 36% (n=45) were modified independent and 2% (n=2) were complete independent.

Bridging	Frequency (n=121)	Percentage
Total Assistance	1	1
Maximum Assistance	0	0
Moderate Assistance	52	43
Minimal Assistance	20	17
Supervision	1	1
Modified Independent	45	36
Complete independent	2	2
Total	**121**	**100**

Table-5: Bridging

4.6.3 Supine to sit and Sit to supine

The study showed that out of these 121 participants, 2% (n=2) were completely independent, 35% (n=42) were modified independent, 41% (n=50) needed moderate assistance, 22% (n=27) needed minimal assistance in Supine to sit. In Sit to supine, 2% (n=2) were completely independent, 36% (n=44) were modified independent, 41% (n=49) were need moderate assistance, 20% (n=25) needed minimal assistance.

FIM Scoring	**Supine to sit**		**Sit to supine**	
	Frequency (n=121)	**%**	**Frequency (n=121)**	**%**
Total Assistance (1)	0	0	0	0
Maximum Assistance (2)	0	0	0	0
Moderate Assistance (3)	50	41	49	41
Minimal Assistance (4)	27	22	25	20
Supervision (5)	0	0	1	1
Modified Independent (6)	42	35	44	36
Complete independent (7)	2	2	2	2
Total	**121**	**100**	**121**	**100**

Table-6: Supine to sit and Sit to supine

4.6.4 Sitting static balance and Sitting dynamic balance

Among 121 participants, 3% (n=3) and 60% (n=73) were completely independent and modified independent, 22% (n=27), 13% (n=16) and 1% (n=1) were need moderate assistance, minimal assistance, supervision and maximum assistance in Sitting static balance. In Sitting dynamic balance, 3% (n=4), 20% (n=24), 13% (n=16) and 2% (n=2) were need total assistance, moderate assistance, minimal assistance and supervision, 61% (n=74) and 1% (n=1) were modified independent and complete independent.

FIM Scoring	**Sitting static balance**		**Sitting dynamic balance**	
	Frequency (n=121)	**%**	**Frequency (n=121)**	**%**
Total Assistance (1)	0	0	4	3
Maximum Assistance (2)	1	1	0	0
Moderate Assistance (3)	27	22	24	20
Minimal Assistance (4)	16	13	16	13
Supervision (5)	1	1	2	2
Modified Independent (6)	73	60	74	61
Complete independent (7)	3	3	1	1
Total	**121**	**100**	**121**	**100**

Table-7: Sitting static balance and Sitting dynamic balance

4.6.5 Standing static balance and Standing dynamic balance

3% (n=4), 2% (n=2), 42% (n=51) and 17% (n=20) were need total assistance, maximal assistance, moderate assistance and minimal assistance, 34% (n=41) and 2% (n=3) were modified independent and complete independent in Standing static balance. In Standing dynamic balance, 32% (n=39) were modified independent, 3% (n=4), 2% (n=2), 44% (n=53) and 19% (n=23) needed total assistance, maximum assistance, moderate assistance and minimal assistance.

FIM Scoring	**Standing static balance**		**Standing dynamic balance**	
	Frequency (n=121)	**%**	**Frequency (n=121)**	**%**
Total Assistance (1)	4	3	4	3
Maximum Assistance (2)	2	2	2	2
Moderate Assistance (3)	51	42	53	44
Minimal Assistance (4)	20	17	23	19
Supervision (5)	0	0	0	0
Modified Independent (6)	41	34	39	32
Complete independent (7)	3	2	0	0
Total	**121**	**100**	**121**	**100**

Table-8: Standing static balance and Standing dynamic balance

4.6.6 Transfer bed wheelchair and Gait

Among the 121 participants, 6% (n=7), 7% (n=9), 38% (n=46) and 12% (n=15) were need total assistance, maximal assistance, moderate assistance and minimal assistance, 32% (n=38) and 5% (n=6) were modified independent and complete independent in Transfer bed wheelchair. In Gait, 14% (n=17), 2% (n=2), 36% (n=43) and 18% (n=22) were need total assistance, maximal assistance, moderate assistance and minimal assistance, and 30% (n=37) were modified independent.

FIM Scoring	**Transfer bed wheelchair**		**Gait**	
	Frequency (n=121)	**%**	**Frequency (n=121)**	**%**
Total Assistance (1)	7	6	17	14
Maximum Assistance (2)	9	7	2	2
Moderate Assistance (3)	46	38	43	36
Minimal Assistance (4)	15	12	22	18
Supervision (5)	0	0	0	0
Modified Independent (6)	38	32	37	30
Complete independent (7)	6	5	0	0
Total	**121**	**100**	**121**	**100**

Table-9: Transfer bed wheelchair and Gait

Descriptive analysis of WHODAS 2.0

5. Cognition

5.1 Concentrating on doing something for ten minutes

Among 121 participants, 30%, 12%, 47%, 10% and 1% were no problem, mild problem, moderate problem, severe problem and extreme problem to concentrate about 10 minutes.

Level of difficulty	Frequency (n=121)	Percentage
No problem	36	30
Mild problem	14	12
Moderate problem	57	47
Severe problem	13	10
Extreme or cannot do	1	1

Table-10: Concentrating on doing something for ten minutes

5.2 Remember to do important things

The study found that 30%, 13%, 46%, 5% and 6% were no problem, mild problem, moderate problem, severe problem and extreme problem to remember to do important.

Level of difficulty	Frequency (n=121)	Percentage
No problem	36	30
Mild problem	16	13
Moderate problem	56	46
Severe problem	6	5
Extreme or cannot do	7	6

Table-11: Remember to do important things

5.3 Finding solutions to solving problems in daily life

Study showed that 12%, 22%, 53%, 10% and 3% were no problem, mild problem, moderate problem, severe problem and were extreme problem to find out the solution to solve their daily problem.

Level of difficulty	Frequency (n=121)	Percentage
No problem	15	12
Mild problem	26	22
Moderate problem	64	53
Severe problem	12	10
Extreme or cannot do	4	3

Table-12: Finding solutions to solving problems in daily life

5.4 Learning a new task

Study found that 17%, 33%, 41% and 9% participants were no problem, mild problem, moderate problem and severe problem to learning a new task.

Level of difficulty	Frequency (n=121)	Percentage
No problem	21	17
Mild problem	40	33
Moderate problem	50	41
Severe problem	10	9
Extreme or cannot do	0	0

Table-13: Learning a new task

5.5 Understanding what people say

Study showed that 59%, 31%, 6%, 3% and 1% participants were no problem, mild, moderate, severe and extreme problem with understanding.

Level of difficulty	Frequency (n=121)	Percentage
No problem	71	59
Mild problem	38	31
Moderate problem	7	6
Severe problem	4	3
Extreme or cannot do	1	1

Table-14: Understanding what people say

5.6 Starting & maintaining a conversation

Study found that 12%, 23%, 55%, 7% and 3% participants were no problem, mild problem, moderate problem, severe problem and extreme problem with starting and maintaining a conversation.

Level of difficulty	Frequency (n=121)	Percentage
No problem	14	12
Mild problem	28	23
Moderate problem	66	55
Severe problem	9	7
Extreme or cannot do	4	3

Table-15: Starting & maintaining a conversation

6. Mobility

6.1 Standing for long periods such as 30 minutes

Among 121 participants, 6%, 12%, 13%, 47% and 22% participants were no problem, mild problem, moderate problem, severe problem and extreme problem with Standing for long period.

Level of difficulty	Frequency (n=121)	Percentage
No problem	7	6
Mild problem	15	12
Moderate problem	15	13
Severe problem	57	47
Extreme or cannot do	27	22

Table-16: Standing for long periods such as 30 minutes

6.2 Standing up from sitting down

Study found that 21%, 22%, 26%, 30% and 1% participants were no problem, mild problem moderate, severe and extreme problem with Standing up.

Level of difficulty	Frequency (n=121)	Percentage
No problem	26	21
Mild problem	27	22
Moderate problem	31	26
Severe problem	36	30
Extreme or cannot do	1	1

Table-17: Standing up from sitting down

6.3 Moving around inside home: Study showed that 16%, 13%, 12%, 55% and 4% were no problem, mild problem, moderate problem, severe and extreme problem with moving insight their home.

Level of difficulty	Frequency (n=121)	Percentage
No problem	19	16
Mild problem	16	13
Moderate problem	15	12
Severe problem	66	55
Extreme or cannot do	5	4

Table-18: Moving around inside home

6.4 Getting out of home: 12%, 16%, 11%, 42% and 19% participants were no problem, mild problem, moderate problem, severe problem and were extreme problem with Getting out of home.

Level of difficulty	Frequency (n=121)	Percentage
No problem	15	12
Mild problem	19	16
Moderate problem	13	11
Severe problem	51	42
Extreme or cannot do	23	19

Table-19: Getting out of home

6.5 Walking a long distance: 4% participants were no problem, 6% were mild problem, 16% were moderate problem, 48% were severe problem and 26% were extreme problem with walking a long distance.

Level of difficulty	Frequency (n=121)	Percentages
No problem	5	4
Mild problem	8	6
Moderate problem	19	16
Severe problem	58	48
Extreme or cannot do	31	26

Table-20: Walking a long distance

7. Self-care activities

7.1 Washing whole body: Study found that 9%, 5%, 27%, 51% and 8% participants were no problem, mild problem, moderate problem, severe problem and extreme problem with washing their own body.

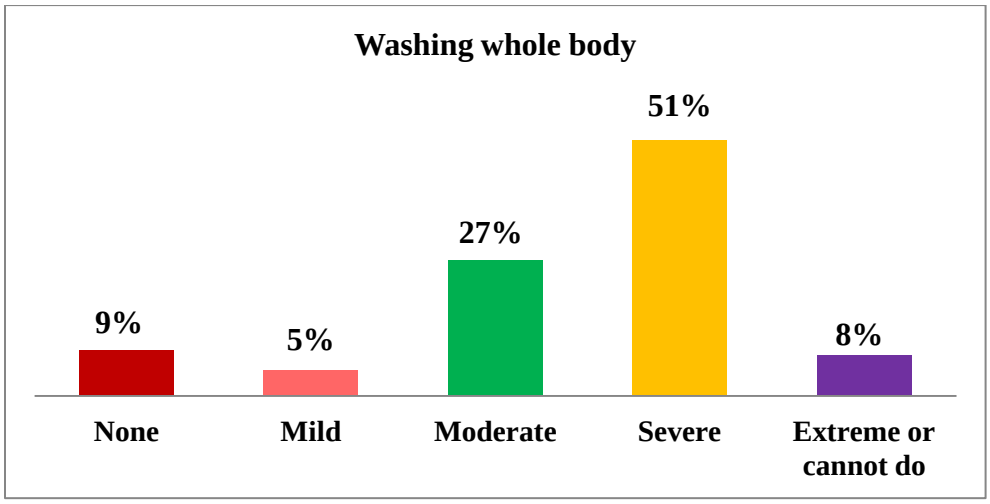


Figure-6: Washing the whole body

7.2 Getting dressed: 7% participants were no problem and mild problem, 28% were moderate problem, 50% were severe problem and 8% were extreme problem with Getting dressed.

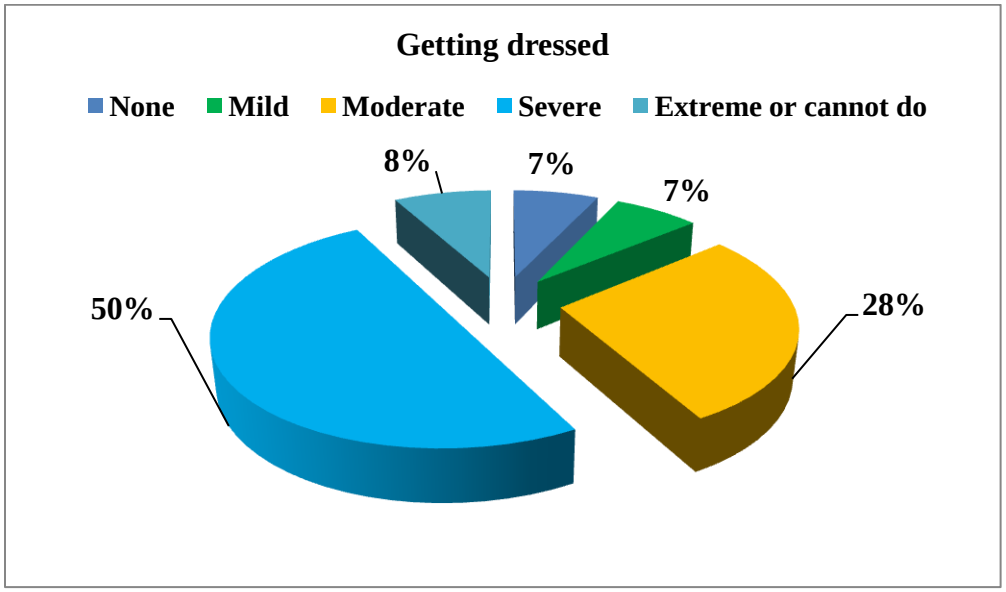


Figure-7: Getting dressed

7.3 Eating: Study showed that 22% participants were no problem, 6% were mild problem, 37% were moderate problem, 31% were severe and 4% were extreme problem with eating.

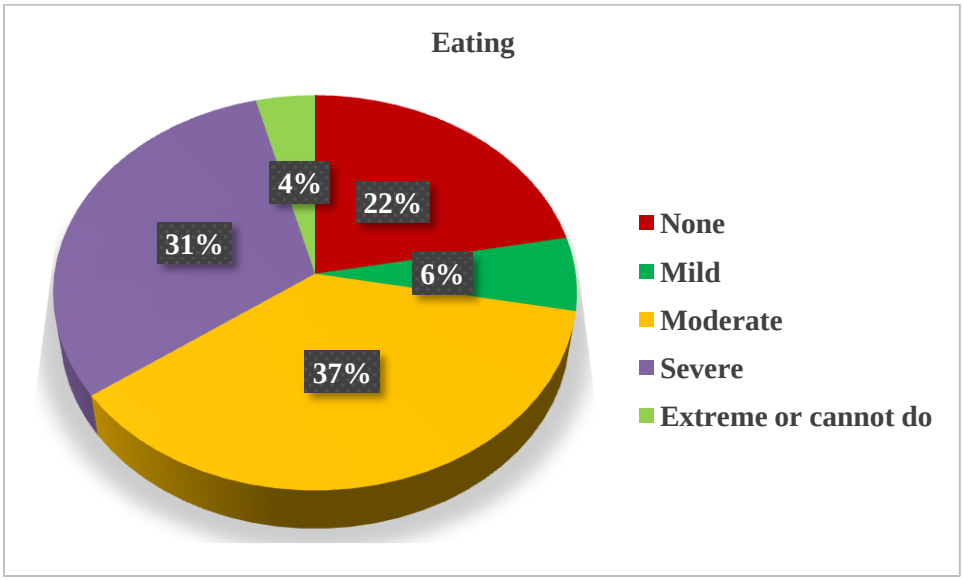


Figure-8: Eating

7.4 Staying by self for a few days: 8% participants were no problem, 4% were mild problem, 5% were moderate problem, 49% were severe and 34% extreme problem with staying along.

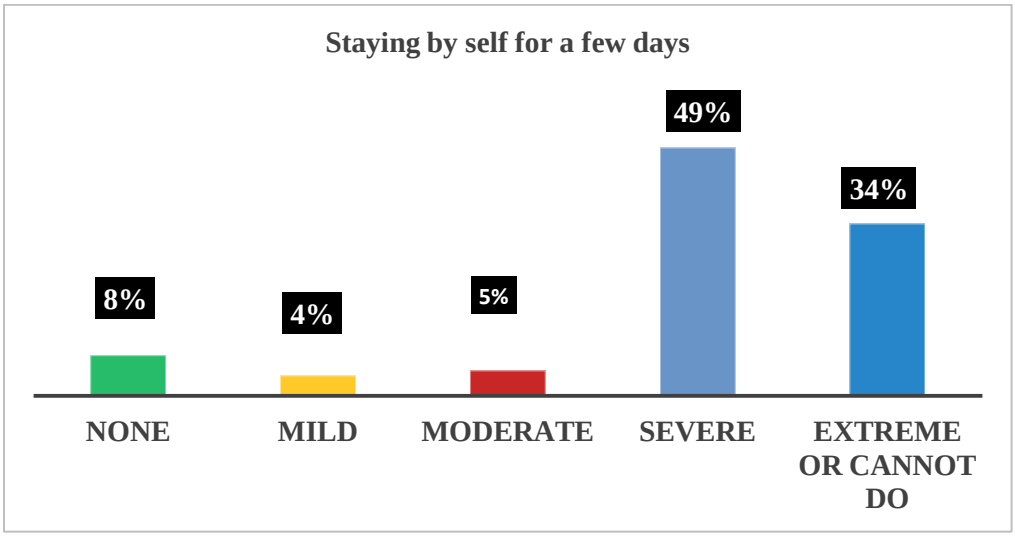


Figure-9: Staying by self for a few days

8. Getting along with people

8.1 Dealing with people

Study found that 61% participants were no problem, 28% were mild problem, 10% were moderate problem and 1% was severe problem with Dealing with people

Level of difficulty	Frequency (n=121)	Percentage
No problem	74	61
Mild problem	34	28
Moderate problem	12	10
Severe problem	1	1
Extreme or cannot do	0	0

Table-21: Dealing with people

8.2 Maintaining a friendship

Study showed that 37% participants were no problem, 36% were mild problem, 22% were moderate problem and 5% were severe problem with maintaining friendship.

Level of difficulty	Frequency (n=121)	Percentage
No problem	45	37
Mild problem	44	36
Moderate problem	26	22
Severe problem	6	5
Extreme or cannot do	0	0

Table-22: Maintaining a friendship

8.3 Getting along with people who are close: 88% participants were no problem and 12% were mild problem with getting along with people.

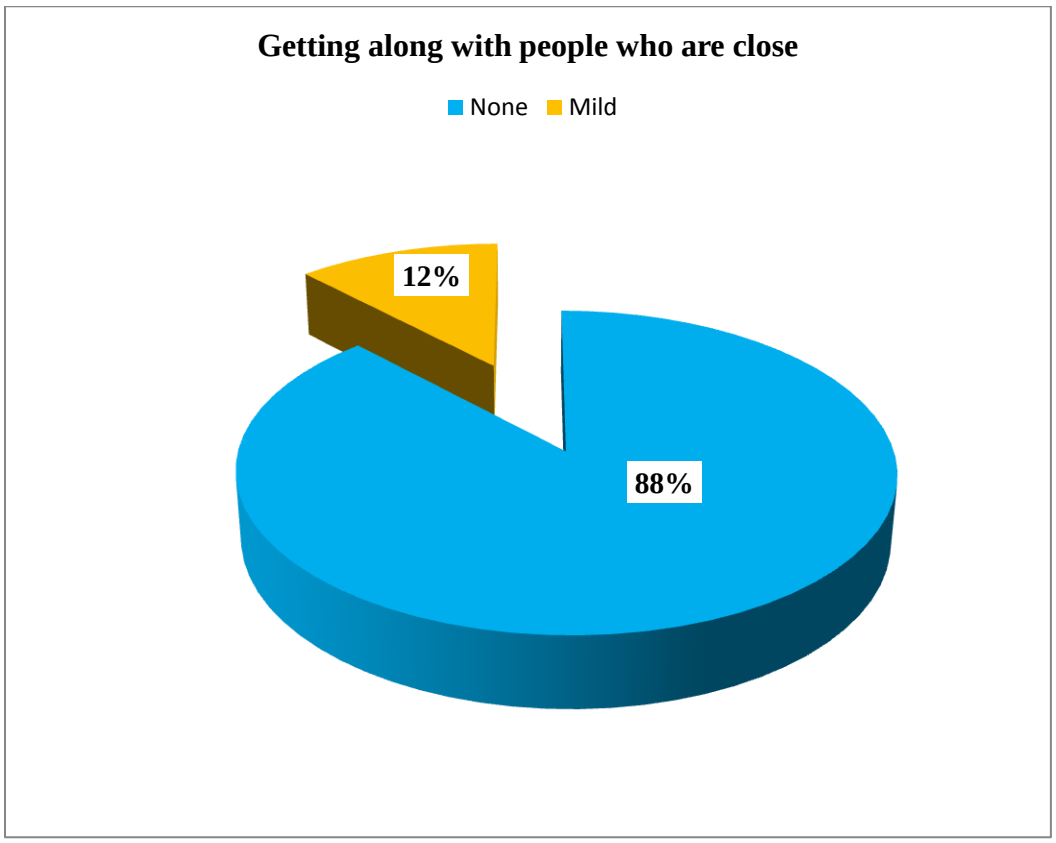


Figure-10: Getting along with people who are close

8.4 Making new friends: 31% participants were no problem, 35% were mild problem, 28% were moderate problem and 6% were severe problem with making new friends.

Level of difficulty	Frequency (n=121)	Percentage
No problem	38	31
Mild problem	42	35
Moderate problem	34	28
Severe problem	7	6
Extreme or cannot do	0	0

Table-23: Making new friends

8.5 Sexual activities

Study found that 3% participants were moderate problem and 27% were severe and 70% were extreme problem with Sexual activities.

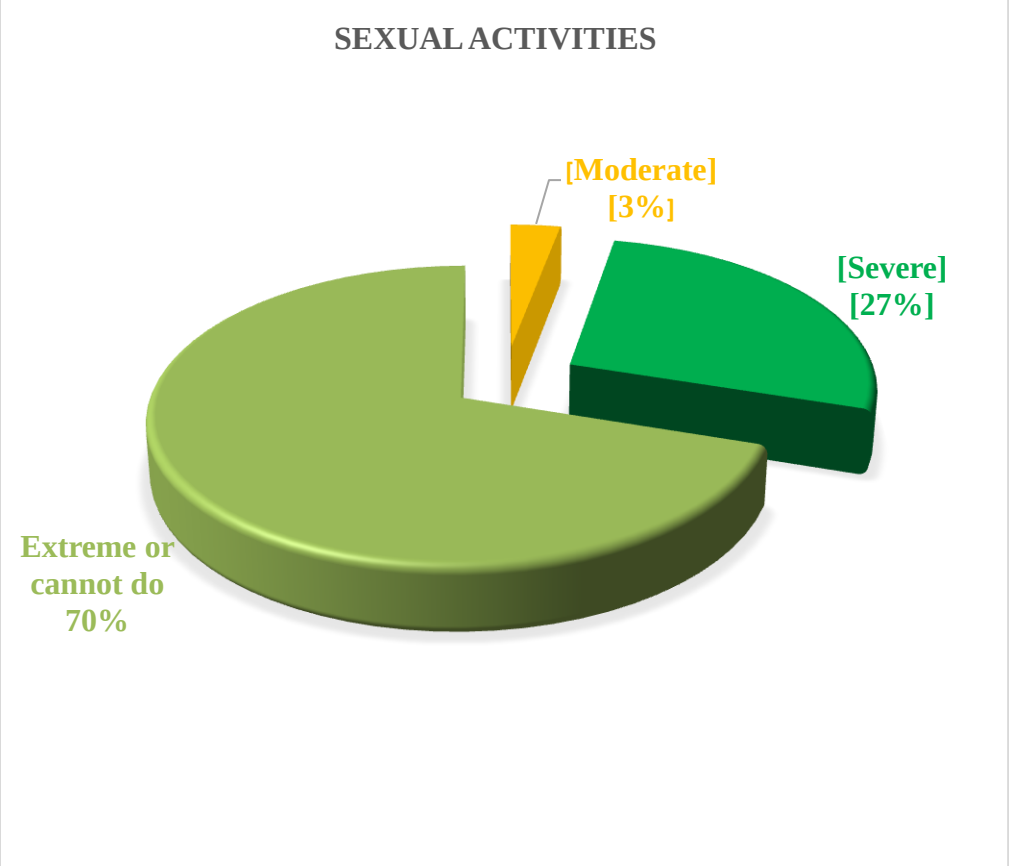


Figure-11: Sexual activities

9. Household activities

9.1 Taking care of household responsibilities: In this study, 3% participants were no problem, 6% were mild problem, 14% were moderate problem and 47% were severe and 30% were extreme problem with Taking care of household responsibilities.

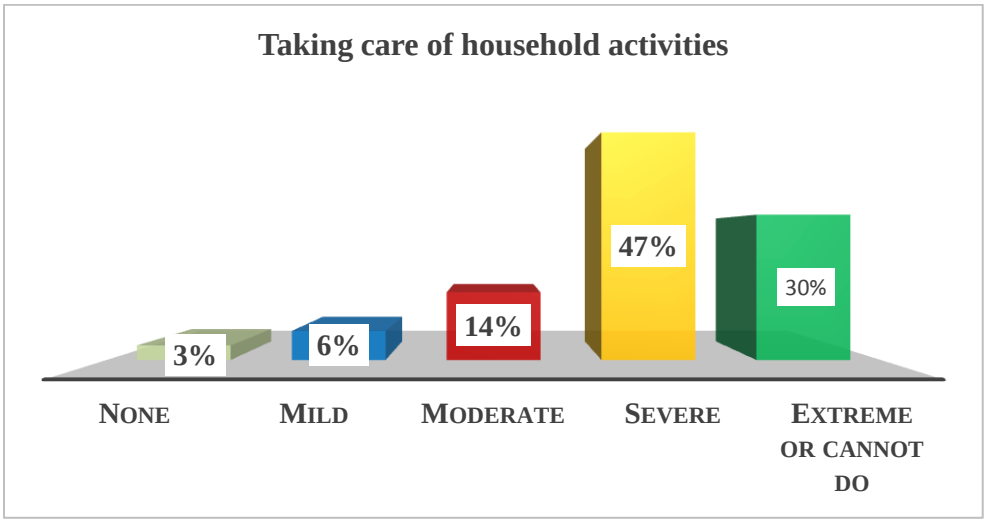


Figure-12: Taking care of household responsibilities

9.2 Doing most important household task: Study found that 8% were mild problem, 13% were moderate problem, 46% were severe and 33% were extreme problem with done most important household task.

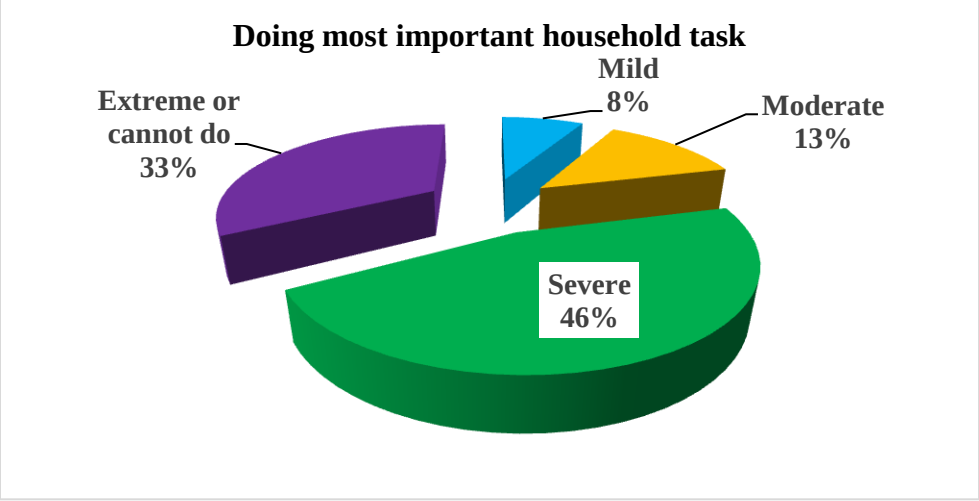


Figure-13: Doing most important household task

9.3 Getting all the household work: 9% were mild problem, 12% were moderate problem, 55% were severe problem and 24% were extreme problem with getting all the household work.

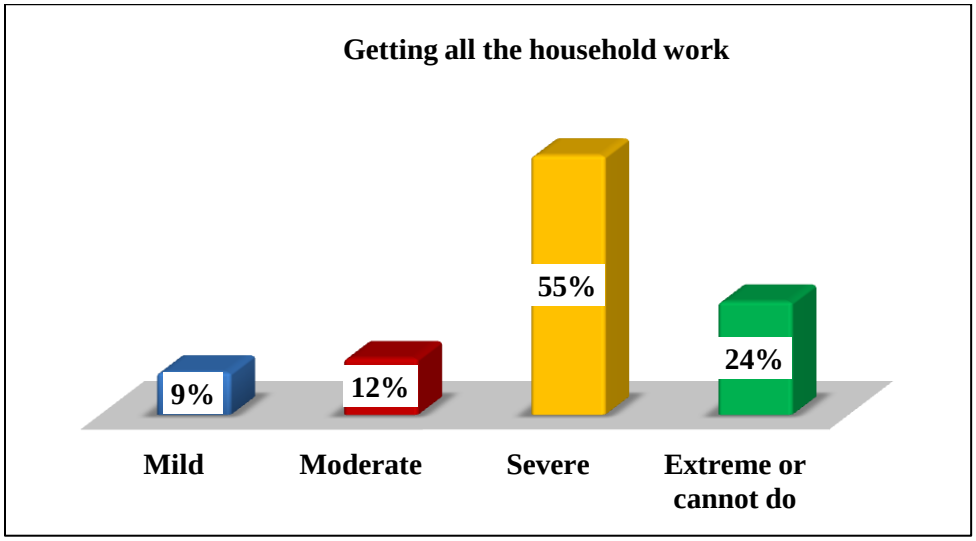


Figure-14: Getting all the household work

9.4 Household work done as quickly: 6% were mild problem, 13% were moderate problem, 49% were severe problem and 32% were extreme problem with Household work done as quickly.

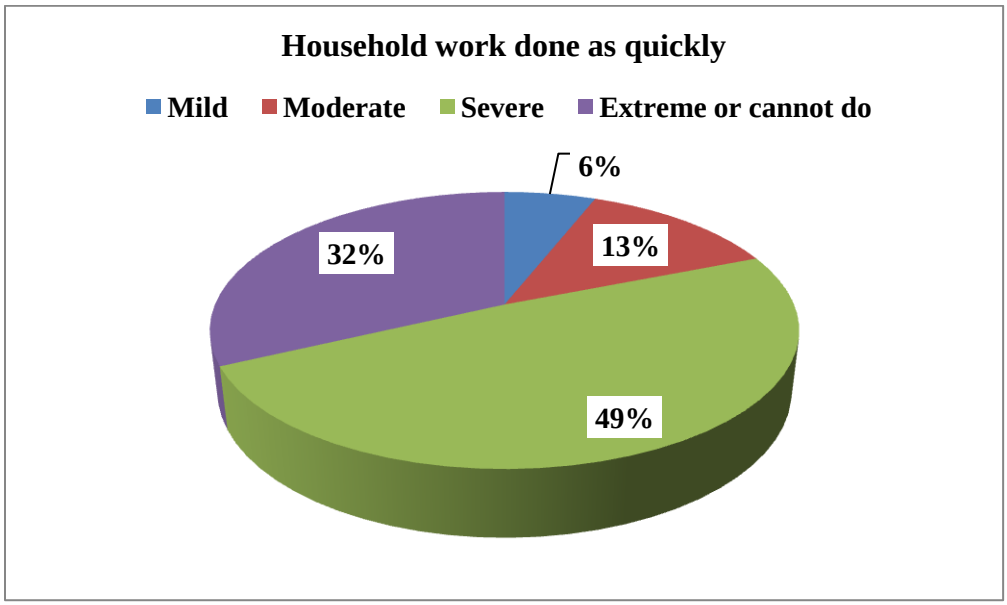


Figure-15: Household work done as quickly

10. Participation

10.1 Problem to joining in community activities

Study found that 16% were mild problem, 17% were moderate problem, 47% were severe and 20% were extreme Problem to joining in community activities.

Level of difficulty	Frequency (n=121)	Percentage
No problem	19	16
Mild problem	21	17
Moderate problem	57	47
Severe problem	24	20
Extreme or cannot do	0	0

Table-24: Problem to joining in community activities

10.2 Problem because of barriers: 11% participants were no problem, 18% were mild problem, 19% were moderate problem, 40% were severe problem and 12% were extreme problem with Problem because of barrier.

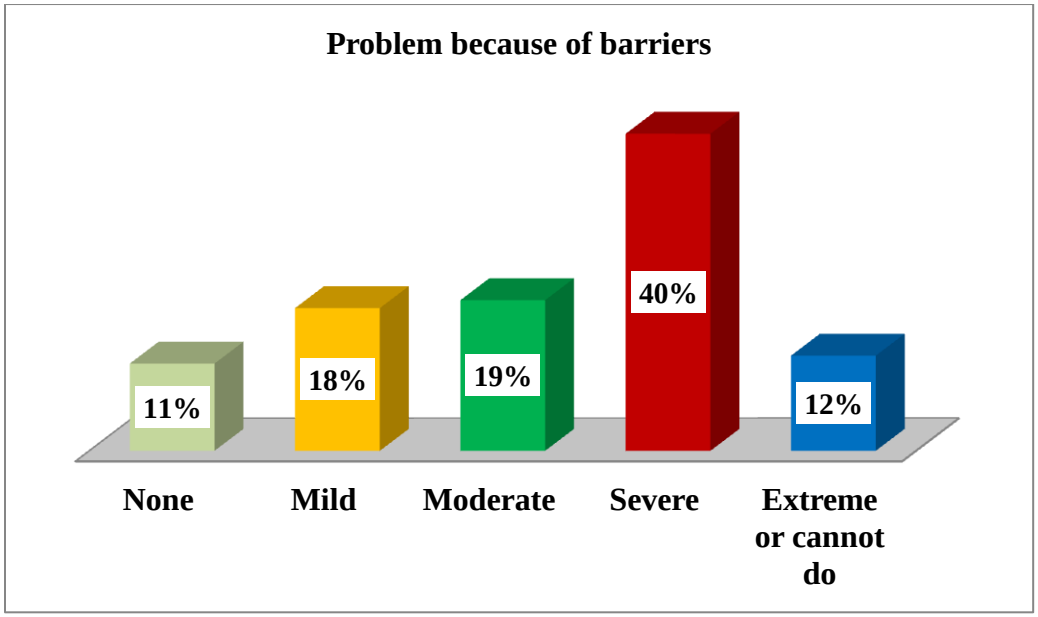


Figure-16: Problem because of barriers

10.3 Problem to living with dignity cause of attitude: Study found that 7% participants were no problem, 61% were mild problem 18% were moderate problem and 14% were severe problem with Dealing with people Problem to living with dignity cause of attitude.

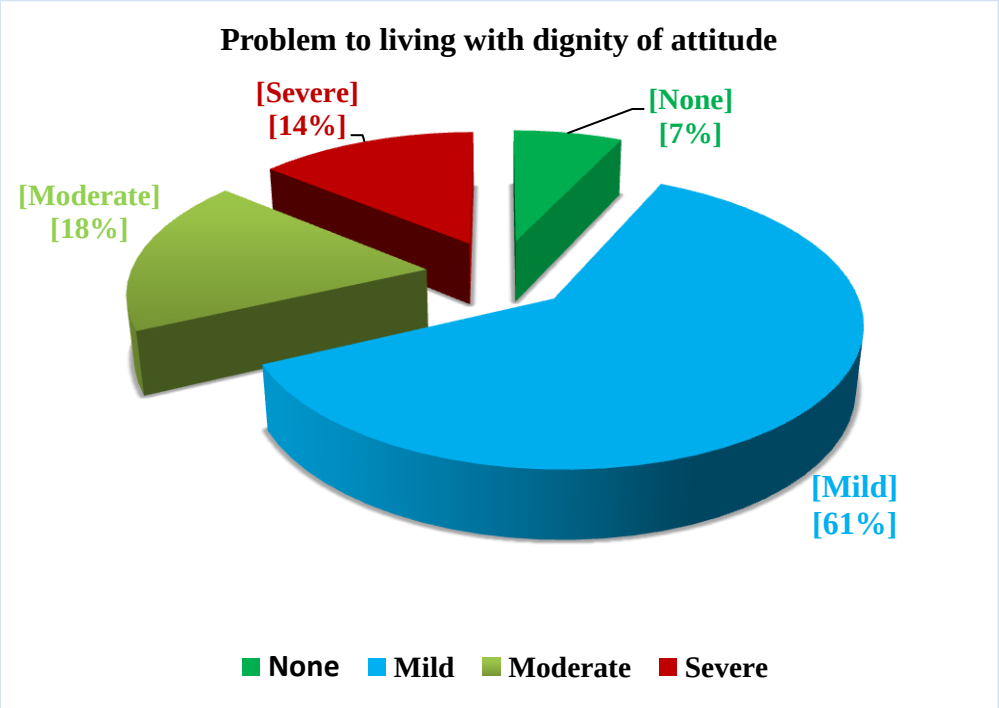


Figure-17: Problem to living with dignity cause of attitude

10.4 Time spends on health condition: Study showed that 1% was mild problem, 31% were moderate problem, 61% were severe problem and 7% were extreme problem with Time spends on health condition.

Level of difficulty	Frequency (n=121)	Percentage
No problem	1	1
Mild problem	36	31
Moderate problem	74	61
Severe problem	9	7
Extreme or cannot do	0	0

Table-25: Time spends on health condition

10.5 Emotionally depressed: 1% was no problem, 7% were mild problem, 8% were moderate problem, and 84% were severe problem to affecting emotionally depressed.

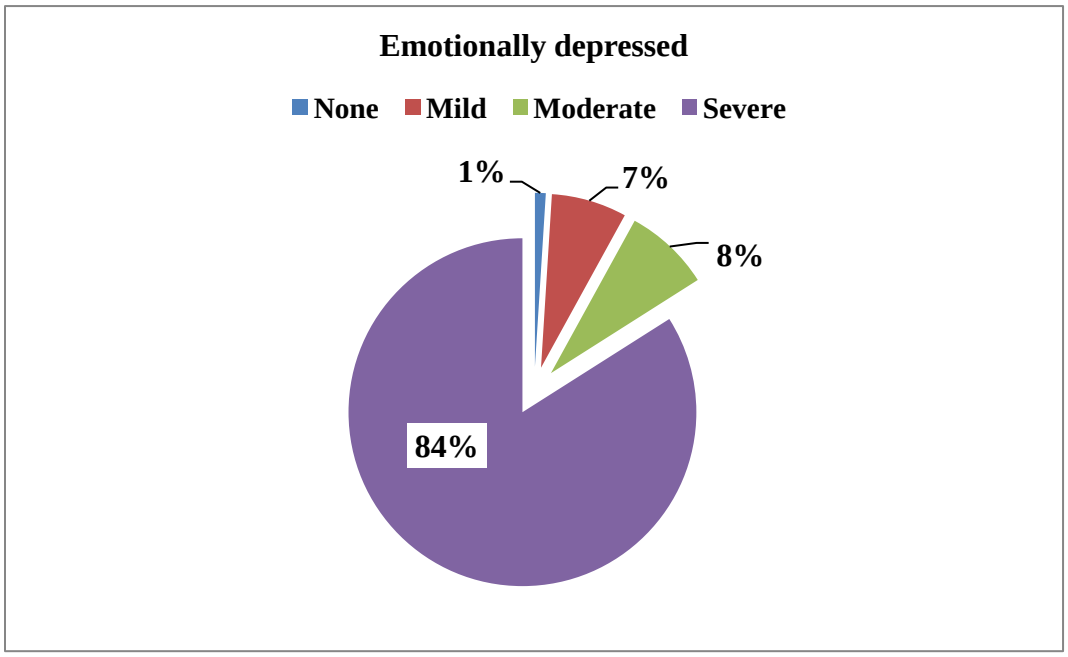


Figure-18: Emotionally Depressed

10.6 Problem with financial resources of family

2% participant showed that mild problem, 10% were moderate problem, 86% participants were severe and other 2% were extreme problem with financial resources of family.

Level of difficulty	Frequency (n=121)	Percentage
No problem	0	0
Mild problem	3	2
Moderate problem	12	10
Severe problem	104	86
Extreme or cannot do	2	2

Table-26: Problem with financial resources of family

10.7 Problem with family: 3% and 11% participants were mild and moderate problem, 84% were severe Problem and 2% were extreme problem because of them, their families were facing trouble.

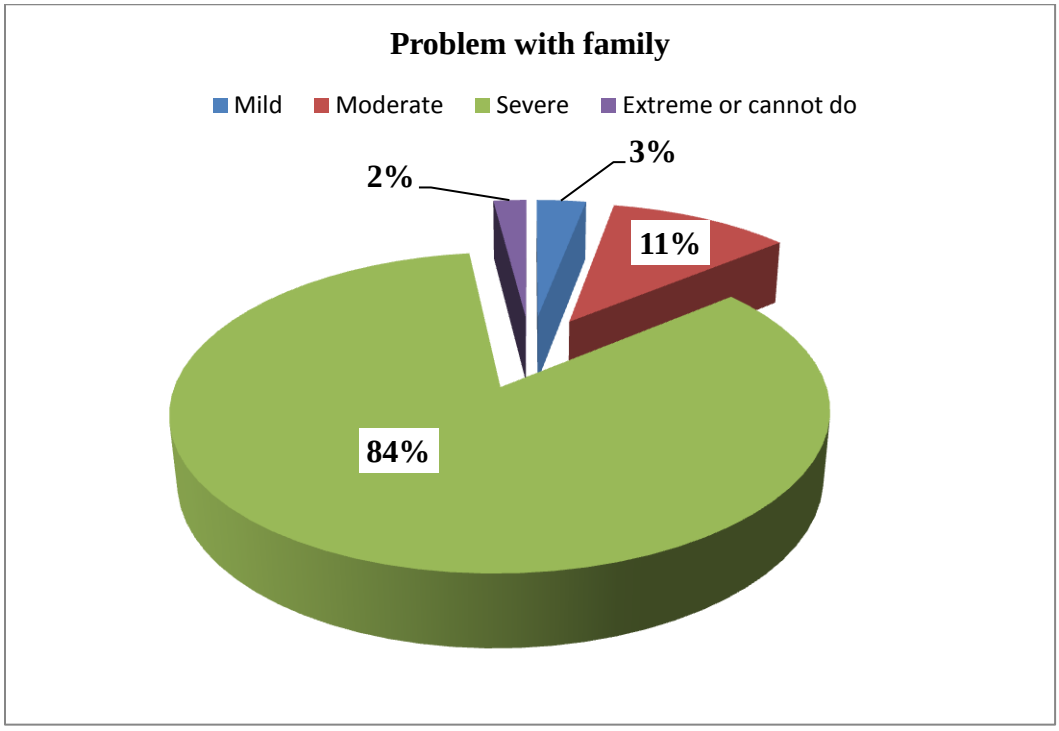


Figure-19: Problem with family

10.8 Time for relaxation of pleasure: The study showed that 7% of participants were no problem, 47% were mild problem, 28% were moderate problem, 17% were severe and 1% was an extreme problem with them to time for relaxation of pleasure.

Level of difficulty	Frequency (n=121)	Percentage
No problem	8	7
Mild problem	57	47
Moderate problem	34	28
Severe problem	21	17
Extreme or cannot do	1	1

Table-27: Time for relaxation of pleasure

Inferential statistical analysis

11.1 Association between Age category and Gross motor function category (according to FIM scoring).

Table-28 shows the statistical comparison between Age category and the gross motor function category.

Null Hypothesis (H_0): There is no Association between Age category and Gross motor function category.

Alternative Hypothesis (H_A): There is Association between Age category and Gross motor function category.

Test assumptions:

1. Two categorical variables including two or more subcategories.
2. 0.0% of cells have an expected count of less than 5.

Level of significance (P value < .05)

Association between Age category and Gross motor function category							
			FIM category		Total	Pearson Chi-square Value (χ^2)	P-Value
			Moderate to total assistance (poor physical activity)	Minimal to complete independent(Good physical activity)			
Age category	Above 50	N	52	23	75	39.113	.000*
		%	69%	31%	100%		
	Below 50	N	5	41	46		
		%	11%	89%	100%		
Total		N	57	64	121		
		%	47%	53%	100%		

Alpha value= .05 ***Significant**

Table-28: Association between Age category and Gross motor function category

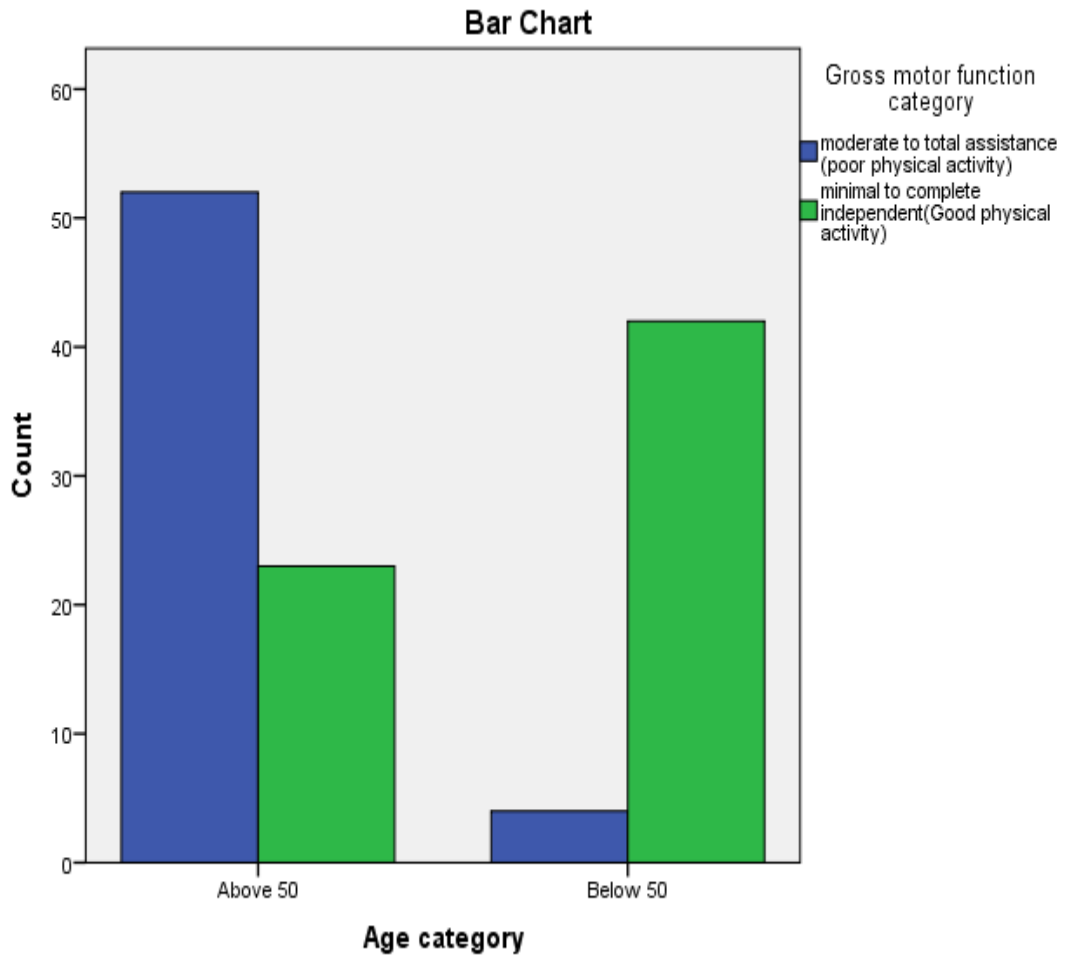


Figure-20: Association between Age category and Gross motor function category

In this study, there was a significant association between Age category and Gross motor function category in the chi-square test. The corresponding p-value (.000) of the chi-square value is less than the alpha value (.05). Therefore the null hypothesis was rejected. The phi (φ) coefficient of .569, indicating a large association. The Bar chart also showed that those who were below 50 had better physical activity than those who were above 50. So, for these consequences, it could be said that this Gross motor function category was strongly associated with the age category of the participants.

11.2 Association between Stages of stroke and Gross motor function category

Table 29 shows the statistical comparison between Stages of stroke and the Gross motor function category.

Null Hypothesis (H_0): There is no Association between Stages of stroke and Gross motor function category.

Alternative Hypothesis (H_A): There is an Association between Stages of stroke and Gross motor function category.

Test assumption:

1. Two categorical variables including two or more subcategories.
2. 0.0% of cells have an expected count of less than 5.

Level of significance (P value < .05)

Association between Stages of stroke and Gross motor function category							
			Gross motor function category		Total	Pearson Chi-square Value (χ^2)	P-Value
			Moderate to total assistance (poor physical activity)	Minimal to complete independent (Good physical activity)			
Stages of stroke	Subacute	N	41	29	70	8.760	.003*
		%	59%	41%	100%		
	Chronic	N	16	35	51		
		%	31%	69%	100%		
Total		N	57	64	121		
		%	47%	53%	100%		

Alpha value=.05 *Significant

Table-29: Association between Stages of stroke and Gross motor function category

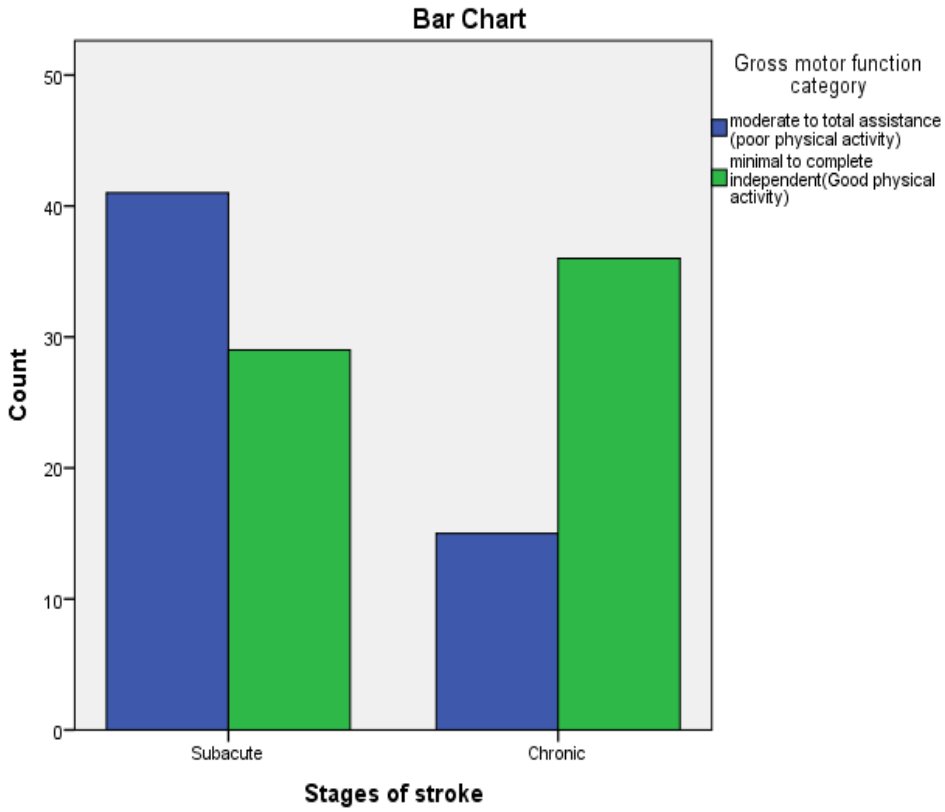


Figure-21: Association between Stages of stroke and Gross motor function category

There was a significant association between Stages of stroke and Gross motor function category in the chi-square test. The corresponding p-value (.003) of the chi-square value is less than the alpha value (.05). Therefore the null hypothesis was rejected. The phi (φ) coefficient of .269, indicating a weak association. The Bar chart also showed that those who were in chronic stages had better physical activity than those who were in the sub acute stage. For these consequences, it could be said that this Gross motor function category was associated with Stages of stroke of the participants.

11.3 Association between Type of stroke and Gross motor function category

Table 30 shows the statistical comparison between type of stroke and Gross motor function category.

Null Hypothesis (H_0): There is no Association between Type of stroke and Gross motor function category.

Alternative Hypothesis (H_A): There is an Association between Type of stroke and Gross motor function category.

Test assumptions:

1. Two categorical variables including two or more subcategories.
2. 0.0% of cells have an expected count of less than 5.

Level of significance (P value < .05)

Association between Type of stroke and Gross motor function category							
			FIM category		Total	Pearson Chi-square Value (χ^2)	P-Value
			Moderate to total assistance (poor physical activity)	Minimal to complete independent (Good physical activity)			
Type of stroke	Ischemic	N	45	48	93	.717	.517(Not significant)
		%	48%	52%	100%		
	Hemorrhagic	N	11	17	28		
		%	39%	61%	100%		
Total		N	56	65	121		
		%	46%	54%	100%		

Table-30: Association between Type of stroke and Gross motor function category

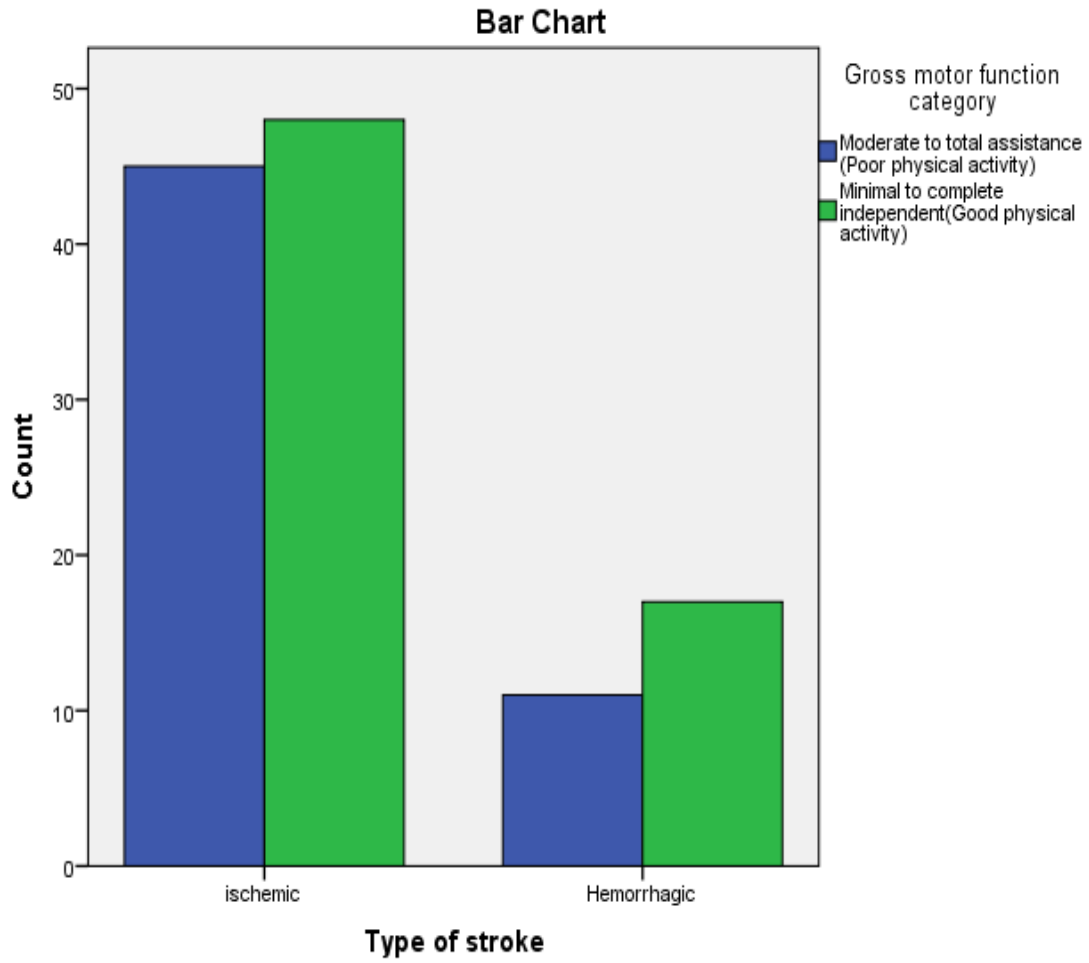


Figure-22: Association between Type of stroke and Gross motor function category

There was no association found between the type of stroke and the Gross motor function category in the chi-square test. The corresponding p-value of the chi-square value is less than the alpha value (.05). So, the null hypothesis was accepted. So, for these consequences, it could be said that this Gross motor function category was not associated with the type of stroke of the participants. Therefore, the alternative hypothesis was rejected. The Bar chart showed a similar pattern. So, the type of stroke and Gross motor function category could not influence each other. For That Reason, they were independent and had no association.

11.4 Association between Gender of the participants and Gross motor function category

Table 31 shows the statistical comparison between the Gender of the participants and the Gross motor function category.

Null Hypothesis (H_0): There is no Association between the Gender of the participants and the Gross motor function category.

Alternative Hypothesis (H_A): There is an Association between the Gender of the participants and the Gross motor function category.

Test assumptions:

1. Two categorical variables including two or more subcategories.
2. 0.0% of cells have an expected count of less than 5.

Level of significance (P value < .05)

Association between Gender of the participants and Gross motor function category							
			FIM category		Total	Pearson Chi-square Value (χ^2)	P-Value
			Moderate to total assistance (poor physical activity)	Minimal to complete independent (Good physical activity)			
Gender of the participants	Male	N	43	46	89	.560	.537(Not significant)
		%	48%	52%	100%		
	Female	N	13	19	32		
		%	41%	59%	100%		
Total		N	56	65	121		
		%	46%	54%	100%		

Table-31: Association between Gender of the participants and Gross motor function category

There was no association found between the Gender of the participants and the Gross motor function category in the chi-square test. The corresponding p-value of the chi-square value is less than the alpha value (.05). So, the null hypothesis was accepted. So, for these consequences, it could be said that this Gross motor function category was not associated with the Gender of the participants. So in that case alternative hypothesis was rejected.

11.5 Correlation between actual Age count with 6 Domains of WHODAS 36 Individual score and the subtotal score.

Null Hypothesis (H_0): There is no correlation between actual Age count with 6 Domains of WHODAS 36 Individual score and the subtotal score.

Alternative Hypothesis (H_A): There is a correlation between actual Age count with 6 Domains of WHODAS 36 Individual score and the subtotal score.

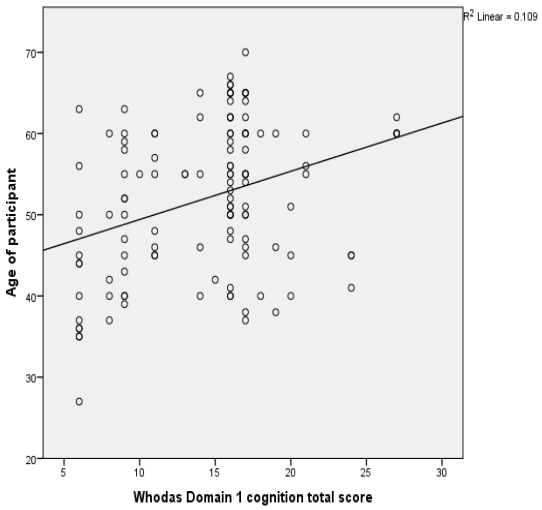
Test assumptions:

1. Two continuous variable
2. Normally distributed
3. Presence of linear association

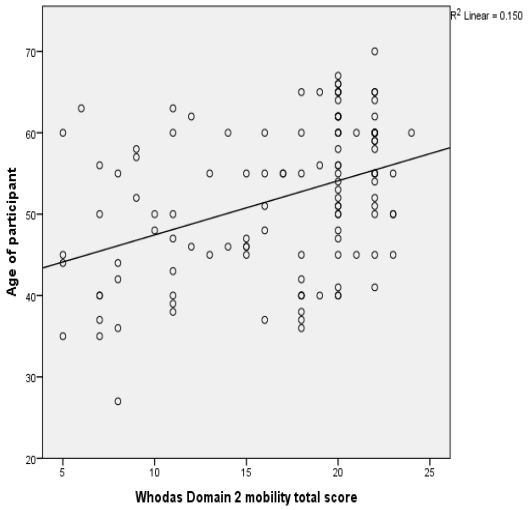
Level of significance (P-value< .05)

Table-32: **Correlation between actual Age count with 6 Domains of WHODAS 36 Individual score and the subtotal score.**

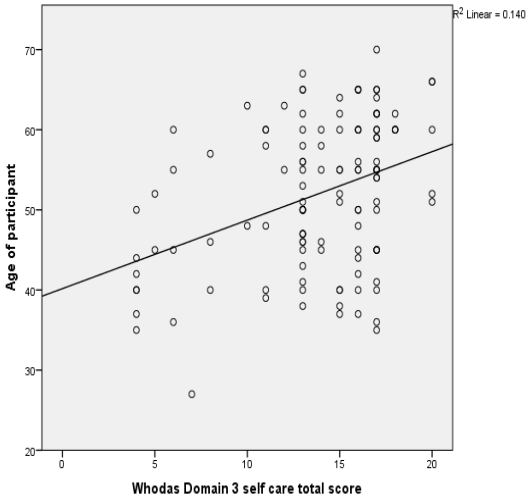
Variables	Pearson correlation coefficient (r)	Significant level (p= < .05)	Comment
Age and cognition	.331	.0002**	Significant Positive medium Correlation
Age and mobility	.388	.00001**	Significant Positive medium Correlation
Age and self care	.374	.00002**	Significant Positive medium Correlation
Age and getting along with people	.379	.00002**	Significant Positive medium Correlation
Age and life activities	.443	.0001**	Significant Positive medium Correlation
Age and participation	.378	.00002**	Significant Positive medium Correlation
Age and WHODAS subtotal score	.460	.0001**	Significant Positive medium Correlation



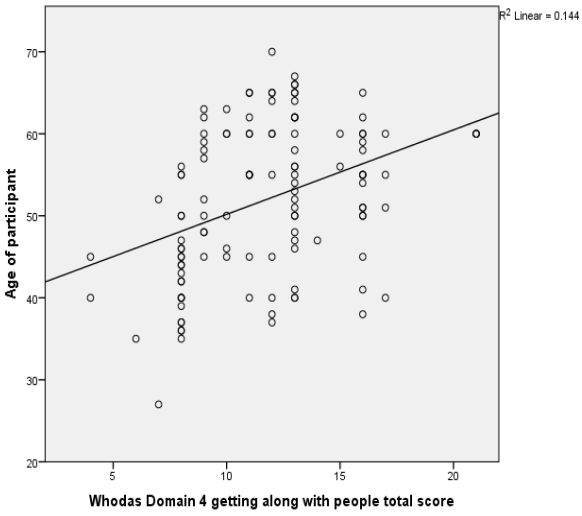
23(A)



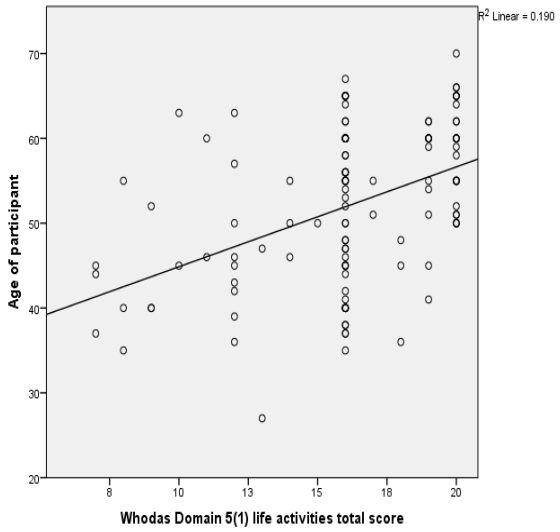
23(B)



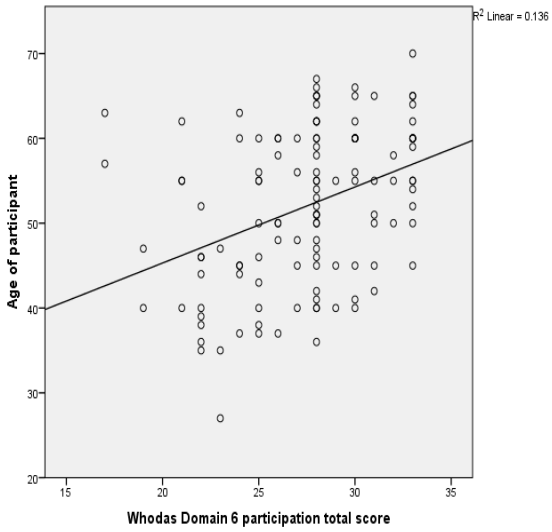
23(C)



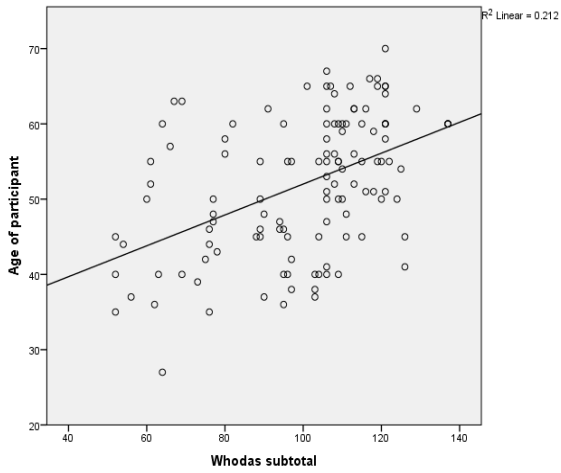
23(D)



23(E)



23(F)



23(G)

Figure-23: 23(A, B, C, D, E, F&G) indicate Scatter plots of WHODAS individual and subtotal score with age.

Table 32 found that there is a significant positive and medium correlation between Age with every domain individual score and all domains subtotal score. Every domain's P-value is found less than the significant level (p= <.05), therefore the null hypothesis is rejected. Here, cognition (r=.331, p=.0002**), mobility (r=.388, p=.00001**), self care activities (r=.374, p=.00002**), getting along with people (r=.379, p=.00002**), life activities (r=.443, p=.0001**), participation (r=.378, p=.00002**) and WHODAS subtotal (r=.460, p=.0001**). The scatter plots had been added.

CHAPTER – V DISCUSSION

The analysis and discussion are about identifying published papers & determining the relevance with the acquired data. In this chapter, the results of the study are discussed in relation to the research questions and objectives of the study.

In this study, the minimum age of a participant was 35 and the maximum age of a participant was 70. Their mean was 50.05 and the standard deviation is 9.008. 18% participants in between 30-40 years, 31% participants in between 41-50 years, 41% participants in between 51-60 years, and 31% participants in between 61-70 years. In this study, 74% (n=89) were male and 26% (n=32) were female. Approximately similar findings have been reported in the study of Mondol et al. (2012) as the frequency of stroke increased after the age of 40 years (84.3%), the most common being in the 51-60 years age group (31.1%). But the occurrence of stroke somewhat decreased after sixty (23.7%). They also stated that males were 73.4% and females were 26.6%. A study by Hossain et al. (2011) in Bangladesh found that peak incidence was between 51 to 70 years.

The present study showed that 77% (n=93) were ischemic stroke and 23% (n=28) were hemorrhagic stroke. This finding was almost similar to the study of Nayeem et al. (2010) in Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka found that 87% were ischemic and 13% were hemorrhagic stroke among participants. But this study contradicted with the study of Hossain et al. (2011) which was done at Faridpur medical college, Bangladesh stated that 61% were ischemic and 39% were hemorrhagic stroke. Another study by Aydin et al. (2016) in Turkey found that 91% (n=131) were ischemic and 9% (n=13) were hemorrhagic stroke among participants.

The result of the study showed that 43% (n= 52) were left-sided hemiplegic (LSH), 57% (n=69) were right-sided hemiplegic (RSH). In a study, they took 144 stroke survivors. The majority were men (62.5%). Their mean age was 65.10 ±11.56 years. 85 (59%) and 59 (41%) stroke survivors had hemiparesis on the right and left sides, respectively (Aydin et al., 2016).

In this study, 21% (n=25) had no comorbidity, 32% (n=39) had Single comorbidity and 47% (57) had multiple comorbidities (Hypertension, Diabetes mellitus, Heart Disease, Lung Disease, and Kidney Disease). In Swedish, A cohort study was conducted by 11775 participants and reported that the proportion of participants without comorbidity was 24.8%; 31.8% had low comorbidity; 33.5% had moderate comorbidity and 9.9% had high comorbidity. At 12months, the proportion of poor outcome was 24.8% (no comorbidity), 34.7% (low), 45.2% (moderate) and 59.4% (high). At five years, these proportions were 37.7%, 50.3%, 64.3%, and 81.7%, respectively (Sennfalt et al., 2020).

The result showed that the time between stroke and start of rehabilitation where 19% (n=23), 43% (n=52), 9% (n=11) and 29% (n=35) were 1 month, 2-6 month, above 6 month and above 1 year. Duration of Rehabilitation where 48% (n=58) were 2 weeks, 19% (n=23) were 4 weeks, 14% (n=17) were 8 weeks and 19% (n=23) were 12 weeks. Population-based studies of stroke recovery have shown that the time is taken to achieve the best functional performance for mild, moderate, and severe strokes average 8, 13, and 17 weeks respectively. The times vary considerably between individual stroke survivors, but these averages provide a useful guide for the duration of rehabilitation contact time (Young and Forster, 2007).

In this study among all parts of the gross motor functional activities of the participants, majority of the participants were need moderate to minimal assistance and were modified independence in the rolling right to left (46% moderate assistance, 25% minimal assistance and 48% modified independent), rolling left to right (47% moderate assistance, 26% minimal assistance and 43% modified independent), Bridging (52% moderate assistance, 20% minimal assistance and 45% modified independence), supine to sit (50% moderate assistance, 27% minimal assistance and 42% modified independent), sit to supine (49% moderate assistance, 25% minimal assistance and 44% modified independent), sitting static balance (27% moderate assistance, 16% minimal assistance and 73% modified independent), sitting dynamic balance (24% moderate assistance, 16% minimal assistance and 74% modified independent), standing static balance (51% moderate assistance, 20% minimal assistance and 41% modified independent), standing dynamic balance (53% moderate assistance, 23% minimal assistance and 39% modified

independent), Transferring (46% moderate assistance, 15% minimal assistance and 38% modified independent). In Japan, A study was conducted by Uchida et al. (2020) reported that the estimated total FIM-motor scores that corresponded to supervision or setup levels for eating, grooming, and bowel and bladder management ranged from 30 to 55, indicating that these were relatively easy items. In contrast, the estimated values for dressing the upper body, locomotion, transfer to the tub/ shower, and stair climbing exceeded a total FIM-motor score of 70, suggesting that these items were relatively difficult. The remaining five items (toileting, dressing the lower body, transfer to bed/chair/wheelchair, transfer to the toilet, and bathing) were estimated to be of intermediate difficulty.

The present study showed that the majority of the participants needed total, moderate, and minimal assistance and were modified independence in the Gait as a part of gross motor functional activities (17% need total assistance, 43% moderate assistance, 22% minimal assistance and 37% modified independent). In Israel, A study took 104 participants and their functional activities and functional walking activities were assessed with the Barthel index and Functional ambulation category (FAC). Among 104 participants, 50 were able to stand independently and 54 participants could not stand independently (Laufer et al., 2003).

Participants in this study experienced mild to moderate impairments in the domains of cognition and getting along with people, especially in the domain's component of remembering an important thing (13% mild and 36% moderate), tasks involving concentration (33% mild and 41% moderate), problem-solving (22% mild and 53% moderate), interacting with friends (36% mild and 22% moderate) and unknown people (28% mild and 10% moderate), maintaining relationships (36% mild and 22% moderate) and the majority of participants (27% severe and 70% extreme) reported severe to extreme difficulties with sexual activities. According to Elloker et al. (2017), stated that in the domains of cognition and getting along with people, the largest percentages of participants reported no difficulty with activities. However, smaller percentages reported mild to moderate difficulties with tasks involving concentration (34.1%), remembering important things (39.8%), problem-solving (34.9%), interacting with friends (16.4%) and

unknown people (25.7%), as well as maintaining relationships (22.1%). It is noted that the majority of participants (44.1%) reported severe to extreme difficulties with sexual activities.

The result of the study showed that in the domain of mobility and self-care activities, the majority of participants reported severe to extreme difficulties with standing for long periods (47% and 22%) and walking a long distance (48% and 26%). Participants were restricted in self-care activities such as staying on their own for a few days (49% and 34%) and washing their entire body (51%). A cross-sectional study design conveniently selected 226 stroke patients living within community settings and showed that in the domain of mobility, the majority of participants reported severe to extreme difficulties with standing for long periods (55.8%) and walking a long distance (64.5%), such as a kilometer, 12 months post-stroke. Participants were restricted in self-care activities such as staying on their own for a few days (50.9%) and washing their entire body (40.8%), as they found this to be extremely difficult (Elloker et al., 2017).

The present study showed that in the domain of life activities and participation, the majority of participants reported severe to extreme difficulties with household tasks (47%) and participants were not involved in any work or school activities because of their health condition and indicated problems with participation in life situations, such as joining in community activities (47%), barriers affecting community participation (40%), emotionally depressed (84%), financial strain (86%), increased burden on family (84%), and leisure and relaxation dysfunction (17%). In South Africa, A study was conducted by Elloker et al. (2017) reported that the largest proportion of participants, a total of 120 (57.2%), were reported to have severe to extreme difficulties with household tasks (40.2%) and aspects related to these activities. The majority of participants were not involved in any work or school activities because of their health condition and indicated problems with participation in life situations, such as joining in community activities (34.5%), barriers affecting community participation (39.4%), emotional instability (53.5%), financial strain (48.2%), increased burden on family (37.2%), and leisure and relaxation dysfunction (39.4%).

The result of the study showed that a strong significant association of age category with gross motor function category and a weak significant association of stages of stroke with gross motor function category and a significant positive and medium correlation found in every domain individual score and all domains subtotal score with age. A similar result was found in the study of Med & Subramaniam (2016) reported that age was positively correlated with severity in disability scores, with participants aged 85 years and above reporting higher levels of disability compared to those in the age groups of 60 to 74 and 75 to 84 years.

Limitation of the Study

Complete accuracy will not be possible in any research so that some limitations may exist. Regarding this study, there were some limitations to consider the result of the study as below:

Data collection procedure was interrupted due to pandemic situation of COVID 19 and was taken only 121 samples. Sufficient budget was limited for increasing data collection area. The researcher wanted to apply a hospital-based random sampling technique but it was not possible due to the interruption. As the study was conducted at Centre for the Rehabilitation of the Paralysed (CRP) which may not represent the whole country. This study has provided for the first time data on the functional and disability status of stroke survivors in Bangladesh. No research has been done before on this topic. So there was little evidence to support the result of this project in the context of Bangladesh. The research project was done by an undergraduate student and it was the first research project for her. So the researcher had limited experience with techniques and strategies in terms of the practical aspects of research. As it was the first survey of the researcher so might be some mistakes overlooked by the supervisor and the honorable teacher.

CHAPTER – VI CONCLUSION AND RECOMMENDATION

6.1 Conclusion

Stroke is one of the leading causes of morbidity, mortality, and socioeconomic challenge. The study revealed that stroke patients have limited functional restoration, even after several months post-stroke, and this impeded heavily on functional, environmental, societal, and leisure activities. The increased burden on family, the emotional stress, the feeling of low self-esteem, increased depressive mood, reduced social gathering because of aphasia, loss of memory, mobility difficulty, self-care difficulty, maintaining a friendship, low libido in sexual activities, reduced household activities, and increased financial strain, had profound effects on functional restoration and participation in society. The study also revealed that had a strong significant relationship between disability and functional status with the age of the participants. Finally, the study showed that disability had been increased with the increase of age. On the other side, Functional status had been decreased with the increase of age.

6.2 Recommendations

The following recommendations are-

- It will be better to take more samples for generating the result and make it more valid and reliable.
- It will be better to take more samples for the pilot study to establish the accuracy of the questionnaire.
- It will be better to collect samples from the community, different hospitals, clinics, institutes, and organizations in different districts of Bangladesh to generalize the result.

There was some limitation of this study mentioned in the relevant section; it is recommended to overcome those limitations during the further study. So for further study, it is strongly recommended to increase sample size with adequate time to generalize the result in all of the stroke survivors in Bangladesh for better results and perspectives.

REFERENCES

AL-Abedi, H.M.H. and Hamza, R., (2016). Self-Care Activities for Patients' with Stroke. International Journal of Scientific and Research Publications, 6(9):530-536.

Alharbi, A.S., Alhayan, M.S., Alnami, S.K., Traad, R.S., Aldawsari, M.A., Alharbi, S.A., Sharif, A.O.A., Alboqami, S.T., Alshammari, S.A., Alzeer, M.K.S. and Alshammari, M.A., (2019). Epidemiology and Risk Factors of Stroke. Archives of Pharmacy Practice, 10(4).

Arowoiya, A.I., Elloker, T., Karachi, F., Mlenzana, N., Khuabi, L.A.J.N. and Rhoda, A., (2017). Using the World Health Organization's Disability Assessment Schedule (2) to assess disability in community-dwelling stroke patients. The South African journal of physiotherapy, 73(1).

Avan, A., Digaleh, H., Di Napoli, M., Stranges, S., Behrouz, R., Shojaeianbabaei, G., Amiri, A., Tabrizi, R., Mokhber, N., Spence, J.D. and Azarpazhooh, M.R., (2019). Socioeconomic status and stroke incidence, prevalence, mortality, and worldwide burden: an ecological analysis from the Global Burden of Disease Study 2017. BMC medicine, 17(1):1-30.

Aydin, T., Taspinar, O., Kepekci, M., Keskin, Y., Erten, B., Gunel, M., Gok, M., Bektas, E., Sarac, M. and Mutluer, A.S., (2016). Functional independence measure scores of patients with hemiplegia followed up at home and in university hospitals. Journal of Physical Therapy Science, 28(2):553-557.

Burns, S.P., White, B.M., Magwood, G., Ellis, C., Logan, A., Jones Buie, J.N. and Adams, R.J., (2019). Racial and ethnic disparities in stroke outcomes: a scoping review of post-stroke disability assessment tools. Disability and rehabilitation, 41(15):1835-1845.

Carvalho-Pinto, B.P. and Faria, C.D., (2016). Health, function and disability in stroke patients in the community. Brazilian journal of physical therapy, (AHEAD):0-0.

Coupland, A.P., Thapar, A., Qureshi, M.I., Jenkins, H. and Davies, A.H., (2017). The definition of stroke. Journal of the Royal Society of Medicine, 110(1):9-12.

Demir, Y.P., Balci, N.Ç., Unluer, N.O., Ulug, N., Dogru, E., Kilinc, M., Yildirim, S.A. and Yilmaz, Ö., (2015). Three different points of view in stroke rehabilitation: patient, caregiver, and physiotherapist. Topics in stroke rehabilitation, 22(5):377-385.

Elloker, T., Karachi, F., Mlenzana, N., Arowoiya, A.I., Jacobs-Nzuzi Khuabi, L.A. and Rhoda, A., (2017). Using the World Health Organization's Disability Assessment Schedule (2) to assess disability in community-dwelling stroke patients. South African Journal of Physiotherapy, 73(1):1-7.

Etikan, I., Musa, S.A. and Alkassim, R.S., (2016). Comparison of convenience sampling and purposive sampling. American journal of theoretical and applied statistics, 5(1):1-4.

Feigin, V., Norrving, B., Sudlow, C.L. and Sacco, R.L., (2018). Updated criteria for population-based stroke and transient ischemic attack incidence studies for the 21st century. Stroke, 49(9):2248-2255.

Giang, K.W., Björck, L., Ståhl, C.H., Nielsen, S., Sandström, T.Z., Jern, C., Torén, K. and Rosengren, A., (2016). Trends in risk of recurrence after the first ischemic stroke in adults younger than 55 years of age in Sweden. International Journal of Stroke, 11(1):52-61.

Gillespie, D.C., Bowen, A., Chung, C.S., Cockburn, J., Knapp, P. and Pollock, A.,(2015). Rehabilitation for post-stroke cognitive impairment: an overview of recommendations arising from systematic reviews of current evidence. Clinical Rehabilitation, 29(2):120-128.

Haruyama, K., Kawakami, M. and Otsuka, T., (2017). Effect of core stability training on trunk function, standing balance, and mobility in stroke patients: a randomized controlled trial. Neurorehabilitation and neural repair, 31(3):240-249.

Hatem, S.M., Saussez, G., Della Faille, M., Prist, V., Zhang, X., Dispa, D. and Bleyenheuft, Y., (2016). Rehabilitation of motor function after stroke: a multiple systematic review focused on techniques to stimulate upper extremity recovery. Frontiers in human neuroscience, 10:442.

Hebert, D., Lindsay, M.P., McIntyre, A., Kirton, A., Rumney, P.G., Bagg, S., Bayley, M., Dowlatshahi, D., Dukelow, S., Garnhum, M. and Glasser, E., (2016). Canadian stroke best practice recommendations: stroke rehabilitation practice guidelines, update 2015. International Journal of Stroke, 11(4):459-484.

Hemed, M. and Tanzania, Geneva Foundation for Medical Education and Research., (2015). Cross-sectional studies. Training Course in Sexual and Reproductive Health Research Geneva, 12.

Hossain, A.M., Ahmed, N.U., Rahman, M., Islam, M.R., Sadhya, G. and Fatema, K., (2011). Analysis of sociodemographic and clinical factors associated with hospitalized stroke patients of Bangladesh. Faridpur Medical College Journal, 6(1):19-23.

Hannan, J.M.A., (2016). Medical and Pharmacetical statistics. 2nd edition. Dhaka: AFI publication.

Islam, F.M.A., Bhowmik, J.L., Islam, S.Z., Renzaho, A.M. and Hiller, J.E., (2016). Factors associated with disability in rural Bangladesh: Bangladesh Population-based Diabetes and Eye Study (BPDES). PloS one, 11(12):e0165625.

Islam, M.N., Moniruzzaman, M., Khalil, M.I., Basri, R., Alam, M.K., Loo, K.W. and Gan, S.H., (2013). Burden of stroke in Bangladesh. International journal of stroke, 8(3):211-213.

Johnson, C.O., Nguyen, M., Roth, G.A., Nichols, E., Alam, T., Abate, D., Abd-Allah, F., Abdelalim, A., Abraha, H.N., Abu-Rmeileh, N.M. and Adebayo, O.M., (2019). Global, regional, and national burden of stroke, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. The Lancet Neurology, 18(5):439-458.

Khan, M.I., Khan, J.I., Ahmed, S.I. and Ali, S., (2019). The epidemiology of stroke in a developing country (Pakistan). Pakistan Journal of Neurological Sciences (PJNS), 13(3):30-44.

Krishnamurthi, R.V., Moran, A.E., Feigin, V.L., Barker-Collo, S., Norrving, B., Mensah, G.A., Taylor, S., Naghavi, M., Forouzanfar, M.H., Nguyen, G. and Johnson, C.O., (2015). Stroke prevalence, mortality and disability-adjusted life years in adults aged 20-64 years in 1990-2013: data from the global burden of disease 2013 study. Neuroepidemiology, 45(3):190-202.

Kristensen, H.K., Ytterberg, C., Jones, D.L. and Lund, H., (2016). based evidence in stroke rehabilitation: an investigation of its implementation by physiotherapists and occupational therapists. Disability and rehabilitation, 38(26):2564-2574.

Kumar, S., Paswan, N.K. and Sinha, P.K., (2019). STUDY OF CLINICAL PROFILE AND RISK FACTORS IN ACUTE ISCHEMIC STROKE IN ANMMC Gaya. International Journal of Scientific Research, 8(11).

Langhorne, P., Bernhardt, J. and Kwakkel, G., (2011). Stroke rehabilitation. The Lancet, 377(9778):1693-1702.

Lee, H., Lee, Y., Choi, H. and Pyun, S.B., (2015). Community integration and quality of life in aphasia after stroke. Yonsei Medical Journal, 56(6):1694-1702.

Lindley, R.I., Anderson, C.S., Billot, L., Forster, A., Hackett, M.L., Harvey, L.A., Jan, S., Li, Q., Liu, H., Langhorne, P. and Maulik, P.K., (2017). Family-led rehabilitation after stroke in India (ATTEND): a randomised controlled trial. The Lancet, 390(10094):588-599.

Lopez-Espuela, F., Pedrera-Zamorano, J.D., Jiménez-Caballero, P.E., Ramírez-Moreno, J.M., Portilla-Cuenca, J.C., Lavado-García, J.M. and Casado-Naranjo, I., (2016). Functional status and disability in patients after acute stroke: a longitudinal study. American Journal of Critical Care, 25(2):144-151.

Lui, S.K. and Nguyen, M.H., (2018). Elderly stroke rehabilitation: overcoming the complications and its associated challenges. Current gerontology and geriatrics research, 2018.

Laufer, Y., Sivan, D., Schwarzmann, R. and Sprecher, E., (2003). Standing balance and functional recovery of patients with right and left hemiparesis in the early stages of rehabilitation. Neurorehabilitation and neural repair, 17(4):207-213.

Mao, Y.R., Lo, W.L., Lin, Q., Li, L., Xiao, X., Raghavan, P. and Huang, D.F., (2015). The effect of body weight support treadmill training on gait recovery, proximal lower limb motor pattern, and balance in patients with subacute stroke. BioMed research international, 2015.

Mayo, N.E., Anderson, S., Barclay, R., Cameron, J.I., Desrosiers, J., Eng, J.J., Huijbregts, M., Kagan, A., MacKay-Lyons, M., Moriello, C. and Richards, C.L., (2015). Getting on with the rest of your life following stroke: a randomized trial of a complex intervention aimed at enhancing life participation post stroke. Clinical rehabilitation, 29(12):1198-1211.

Med, M. and Subramaniam, M., (2016). Disability in Singapore's elderly population. Annals Academy of Medicine Singapore, 45:284-96.

Mondol, B.A., Chowdhury, R.N., Rahman, K.M., Khan, S.U., Haque, M.A., Haque, B., Khan, M.Z.R., Habib, M., and Mohammad, Q.D., (2012). Major comorbidities in stroke patients: a hospital based study in Bangladesh. Journal of Dhaka Medical Collage, 21(1):16-22.

Muniyar, K.D. and Darade, S.B., (2018). EFFECT OF SWISS BALL TRAINING AND CONVENTIONAL PHYSIO-THERAPY TO IMPROVE BALANCE AND MOBILITY IN POST-STROKE PATIENTS. International Journal of Physiotherapy and Research, 6(4):2813-2822.

Musuka, T.D., Wilton, S.B., Traboulsi, M. and Hill, M.D., (2015). Diagnosis and management of acute ischemic stroke: speed is critical. Canadian medical association journal, 187(12):887-893.

Naghdi, S., Ansari, N.N., Raji, P., Shamili, A., Amini, M. and Hasson, S., (2016). Cross-cultural validation of the Persian version of the Functional Independence Measure for patients with stroke. Disability and Rehabilitation, 38(3):289-298.

Nayeem, A., Hannan, M.A., Islam, M.R., and Barman, K.K., (2010). Blood monocyte count in hypertensive ischemic stroke patients. Bangladesh Journal of Neuroscience, 26 (2):68-73.

Ojaghihaghighi, S., Vahdati, S.S., Mikaeilpour, A. and Ramouz, A., (2017). Comparison of neurological clinical manifestation in patients with hemorrhagic and ischemic stroke. World journal of emergency medicine, 8(1);34.

Rayegani, S.M., Raeissadat, S.A., Alikhani, E., Bayat, M., Bahrami, M.H. and Karimzadeh, A., (2016). Evaluation of complete functional status of patients with stroke by Functional Independence Measure scale on admission, discharge, and six months poststroke. Iranian journal of neurology, 15(4):202.

Shaikhul Hasan, M., Anusaksathien, K., Siripornpibul, T. and Narattharaksa, K., (2020). Assessing Post-Stroke Outpatients' Rehabilitation Service Quality Gaps in Bangladesh. Iranian Rehabilitation Journal, 18(4):0-0.

Şimşek, T.T. and Çekok, K., (2016). The effects of Nintendo WiiTM-based balance and upper extremity training on activities of daily living and quality of life in patients

with sub-acute stroke: a randomized controlled study. International Journal of Neuroscience, 126(12):1061-1070.

Sennfalt, S., Pihlsgård, M., Petersson, J., Norrving, B. and Ullberg, T., (2020). Long-term outcome after ischemic stroke in relation to comorbidity–An observational study from the Swedish Stroke Register (Riksstroke). European stroke journal, 5(1):36-46.

Ustun, T.B., Kostanjsek, N., Chatterji, S. and Rehm, J. eds., (2010). Measuring health and disability: Manual for WHO disability assessment schedule WHODAS 2.0. World Health Organization.

Uchida, K., Uchiyama, Y., Domen, K. and Koyama, T., (2020). Item Difficulties of the FIM-Motor Subscale in Patients with Ischemic Stroke during Acute Care: An Ordinal Logistic Modeling Study. Progress in Rehabilitation Medicine, 5:20200022.

Vornholt, K., Villotti, P., Muschalla, B., Bauer, J., Colella, A., Zijlstra, F., Van Ruitenbeek, G., Uitdewilligen, S. and Corbiere, M., (2018). Disability and employment–overview and highlights. European journal of work and organizational psychology, 27(1):40-55.

Whitehead, S. and Baalbergen, E., (2019). Post-stroke rehabilitation. South African Medical Journal, 109(2):81-83.

Willey, J.Z., Disla, N., Moon, Y.P., Paik, M.C., Sacco, R.L., Boden-Albala, B., Elkind, M.S. and Wright, C.B., (2010). Early depressed mood after stroke predicts long-term disability: the Northern Manhattan Stroke Study (NOMASS). Stroke, 41(9):1896-1900.

Yoon, J.A., Park, S.G. and Roh, H.L., (2015). Comparisons of social interaction and activities of daily living between long-term care facility and community-dwelling stroke patients. Journal of physical therapy science, 27(10):3127-3131.

Young, J. and Forster, A., (2007). Rehabilitation after stroke. BMJ. British medical journal (International ed.), 334(7584):86-90.

APPENDIX

CONSENT FORM

(Please read out to the participants)

Adab/Namasker, my name is Eti Rani Shil. I am 4th year student of B.Sc. in Physiotherapy program at Bangladesh Health Professions Institute (BHPI). For my study purpose I am conducting a study on stroke patients and my study title is "Functional and Disability status of persons with Stroke in a Specialized Rehabilitation Center".

I would like to know about some personal and other related information regarding stroke. This will take approximately 20 minutes. This is an academic study and will not be used for any other purpose. The researcher is not directly related to neurology unit, so your participation in the research will have no impact on your present or future treatment in neurology unit. Researcher will maintain confidentiality of all procedures. Your data will never be used without your permission. Your participation in this study is voluntary and you may withdraw yourself at any time during this study.

If you have any query about the study or your right as a participant, you may contact with me or Asma Islam, Assistant Professor, Department of Physiotherapy, BHPI, CRP, Savar, Dhaka.

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

Yes ☐ No ☐

Signature of the Participant_____Date_____

Signature of the Interviewer_____Date_____

অনুমতি পত্র

(অংশগ্রহণকারীকে পড়েশোনাতে হবে)

আদাব/ নমস্কার আমার নাম ইতি রানী শীল,আমি বাংলাদেশ হেল্থ প্রফেশনস ইনস্টিটিউট (বি এইচ পি আই)- এ ফিজিওথেরাপি কোর্সের এক জন ছাত্রী। আমার গবেষণার কাজের জনা আমি স্ট্রোক রোগীদের উপর একটি গবেষণা পরিচালনা করছি এবং আমার অধ্যয়ন শিরোনাম "একটি বিশেষায়িত পুনর্বাসন কেন্দ্রে স্ট্রোকযুক্ত ব্যক্তিদের কার্যকরী এবং অক্ষমতা অবস্থা"।এক্ষেত্রে আমি আপনার এবং স্ট্রোক সম্পর্কে আনুষঙ্গিক কিছু তথা জানতে চাচ্ছি। যা প্রায় ২০ মিনিট সময় লাগবে। এটি একটি শিক্ষা গত গবেষণা এবং অনা কোন উদ্দেশ্যে ব্যবহার করা হবে না ।গবেষক সরাসরি নিউরোলজি ইউনিট এর সাথে সম্পর্কিত নয়, তাই গবেষণায় আপনার অংশগ্রহণ নিউরোলজি ইউনিটে আপনার বর্তমান বা ভবিষ্যতে চিকিৎসায় কোনো প্রভাব ফেলবে না। গবেষক গবেষণা চলাকালীন প্রতিটি ধাপে গোপনীয়তা বজায় রাখবেন। আপনার তথ্য আপনার অনুমতি ছাড়া ব্যবহার করা হবে না। এই গবেষণায় আপনার অংশগ্রহণ ইচ্ছা অনুযায়ী এবং এই অধ্যয়নের যে কোন সময়ে নিজেকে প্রত্যাহার করতে পারবেন।

আপনি একজন অংশগহণকারী হিসেবে অধ্যয়ন সম্পর্কে কোনো প্রশ্ন থাকে তাহলে আপনি আমাকে অথবা আসমা ইসলাম এর সঙ্গে যোগাযোগ করতে পারেন, ফিজিওথেরাপি বিভাগের সহকারী অধ্যাপক, বি এইচ পি আই, সিআরপি, সাভার, ঢাকা।

আমি আপনার আনুমতি নিয়ে এই সাক্ষাৎকার শুরু করতে যাচ্ছি?

☐ হ্যাঁ ☐ না

অংশগ্রহণকারীর স্বাক্ষর _____ তারিখ _____

সাক্ষাৎকারীর স্বাক্ষর _____ তারিখ _____

Questionnaire (English)

Code number:

SECTION-1: Personal Details

Identification number:
Name of respondents:
Address:
Contact number:
Date of interview:

SECTION-2: Socio-demographic information

Q. N	QUESTION	RESPONSE
2.1	Age	years
2.2	Gender	1= Male 2=Female
2.3	Living area	1=Rural 2=Semi Urban 3=Urban
2.4	Educational Status	1=No formal education 2=Primary education 3=Secondary education 4= Higher secondary 5=Bachelor degree or above
2.5	Occupation	
2.6	Marital status	1 =Married 2=Unmarried 3 =Divorced 4= Widow
2.7	Loss of occupation due to stroke	Yes/No
2.8	Financial status	Lower class Lower middle class Middle class Upper middle class Upper class
2.9	Identity of caregiver	Relative Non relative
3.0	Family history of Stroke	1=Yes 2=No
3.1	Comorbidity	1=Hypertension 2=Diabetes mellitus 3= Heart disease 4=Lung disease 5=Other

SECTION-3: Stroke and Treatment related information

3.1	Date of stroke	
3.2	Type of stroke	1=ischemic 2=Hemorrhagic
3.3	Stages of stroke	1=Sub acute 2=Chronic
3.4	Affected side	1=Right 2=Left
3.5	Time between stroke and starting of rehabilitation (day/months/year)	
3.6	Time of rehabilitation Duration of Rehabilitation (Day/Week/months /year)	
3.7	Referred for Rehabilitation by whom	Self Physician Physiotherapist Other

SECTION-4: Gross motor functional activities: (According to FIM score)

Q.N	**Functions**	**Achieved score**
4.1	Rolling right to left	
4.2	Rolling left to right	
4.3	Bridging	
4.4	Supine to sit	
4.5	Sit to supine	
4.6	Sitting static balance	
4.7	Sitting dynamic balance	
4.8	Standing static balance	
4.9	Standing dynamic balance	
4.10	Transfer bed wheel chair	
4.11	Gait	
Total FIM Score		

7=complete Independent (timely, safely)

6=Modified Independent (Extra time, Device)

5=Supervision (Cuing. Coaxing, prompting)

4=Minimal Assist (performs 75% of more of task)

3=Moderate Assist (performs 50% to 74% of task)

2=Maximum Assist (performs 25% to 49% of task)

1=Total Assist (performs less than 25% of task)

SECTION-5: WORLD HEALTH ORGANIZATION DISABILITY ASSESSMENT SCHEDULE (WHO DAS) 2.0: (Interviewer administered 36 version)

Domain 1: Cognition

I am now going to ask some questions about understanding and communicating.

Show flashcards #1 and #2 to respondent

In the past 30 days, how much difficulty did you have in:		None	Mild	Moderate	Severe	Extreme or cannot do
D1.1	Concentrating on doing something for ten minutes?	1	2	3	4	5
D1.2	Remembering to do important things?	1	2	3	4	5
D1.3	Analysing and finding solutions to problems in day-to-day life?	1	2	3	4	5
D1.4	Learning a new task, for example, learning how to get to a new place?	1	2	3	4	5
D1.5	Generally understanding what people say?	1	2	3	4	5
D1.6	Starting and maintaining a conversation**?**	1	2	3	4	5

Domain 2: Mobility

I am now going to ask you about difficulties in getting around.

Show flashcards #1 and #2 to respondent

In the past 30 days, how much difficulty did you have in:		None	Mild	Moderate	Severe	Extreme or cannot do
D2.1	Standing for long periods such as 30 minutes?	1	2	3	4	5
D2.2	Standing up from sitting down?	1	2	3	4	5
D2.3	Moving around inside your home?	1	2	3	4	5
D2.4	Getting out of your home?	1	2	3	4	5
D2.5	Walking a long distance such as a kilometre [or equivalent]?	1	2	3	4	5

Domain 3: Self-care

I am now going to ask you about difficulties in taking care of yourself.

Show flashcards #1 and #2 to respondent

In the past 30 days, how much difficulty did you have in:		None	Mild	Moderate	Severe	Extreme or cannot do
D3.1	Washing your whole body?	1	2	3	4	5
D3.2	Getting dressed?	1	2	3	4	5
D3.3	Eating?	1	2	3	4	5
D3.4	Staying by yourself for a few days?	1	2	3	4	5

Domain 4: Getting along with people

I am now going to ask you about difficulties in getting along with people. Please remember that I am asking only about difficulties that are due to health problems. By this I mean diseases or illnesses, injuries, mental or emotional problems and problems with alcohol or drugs.

Show flashcards #1 and #2 to respondent

In the past 30 days, how much difficulty did you have in:		None	Mild	Moderate	Severe	Extreme or cannot do
D4.1	Dealing with people you do not know?	1	2	3	4	5
D4.2	Maintaining a friendship?	1	2	3	4	5
D4.3	Getting along with people who are close to you?	1	2	3	4	5
D4.4	Making new friends?	1	2	3	4	5
D4.5	Sexual activities?	1	2	3	4	5

Domain 5: Life activities

5(1) Household activities

I am now going to ask you about activities involved in maintaining your household, and in caring for the people who you live with or are close to. These activities include cooking, cleaning, shopping, caring for others and caring for your belongings.

Show flashcards #1 and #2 to respondent

Because of your health condition, in the past 30 days, how much difficulty did you have in:		None	Mild	Moderate	Severe	Extreme or cannot do
D5.1	Taking care of your household responsibilities**?**	1	2	3	4	5
D5.2	Doing your most important household tasks well?	1	2	3	4	5
D5.3	Getting all the household work done that you needed to do?	1	2	3	4	5
D5.4	Getting your household work done as quickly as needed?	1	2	3	4	5

If any of D5.5–D5.8 are rated greater than none (coded as "1"), ask:

D5.01	In the past 30 days, on how many days did you reduce or completely miss household work because of your health condition?	Record number of days _____

If respondent works (paid, non-paid, self-employed) or goes to school, complete questions D5.5–D5.10 on the next page. Otherwise, skip to D6.1 on the following page.

5(2) Work or school activities

Now I will ask some questions about your work or school activities.

Show flashcards #1 and #2

Because of your health condition, in the past 30 days how much difficulty did you have in:		None	Mild	Moderate	Sev ere	Extreme or cannot do
D5.5	Your day-to-day work/school?	1	2	3	4	5
D5.6	Doing your most important work/school tasks well?	1	2	3	4	5
D5.7	Getting all the work done that you need to do?	1	2	3	4	5
D5.8	Getting your work done as quickly as needed?	1	2	3	4	5
D5.9	Have you had to work at a lower level because of a health condition?				No	1
					Yes	2
D5.10	Did you earn less money as the result of a health condition?				No	1
					Yes	2

If any of D5.5–D5.8 are rated greater than none (coded as "1"), ask:

D5.02	In the past 30 days, on how many days did you miss work for half a day or more because of your health condition?	Record number of days ____

Domain 6: Participation

Now, I am going to ask you about your participation in society and the impact of your health problems on you and your family. Some of these questions may involve problems that go beyond the past 30 days, however in answering, please focus on the past 30 days. Again, I remind you to answer these questions while thinking about health problems: physical, mental or emotional, alcohol or drug related.

Show flashcards #1 and #2

In the past 30 days:		None	Mild	Moderate	Severe	Extreme or cannot do
D6.1	How much of a problem did you have joining in community activities (for example, festivities, religious or other activities) in the same way as anyone else can?	1	2	3	4	5
D6.2	How much of a problem did you have because of barriers or hindrances in the world around you?	1	2	3	4	5
D6.3	How much of a problem did you have living with dignity because of the attitudes and actions of others?	1	2	3	4	5
D6.4	How much have you been emotionally affected by your health condition?	1	2	3	4	5
D6.5	How much has your health been a drain on the financial resources of you or your family?	1	2	3	4	5
D6.6	How much has your health been a drain on the financial resources of you or your family?	1	2	3	4	5
D6.7	How much of a problem did your family have because of your health problems?	1	2	3	4	5
D6.8	How much of a problem did you have in doing things by	1	2	3	4	5

	yourself for relaxation or pleasure?					

H1	Overall, in the past 30 days, were these difficulties present?	Record number of days _____
H2	In the past 30 days, for how many days were you totally unable to carry out your usual activities or work because of any health condition?	Record number of days ____
H3	In the past 30 days, not counting the days that you were totally unable, for how many days did you cut back or reduce your usual activities or work because of any health condition?	Record number of days _____

This concludes the interview. Thank you for participating.

WORLD HEALTH ORGANIZATION DISABILITY ASSESSMENT SCHEDULE 2.0

Flashcard 1

Health conditions:

- **Diseases, illnesses or other health problems**
- **Injuries**
- **Mental or emotional problems**
- **Problems with alcohol**
- **Problems with drugs**

Having difficulty with an activity means:

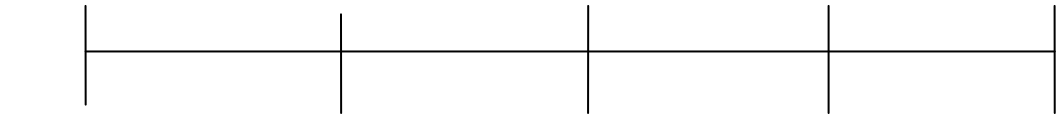
- **Increased effort**
- **Discomfort or pain**
- **Slowness**
- **Changes in the way you do the activity**

Think about the past 30 days only.

WHODAS 2.0

WORLD HEALTH ORGANIZATION DISABILITY ASSESSMENT SCHEDULE 2.0

Flashcard 2



None **Mild** **Moderate** **Severe** **Extreme or Cannot do**

একটি বিশেষায়িত পুনর্বাসন কেন্দ্রে স্ট্রোকযুক্ত ব্যক্তিদের কার্যকরী এবং অক্ষমতা অবস্থা।

কোড নং:

প্রশ্নপত্র বাংলা

পর্ব-১: ব্যক্তিগত বিবরণ

সনাক্তকরণ নম্বর:

উত্তরদাতার নাম:

ঠিকানা:

ফোন নম্বর:

সাক্ষাৎকারের তারিখ:

পর্ব-২: জনসংখ্যাতাত্তিক তথ্যাবলী

প্রশ্ন নং	প্রশ্ন	উত্তর
২.১	বয়স	বছর
২.২	লিঙ্গ	১=পুরুষ ২=মহিলা
২.২	বসবাসের এলাকা	১=গ্রাম ২=উপশহর ৩=শহর
২.৪	শিক্ষাগত অবস্থা	১=কোন প্রাতিষ্ঠানিক শিক্ষা নাই ২=প্রাথমিক শিক্ষা ৩=মাধ্যমিক শিক্ষা ৪=উচ্চ মাধ্যমিক শিক্ষা ৫=স্নাতকডিগ্রী/স্নাতকোত্তর
২.৫	পেশা	
২.৬	বৈবাহিক অবস্থা	১=বিবাহিত ২=অবিবাহিত ৩=বিবাহ বিচ্ছিন্ন ৪=বিধবা/বিপত্নীক
২.৭	স্ট্রোকের কারণে পেশার ক্ষতি	হ্যাঁ/না

২.৮	আর্থিক অবস্থা	১=নিম্ন শ্রেণী ২=নিম্ন মধ্যবিত্ত শ্রেণী ৩=মধ্যবিত্ত শ্রেণী ৪=উচ্চ মধ্যবিত্ত শ্রেণী ৫=উচ্চ শ্রেণী
২.৯	শুশ্রুষাকারীর পরিচয়	১=আত্মীয় ২=অনাত্মীয়
৩.০	পরিবারে স্ট্রোকের ইতিহাস	১=হ্যাঁ ২=না
৩.০১	রোগের হার	১=উচ্চ রক্ত চাপ ২=বহু মূত্র রোগ ৩=হৃদরোগ ৪=ফুসফুসের রোগ ৫=অন্যান্য

পর্ব-৩: স্ট্রোকএবং চিকিৎসা সম্পর্কিত তথ্য

৩.১	স্ট্রোকের তারিখ	
৩.২	স্ট্রোকের ধরণ	১=ইসচেমিক ২=হেমোরেজিক
৩.৩	স্ট্রোকের ধাপ	১=সাবঅ্যাকিউট ২=ক্রনিক
৩.৪	ক্ষতিগ্রস্ত পাশ	১=ডান ২=বাম
৩.৫	স্ট্রোক এবং পুর্নবাসন শুরুর মধ্যকার সময়(দিন/মাস/বছর)	
৩.৬	পুর্নবাসনের স্থায়িত্ব(দিন/সপ্তাহ/মাস/বছর)	
৩.৭	কাদের মাধ্যমে পুর্নবাসনের জন্য রেফার্ড করা হয়	নিজে চিকিৎসক ফিজিওথেরাপিষ্ট অন্যান্য

পর্ব-৪: গ্রোস মোটর ফাংশনাল কাজসমূহ: (ফিম স্কোর অনুসারে)

প্রশ্ন নং	কাজসমূহ	অর্জিত স্কোর
৪.১	রোলিং-আক্রান্তপাশ হতে ভালোপাশে	
৪.২	রোলিং-ভালোপাশ হতে আক্রান্তপাশে	
৪.৩	ব্রিজিং	
৪.৪	চিৎ হয়ে শোয়া থেকে বসা	
৪.৫	বসা থেকে চিৎ হয়ে শোয়া	
৪.৬	বসা অবস্থায় স্থির ভারসাম্য	
৪.৭	বসা অবস্থায় গতি ভারসাম্য	
৪.৮	দাঁড়ানো অবস্থায় স্থির ভারসাম্য	
৪.৯	দাঁড়ানো অবস্থায় গতি ভারসাম্য	
৪.১০	স্থানান্তরবেড,চেয়ার/হুইলচেয়ার	
৪.১১	হাঁটা	
সর্বমোট ফিম স্কোর		

৭=সম্পূর্ণস্বাধীন(সময়মত,নিরাপদে)

৬=সংশোধিতস্বাধীন(অতিরিক্তসময়,ডিভাইস

৫=কার্যদর্শন(খোশামোদ,প্ররোচনা)

৪=নূন্যতমসহায়তা(৭৫% কাজকরতেপারে)

৩=মধ্যপন্থীসহায়তা(৫০থেকে৭৪%কাজকরতেপারে)

২=সর্বাধিকসহায়তা(২৫%থেকে৪৯%কাজকরতেপারে)

১=সম্পূর্ণসহায়তা(২৫%এরনিচেকাজকরতেপারে)

পর্ব-৫: বিশ্ব স্বাস্থ্যসংস্থা অক্ষমতা মূল্যায়ন পদ্ধতি ২.০ (৩৬ টি বিষয় সাক্ষাৎকারগ্রহণকারী কর্তৃক লিপিবদ্ধ)

ক্ষেত্র ১: বোধশক্তি

আমি এখন বোঝার ক্ষমতা ও ভাব বিনিময় বিষয়ে কিছু প্রশ্ন করছি।

উত্তর প্রদানকারীকে ফ্লাশকার্ড ০১ এবং ফ্লাশকার্ড ০২ দেখান।

বিগত ৩০ দিনে আপনি কতটুকু সমস্যায় পড়েছেনঃ		কোন সমস্যা নাই	খুব অল্প সমস্যা	মাঝারি সমস্যা	তীব্র সমস্যা	প্রচন্ড সমস্যা বা কিছুই করতে না পারা
০১.১	কোন কিছু করতে ১০ মিনিট মনোযোগ দিতে পারেন?	১	২	৩	৪	৫
০১.২	গুরুত্বপূর্ণ কিছু করার কথা মনে থাকে?	১	২	৩	৪	৫
০১.৩	দৈনন্দিন কাজে সমস্যা হলে বিশ্লেষণ ও সমাধান করতে পারেন?	১	২	৩	৪	৫
০১.৪	নতুন কিছু শেখা (যেমন নতুন কোন স্থানে কি করে 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 ও চালিয়ে যেতে পারেন?	১	২	৩	৪	৫

স্কেএ ২: চলাফেরা

এখন আমি চলাফেরার অসুবিধা সম্পর্কে জানতে চাইবো।

উত্তর প্রদানকারীকে ফ্লাশকার্ড ০১ এবং ফ্লাশকার্ড ০২ দেখান।

বিগত ৩০ দিনে আপনি কতটুকু সমস্যায় পড়েছেনঃ		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	বাড়ীর ভিতর চলাফেরা করতে পারেন?	১	২	৩	৪	৫
০২.৪	বাড়ী থেকে বাইরে যেতে পারেন?	১	২	৩	৪	৫
০২.৫	একটানা এক কিলোমিটার হাঁটতে পারেন?	১	২	৩	৪	৫

স্কেএ ৩: নিজের যত্ন

আমি একন আপনার কাছে জানতে চাইবো-নিজেরযত্ন নিজে নিতে পারেন কিনা।

উত্তর প্রদানকারীকে ফ্লাশকার্ড ০১ এবংফ্লাশকার্ড ০২ দেখান।

বিগত ৩০ দিনে আপনি কতটুকু সমস্যায় পড়েছেনঃ		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

স্কেএ ৪: মানুষের সাথে মানিয়ে চলা

মানুষের সাথে থাকার ব্যাপারে কোন সমস্যা হয় কিনা সে সম্পর্কে এখন আমি আপনাকে জিজ্ঞেস করছি।অনুগ্রহপূর্বক মনে রাখবেন যে কেবল মাত্র অসুস্থতার কারনে সৃষ্ট সমস্যা সম্বন্ধেই প্রশ্ন করা হবে।এর অর্থ আমি বোঝাচ্ছি রোগ বা অসুস্থতা,আঘাত,মানসিক বা আবেগজনিত সমস্যা এবং মদ্যপান জনিত সমস্যা।

উত্তর প্রদানকারীকে ফ্লাশকার্ড ০১ এবংফ্লাশকার্ড ০২ দেখান।

বিগত ৩০ দিনে আপনি কতটুকু সমস্যায় পড়েছেনঃ		কোন সমস্যা নাই	খুব অল্প সমস্যা	মাঝারি সমস্যা	তীব্র সমস্যা	প্রচন্ড সমস্যা বা কিছুই করতে না পারা
০৪.১	অপরিচিত লোকের সঙ্গে আচরনে?	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 তৈরিতে?	১	২	৩	৪	৫
০৪.৫	যৌন কার্যকলাপ?	১	২	৩	৪	৫

স্কেএ ৫: জীবনযাপন প্রনালী

৫(১) গৃহস্থালীর কার্যাবলী

এখন আমি আপনাকে গৃহস্থালী কাজের ব্যাপারে জিজ্ঞেস করবো।আপনার আপনজন যাদের সাথে আপনি থাকেন তাদেরপ্রতি আপনি কতটা যত্নশীল।এই কার্যক্রমের মধ্যে অন্তর্ভূক্ত রয়েছে–রান্নাবান্না,পরিষ্কার,পরিচ্ছন্নতা,বাজার,অন্যেরপ্রতি এবং নিজের জিনিসপত্রের যত্ন আত্তি করা।

ফ্লাশকার্ড ০১ এবংফ্লাশকার্ড ০২ দেখিয়ে–

বিগত ৩০ দিনে স্বাস্থ্যগত কারনে আপনি কতটুকু সমস্যায় পড়েছেনঃ		কোন সমস্যা নাই	খুব অল্প সমস্যা	মাঝারি সমস্যা	তীব্র সমস্যা	প্রচন্ড সমস্যা বা কিছুই করতে না পারা
০৫.১	গৃহস্থালী দায়িত্বগুলো পালন করতে পারেন?	১	২	৩	৪	৫
০৫.২	সবচেয়ে গুরুত্বপূর্ণ গৃহস্থালী 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	গৃহস্থালী কাজগুলো যথা সম্ভব দ্রুত করতে পারেন?	১	২	৩	৪	৫

যদি ০৫.২-০৫.৫ এর মান 'কোন সমস্যা না' (১)এর বেশি হয় তাহলে জিজ্ঞেস করুন-

০৫.০১	বিগত ৩০ দিনের মধ্যে কতদিন গৃহস্থালীর কাজ কম হয়েছে অথবা কতদিন কাজ পুরোপুরি বাদ গেছে?	উক্ত দিনগুলোর হিসেব লিখুন _

যদি সাক্ষাৎদানকারী চাকুরী করেন(বেতন ভুক্ত,অবৈতনিক,স্বকর্মসংস্থান)অথবা স্কুলে যায়, তাহলে পরবর্তী পৃষ্ঠায় ০৫.৫-০৫.১০ এর প্রশ্নগুলো শেষ করুন।অথায় ০৬.১ এ চলে যেতে পারেন।

৫(২) পেশাগত বা স্কুলের কাজকর্ম-

এখন আমি আপিনার পেশাগত বা স্কুলের কাজকর্ম নিয়ে জানতে চাইব।

ফ্লাশকার্ড ০১ এবংফ্লাশকার্ড ০২ দেখিয়ে-

আপনার স্বাস্থ্যগত সমস্যার কারনে বিগত ৩০ দিনের মধ্যে কতটুকু সমস্যায় পড়েছেনঃ		কোন সমস্যা নাই	খুব অল্প সমস্যা	মাঝারি সমস্যা	তীব্র সমস্যা	প্রচন্ড সমস্যা বা কিছুই করতে না পারা
০৫.৫	আপনার দৈনন্দিন বা স্কুলের কাজ করতে?	১	২	৩	৪	৫
০৫.৬	আপনার পেশাগত বা স্কুলের জরুরী কোন কাজ সমাধান করতে?	১	২	৩	৪	৫
০৫.৭	আপনার প্রয়োজনীয় সকল কাজগুলো করতে?	১	২	৩	৪	৫
০৫.৮	আপনার কাজগুলো নির্দিষ্ট সময়ে প্রয়োজনীয় দ্রুততার সাথে শেষ করতে?	১	২	৩	৪	৫
০৫.৯	শারীরিক অবস্থার কারনে আপনাকে কি আপনার মর্যাদার চাইতে নিম্নস্তরে কাজ করতে হয়?				না	১
					হ্যাঁ	২
০৫.১০	শারীরিক অবস্থার কারনে কম উপার্জন করেছেন কি?				না	১
					হ্যাঁ	২

যদি ০৫.৫-০৫.৮ এর মান 'কোন সমস্যা নাই'(১) এর চেয়ে বেশি হয় তাহলে জিজ্ঞেস করুনঃ

০৫.২	বিগত ৩০ দিনের মধ্যে কতদিন আপনি অর্ধবেলা বা তার বেশি সময় আপনার স্বাস্থ্যগত সমস্যার কারনে কাজ থেকে অনুপস্থিত থেকেছেন?	উক্ত দিনগুলোর হিসেব লিখুন _____

ক্ষেত্র ৬: অংশগ্রহন

এখন আমি আপনাকে জিজ্ঞেস করব সমাজে আপনার অংশগ্রহন এবং আপনার নিজের ও পরিবারের উপর আপনার শারীরিক সমস্যার প্রভাব সম্পর্কে।কিছু প্রশ্ন হতে পারে বিগত ৩০ দিন আগের আপনার সমস্যা সম্পর্কে।উত্তর দেয়ার সময় অনুগ্রহপূর্বক বিগত ৩০ দিনের উপর আলোকপাত করবেন। আবারো আমি আপনাকে মনে করিয়ে দিতে চাই যে,এই প্রশ্নগুলোর উত্তরের সময় শারীরিক,মানসিক বা আবেগীয়,মদ্যপান বা মাদক জনিত সমস্যার কথা বলবেন।

ফ্লাশকার্ড ০১ এবং ফ্লাশকার্ড ০২ দেখিয়ে–

বিগত ৩০ দিনে:		কোন সমস্যা নাই	খুব অল্প সমস্যা	মাঝারি সমস্যা	তীব্র সমস্যা	প্রচন্ড সমস্যা বা কিছুই করতে না পারা
০৬.১	সামাজিক অনুষ্ঠানগুলোতে (যেমন উৎসব,ধর্মীয়অনুষ্ঠান বা অন্যান্য কর্মকান্ড) অন্যদের মত অংশগ্রহন 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 ও কাজের কারনে আপনি মর্য়াদাপূর্ন জীবনযাপনে কতটুকু সমস্যায় পড়েছেন?	১	২	৩	৪	৫
০৬.৪	আপনার শারীরিক সমস্যা ও এর ফলে উদ্ভূত সমস্যাগুলোর জন্য কতটুকু সময় ব্যয় করেন?	১	২	৩	৪	৫
০৬.৫	নিজের শারীরিক সমস্যার কারনে কতটুকু আবেগ তারিত হন?	১	২	৩	৪	৫

০৬.৬	আপনার শারীরিক সমস্যার কারনে আপনার বা পরিবারের কী পরিমান আর্থিক ক্ষতি হচেছ?	১	২	৩	৪	৫
০৬.৭	আপনার শারীরিক সমস্যার কারনে আপনার পরিবার কতটুকু ভুক্তভোগী?	১	২	৩	৪	৫
০৬.৮	বিশ্রাম বা বিনোদনের জন্য কিছু করতে গিয়ে আপনি কতটুকু সমস্যায় পড়েছেন?	১	২	৩	৪	৫

১	সব মিলিয়ে,গত ৩০ দিনে,মোট কতদিন উপরোক্ত সমস্যাগুলো 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 কারনে কতদিন স্বাভাবিক কাজকর্ম কম করেছেন?	দিনগুলোর হিসাব রাখুন

সাক্ষাৎকার এখানেই শেষ।আপনাকে ধন্যবাদ।

বিশ্ব স্বাস্থ্যসংস্থা অক্ষমতা মূল্যায়ন পদ্ধতি ২.০

ফ্লাশকার্ড ০১

শারীরিক অবস্থা:

- রোগ,অসুস্থতা বা অন্য কোন শারীরিক সমস্যা
- আঘাত সমূহ
- মানসিক বা আবেগীয় সমস্যা
- মদ্যপান জনিত সমস্যা
- মাদক জনিত সমস্যা

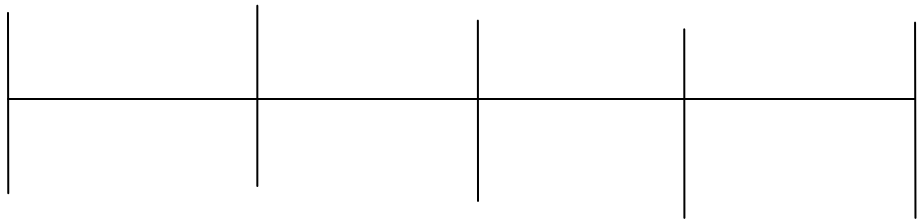
কাজের ক্ষেত্রে সমস্যা হচ্ছে বলতে বোঝায়:

- অতিরিক্ত প্রচেষ্টায় কাজটি করা
- অস্বস্তি বা ব্যথা স্বত্বেও করা
- সময় নিয়ে কাজটি করা
- যেভাবে করতে চান,সেভাবে করতে না পারা

কেবল মাত্র বিগত ৩০ দিনের কথা ভাবুন।

বিশ্ব স্বাস্থ্যসংস্থা অক্ষমতা মূল্যায়ন পদ্ধতি ২.০

ফ্লাশকার্ড ০২



১	২	৩	৪	৫
কোন সমস্যা নাই	খুব অল্প সমস্যা	মাঝারি সমস্যা	তীব্র সমস্যা	প্রচন্ড সমস্যা বা কিছুই করতে না পারা

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

Ref: Date:

CRP/BHPI/MRS/02/2021/441

10th February 2021

Eti Rani Shil
4th Year, B.Sc. in Physiotherapy
Session: 2015-16, Reg. No.: 3605
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Subject: Approval of the thesis proposal "**Functional and Disability status of persons with stroke in a specialized rehabilitation center**" by ethics committee.

Dear Eti Rani Shil,
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 & Bengali version)
3	Information sheet & consent form

The purpose of the study is to determine the overall functional and disability status of persons with stroke by using a questionnaire that may take 20 to 30 minutes to answer and there is no likelihood of any harm to the participants. Data collectors will receive informed consent from all participants. Any data collected will be kept confidential. The members of the Ethics committee have approved the study to be conducted in the presented form at the meeting held at 9AM on 29 February, 2020 at BHPI (23rd IRB Meeting).

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

Best regards,

Millat Hossain

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

Permission Latter

Date: 10 February, 2021

The Head

Department of Physiotherapy

Centre for the Rehabilitation of the Paralysed (CRP)

Chapain, Savar, Dhaka-1343

Through: Head, Department of Physiotherapy, BHPI.

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

Sir,

With due to respect and humble submission to state that I am Eti Rani Shil, a student of 4th year B.Sc. in physiotherapy at Bangladesh Health Professions Institute (BHPI). The Ethical committee has approved my research project entitled: **"Functional and Disability status of persons with stroke in a specialized rehabilitation center"** under the supervision of Asma Islam, Assistant professor, Department of Physiotherapy, BHPI. I want to collect data for my research project from the Department of Physiotherapy at CRP. So, I need permission for data collection from the Neurology Unit of Physiotherapy Department at CRP-Savar, Dhaka-1343. I would like to assure that anything of the study will not be harmful for the participants and the Department itself.

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

Yours faithfully,

Eti Rani Shil

Eti Rani Shil

4th Year

B.Sc. in Physiotherapy

Class Roll: 01; Session: 2015-16

Bangladesh Health Professions Institute (BHPI)

(An academic Institution of CRP)

CRP-Chapain, Savar, Dhaka-1343.

Approved
10/02/21
MOHAMMAD ANWAR HOSSAIN
Senior Consultant &
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