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BARRIERS ASSOCIATED WITH RETURN TO WORK AFTER STROKE

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We the undersign certify that we have carefully read and recommend to the faculty of Medicine, University of Dhaka, for acceptablethis dissertation entitled-

"BARRIERS ASSOCIATED WITH RETURN TO WORK AFTER STROKE"

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CONTENT

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ACRONYM

BHPI: Bangladesh Health Profession's Institute

CRP: Centre for the Rehabilitation of the Paralyzed

IRB: Institutional Review Board

WHO: World Health Organization

SPSS: Statistical Package for the Social Sciences

BMRC: Bangladesh Medical Research Council

TIA: Transient Ischemic Attack

RTW: Return To Work

ADL: Activity of Daily Living

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ABSTRACT

Purpose: The purpose of the study was to find out the barriers associated with return to work after stroke. ***Objectives:*** The objectives of this study were to explore prevalence of return to work after stroke. To evaluate the socio-demographic information of the persons with stroke and highlight the physical, social, environmental and cognitive barriers associated with return to work. And lastly synthesized the relationship between return to work and age, gender, type of stroke, time of rehabilitation, social/family support, cognitive state, social and environmental barriers and so on. ***Methodology:*** The study design was cross-sectional. Total 105 samples were selected for this study from Centre for the rehabilitation of the paralyzed (CRP), Neurology unit, at Savar and also community level in Dhaka city. Data was collected by using of questionnaire. The study was conducted by descriptive and inferential analysis through using SPSS software 25.0 version. ***Results:*** This study found the prevalence of return to work people after stroke which was 43.8%. The main barriers of return to work for the stroke survivors was physical barriers or personal barriers such as poor functional use of affected arm and leg and also difficulty with speech and toiletting. There had also a large number of barriers that have been identified including: Low energy (fatigue), poor memory, difficulty with vision, accessibility or transportational barriers, social participation barriers, environmental barrier. poor concentration, difficulty with hearing, difficulty with thinking skills etc. There was no association found between return to work with sociodemographic information and physical parameter related information such as age, sex, type of stroke, site of stroke, speech problem, co morbidities but a strong association found between return to work with use of assistive device and cognitive problem. ***Conclusion:*** An individual own view of their working ability and barriers were also connected to returning to work and should be taken into consideration. So every stroke patient should undergo a routine rehabilitation process to cope with these barriers.

Key word: stroke, barriers, return to work.

CHAPTER I INTRODUCTION

1.1 Background

Stroke is a widespread, dangerous, incapacitating, and potentially fatal global health issue. For both industrialised and developing nations, it is still a grave medical and public health issue. (Patterson 2018, p.45). In most countries, stroke is the second or third most common motive of death and one of the foremost causes of acquired adult disability and it is the 3rd leading cause of death in Bangladesh (Islam et al. 2013, p. 212). William Cole may have coined the term "stroke" for the first time in medicine when he published a physico-medical essay in 1689. (Langhorne et al. 2011, p. 578).

The world health organisation (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". Among 80% of stroke are ischemic, rest being due to haemorrhage. . Every year, a little over 20 million people will experience a stroke, and of those, 5 million will pass away. The majority of stroke deaths—85.5%—occur in poorer nations. In underdeveloped nations, stroke morbidity was around seven times higher than in developed nations. A common cause of emergency admission, stroke is linked to higher mortality, morbidity, and poorer quality of life. Stroke is the third leading cause of death in the elderly, after coronary artery disease and cancer (Kumar et al. 2019, p. 578).

Men and women both see an increase in the frequency of stroke sickness with increasing age, having about 50% of all strokes occurring in those over the age of 75 and 30% in people over the age of 85. One of the leading causes of disability and a lower quality of life is stroke (Lui and Nguyen 2018, p. 1693).

The persons with stroke have difficulties with return to work 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, Park and Roh 2015, p. 3127). That's why most of the people can not return their work.

The ability of stroke survivors regain their prior social status or to adjust to the new social circumstance is correlated with their ability to return to work after a stroke and is reliant on interaction with individuals in their social context (family, employer, community, professionals, and the general public). According to a recent study by (Lock et al. 2014, p.23) a number of factors, including the rehabilitation process, employer agency, social structural issues, and personal characteristics, can affect a person's ability to return to work following a stroke. Since employment qualities, social support, and motivation have been proven to be significant in predicting return to work after stroke, the employer and the workplace may be crucial actors in rehabilitation that tries to recover work competence.

The strong barriers predicting return to work is functional dependence. Most impairments barriers were ‘invisible’, including fatigue, problems with concentration, memory and personality changes. (culler et al. 2011, p. 78).

Stroke is not only a significant financial and medical issue; but also negatively impacts the quality of life for individuals. It has been demonstrated that a successful return to work after a stroke improves quality of life, overall life satisfaction, and financial conditions, yet the majority of patients face numerous obstacles to returning to work. The percentage of stroke victims who go back to work varies greatly around the world, from 14% to 73%. According to a recent study from South India, only 20% of stroke survivors were still employed after the incident, with half of them changing employment as a result. Of those who were employed before the stroke, 62% were found to be survivors. (Treger et al.2017, p.1398).

Several studies have revealed that social support and mental health issues could be significant obstacles to returning work. .Two studies in particular demonstrated that living alone and depression at the time of follow up was associated with a decreased rate of return to work compared to age-matched stroke patients (Neiemi et al.1998, p. 45). Stroke patients frequently describe emotions of helplessness, anxiety, and sadness, as well as a reduction in social interaction and rising social isolation. After a stroke, many patients identify having emotional or psychological problems, such as worry and sadness.

Curiously, many patients claim that these disorders are even more incapacitating than any physical impairment. (Barker and Graham 2019, p. 566).

According to another study, 38.4 stroke survivors out of 100 faced poor social support, which was the most widely acknowledged relational barrier to physical activity and ultimately barriers for return to work (Jackson et al., 2018). Poor inspiration or low power for exercise also acted as a barrier for stroke survivors in the presence of social support (Damush et al. 2007, p. 98).

The reported RTW rate following a stroke differs significantly between studies. In the first year following a stroke, RTW rates were 75%, according to an Australian study (Westerlind, Persson, and Sunnerhagen 2017, p. 35). At 6 months after their strokes, 60.0% of Korean patients who were employed prior to their strokes displayed RTW (Chang et al. 2016, p. 55). Only 32% of stroke survivors in South Africa were able to successfully return to work (Patterson 2018, p. 22). In an Indian study, out of 141 individuals, 74 (52.5%) went back to work after a stroke (Bonner et al. 2015, p. 548). There has no study yet in Bangladesh about the return to work with stroke survivors from where the investigator can find the actual rate.

The goal of rehabilitation is frequently the return to one's old employment and general well-being (Singam et al. 2015, p. 455). The right rehabilitation enables the injured to resume their line of work. To guarantee the appropriate recovery and In order to encourage the greatest degree of independence in their community after being discharged from the hospital setting, CRP is working with both the MultiDisciplinary Team (MDT) and Interdisciplinary Team (IDT) approach. Every year, CRP provides rehabilitation services to a sizable number of stroke survivors, but no research has been done on their likelihood of returning to the workforce. Therefore, it is crucial for carrying out a study on RTW among them. That’s why the researcher is interested . So according to the above study, a very important goal for these people is to return to work after stroke as it facilitates independent living and guarantees a high level of self-esteem and life satisfaction but most of the stroke survivors face many barriers to return to work. Considering these issues, the aim of the study is to explore the barriers associated with RTW after stroke.

Morris (2011) state that the ability to return to work (RTW) after a stroke is an important issue for the stroke survivors within the working-age population. The reported RTW rate after stroke varies widely between different studies. An Australian study showed that RTW rate of 75% within the first year after stroke (Westerlind, Persson & Sunnerhagen, 2017).

In Korea at 6 months post-stroke, 60.0% of patients who had an occupation before their strokes showed RTW (Chang et al. 2016). In South Africa, only 32% successfully returned to work after their stroke (Patterson et al. 2018). An Indian study, approximately half, 74 (52.5%), returned to work after stroke out of the 141 participants (Bonner et al. 2015). There has no study yet in Bangladesh about the return to work with stroke survivors from where the investigator can find the actual rate.

Return to previous work and well-being of living often seen as a goal of rehabilitation (Singam et al. 2015). The proper rehabilitation helps the affected people to return their occupation. In order to ensure the proper rehabilitation and community reintegration of the affected individual, CRP is working with both the MultiDisciplinary Team (MDT) and Interdisciplinary Team (IDT) approach to promote the most possible independence to their community after getting discharged from the hospital setting. A large amount of stroke survivors taking rehabilitation service from CRP in every 2 year, but there was no study on return to work with that stroke survivors. So, it is very important to conduct a study on RTW among them. That's why the researcher is interested to find the actual RTW rate of stroke survivors. This study investigated the status of RTW of stroke patients and also functional independence after 3 months of stroke.

1.2 Rationale

The purpose of this study is to describe the barriers those are facing by the person with stroke to return to work and active participants in various social activities in their community during rehabilitation or after completion of rehabilitation. Patients with stroke may face range of problems or barriers in their community like as environmental, physical, emotional/psychological, perceptions and attitudes. Environmental and physical barriers are commonly seen in our country after stroke and it is increasing day by day. In recent past some studies have dealt with stroke patients in our countries, but the exact barriers of people with stroke patients in community has not been studied in Bangladesh. This study formulates to fill the gap of knowledge & ideas in this area. The purposes of the study are to find out barriers associated with return to work of people with stroke patients in community. This study also help to explore the patient's physical, emotional/psychological, perceptions, attitudes and environmental barriers. This study will also helps to discover the lacking area of a career, especially after doing any activities in community. By doing this research, the problem may be drawn out & gives proper education about accessibility barriers of stroke patients. This study will helpful in making physiotherapist to aware about the accessibility barriers of stroke patients. Physiotherapy plays a vital role in the management of stroke patients, so it is helpful for physiotherapist in working in this area for delivering service. As a result patients become more benefited. Thus the study might create a future prospect of physiotherapy profession in Bangladesh. So, researcher interest to work in this area and to aware the people and professionals about the accessibility barriers of stroke people in community for return to work. It will help to discover the role and importance of physiotherapy in every sector of Bangladesh.

1.3 Research question :

What are the barriers associated with return to work after stroke?

1.4 Study objective :

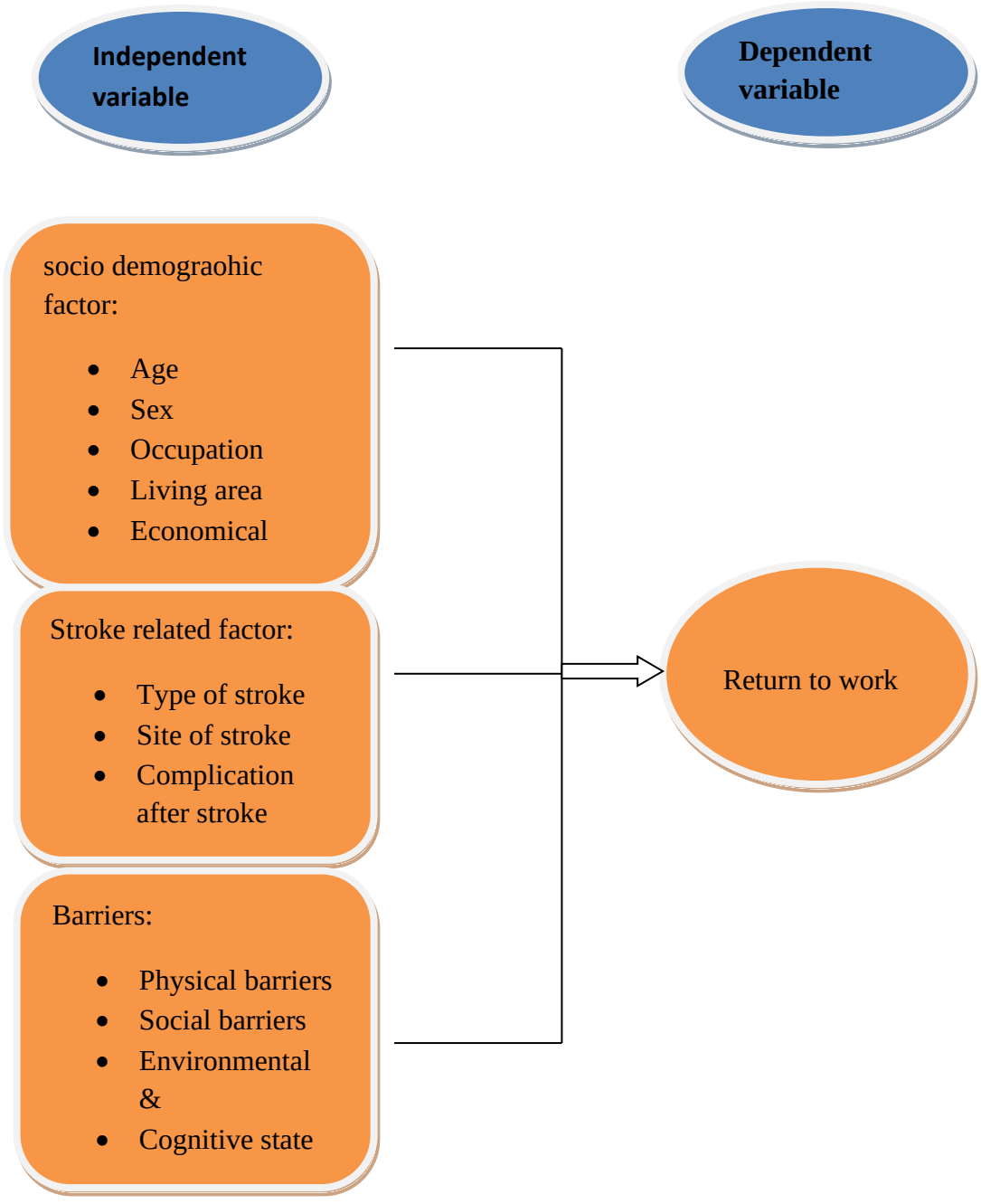
General objective :

i. To find out the barriers associated with return to work after stroke.

Specific objective :

i. To explore prevalence of return to work after stroke.
ii. To evaluate the socio-demographic information of the persons with stroke.
iii. To find out their level of difficulties of understanding and communicating others.
iv. To discover their level of difficulties in mobility, self-care, socialization, life activities and social participation.
v. To highlight the physical, social, environmental and cognitive barriers associated with return to work.
vi. To synthesized the relationship between return to work and age, gender, type of stroke, time of rehabilitation, social/family support, cognitive state, social nd environmental barriers and so on.

1.5 Conceptual framework :



1.6 Operational Definition:

Stroke :

The world health organisation (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.

Barriers :

Any condition that may make employment or returning work difficult.

Return to work:

Return to work means back to the previous activity or other employment from the present condition. (stroke)

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 and BHPI library were the sources of the information. The literature was taken from the different scholarly articles and general scientific articles from 2013 to 2023. The review results are as follows:

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, p. 67).

According to the World Health Organisation (WHO), the International Classification of Disease (ICD)-11 definition of stroke includes cerebral ischemic stroke, intracerebral haemorrhage, subarachnoid haemorrhage, and stroke not acknowledged to be ischemic or hemorrhagic and requires the presence of acute neurological dysfunction (Feigin et al. 2018, p. 2248).

Prevalence :

There were 80.1 million prevalent cases of stroke in the Global Burden of Disease (GBD) 2016 report, 41.1 million of which were female and 39.0 million of which were male. 84.4% of all prevalent strokes were ischemic strokes. There were 13.7 million new incidents of stroke in 2016. The highest age-standardized incidences of stroke were reported in East Asia, with China having the highest rates (354 per 100,000 people), followed by Eastern Europe (200 per 100,000 people in Estonia to 335 per 100,000 people in Latvia). The age-specific stroke incidence was comparable for men and women under the age of 55 but significantly higher for men than women between the ages of 55 and 75. Age-standardized incidence decreased overall from 1990 to 2016 (-8.1%) (Johnson et al. 2019, p. 439).

According to the Global Burden of Disease (GBD) 2017 report, there were 11.9 million new stroke cases worldwide in 2017, up from 6.8 million in 1990. Age-standardized stroke prevalence rates worldwide grew by 3% between 1990 and 2017 to reach 1300.6 per 100,000, with UMICs (Upper Middle-Income Countries) accounting for the majority of the rise. Contrarily, age-standardized rates of prevalent instances of stroke had decreased by 3% and 8%, respectively, in LICs (Lower-Income Countries) and HICs (Higher Income Countries) by 2017. In contrast to ischemic strokes, hemorrhagic stroke age-standardized rates have significantly decreased globally from 1990 to 2017 (Avan et al. 2019, p. 30).

According to estimates, 1.5 million people in India experience a stroke each year, and 500,000 people live with a stroke-related impairment. This is based entirely on a stroke incidence of 135 to 145 per 100,000 people annually, and an early case mortality rate of between 27% and 41%. Families in India are likely to have considerable long-term effects from stroke, particularly those who live in rural areas (Lindley et al. 2017, p. 588).

For the years 2000 to 2016, Pakistan had a crude age and sex-adjusted stroke incidence of 95 per 100,000 individuals per year, with men and women aged 75 to 85 having the highest incidence (584,000 of 650,000) (Khan et al. 2019, p. 30).

For the age groups of 40–49 years, 50–59 years, 60–69 years, 70–79 years, and 80 years or more, respectively, the stroke prevalence in Bangladesh was reported as 0–20%, 0–30%, 0–20%, and 1–00%. The ratio of male to female participants was 3:44:2, and the overall prevalence of stroke was 0:30% (Islam et al. 2013, p. 212).

Clinical presentation of stroke:

The clinical signs and symptoms of hemorrhagic strokes vary, but the most typical ones are sudden onset headache, vomiting, and severe blood pressure rises. Within a few minutes of the stroke's beginning, localised neurological signs accompany these symptoms. These individuals' signs and symptoms may begin to manifest gradually over the period of many hours, with varying degrees of severity. Paresis, ataxia, paralysis, vomiting, and eye staring are some of the symptoms that may appear after an ischemic stroke; however, the location of these symptoms depends on the part of the brain that is

supplied by damaged blood vessels (Ojaghihaghi et al. 2017, p. 34). Patients reported that headache was the most frequent clinical symptom in 75.0% of cases, followed by aphasia in 60.3% of cases and hemiparesis in 0.5% of cases. (53.4%). The majority of those who had an ischemic stroke looked to have headache (71.7%), facial palsy (58.3%), and aphasia (60.0%). Similar to this, aphasia (60.7%), vomiting (57.1%), and headache (78.6%) were shown to be the most frequent clinical manifestations in those who had hemorrhagic strokes (Fekadu, Chelkeba and kebede 2019, p. 11).

Predisposing factor :

Two groups of predisposing factors for stroke exist. One of these is a controllable predisposing factor, and the other is an irreversible predisposing factor (Hossain et al. 2011, p. 19), (Boehme et al. 2017, p. 78). The risk factors that can be modifiable include high blood pressure, erythremia, coronary artery disease, alcohol misuse, diabetes mellitus, smoking habit, hypercholesterolemia, and OCPs. According to Hossain et al. (2011, p. 19) the non-modifiable predisposing factors include gender, age, family history, ethnicity and others. According to scientists, other risk factors for ischemic CVA include apoA1, mental causes, exercise, social causes, eating preferences, and belly obesity (O'donnell et al. 2012, p. 1777). However, during just the first 12 weeks following a micro stroke, patients are at a high risk of a cerebrovascular accident known as transient ischemic assault (Amort et al. 2011, p. 78). Repetitive strokes are less frequent when medical management and the risk factor for cardiovascular disease are manage (Shah et al. 2013, p. 98). More than two thirds of stroke survivors who recover after inpatient care enrol in a rehab programme (Winstein et al. 2016, p. 45). Therefore, a quicker start to a rehab programme affects how a stroke progresses (Scorrano et al. 2018, p. 56).

Return to work :

The ability of stroke survivors regain their prior social position or to adapt to the new social circumstance depends on interaction with people in their social context (family, employer, community, professionals, and the general public). According to Medin et al. (2016, p. 77), the percentage of stroke victims who return to work varies greatly around the world, from 14% to 73%. According to a recent study from South India, just 20% of stroke survivors were continuously employed after the event, and half of those who were employed before the stroke changed occupations thereafter (Bonner et al. 2015, p. 548). The probability of RTW has been demonstrated to rise with stroke severity, greater independence upon hospital discharge, younger age, male sex, higher educational level, white collar work, the capacity to walk, and having retained cognition (Larsen et al. 2016, p. 23). Longer-term work status has only seldom been explored in quantitative investigations. Using stroke register data and mail surveys, Westerlind et al. (2017, p. 89) followed up 211 participants (18-63 years) 6 years after their stroke. 47% of postal inquiries were answered. The average age at the start of the stroke was 53. At 6 years, 130 (75%) of the participants were employed, 10 (6%) had retired owing to old age, 10 (6%) had passed away before to retirement, and 24 (14%) were depend on disability benefits,a excluding the 37 members who had retired early. Interestingly, RTW rates kept rising. Interestingly, RTW rates continued to increase up to three years post stroke (Lock et al. 2015, p. 77). In a Swedish study, Vestling and her colleagues examined the experiences of 120 stroke patients and found 41% returned.

According to another study, 38.4 stroke survivors out of 100 faced poor social support, which was the most widely acknowledged relational barrier to physical activity and ultimately barriers for return to work (Jackson, Meroer and Singer 2018, p. 14). Poor inspiration or low power for exercise also acted as a barrier for stroke survivors in the presence of social support (Damush et al. 2017, p. 257).

The reported RTW rate following a stroke differs significantly between studies. In the first year following a stroke, RTW rates were 75%, according to an Australian study (Westerlind, Persson, and Sunnerhagen, 2017, p. 38). At 6 months after their strokes, 60.0% of Korean patients who were employed prior to their strokes displayed RTW

(Chang et al. 2016, p. 553). Only 32% of stroke survivors in South Africa were able to successfully return to work (Patterson 2018, p. 22). In an Indian study, out of 141 individuals, 74 (52.5%) went back to work after a stroke (Bonner et al. 2015, p. 548). There has no study yet in Bangladesh about the return to work with stroke survivors from where the investigator can find the actual rate.

Importance of return to work

The concept of work can be defined in different ways and for the purpose of this study, it shall be defined as "tasks they (people) perform for some form of remuneration (Patterson, 2018 P. 34). A person can be self-employed or employed by an employer. Patterson (2018) stated that the word, Work may be categorized into formal and informal economic activities. Sansam & Kent (2009) think that work is a very important activity in an adult's life; it helps the people to get a structure in their lives, recognized social status, opportunity/ opportunities for social interaction, a sense of belonging, and it promotes physical wellbeing over and above the income generated (Patterson 2018, P. 56). According to Hartke, Trierweiler & Bode (2011) Work is also a means by which a person can develop a sense of identity through the experiences, challenges, personal development and fulfillment achieved. According to National stroke association (2018), Most of the people who RTW, do so within three to six months, with a second peak of RTW at 12 to 18 months after their stroke. Making the decision to return to work after a stroke can be difficult, but it is an important step for many survivors. Some of the stroke survivors are able to go back to their previous employer in the same position they were in before the stroke. Others may need modifications to their previous job including fewer hours and physical accommodations, and some may need training so they can change their work or move into a different field altogether. (National stroke association, 2018).

Barriers:

There are several barriers associated with return to work after stroke including social,physical, environmental, cognitive and economical. Environmental and physical barriers are commonly seen in our country after stroke and it is increasing day by day

(Hellman et al. 2016, p. 901) Several studies have suggested that mental health and social support factors may also play an important role in the return to work. Living alone and having depression at the time of follow-up were linked to a lower incidence of return to work compared to stroke patients of similar age, according to two studies in particular, although the general topic is still understudied. Patients who have had a stroke frequently describe feelings of powerlessness, worry, and sadness as well as a decline in social interaction and rising isolation. After a stroke, many patients identify having emotional or psychological problems, such as worry or sadness. Curiously, many of these patients claim that these problems are far more incapacitating than any physical impairment. There have been few prior studies assessing psychosocial aspects, and none have been conducted in India (Hartke and Trierwiler 2015, p. 32). Additionally, it indicates that having the support of one's loved ones, friends, and coworkers has a significant, beneficial impact on a patient's to return to work after stroke. In fact, it has been demonstrated that individuals with high levels of social support recover from a stroke more quickly and with a wider range of functional status. As a result, factors related to mental health and social support may also be essential to a successful return to work; however, there are few studies that specifically examine the importance of psychosocial factors in this context stroke (Bonner et al. 2015, p. 548).

Stroke and rate of return to work:

Stroke is a very important reason for people having difficulties at work, or even being at risk of losing their job, was having invisible impairments (Balasooriya et al. 2016). There have many studies were done in the United States of America, the United Kingdom, Japan and Sweden have shown that the rates of return to work widely vary from 1% to 91% with variances occurring among the countries as well as within the same country. (Duff et al. 2014). Returning to work of stroke survivors is a complex process which can be facilitated or hindered by organizational, social or personal factors, as well as accessibility to appropriate services (Brannigan et al. 2016) According to the Duff et al. (2014) the wide range of RTW rates in the studies can be a result of different definitions of work used, varied age groups of participants, nature and severity of the stroke and the type of rehabilitation received, cultural factors and disability compensation programs etc.

(Patterson, 2018). Stroke can restrict the productive life of a stroke survivor and also can decrease the quality of life which makes a critical situation for his or her family. Stroke also affects in return to the previous work and sometimes stroke 7 changes the working pattern of a person that's why they have to face a challenging work situation. Research shows that maximum improvement of post-stroke is seen within the first six months and, maximally, up to two years (Duff et al. 2014) A study done by Duff in Johannesburg, South Africa found that 66.0% of stroke survivors (n=97) did not return to work after the stroke (Patterson et al. 2018). Of the 34% that could return to work, 86.7% returned to the same work as they before did and 63.3% resumed full-time employment (Patterson, 2018). Duff et al. (2014) deduced that either some employers were accommodating of their employees and/or recovery following the stroke was conducive for returning to work (Patterson et al. 2018). Bonner et al. (2015) have found that professional or business employment, lower mRS scores, 3 months post-stroke and younger age were associated with a successful return to work. The two most common reasons for not returning to work were upper limb dysfunction and walking difficulties and other barriers were poor memory, difficulty with speech and poor support and guidance from the health care professionals and also employers and the main facilitators were included: dislike of being bored, financial needs to support one's and family, enjoyment of work as well as supportive and understanding healthcare professionals and employers (Patterson, 2018). There have many reasons may contribute to these findings thus, in the context of this study, Patterson (2018) used the International Classification of Functioning, Disability, and Health (ICF) to explore factors facilitating the RTW for stroke survivors.

CHAPTER III METHODOLOGY

3.1 Study design

The purpose of the study was to find out barriers associated with return to work after stroke. The cross-sectional study was chosen to conduct and it was found to be an appropriate design to find out the objectives. Cross-sectional studies simultaneously examine exposure and health consequence in a specific population and geographic region at a given period.

3.2 Population and sample

Population: Population is the set of all observable items or occurrences on which the research is conducted.

Sample: A sample is a representative part of a population (Hannan 2016, p. 34).

The study population were stroke and selected from the stroke rehabilitation unit of Centre for the Rehabilitation of the Paralyzed (CRP), from May 2023 to July 2023. Sample size was 105 which were selected conveniently.

3.3 Sampling technique

The study was conducted by using the convenient sampling technique. Due to the time limitation, it was selected and as it was the one of the easiest, cheapest and quicker method of sample selection. The researcher used this procedure, because, getting of those samples whose criteria were concerned with the study purpose.

3.4 Study site and study area

The researcher collected data from the stroke rehabilitation unit of Centre for the Rehabilitation of the paralysed (CRP), Savar, Dhaka. The study area was Neurological condition (stroke) of the patient and also community level in Dhaka district.

3.5 Sample size Calculation (Cross-sectional): (Hannan 2016, p. 78)

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

$= Z2\ pq/d2$

= (1.96) 2x 0.23 x 0.77/ (0.05)2 = 272

Here, Z (confidence interval)

P (prevalence) =23% (Donker et al. 2015, p. 3) And, q= (1-p) = (1-0.23) =0.77 The actual sample

size was, n= 272

According to this equation, the sample should be 272 people. Due to 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 105 patients were selected.

3.6 Inclusion criteria:

- Patient with stroke who are diagnosed by a neuro specialist and treated at least 1month after stroke by a physiotherapist in CRP Neurology unit. Patients who are diagnosed as Stroke and getting ongoing treatment will be included.
- Both ischemic & hemorrhagic stroke patient.
- Both Male & female participants will be included
- Age – 30 to 70 years (Damush et al. 2019, p. 45)

3.7 Exclusion criteria :

- Medically unstable and mentally ill participant.
- ICU patient or acute stroke patient.
- Lack of interest to participate in research activities

3.8 Data collection tools

To fulfill the aim and objective of the study researcher used the following tools during the data collection period:

Self Structure Questionnaire, consent forms, pen, papers, eraser, white paper, clip board, wrist watch.

3.9 Data collection procedure

A written consent was taken from the patients. A Questionnaire was used to accumulate data by face to face conversation. Before collecting data researcher clarified all the procedure of data collection to data collectors and trained up well before data collection. All the data were collected by the selective trained data collectors with the presence of researcher to avoid the errors. Every questionnaire was rechecked by researcher for missing information or unclear information.

3.10 Data Analysis

After completing the initial data collection, every answer was cross checked to find out mistakes or unclear information. Then data was inserted into SPSS version 25 to analyze the collected data. Microsoft word 19 was used to create most of the graphs and charts. Then data was analyzed through descriptive and interferential statistics. In descriptive part in case of parametric data the central tendency and the measure of dispersion was presented through mean and standard deviation. The categorical data was presented as frequency and percentage of proportion through different visualization tool such as pie chart, bar chart. To find out the relationship among sociodemographic, physical parameters , barriers to return to work by pearson chi square test.

3.11 Informed consent

In this study interested subjects were given consent forms and the purpose of the research and consent forms were explained to the subject verbally. They were told that participation is fully voluntary and they have the right to withdraw at any time. They were also told that confidentiality will be maintained. Information might be published in any presentations or writing but they will not be identified. The study results might not have any direct effects on them but the members of Physiotherapy population may be benefited from the study in future.

3.12 Ethical consideration

Permission was taken from BHPI ethical committee for research project then permission was taken from physiotherapy department for data collection. The participants were explained the purpose and goals of the study. This study followed the World Health Organization (WHO) & Bangladesh Medical Research Council (BMRC) guidelines and strictly maintained the confidentiality. Meanwhile, it was purely observation research, so nothing was intervene through which the research is considered as limited ethical issue.

CHAPTER IV RESULT

Table 1 : Sociodemographic information :

Variable	Mean/ SD	Median	Frequency (n) / Percentage(%)
Age	Mean =52.58/ SD = 7.862		
Sex			Male = 67 / 63.8% Female=38 /36.2%
Marital status			Married=100/95.2% Unmarried= 4/ 1 % Widow= 1 / 3.8 %
Educational qualification			Illiterate=10 / 9.5 % Lower educated= 38 /36.2% Higher educated= 57 / 54.3%
Resident Area			Urban=58 / 55.2 % Semi urban=38 / 36.2% Rural = 9 / 8.6 %
Present Occupation			Teacher=7/ 6.7 % Businessman=16 15.2% Shopkeeper= 7/ 6.7% Driver= 2 / 1.9% Service holder=15/ 14.3 % Housewife = 24/ 22.9% Other= 3/ 2.9 % None= 31/29.5 %

Previous Occupation	Teacher=10/ 9.5 % Businessman=14/13.3% Shopkeeper= 7/ 6.7% Driver= 8 / 7.6 % Service holder= 29/ 27.6 % Housewife = 25/ 23.8% Other= 9/ 8.6 % None= 3/ 2.9 %

**** median value was considered in case of non normally distributed continous data.**

Age:

Among the 105 participant in the study, minimum of participant was 33 and maximum age of participant was 68. Their mean age was 52.58 and standard deviation was 7.862.

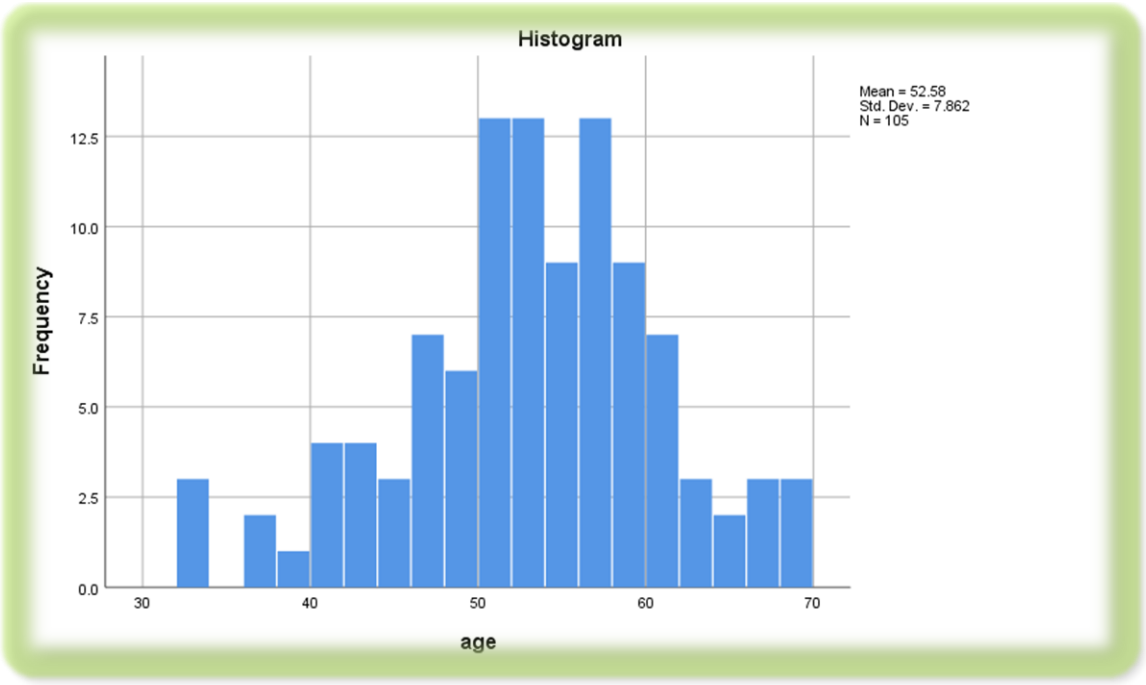


Figure 1: Age of the paricipant

Gender :

Among the 105 participant 63.8 % (n=67) were male and 36.2% (n=38) were female.

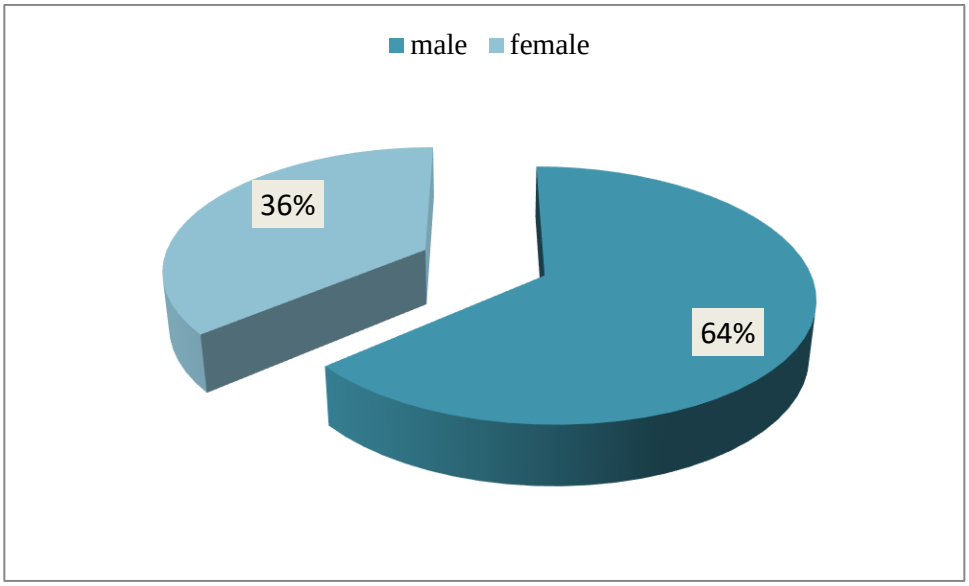


Figure 2 : Gender of participation

Educational qualification :

Among 105 stroke patient 9.5% (n=10) were illiterate, 36.2 % (n=38) were lower educated and 54.3% (n=57) were higher educated.

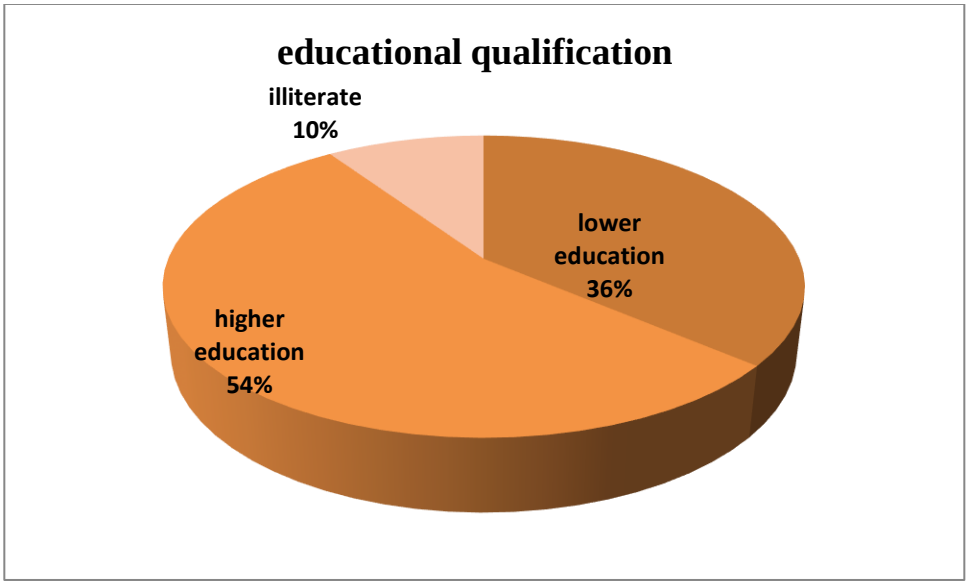


Figure 3: Educational qualification of the participant

Previous occupation:

Among the 105 participant, 9.5% (n=10) were teacher, 13.3% (=14) were businessman, 6.7% (7) were shopkeeper, 7.6 % (n=8) were driver, 27.6% (29) were service holder, 23.8 % (n=25) were housewife, 8.6 % (n= 9) were other such as doctor, carpenter, banker etc and 2.9% (n=3) were unemployed.

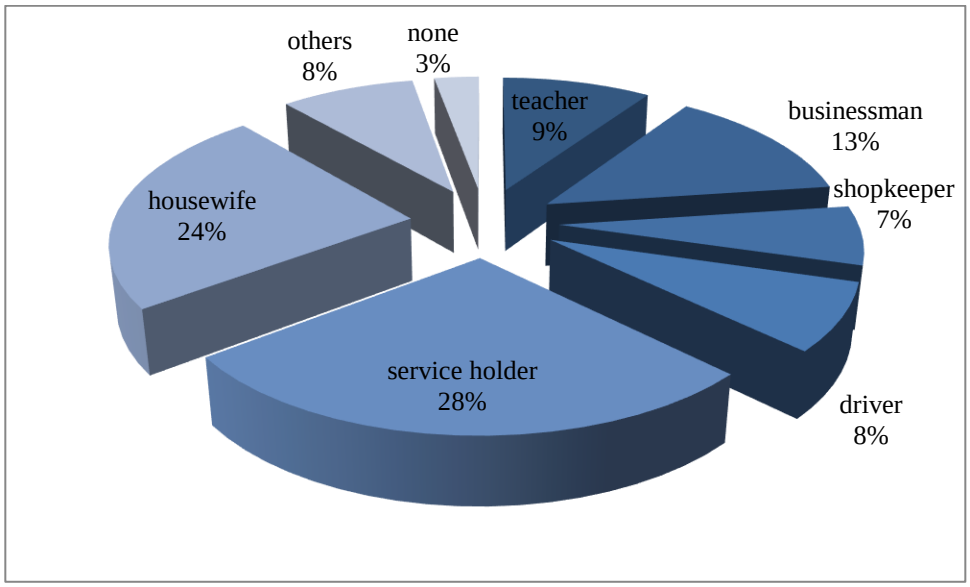


Figure 4: Previous occupation of participant

Present occupation :

Among the 105 participant, 1.9% (n=2) were teacher, 12.3% (n=13) were businessman, 6.7% (7) were shopkeeper, 6.7% (n=7) were service holder, 12.3 % (n=13) were housewife, 3.8 % (n= 4) were other such as doctor, carpenter, banker etc and 55.7% (n=59) were unemployed.

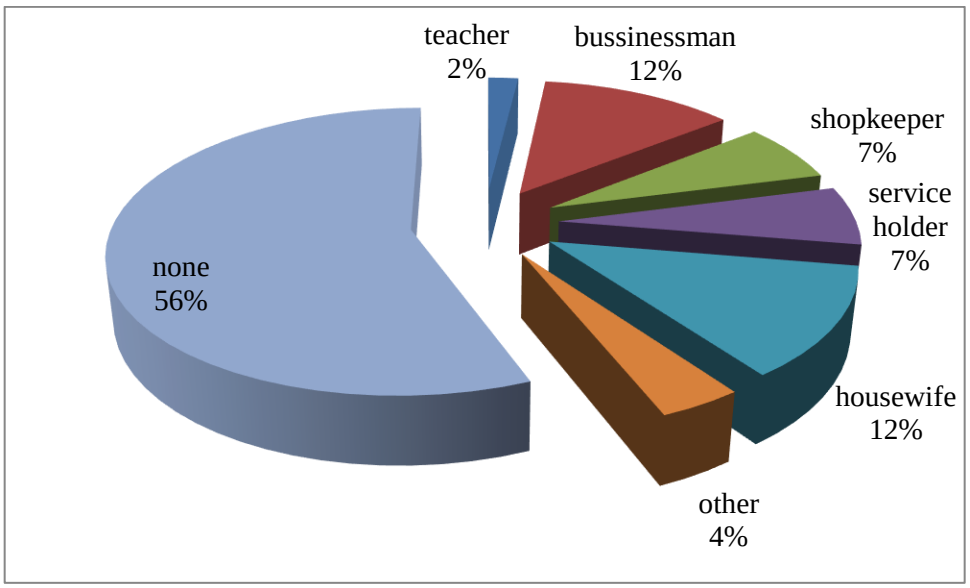


Figure 5 : Present occupation of participant

Table 2: Medical history

Variable	Mean/ SD	Median	Frequency (n) / Percentage (%)
Type of stroke			Ischemic= 82/ 78.1 % Haemorrhagic=23/21.9%
Site of stroke			Right =55/52.4 % Left =50/47.6 %
Rehabilitation duration	Mean= 3.14 SD= 1.326		
Complication after stroke			Shoulder pain=32/30.5 % Memory problem with depression =34/32.4 % Chest infection=11/10.5 % Other =15/14.3 % None =13/12.4 %
Frequency of Co morbidities			Single =32/30.5 % Multiple = 64/ 61.0 % None =9 / 8.6 %

Type of stroke:

Among the 105 participant ischemic stroke type is 78.1 % (n=82) and 21.9% (n=23) have hemorrhagic.

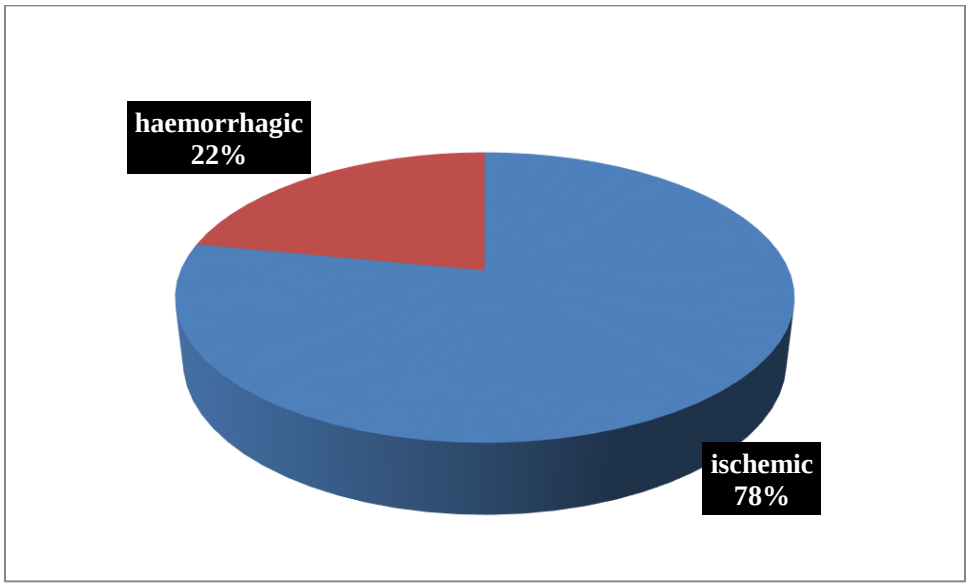
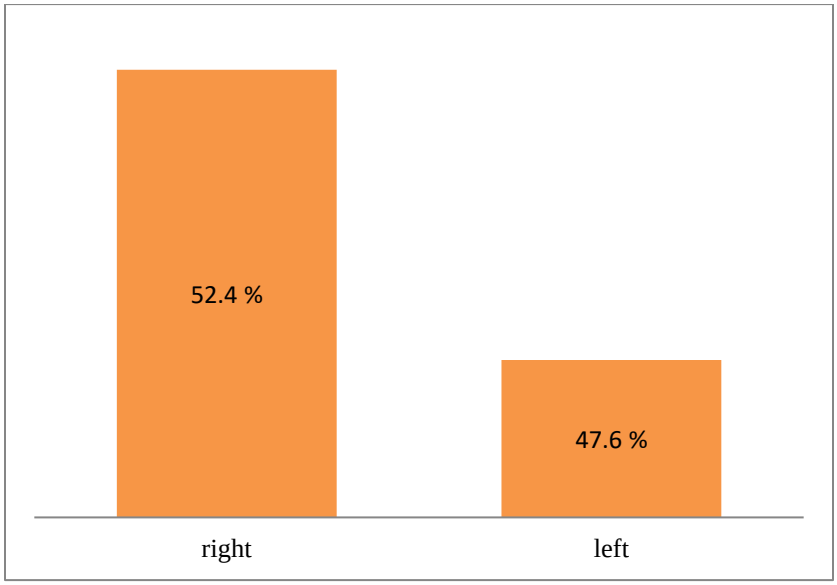


Figure 6 : Type of stroke of participant

Site of stroke :

Among 105 participant , 52.4% (n=55) have stroke in right site of brain and 46.7% (n=50) have left site of brain.



Figue 7 : Site of stroke in brain

Rehabilitation duration :

The study found that the mean of rehabilitation duration is 3.14 and standard deviation is 1.326. Minimum duration is 1 month and maximum 6 months.

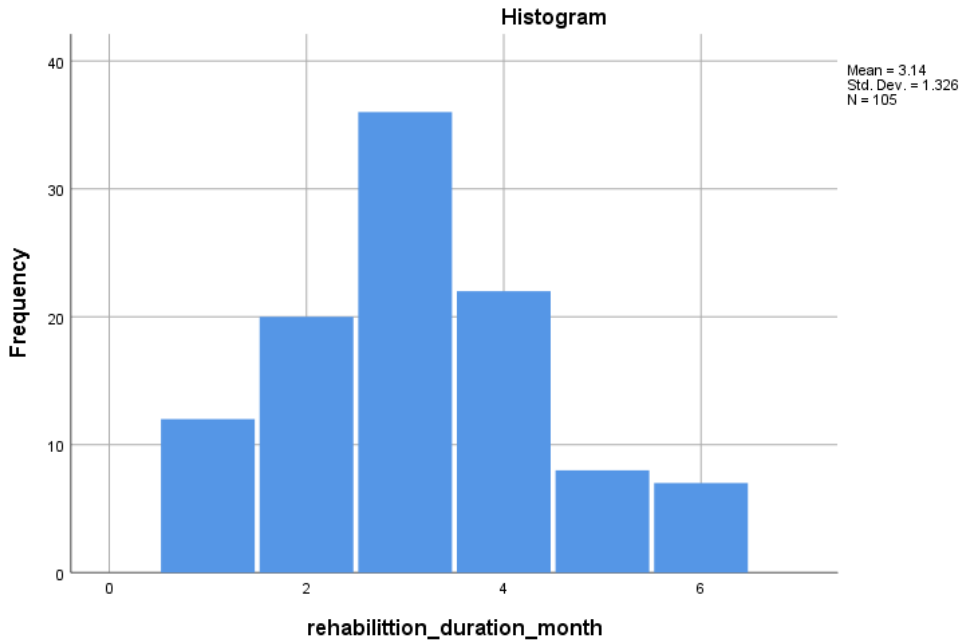


Figure 8 : Rehabilitation duration (month)

Complication after stroke :

Shoulder pain was present about 30.5% (n=32), memory problem with depression was 22.4% (n=34),chest infection was 10.5% (n=11%), and other type of complications such as body pain, pneumonia, UTI was 14.3% (n=15) and 12.4 % (n=13) had no complication.

Frequency of comorbities :

Among the 105 participants, it was found that 8.6% (n=9) had no comorbidity, 30.5% (n=32) had Single comorbidity and 61% (n=64) had multiple comorbidities (Hypertension, Diabetesmellitus, Heart disease, Lung Disease, and Kidney disease etc.

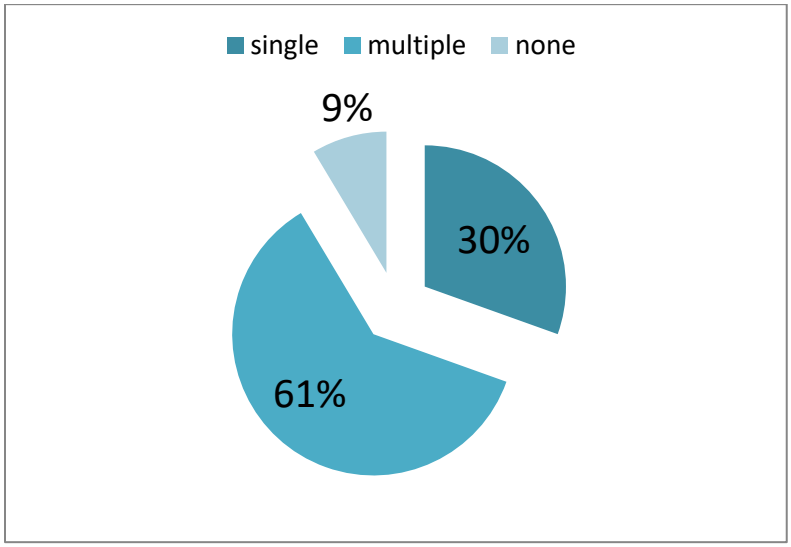


Figure 9 : Frequency of comorbities

Type of comorbidities :

In this study among 105 sample, hypertension was 28.9% (n=20), diabetes 24.5%(n=26), Hypertension with diabetes 40.6% (n=43), Hypertension, diabetes with IHD were 15.1% (n=16).

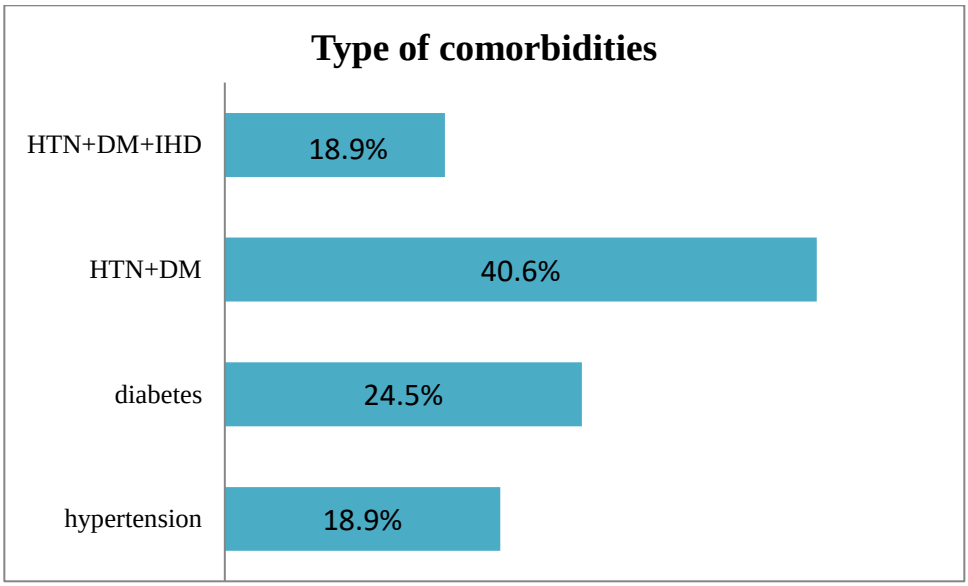


Figure 10 : Type of comorbidities

Table 3: Physical barriers

Variable	Frequency (n) / Percentage (%)
post stroke fatigue	Yes =102 / 97.1 % No = 3 / 2.9 %
Sleeping problem	Yes=47 / 44.8 % No = 58 / 55.2 %
B/B incontinence	Yes = 12 / 11.4% No = 93 / 88.6%
Speech problem	Aphasia = 3 / 2.9% Dysarthria = 57/ 54.3 % Stuttering = 2/ 1.9 % None = 43 / 40.0 %
Transportation by	wheelchair=32 / 32.5% crutch =16 / 15.2 % other = 12/ 11.4 % none =45 / 40.9 %

Post stroke fatigue :

post stroke fatigue is present among 97.1% (n=102) participant and absent in 2.9% (n=3) participant.

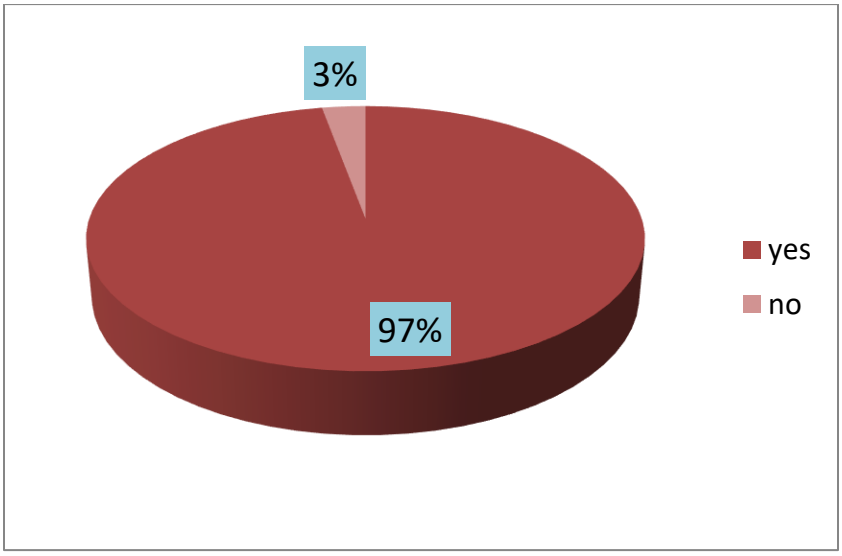


Figure 11: Post stroke fatigue

Sleeping problem :

44.8% (n=47) have sleeping problem and 55.2% (n=58) have no problem with sleeping among 105 participant.

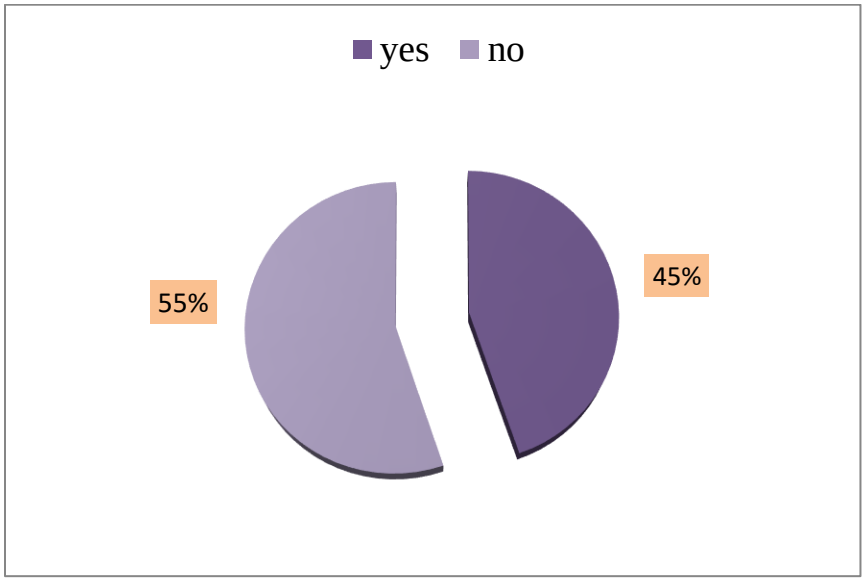


Figure 12: Sleeping problem

Bowel and bladder incontinence :

In this study , 11.4 % (n=12) have bowel and bladder incontinence and 88.6 % (n=93) have no problem with bowel and bladder function.

Speech problem :

Among 105 participant, 40%(n=43) had no speech problem, 1,9%(n=2) were stuttering, 54.3% (n=57) were dysarthia and 2.9%(n=3) were aphasia.

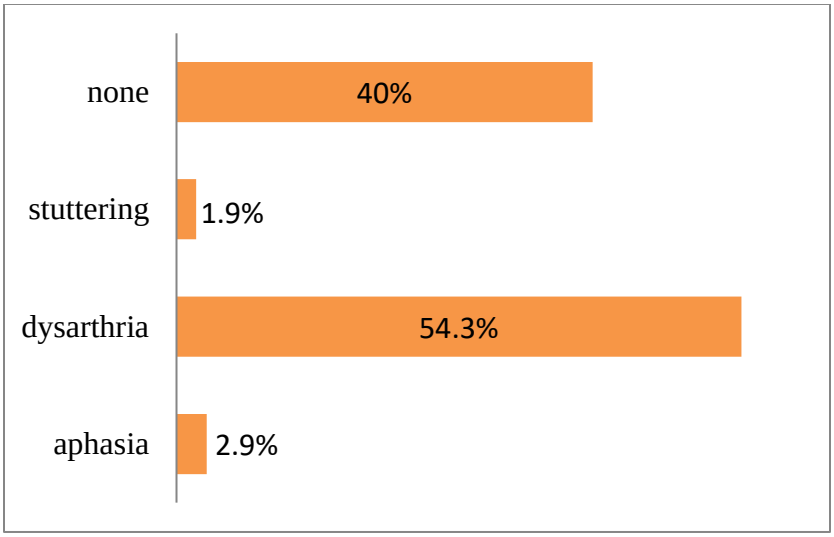


Figure 13 : Speech problem of participant

Transportation by :

In this study, we found that 32.5% (n=32) were using wheelchair, 15.2% (n=16) were used crutch, 11.4% (n=11.4) used other such as stick , walker, cane etc. and 40.9% (n=45) were not use any mobility device.

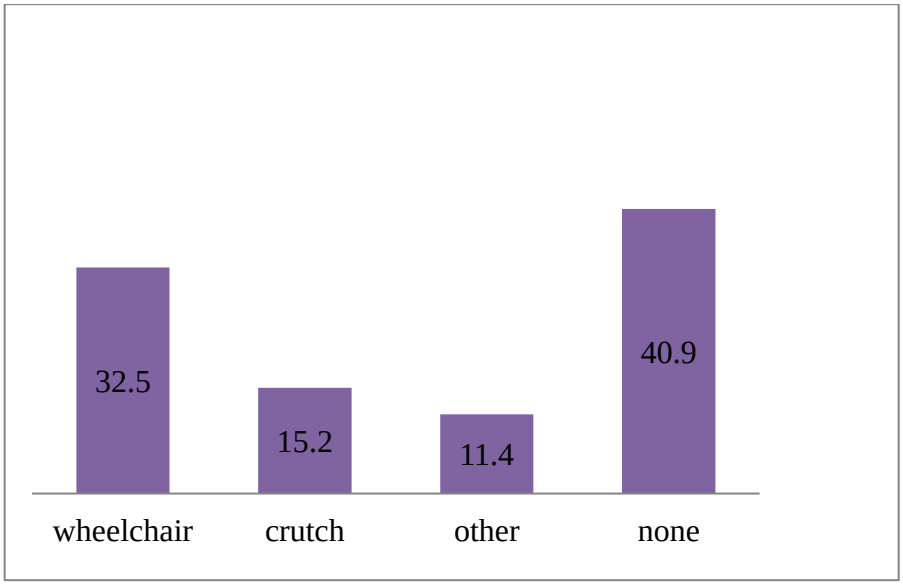


Figure 14: Transportation medium

Table 4: Social and environmental barriers

Variable	Frequency (n) / Percentage(%)
Family support	Most of the time=95/ 90.5 % Sometimes =8/ 7.6 % Not at all =2/ 1.9 %
Friends support	Most of the time=67/ 63.8 % Sometimes =18/ 17.1 % Not at all =20 / 19 %
Equaly social activity participation	Yes=32/ 30.5 % No =73/ 69.5 %
Road type	Muddy=8/7.6 % Brick=42/ 40 % Pitch =55/ 52.4 %
Toileting difficulties	Yes =72/ 68.6 % No =33/ 31.4 %
Transportational barriers from home to working place	Yes =21/ 19.8 % No =25 / 23.6 % Still unemployed=59/ 55.7 %
Feel any discrimination	Yes =16/ 15.2 % No =89/ 84.8 %

Family support:

Most of the time 90.5% (n=95) were got support from their family, 7.6% (n=8) got sometimes and 1.9% (n=2) didn't get any help from family.

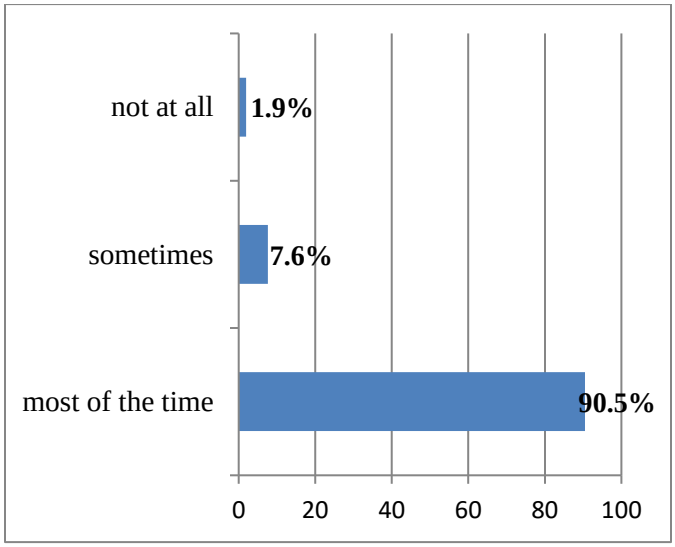


Figure 15: Family support

Friend support :

Most of the time 63.8% (n=67) were got support from their friends, 17.1% (n=18) got sometimes and 19% (n=20) didn't get any help from friends.

Equally participation in social activity :

Among 105 participant, 30.5% (n=32) were participate equally in social activity and 69.5% (n=73) were not participate equally in social activity.

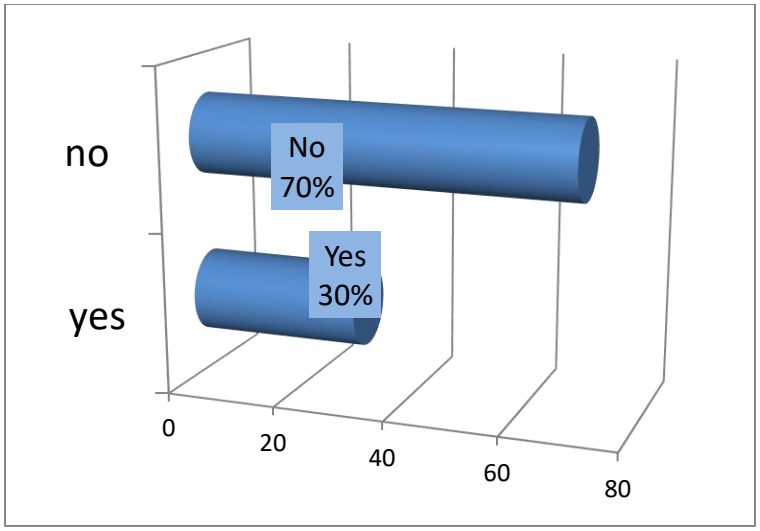


Figure 16: Equally participation in social activity

Road type :

From this study we found among 105 participant that, the road type of 7.6% (n=8) was muddy, 40% (n=42) was brick and 52.4% (n=55) was pitch type.

Toileting difficulties :

In this study , 68.6 % (n=72) have toileting difficulties such as unable to go to toilet, asian type toilet and 31.4% (n=33) have no problem with toileting.

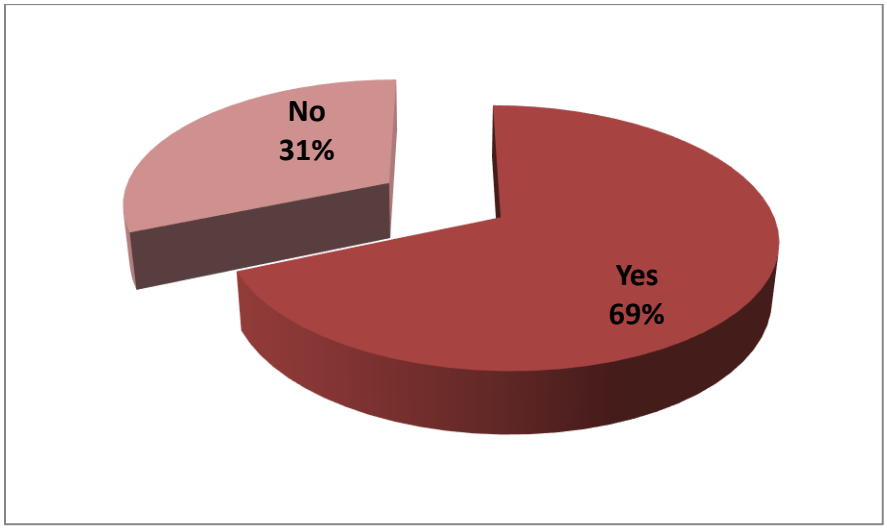


Figure 17: Toileting difficulties

Transportational barrier to reach from home to working place :

Among 105 participant, 19.8%(n=21) participant face transportational barrier to reach from home to working place , 23.6% (n=25)) participant didn't face transportational barrier and 55.7% (n=59) were still unemployed.

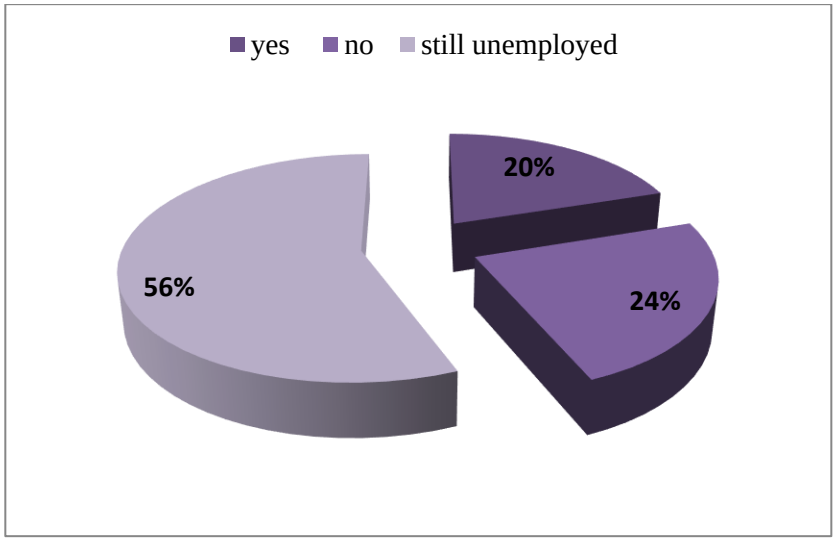


Figure 18: Transportational barrier to reach from home to working place

Feel any discrimination :

Among 105 participant, 15.2%(n=16) participant feel discrimination from society or working place, 84,8% (n=89) didn't feel any discrimination.

Colleague or neighbours behavior:

In this study, from 105 participant , Colleague or neighbours behavior was friendly in 89.5% (n=94) and negligible in 10.5% (n=11).

Table 5: Economical barriers

Variable	Frequency (n) / Percentage(%)
Face economical challenges	Yes =82 / 78.1 % No =23 / 21.9 %

Face economical challenge :

Among 105 participant, 78.1 % (n=82) had face economical challenge and 21.9% (n=23) didn't have any economical challenge.

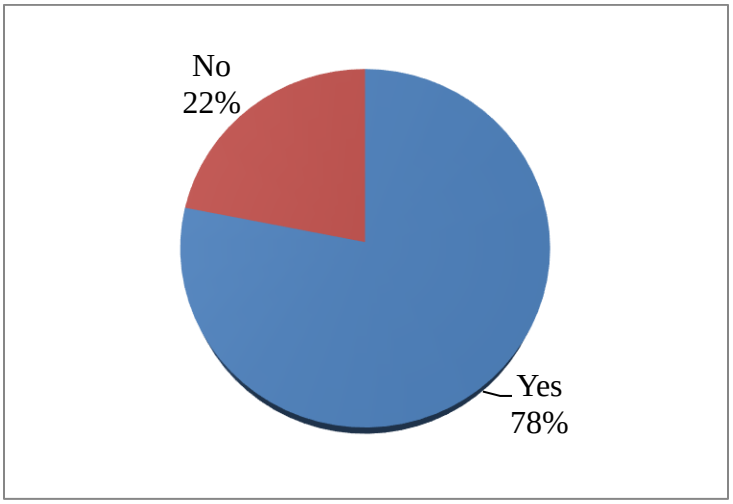


Figure 19: Economical challenge

Table 6: Cognitive barriers

Variable	Frequency (n) / Percentage(%)
Thinking power	Good =41/ 39.0 % Fair =62 /69.0 % Poor =2 / 1.9 %
Concentration and attention level	Good =35 / 33.3 % Fair =67 / 63.8 % Poor =3 / 2.9 %
Calculation skill	Good =12/11.4 % Fair =70 / 66.7 % Poor =23 / 21.9 %

Thinking power :

Among 105 participant, 39% (n=41) had good thinking power, 69% (n=62) had fair and 1.9% (n=2) had poor thinking power.

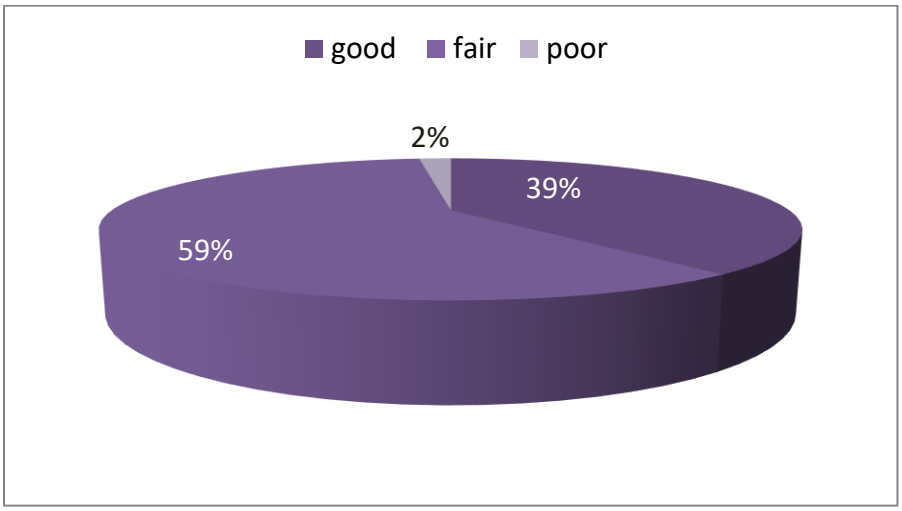


Figure 20 : Thinking power

Concentration and attention level :

Among 105 participant, 33.3% (n=35) had good concentration and attention level, 63.8% (n=67) had fair and 2.9% (n=3) had poor

Calculation skill :

Among 105 participant, 11.4% (n=12) had good calculation skill, 66.7% (n=70) had fair and 21.9% (n=23) had poor.

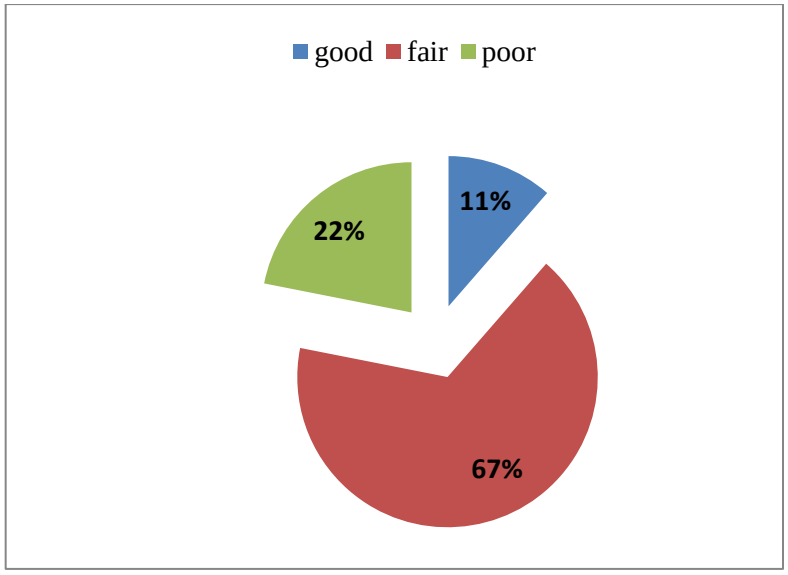


Figure 21: Calculation skill

Return to work:

Among 105 participant, 43.8% (n=46) are return to work after stroke and 56.2% (n=59) are still unemployed.

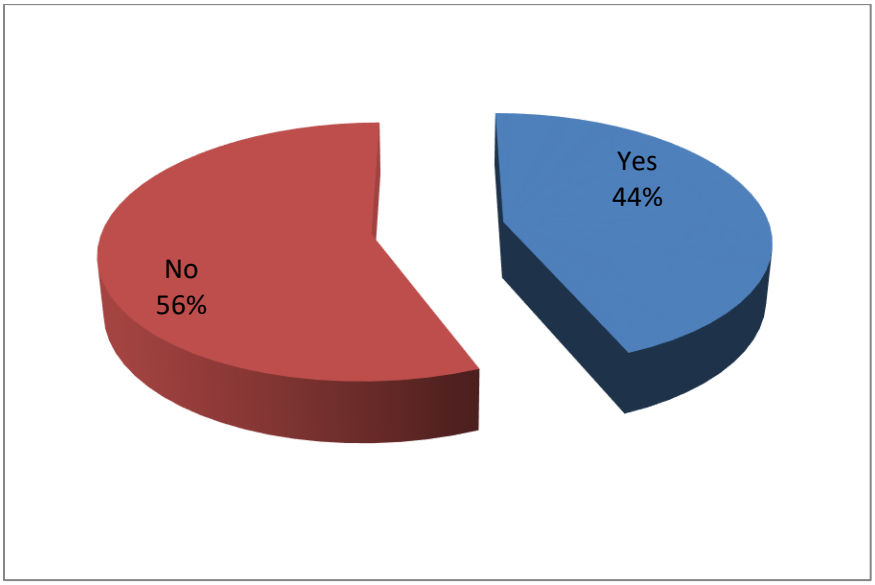


Figure 22 : Return to work participant

Inferential analysis:

In this study association were analysed between return to work with sociodemographic information (age, Sex,) and physical parameter related information (e.g: type of stroke, site of stroke, speech problem, co morbidities, use of assistive device) and cognitive problem.

Null hypothesis (H0): There has no association between return to work with age, Sex, type of stroke, site of stroke, speech problem, co morbidities, use of assistive device and cognitive problem.

Alternative (HA): There has association between return to work with age, Sex, type of stroke, site of stroke, speech problem, co morbidities, use of assistive device and cognitive problem.

Test assumption:

In case of Pearson chi square,

1. Two categorical variable including two or more subcategory.
2. 0.1 cells (0%- 20%) have expected count less than 5.

In case of Fishers exact test if,

1. Expected frequency is <5, cell count is >20%

Table 7: Association between return to work (RTW) with sociodemographic information (age, Sex,) and physical parameter related information (e.g: type of stroke, site of stroke, speech problem, co morbidities, use of assistive device) and cognitive problem.

Variable 1	Variable 2	Pearson chi square co efficient value (x^2)	Significant level (P value)	Comment /discussion
Return to work 1.yes 2.no	Sex: 1. male 2. female	.927	.336	No significant association found / Null hypothesis is accepted and alternative hypothesis is rejected.
	Type of stroke: 1.Ischemic 2.Haemorrhegic	3.758	.053	No significant association found / Null hypothesis is accepted and alternative hypothesis is rejected.
	Site of stroke: 1. Right 2. Left.	2.365	.124	No significant association found / Null hypothesis is

				accepted and alternative hypothesis is rejected
Return to work 1.Yes 2. No	Speech problem: 1. Yes 2. No	2.601	.107	No significant association found / Null hypothesis is accepted and alternative hypothesis is rejected.
	Co morbidities: 1. Single 2. Multiple 3. None	.524	.770	No significant association found / Null hypothesis is accepted and alternative hypothesis is rejected.
	Use of assistive device: 1. Yes 2. No	4.414	.036**	There is significant association found / alternative hypothesis is accepted.

Cognitive problem: 1. Yes 2. No	5.926	.017**	There is significant association found / alternative hypothesis is accepted.

Level of significance: (p value <.05)

.

** α value is 0.05. P value is statistically significant if it is less than α value and alternative hypothesis is accepted. If p value is greater than α value then null hypothesis accepted.

Result : The table above showing result of association between return to work with age, sex, type of stroke, site of stroke, speech problem, co morbidities, use of assistive device and cognitive problem. There was no association found between return to work with age, sex, type of stroke, site of stroke, speech problem, co morbidities but a strong association found between return to work with use of assistive device and cognitive problem. And it is show by a bar graph given below:

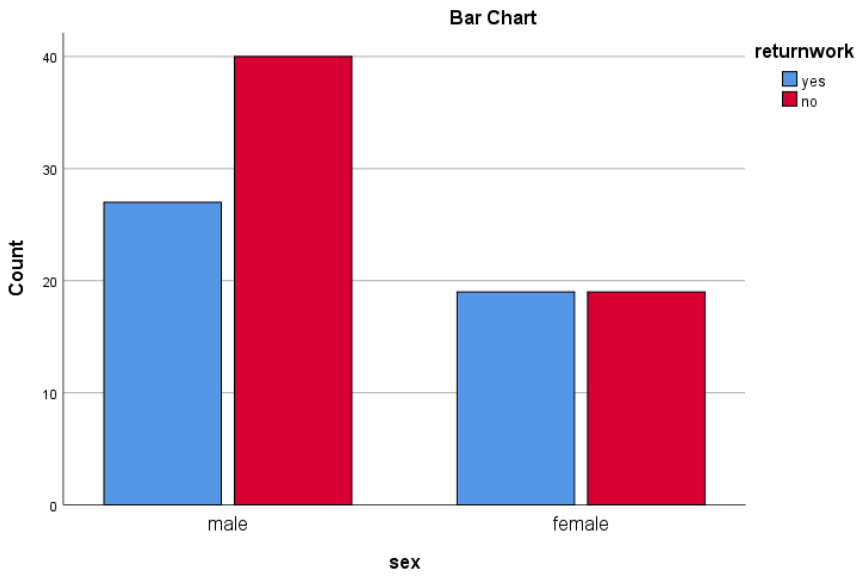


Figure 7 (A): Association between return to work and sex

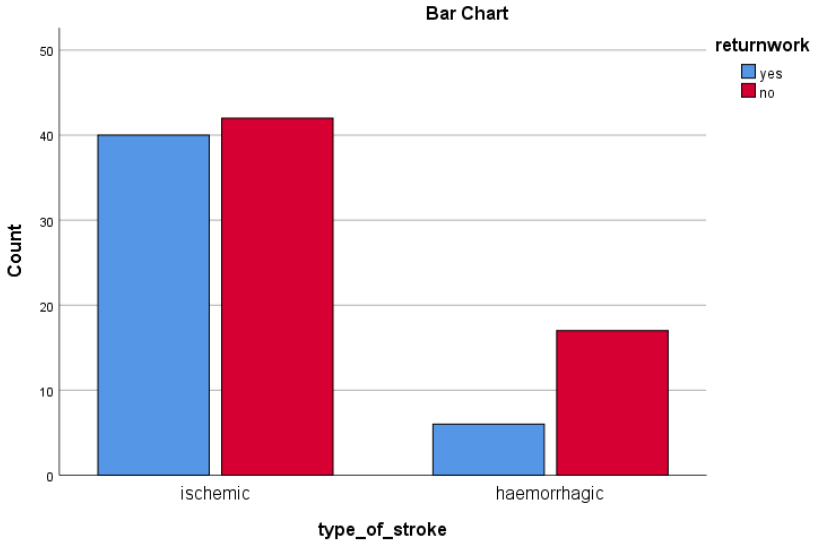


Figure 7 (B): Association between return to work and type of stroke

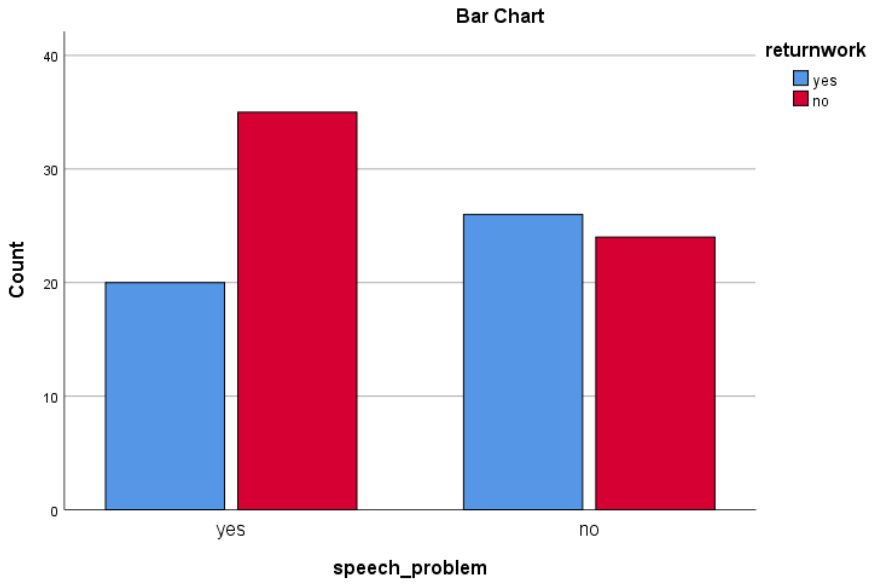


Figure 7 (C): Association between return to work and speech problem

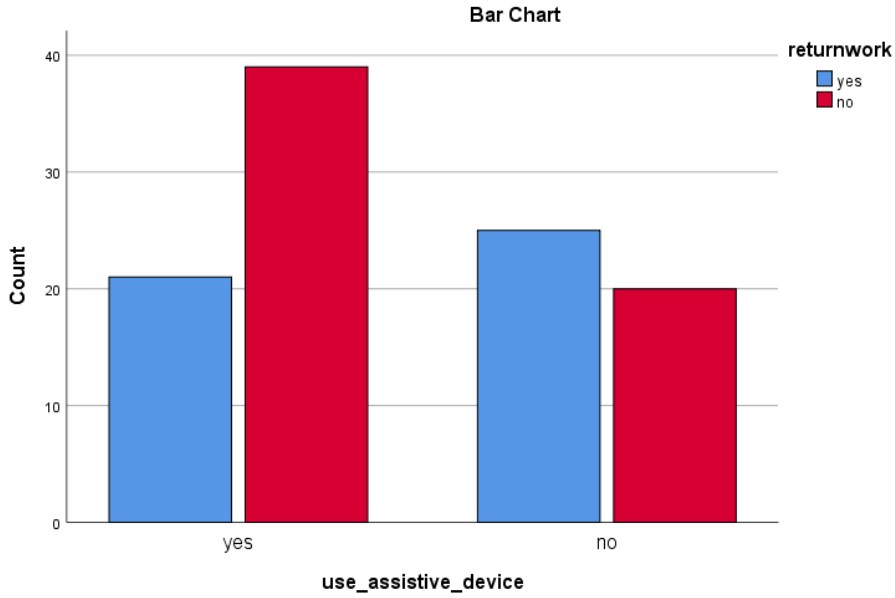


Figure 7 (D): Association between return to work and use of assistive device

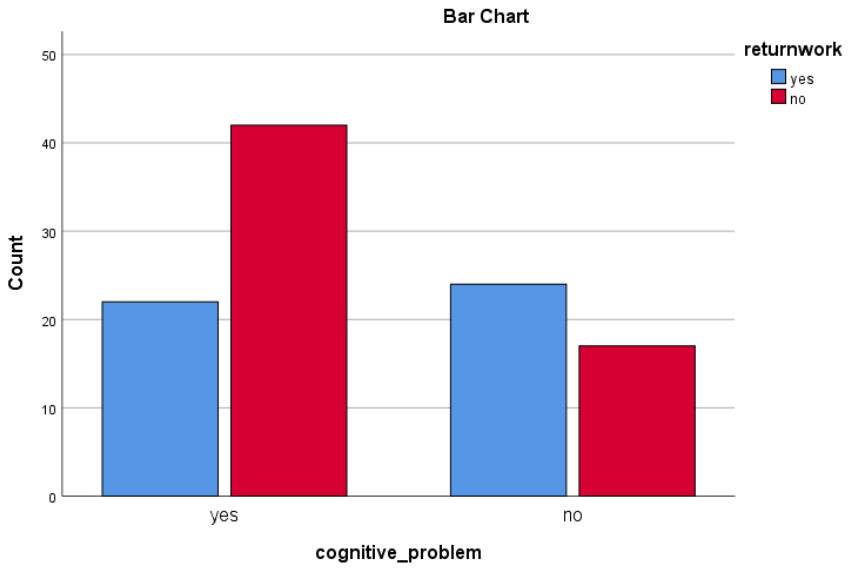


Figure 7 (E): Association between return to work and cognitive problem

CHAPTER V DISCUSSION

Stroke remains one of the leading causes of morbidity and mortality across the world. Stroke is not only a major health problem and economic problem, but also affects patients quality of life and create many barriers to return to work. It is well documented that the type of stroke, extent of disability, rehabilitation duration, type of job, and education level, cognitive level, environental factor, social and physical factor all play important roles in the ability of patients to return to work but many of them faces barriers associated these factors.

In this study the barriers were measured by the self structured questionnaire . A descriptive and inferential statistical analysis have been conducted to find out the result. In the descriptive section the categorical variables were measured in percentage and have been showed in different bar diagrams, pie charts and tables. The continuous variable's central tendency and measure of dispersion was calculated through mean and standard deviation. In the inferential section, chi-square test were conducted to find out the association between different dependent and independent variables.

In this study, the result showed, the prevalence of return to work people after stroke. The purpose of this cross-sectional study is to investigate the barriers associated with return to work after stroke and find out the prevalence of returning people at work. This study is modifiable as it is a cross-sectional study, and although it is considered an exploratory study, it does provide some relevant information regarding stroke barriers and return to work.

The study was conducted through 105 stroke survivors who took at least one months of rehabilitation service from the Centre for the Rehabilitation of the Paralyzed (CRP) which is situated at Savar in Dhaka. From the total participants of the study 43.8% stroke survivors returned to work where another study got 32% returned to work in South Africa (Patterson 2018, p. 78). In India, 52.5% could return to work (Bonner et al. 2015, p. 89).

Another study also found about 34% (Duff et al. 2014, p. 678). However, 57% of participants were unemployed which is indicating a large amount.

The stroke survivors who had participated in this study, their mean age was 52.58 (SD ±7.862) years where 49.65 (SD ± 9.644) was found in study and maximum age 68 and minimum age 33 years in this study. The age is an important factor for the stroke because the older age people are the more vulnerable to be affected by stroke and the young age people may be more active to take rehabilitation service (Patterson 2018, p.78).

In this study, I found that, the more rate of stroke among males (63.8%) than females (36.2%) and it varies on the environment, lifestyle, stress, occupation, medical health condition. In this study, most of the participants (95.2%) were married 1.0% was unmarried and 3.8% were widow. On the other hand, another study also found 92% which is more likely similar to this study (Bonner et al. 2015, p.45).

The stroke survivors had stroke most of them were higher educated 54.3% , lower educated were 54.3% and illiterate were 9.35. It is also similar to the Bonner et al. (2015,p. 90) study where 70% said that the participants completed at least high school level.

The study represented that a significant number of respondents 52.4% were right side affected in brain where nearly 57.6% were left sides affected.

The researcher found a large number of ischemic stroke (78.1%) where the hemorrhagic stroke were 21.9%. In South Asian countries, ischemic stroke occurs among patient with stroke due to hypertension, diabetic, embolism, lifestyle and food habits and patient with ischemic stroke get excellent improvement in 27%, good improvement in 50%, and poor improvement in 23% time (Razzaq, Khan & Baig 2002, p. 345). There was 82% ischemic stroke in India found by Bonner et al. (2015, p. 24) study.

In co-morbidities about 18.9% had high blood pressure, 24.5% had diabetes, 40.6% had hypertension with diabetes and, 15.1% had diabetes, hypertension with IHD.

The study showed that most of the participants were (55.7%) unemployed where others engaged in business (12.3%). Some were service holder (6.6%), shopkeeper (6.6%), housewife (10.3%), teacher (1.9%) and others (3.8%) .

The main barriers of return to work for the stroke survivors was physical barriers or personal barriers such as poor functional use of affected arm and leg and also difficulty with speech. Maximum had dysarthria. There had also a large number of barriers that have been identified including: Low energy (fatigue), poor memory, difficulty with vision, dizziness, shoulder pain, accessibility or transportational barriers, social participation barriers, environmental barrier. poor concentration, difficulty with hearing, difficulty with thinking skills etc. Where the others study by Duff et al. (2014, p.78) & Patterson (2018, p. 67) had similar findings. Others perceived barriers included: poor balance, fear of falling, other medical related conditions, difficulty with going to the toilet or incontinence.

For those participants who had already returned to work , the main barriers for successful reintegration were environmental barriers and mild cognitive impairment. The survivors could return to their previous jobs but had changed their work types and also responsibilities and many of them return to another employment such as one who was service holder before stroke but after stroke he started business such as shopkeeper.

In this study, there was no association found between return to work with age, sex, type of stroke, site of stroke, speech problem, co morbidities but a strong association found between return to work with use of assistive device and cognitive problem . people who didn’t use assistive device were more return to work than who were using assistive device and who had cognitive impairment were less return to work after stroke. In another study show similar to this study (Saar et al. 2023, p.789).

Based on the current findings, the physical, environmental, social and cognitive are the common barriers to return work after stroke. An individual own view of their working ability and and barriers were also connected to returning to work and should be taken into consideration. So every stroke patient should undergo a routine rehabilitation process to cope with these barriers.

For those participants that had previously returned to work but have since stopped, the main barriers for successful reintegration were environmental barriers and poor ability of functional use of the affected arm. The survivors could return to their previous jobs but had changed their work types and also responsibilities.

5.1 Limitation:

Every study has some limitation. The limitation of this study are the sample size was too small to be represented as the large population. The questionnaire was not tested for reliability and concurrent validity. It was only a quantitative study. It should also be done qualitative study among the participants to find out the actual hindering factors or barriers to return to work for the stroke survivors and also the association with factors. Some of the patient information was taken from their caregivers when stroke survivors had more cognitive or speech difficulty.

CHAPTER VI CONCLUSION AND RECOMMENDATION

Even though the study was conducted with a small sample size, it gives crucial information regarding the prevalence of return to work people after stroke, whose prevalence is 43.8%. The study shows a low rate of return to work of stroke survivors due to facing barriers. As most of the barriers are low energy (fatigue), poor memory, difficulty with vision, dizziness, shoulder pain, accessibility or transportational barriers, environmental barriers social barriers, poor concentration, difficulty with hearing, difficulty with thinking skills etc. The therapist also should have knowledge about return to the work-related facilitators and barriers to reach theirultimate goal which will make sure them that the patients are in their previous work. On the basis of this study, it is very necessary to improve communication among therapists, stroke survivors and patient's family members or caregivers about rehabilitation service, client's occupation and return to work. Future studies should consider to better analyze about barriers to RTW in stroke survivors and how vocational rehabilitation can help these people to reduce their disability level, improving the rate of RTW. Working Healthcare services need new incitement and new evidences that suggest how to set up and structure an improved vocational rehabilitation and how to train healthcare professionals to apply this rehabilitation using the most suitable tools for encouraging early RTW in stroke survivors. The study shows a low rate of return to work of stroke survivors. As most of the barriers are impairment-related and affected in hand and leg it should be increased one-handed technique and also improve functional use of client's extremities. The therapist also should have knowledge about return to the work-related facilitators and barriers to reach their ultimate goal which will make sure them that the patients are in their previous work. On the basis of this study, it is very necessary to improve communication among therapists,stroke survivors and patient's family members or caregivers about rehabilitation service, client's occupation and return to work.

Recommendation

There needs to be a broader focus on increasing RTW after stroke not only Dhaka district, but also in whole Bangladesh. It should be necessary to improve communication between therapist, stroke survivors about rehabilitation service and clients return to work. An individual own view of their working ability and and barriers were also connected to returning to work and should be taken into consideration. So every stroke patient should .undergo a routine rehabilitation process to cope with these barriers. . Increased awareness of the existence and impact of stroke in younger people such as :longer term rehabilitation which tackles the individual's functional problems and facilitates planning for return to work. Rehabilitation staff designated to deal with vocational matters. Liaison between healthcare professionals and employers. Identification, negotiation and support of alternative working patterns.

If other authors want to pursue further similar research, then I urge that they should conduct a large number of participants and also be done in the mixed method for accurate information from the stroke survivors . Future studies also should consider to better analyze about barriers to RTW in stroke survivors and how vocational rehabilitation can help these people to reduce their disability level, improving the rate of RTW.

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APPENDIX

INFORMED CONSENT FORM

(Please read out to the participant)

Assalamu Alaikum,

My name is Sadia Afroz Sharna, 4th year BSC in physiotherapy student of Bangladesh Health Professions Institute (BHPI). I am conducting this research study which is the part of B.Sc. in Physiotherapy program and my research title is **"Barriers associated with return to work after stroke "** under Bangladesh Health Professions Institute (BHPI),University of Dhaka. Because of that I would like to know about some personal and other related information. This will take approximately 15-20 minutes.

I would like to inform you that this is a purely professional study and will not be used for any other purpose. All information provided by you will be treated as confidential and in the event of any report or publication it will be ensured that the source of information remains anonymous.

Your participation in this study is voluntary and you may withdraw yourself after 1 week during this study without any negative consequences. You also have the right not to answer a particular question that you don't like or do not want to answer during interview.

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

Department of Physiotherapy, CRP, Savar, Dhaka-1343.

Do you have any questions before I start?

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

Yes .....No.....

Signature of the Participant's..... Date.....

Signature of the Data collector's..... Date.....

Tittle

Barriers associated with return to work after stroke

A.Personal details:

Name :	
Reg. No :	
Sex :	1.Male 2. Female
Age :	
Address :	
Phone number :	
Mail address (if any):	
Consent form Taken :	Yes/ No

B.Socio-demographic Questionnaire:

1) Marital status :	1.Married 2.Unmarried 3.Widow 4.Separate 5.Divorce
2) Religious :	1. Islam 2. Hindu 3. Buddhi 4. Others……..
3) Educational qualification :	1.illiterate 2.primary 3.secondary 4. Honors 5. Masters 6. Others……
4)Income:	……BDT
5)Occupation:	1. Teacher 2. Businessman 3. Shopkeeper 4. Driver 5. Carpenter 6. Doctor 7. Service holder 8.housewife 9. Others…….. 10. none
6)Previous occupation :	……

7) Resident area :	1. Urban 2. Semi-urban 3. Rural

C.Medical history:

1)Type of stroke:	1. Ischaenic. 2. Haemorrhagic
2)Site of stroke:	1. Right 2. Left
3)Rehabilitation duration :	…….
4)FIM (Functional Independence measure) score :	……..
5)Complication after stroke:	1.Shoulder pain 2.DVT 3.Chest infection 4.UTI 5.None 6.other

D.Barriers related question:

Physical barriers:

1.Post stroke fatigue :	Yes / No
2. Sleeping problem :	Yes / No
3. Bowel and bladder incontinence:	Yes / No
4. Hearing/ vision problem :	Yes /No
5. Speech problem	Yes/ No if yes than.. 1.aphasia 2.dysarthria 3.Stuttering
5. Difficulties in upper limb use :	Yes / No
6. Other diseases :	DM / HTN / HD / KD/ Others……..

Social participation barriers:

1.Does your family support you ?	1. Most of the time 2. Sometimes 3.Very often. 4. Rrare 5.Not at all
2.Does your friend support you ?	1. Most of the time 2. Sometimes 3.Very often. 4. Rrare 5.Not at all
3.can you participate equally in social activity?	1. yes 2. No If yes than…….. 1.some of work 2. as a whole activities 3.most of the work 4.all most all activities 5.not at all
4. did you get any help for getting job / business ?	1. yes 2. No

Environmental barriers at home :

1.Type of road inside and outside of house :	1. Muddy 2. Brick 3. Pitch
2.Toilet type:	……
3. Number of stair in front of room/home :	……

Environmental barriers at working place :

1.Did you get any structural change in your working place ?	1.Yes	2. No	
2.Transportation by ?	1.wheelchair 4.walker	2.crutch 3.None	3.stick 4.others
3.Any transportational barriers to reach from home to working place ?	1.Yes	2. No	
4.Did you feel any discrimination in your working place ?	1. Yes	2. No	
5.All of your colleague behave friendly with you ?	1.Yes If yes than……. 1. Negligible 2. Mild 3. Moderate 4. Not so severe 5. Extremely severe	2. No	

Economcal barriers:

1.Can you please tell me about your present economic condition ? Have you face any challenges there ?	

Cognitive barriers :

1.Power of thinking:	1. Good 2. Fair 3. Poor
2.Concentration and attention level :	1. Good 2. Fair 3. Poor
3.Your skill for calculation :	1. Good 2. Fair. 3. Poor

Thank you for taking the time to complete this questionnaire

প্রশ্নপত্র (বাংলা)

আসসালামু আলাইকুম,

আমার নাম সাদিয়া আফরোজ স্বর্ণা, বাংলাদেশ হেলথ প্রফেশনস ইনস্টিটিউটের (বিএইচপিআই) ফিজিওথেরাপির বিএসসি ৪র্থ বর্ষের ছাত্রী। আমি এই গবেষণা অধ্যয়ন পরিচালনা করছি যা B.Sc এর অংশ। বাংলাদেশ হেলথ প্রফেশনস ইনস্টিটিউট (বিএইচপিআই), ঢাকা বিশ্ববিদ্যালয়ের অধীনে ফিজিওথেরাপি প্রোগ্রামে এবং আমার গবেষণার শিরোনাম হল "স্ট্রোকের পরে কাজে ফিরে আসার সাথে যুক্ত বাধা"। সেই কারণে আমি কিছু ব্যক্তিগত এবং অন্যান্য সম্পর্কিত তথ্য সম্পর্কে জানতে চাই। এটি প্রায় 15-20 মিনিট সময় নেবে।

আমি আপনাকে জানাতে চাই যে এটি একটি সম্পূর্ণরূপে পেশাদার অধ্যয়ন এবং অন্য কোন উদ্দেশ্যে ব্যবহার করা হবে না। আপনার দ্বারা প্রদত্ত সমস্ত তথ্য গোপনীয় হিসাবে বিবেচিত হবে এবং কোনও প্রতিবেদন বা প্রকাশের ক্ষেত্রে এটি নিশ্চিত করা হবে যে তথ্যের উত্স বেনামী থাকবে।

এই অধ্যয়নে আপনার অংশগ্রহণ স্বেচ্ছায় এবং আপনি এই অধ্যয়ন চলাকালীন যেকোনো সময় কোনো নেতিবাচক পরিণতি ছাড়াই নিজেকে প্রত্যাহার করতে পারেন। সাক্ষাত্কারের সময় আপনি পছন্দ করেন না বা উত্তর দিতে চান না এমন একটি নির্দিষ্ট প্রশ্নের উত্তর না দেওয়ার অধিকারও আপনার রয়েছে।

অধ্যয়ন বা অংশগ্রহণকারী হিসাবে আপনার অধিকার সম্পর্কে আপনার কোন প্রশ্ন থাকলে, আপনি আমার সাথে বা আমার সুপারভাইজার আসমা ইসলাম, সহকারী অধ্যাপক, ফিজিওথেরাপি বিভাগ, বিএইচপিআই-এর সাথে যোগাযোগ করতে পারেন।

ফিজিওথেরাপি বিভাগ, সিআরপি, সাভার, ঢাকা-১৩৪৩।

আমি শুরু করার আগে আপনার কোন প্রশ্ন আছে?

তাই ইন্টারভিউ নিয়ে এগিয়ে যাওয়ার জন্য আমি কি আপনার সম্মতি পেতে পারি?

হ্যাঁ না.....

অংশগ্রহণকারীর স্বাক্ষর.....তারিখ..... .....

তথ্য সংগ্রাহকের স্বাক্ষর..... তারিখ..... .....

শিরোনাম

স্ট্রোকের পর কাজে প্রত্যাবর্তনের ক্ষেত্রে বাধাসমুহ

A)ব্যক্তিগত বিবরণ:

রেজি. নং:

নাম: বয়স:

লিঙ্গ: ঠিকানা:

ফোন নম্বর : মেইল ঠিকানা (যদি থাকে):

সম্মতি ফর্ম নেওয়া হয়েছে : হ্যাঁ/না

B)সামাজিক-জনসংখ্যা সংক্রান্ত প্রশ্নাবলী:

1.বৈবাহিক অবস্থা:

1. বিবাহিত
2. অবিবাহিত
3. বিধবা
4. আলাদা
5. ডিভোর্সি

2.ধর্ম:

1. ইসলাম
2. হিন্দু
3. বুদ্ধি
4. অন্যান্য……..

3.শিক্ষাগত যোগ্যতা:

1. নিরক্ষর

2. প্রাথমিক

3. মাধ্যমিক

4. অনার্স

6. মাস্টার্স

7. অন্যান্য.....

4.আয়: .....

5.পেশা:

1. শিক্ষক

2. ব্যবসায়ী

3. দোকানদার

4. ড্রাইভার

5. ডাক্তার

6. অন্য……

6.আগের চাকরি: .....

7.বাসিন্দা:

1.শহর

2. উপশহর

3.গ্রাম

C)চিকিৎসা ইতিহাস:

1.স্ট্রোকের ধরন:

1.ইস্কেমিক

2. রক্তক্ষরণজনিত

2.স্ট্রোকের পাশ :

1. ডান

2 বাম

3.পুনর্বাসনের সময়কাল: .....

4.ফিম (কার্যকরী স্বাধীনতা পরিমাপ) স্কোর:.....

5.জটিলতা:

1. কাঁধে ব্যথা
2. DVT
3. বুকে সংক্রমণ
4. প্রস্রাবের সংক্রমণ
5. কোনোটিই নয়
6. অন্যান্য

D. বাধা সম্পর্কিত প্রশ্ন:

শারীরিক প্রতিবন্ধকতা:

1. স্ট্রোক পরবর্তী ক্লান্তি:	হ্যাঁ/ না
2. ঘুমের সমস্যা:	হ্যাঁ/ না
3. অন্ত্র এবং মূত্রাশয় অসংযম:	হ্যাঁ/ না
4. শ্রবণ/দৃষ্টি সমস্যা:	হ্যাঁ/ না
5. বক্তৃতা সমস্যা	হ্যাঁ/না যদি হ্যাঁ হয়.. 1.অ্যাফেসিয়া 2.ডিসারথ্রিয়া 3.তোতলানো
5. উপরের অঙ্গ ব্যবহারে অসুবিধা:	হ্যাঁ/ না

6. অন্যান্য রোগ:	DM/HTN/HD/KD/অন্য……..

সামাজিক অংশগ্রহণের বাধা:

1. আপনার পরিবার কি আপনাকে সমর্থন করে?	1.বেশিরভাগ সময় 2.কখনও কখনও. 3.খুব প্রায়ই. 4. বিরল 5. মোটেও না
2. আপনার বন্ধু কি আপনাকে সমর্থন করে?	1. বেশিরভাগ সময় 2. কখনও কখনও 3.খুব প্রায়ই 4. বিরল 5. মোটেও না
3. আপনি কি সামাজিক কর্মকান্ডে সমানভাবে অংশগ্রহণ করতে পারেন?	1. হ্যাঁ 2. না যদি হ্যাঁ এর ..... 1. কিছু কাজ 2. একটি সম্পূর্ণ কার্যক্রম হিসাবে. 3. অধিকাংশ কাজ 4. সব কার্যক্রম 5. মোটেও না
4. আপনি কি চাকরি/ব্যবসা করার জন্য কোন সাহায্য পেয়েছেন?	1. হ্যাঁ 2. না

বাড়িতে পরিবেশগত বাধা:

1. বাড়ির ভিতরে এবং বাইরে রাস্তার ধরন: 1. কর্দমাক্ত 2. ইট 3. পিচ
2. টয়লেটের ধরন: .....
3. ঘর/বাড়ির সামনের সিঁড়ির সংখ্যা: .....

কাজের জায়গায় পরিবেশগত বাধা:

1. আপনি কি আপনার কাজের জায়গায় কোন কাঠামোগত পরিবর্তন পেয়েছেন?	1. হ্যাঁ 2. না
2. পরিবহন?	1. হুইলচেয়ার 2. ক্রাচ 3. লাঠি 4.ওয়াকার 3.কোনটি নয় 4.অন্য
3. বাড়ি থেকে কর্মস্থলে পৌঁছাতে কোন পরিবহন বাধা?	1. হ্যাঁ 2. না
4. আপনি কি আপনার কাজের জায়গায় কোনো বৈষম্য অনুভব করেছেন?	1. হ্যাঁ 2. না
5. আপনার সব সহকর্মী আপনার সাথে বন্ধুত্বপূর্ণ আচরণ করেন?	1. হ্যাঁ 2. না

অর্থনৈতিক বাধা:

1. আপনি কি আমাকে আপনার বর্তমান অর্থনৈতিক অবস্থা সম্পর্কে বলতে পারেন? আপনি সেখানে কোন চ্যালেঞ্জ সম্মুখীন?

জ্ঞানীয় বাধা:

1.চিন্তার শক্তি:	1. ভাল 2. মোটামুটি 3. খারাপ
2 মনোযোগ শক্তি :	1. ভাল 2. মোটামুটি 3. খারাপ
3. গণনার জন্য আপনার দক্ষতা:	1. ভাল 2. মোটামুটি 3. খারাপ

Date: 13th February 2023
The Chairman
Institutional Review Board (IRB)
Bangladesh Health Professions Institute (BHPI),CRP
Savar, Dhaka-1343.Bangladesh

Subject: Application for review and ethical approval.

Dear sir,

With due respect, I am Sadia Afroz Sharna, student of B.Sc. in physiotherapy program at Bangladesh Health Professions Institute (BHPI) the academic institute of Centre for the Rehabilitation of the Paralysed (CRP) under the Faculty of Medicine,University of Dhaka.As per the course curriculum, I have to conduct a dissertation entitled **"Barriers associated with return to work after stroke"** under the supervision of Asma Islam, Assistant Professor, Department of Physiotherapy, BHPI.

The purpose of the study is to determine the barriers associated with return to work after stroke. The study involves face-to-face interview by using semi-structured questionnaire to explore the perception of persons with stroke at CRP and community level in Bangladesh that may take 20 to 30 minutes to fill in the questionnaire and there is no likelihood of any harm to the participants. Related information will be collected from the patients' guide books. Data collectors will receive informed consent from all participants and the collected data will be kept confidential.

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

Sincerely
sadia

Sadia Afroz Sharna
4th Year B.Sc. in Physiotherapy
Roll : 12, Session: 2017-2018, Student ID: 112170393
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Dissertation presentation date: 9thJanuary,2023
Shofiq 18.02.2023
Head,Department of physiotherapy,BHPI

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

Recommendation from the dissertation supervisor:

Asma Islam 13/02/2023
Asma Islam
Assistant Professor
Department of Physiotherapy, BHPI.

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

Ref: CRP/BHPI/IRB/03/2023/693

Date: 13/03/2023

To
Sadia Afroz Sharna,
B.Sc. in Physiotherapy,
Session: 2017-2018, DU Reg. No: 8631
BHPI, CRP, Savar, Dhaka- 1343, Bangladesh

Subject: Approval of the dissertation proposal **"Barriers Associated with Return to Work after Stroke"**-by ethics committee.

Dear
Sadia Afroz Sharna,
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 Asma Islam, Assistant Professor, Department of Physiotherapy, BHPI, CRP as dissertation supervisor. The following documents have been reviewed and approved:

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

The purpose of the study is to find out the barriers associated with return to work after stroke. Should there any interpretation, type, spelling, grammatical mistakes in the title, it is the responsibilities of the investigator. Since the study involves questionnaire that takes maximum 20- 25 minutes and have no likelihood of any harm to the participants. The members of the Ethics committee approved the study to be conducted in the presented form at the meeting held at 09:00 AM on January 9, 2023 at BHPI, 34th IRB Meeting.

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

Best regards,

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

সিআরপি-চাপাইন, সাভার, ঢাকা-১৩৪৩, বাংলাদেশ। ফোন: +৮৮ ০২ ২২৪৪৪৫৪৬৪-৫, +৮৮ ০২ ২২৪৪৪১৪০৪, মোবাইল: +৮৮ ০১৭৩০ ০৫৯৬৪৭
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E-mail : principal-bhpi@crp-bangladesh.org, Web: bhpi.edu.bd

SPSS OUTPUT FILE

Chi-Square test

Association between return to work and gender

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	.927[a]	1	.336	.414	.224	
Continuity Correction[b]	.575	1	.448			
Likelihood Ratio	.925	1	.336	.414	.224	
Fisher's Exact Test				.414	.224	
Linear-by-Linear Association	.918[c]	1	.338	.414	.224	.102
N of Valid Cases	105					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.65.

b. Computed only for a 2x2 table

c. The standardized statistic is -.958.

Association between return to work and type of stroke

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	3.758[a]	1	.053	.061	.043	
Continuity Correction[b]	2.892	1	.089			
Likelihood Ratio	3.918	1	.048	.061	.043	
Fisher's Exact Test				.061	.043	
Linear-by-Linear Association	3.722[c]	1	.054	.061	.043	.030
N of Valid Cases	105					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.08.

b. Computed only for a 2x2 table

c. The standardized statistic is 1.929.

Association between return to work and speech problem

Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	2.601[a]	1	.107	.119	.078	
Continuity Correction[b]	2.005	1	.157			
Likelihood Ratio	2.610	1	.106	.119	.078	
Fisher's Exact Test				.119	.078	
Linear-by-Linear Association	2.576[c]	1	.108	.119	.078	.043
N of Valid Cases	105					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 21.90.

b. Computed only for a 2x2 table

c. The standardized statistic is -1.605.

Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	4.414[a]	1	.036	.047	.028	
Continuity Correction[b]	3.618	1	.057			
Likelihood Ratio	4.427	1	.035	.047	.028	
Fisher's Exact Test				.047	.028	
Linear-by-Linear Association	4.372[c]	1	.037	.047	.028	.018
N of Valid Cases	105					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 19.71.

b. Computed only for a 2x2 table

c. The standardized statistic is -2.091.

Association between return to work and use of assistive device

Association between return to work and cognitive problem

Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	5.926[a]	1	.015	.017	.013	
Continuity Correction[b]	4.986	1	.026			
Likelihood Ratio	5.943	1	.015	.017	.013	
Fisher's Exact Test				.017	.013	
Linear-by-Linear Association	5.870[c]	1	.015	.017	.013	.009
N of Valid Cases	105					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 17.96.

b. Computed only for a 2x2 table

c. The standardized statistic is -2.423.