THE COMMON SECONDARY COMPLICATIONS AMONG THE STROKE PATIENTS AT CRP

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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

THE COMMON SECONDARY COMPLICATIONS AMONG THE STROKE PATIENTS AT CRP

Submitted by, **Sabrina Akter Runa**, for partial fulfillment of the requirements for the degree of Bachelor of Science in Physiotherapy (B.Sc. PT).

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DECLARATION

I declare that the work presented here is my own. All sources used have been cited appropriately. Any mistake or inaccuracy is 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 of my supervisor & Head of the Physiotherapy Department, Bangladesh Health Professions Institute (BHPI).

Signature: **Date:**

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CONTENTS

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Abbreviation

BHPI: Bangladesh Health Professions Institute.

BMRC: Bangladesh Medical and Research Council.

CRP: Center for the Rehabilitation of the Paralyzed.

DVT: Deep Vein Thrombosis.

HSC: Higher Secondary School Certificate.

RTI: Respiratory Tract Infection.

IRB: Institution of Review Board.

SPSS: Statistical Package of Social Sciences.

SSC: Secondary School Certificate.

WHO: World Health Organization

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Abstract

Purpose: The purpose of the study was to the common secondary complications among stroke patients at CRP. *Objectives:* To explore the socio-demography information and disease condition related information, musculoskeletal related information, neurological related, cardiovascular related and others information. *Methodology:* A cross sectional study was conducted with a semi structural questionnaire to collect information from stroke patients. Fifty-one subjects were selected through convenience sampling technique from the neurology unit of CRP. Data was numerically coded and captured in Microsoft excel, using an SPSS 16.0 version software program. *Results:* This study was found that male participants about 70.6% and 29.6% were female. Males were more affected than female. The most vulnerable age range is 50 to 60 years. Most of the stroke patients were less educated about 39.4% cannot read and write. The people, who were not educated and were not aware of the risks for stroke, were more affected. 55% were in rural and 45% were in urban affected. There were chance to stroke patients who live in rural than the people who live in urban. About 51 participant were involved as sample in this study. Among them 11.8%were day labor, 7.8% werefarmer15.3% were house wives, 17.6% were businessman, 11.8% were service, 5.9% were electrician, 15.7% were abroad .In this study found that businessman and abroad are the most vulnerable group to prone in stroke. In the variety of complications 65% had pressure sore, 31% were affected from UTI, spastic tone 78% were present, muscle atrophy were in 57%, and 65% were affected from autonomic dysreflexion shoulder subluxation were 72.5% and shoulder hand syndrome were 55% .*Conclusion:* Pressure sore, urinary tract infection, spastic tone, muscle atrophy and autonomic dysreflexia shoulder subluxation and shoulder hand syndrome, are most common complications of stroke patients in Bangladesh. The victims are mostly young older. So it is necessary to raise awareness and take steps to reduce the risk of developing complications.

Keywords: Secondary Complication, Stroke.

CHAPTER-I INTRODUCTION

11.1Background

Worldwide, stroke is the second leading cause of death, responsible for at least 4.4 million (9 percent) of total 50.5 million deaths each year (Sudlow & Warlow, 2009). Currently, Stroke is the second leading cause of death in the western world ranking after heart diseases and before cancer and causes 10% of deaths worldwide (Braunwald et al., 2006). According to the World Health Organization, 15 million people suffer stroke worldwide each year. 5 million die and another 5 million are permanently disabled (Engstrom et al., 2011). Stroke is defined by WHO as rapidly developed clinical signs of focal disturbance of cerebral function lasting for more than 24 hours or leading to death without any apparent cause other than vascular origin (Hossain et al., 2011).

The brain is an exciting area in neurology as it is complex in anatomy and in function. With the advancement of age in addition to decay, the brain becomes more prone to get many complicated life threatening diseases, these will need appropriate attention in time. Stroke is one of such condition which is the burning topic in this new millennium since it is not only a major killer but also a cause of disability in the world as well as in Bangladesh (Mohammad, 2011).

Stroke is one of the major chronic illnesses world-wide that health-care organizations will need to address for the next several decades. The nerve cells are responsible for controlling various parts and processes within thebody. If the cells cannot function properly, the body parts they are responsible for controlling also cannot functioning properly. About a third of all strokesare preceded by transient ischemic attacks (TIA), or mini-strokes, that temporarilyinterrupt blood flow to the brain. While TIAs cause similar symptoms (such as suddenvision loss, or temporary weakness in a limb), they abate much more quickly than full flexed strokes, usually within a few hours, sometimes as quickly as a few minutes (Bruno, 2008).

Stroke has described the following effects of brain attack- weakness or paralysis on one side of the body that may affect the whole side or just arm or leg and the weakness or paralysis is on the side of the body opposite the side of the brain affected by the stroke,

spasticity, stiffness in muscles, painful muscles spasms, problems with balance or co-ordination, problem using language, including having difficulty understanding speech or writing (aphasia); and knowing the right words but having trouble saying them clearly (dysarthria), being unaware of or ignoring sensations on one side of the body , pain, numbness or odd sensations problem with memory, thinking, attention or stroke, being unaware of the effects of a stroke, trouble swallowing (dysphasia), problem with bowel or bladder control, fatigue, difficulty controlling emotion, depression and difficulties with daily tasks (Murie-Fernandez et al.,2012).

There are some modifiable or preventable risk factors for stroke. These are -diet and nutrition, physical inability, smoking, substance/alcohol abuse, certain medical condition including: abnormal blood vessel connections, cerebral aneurysms, low cholesterol level, diabetes , hardening of the arteries, heart disease, high blood pressure, obesity, Transient Ischemic Attacks(TIA). And some non-modifiable risk factors are age, ethnicity, heredity/family history of stroke and gender (Maria, 2008).

According to National Stroke Association prognosis of stroke is 10% of the stroke victims recover almost completely, 25% of stroke victims recover with minor impairments, 40% of stroke victims experience moderate to severe impairments requiring special care, 10% of stroke victims require care in nursing home or other long term care facility and approximately 14% of people who have a stroke or TIA will have another within a year (Lkmes, 2006 cited in Begum 2005).The imaging studies are used for diagnosis of stroke by Computed Tomography (CT) scan, Magnetic Resonance Imaging (MRI), Magnetic Resonance angiography (MRA) Electroencephalography (EEG), Cerebra Blood Flow Studies (Bruno, 2008).

1.2 Rationale

Stroke is a catastrophic event and one of the most common causes of severe disability following neurological damage .Stroke is an important health problem in Bangladesh due to high morbidity and Mortality rate. It is the one of the significant causes of physical Disability in our country. The number of affecting people is increasing day by day due to lack of awareness. It is affecting a large number of individual that creates devastating effect on a family a society as well as in whole country.

It is explained broadly about the secondary complication of the stroke patients and this is the most common scenery in the Bangladesh. The world health organization statistics that is, about 10% of the population are disabled by stroke large number of Populations suffer from stroke. Many secondary complications arise, due to lack of awareness of patients and family. So it should be known to everyone about the secondary Complication of stroke. If enough knowledge about the secondary complications after stroke, It will be easy to prevent the further complications. The aim of the study is to find out the Common secondary complications of stroke patients. So it is help for our society and country in both socially and economically. This is very important for the stroke patients focusing on preventing the secondary complications and improving quality of life for people with stroke. Finally for this study participants may be beneficial and practitioner will gain knowledge from this study.

1.3 Research question

What are the common secondary complications among the stroke patients?

1.4 Aims

The aim of the study was to find the common secondary complications among the stroke patients at CRP.

1.5 Objectives

1.5.1 General objective

To identify the common secondary complications among the stroke patients at CRP.

1.5.2 Specific objectives

1. To find out the prevalence of common secondary complication among the stroke patients.
2. To identify the male female ratio
3. To identify the more affected age group.
4. To find the occupation of patients with stroke.
5. To identify the influencing demographic factors for such exposure group in relation to age, sex, occupation, living area, religion etc.

1.6 List of variables

Independent Variables

1. Socio Demographic factors, for example: Age, Sex, Education, and Occupation.
2. Types of Diagnosis
3. Types of Treatment
4. Behavioral risk factors
5. Physical inactivity

Dependent variables

Secondary complications of stroke.

1.6 Operational definitions

Stroke

The world Health Organization the stroke as: A rapidly developed clinical sign of focal disturbance of cerebral function of presumed vascular origin and of more than 24 hours duration.

Secondary complication of Stroke

Pneumonia, pulmonary embolism, seizure, deep venous thrombosis, shoulder subluxation, shoulder hand syndrome, spasticity, contracture, pusher syndrome, pressure sore, urinary infection, depression etc.

CHAPTER-II LITERATURE REVIEW

The ‘stroke’ usually refers to the patients who have had Cerebrovascular Accident (CVA) as the results in circulatory defects in which the symptoms have continued for more than 24 hours and it is due to a lesion affecting the opposite side of the cerebrum(Carr & Shepherd, 2006).

A Stroke is an acute medical emergency. Stroke (also called "Brain Attack") is disease of the circulatory system caused by the rupturing or the blockage of an artery. In middle aged and older women, approximately 70% of strokes are thromboembolic (caused by a blockage from a blood clot), 15% consist of intracerebral hemorrhage, and 10% of subarachnoid hemorrhage. Depending on where the rupture or blocked artery leads, this part of the brain does not get oxygen. This can result in permanent brain damage, disability and sometimes death (Harari et al., 2008).

Cerebral vascular accident (CVA) or stroke is the most common disabling neurological disease of adulthood (Pedretti, 2007). It may be defined as an interruption in the blood flow so that an adequate supply of oxygen and nutrients failto reach portion of the brain. Medical practitioners use the term, often abbreviated as CVA, for stroke. A stroke can occur in any part of thebrain the cerebral hemispheres, the cerebellum or the brainstem (Bierman, 2009). A cerebrovascular accide3nt is a rapidly developed clinical sign of a focal disturbance ofcerebral function of presumed vascular origin and o more than 24 hours duration (WHO, 1986 cited in Turner, Foster, and Johnson, 2006). Clinical signs of stroke develop suddenly due to interruption of blood flow to the brain and lasts more than 24 hours. Warlow (2010) defined the stroke or CVA as rapidly developing clinical symptoms and or signs of focal time’s global loss of cerebral function with symptoms lasting more than 24 hours leading to death with no apparent cause other than that vascular origin. World health Organization (WHO) supports this definition of CVA. When the severity of stroke last less than 24 hours, it is known as transient ischemic attack (TIA).it is not a stroke but a warning for a forth coming stroke. In TIA no

symptoms are found (Pedretti, 2007). Stroke or cerebrovascular accident (CVA) does not represent a single disorder but rather a variety of disorders characterized by the sudden onset of neurological deficits brought about by vascular injury to the brain. The most typical manifestation of CVA is hemipheresis orhemiplegia on the side of the body contralayeral to the site of CVA. One study on the people of Bangladesh shows that the 75.59% of all stroke patients are men and 24.1%are women where due to large artery atherosclerosis 21.25%, small artery occlusion17.32%, cardio embolism 18.1% other determined etiology 26.7% and undetermined causes 16.53% (Hayee et al.,2012). Stroke can be classified into two main types-Ischemic and Hemorrhagic. Ischemic stroke includes artherothrombotic, lacunar andembolic infarction .Hemorrhagic stroke includes intracerebral and subarachnoid hemorrhage (warlow, 2010).

The most common type of stroke and it is responsible for about 80% of all first ever in a life time stroke. This takes place when a clot blocks blood vessels or become too narrow for blood to flow within the brain due to reduction inblood supply, brain cells die from lack of oxygen (Nayan, 2009).

The most important modifiable risk factors for stroke are high blood pressure and atrial fibrillation (although magnitude of this effect is small: the evidence from theMedical Research Council trials is that 833 patients have to be treated for 1 year toprevent one stroke). Other modifiable risk factors include highblood cholesterol levels, diabetes, cigarette smoking (active and passive), heavy alcohol consumption and drug use, lack of physical activity, obesity, processed red meat consumption and unhealthy diet. Alcohol use could predispose to ischemic stroke and intracerebral and subarachnoid hemorrhage via multiple mechanisms (for example via hypertension, atrial fibrilation, rebound thrombocytosis and platelet aggregation and clotting disturbances). The drugs most commonly associated with stroke are cocaine, amphetamines causing hemorrhagic stroke, but also over-the-counter cough and cold drugs containing sympathomimetics (NINDS, 2005).

The stroke centre (2012) has described the following risk factors of stroke-Manageable or Preventable Risk Factors: Diet & Nutrition, physical inactivity, smoking, substance/alcohol abuse, certain medical conditions, including:-Abnormal blood vessel connections (arteriovenous malformations and arteriovenousfistulas),cerebral aneurysms (enraptured), cholesterol level (high levels of "bad" cholesterol and/or low levels of "good" cholesterol), diabetes hardening of the arteries(atherosclerosis/arteriosclerosis), heart (cardiovascular) disease, high blood pressure(hypertension), obesity, transient ischemic attacks (TIAs). Unalterable Risk Factors: Age, ethnicity, heredity/family history of stroke, gender (TSC, 2012)

Strokes are usually diagnosed by studying images of the brain (brain imaging) and carrying out physical tests. Doctor may check for the causes of stroke by taking blood tests to determine cholesterol and blood sugar levels, checking pulse for an irregular heart beat and taking a blood pressure measurement. Even if the physical symptoms of a stroke are obvious, brain imaging should also be carried out to determine: if the stroke has been caused by a blocked artery or burst blood vessel, which part of the brain has been affected, how severe the stroke is, the risk of a transient ischemic attack (TIA). Different treatment is required for each type of stroke so a rapid diagnosis will make treatment more straight forward (Jakson et al., 2006).

The ability to define the world and our place in it distinguishes our humanity. Stroke or brain attack forever alters this world-making capacity. The stroke patient's world, once comprehensible and manageable, is transformed into a confusing, intimidating and hostile environment. The skills of intellect, sensation, perception and movement, which are honed over the course of a lifetime and which so characterize our humanity are the very abilities most compromised by stroke. Stroke can rob people of the mostbasic methods of interacting with the world. The specific abilities that will be lost or affected by stroke depend on the extent of therein damage and most importantly where in the brain the stroke occurred. The brain is an incredibly complex organ, and each area within the brain has responsibility for particular function or ability. The brain is divided into four primary

parts: the right hemisphere (or half), the left hemisphere, the cerebellum and the brain stem (Drake, 2005).

‘A stroke may result in a severe dramatic change to a person’s life. It can be very hard to accept this and may result in unrealistic expectation and depression. People often feel a great physical and mental tiredness. Movements are not as autonomic and smooth as before the stroke. So people who had a stroke use much more energy than someone who has not. In relation with movement the functional activities of the stroke patient become dependent. It influences in all aspects of daily living at home such addressing, toileting, bathing. Each stroke differs depending upon the brain injury, the severity of the injury, and the person’s general health (Mondol, 2005).

Stroke is often followed by complications, which add to the detrimental effect that loss of motor, sensory and autonomic function have on a person’s health, social participation and quality of life Stroke typically induces devastating damages leading to a permanent loss of sensory and voluntary motor functions. In recent years, associated conditions or so called secondary complications have received increasing attention from clinicians 'and scientists. It is now generally recognized that many stroke patients will develop important and often life-threatening complications several months to several years post-trauma. For instance, muscle wasting, osteoporosis, cardiovascular problems, Immune deficiencies, hormonal imbalance, skin ulcers, anemia and urinary urgency are among the problems typically encountered by chronic ischemic individuals (Robert et al., 2013).

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Dysphasia is defined as difficulty with swallowing and is a common complication of stroke. The incidence rates are reported to be between 29-67% in acute stroke patients. Some of the variability is related to differences in the timing and method of swallowing assessment. The presence of dysphasia can be identified on the basis of clinical or radiographic examinations, or both patients (Martino et al., 2005).

The most occurring voiding abnormalities associated with stroke have been identified as urinary frequency, urge incontinence and urinary retention (Marinkovic & Badlani 2011). There have been reports that 21%-47% of stroke patients experience urinary retention.

The commonality and the importance/necessity for clinicians to address and manage these complications have been highlighted by three recent review articles on overactive bladder, urinary incontinence, and voiding dysfunctions in stroke patients, respectively (Linsenmeyer 2012; McKenzie & Badlani 2012; Mehdi et al., 2013).

A variety of risk factors for fecal incontinence have been identified, including total anterior infarction (Barrett 2012). It identified problems with toilet access and constipating drugs as modifiable risk factors post stroke; however, the most powerful predictor of fecal incontinence in the first few days following stroke appears to be the initial level of consciousness. These are followed Bladder distention spasms and catheter irrigation arethe primary causes of autonomic dysreflexia. These are followed by bowel impaction and rectal stimulation (Umphred, 2007).

Respiratory complications and infection predominate as post-strokecomplications. When the injury involves the upper thorax, the normal breathing pattern is permanently altered. Pneumonia is one of the most common complications of acute stroke. Respiratory dysfunction is a major cause of morbidity and mortality in stroke which causes impairment of respiratory muscles, reduced vital capacity, ineffective cough, reduction in lung and chest wall compliance, and excess oxygen cost of breathing due to distortion of the respiratory system. A research article summary, demonstrated that eighty percent of deaths in patients hospitalized with cervical stroke are secondary to pulmonary dysfunction, with pneumonia the cause in 50% of the cases. The numbered respiratory complications during the acute hospital stay contribute significantly to the length of hospital stay and cost. Four factors (use of mechanical ventilation, pneumonia, the need for surgery, and use of tracheotomy explain nearly 60% of hospital costs and may be as important a predictor of hospital cost as level of injury. Atelectasis (36.4%), pneumonia (31.4%), and ventilator failure (22.6%) are the most common complications during the first 5 days after stroke (Birschel et al., 2014).

Postural hypotension, also known as orthostatic hypotension, is a situation which results in a decrease in blood pressure (a drop of 20mm of Hg in systolic and 10 mm of Hg in diastolic within three minutes) when the person changes position from horizontal to

vertical. Mobilization of the legs and careful use of ant embolism stockings may help to prevent Deep vein thrombosis, DVT (Tharion et al., 2009).

The commonest complication after stroke is the occurrence of pressure sores. There is a direct relationship between the amount of pressure and time of the pressure over a bony prominence that leads to the development of pressure ulcers. In the United Kingdom (UK) Thirty-two per cent of patients already had pressure ulcers on admission to the stroke rehabilitation unit (SRU), while a total of 56% experienced an ulcer at some stage between injury and discharge from the SRU (Avillion, 2012).

Contractures develop very quickly in persons with Stroke. The common contractures are flexion contractures which develop in the elbow, fingers and hip, knee and ankle. Shoulder adductor contractures add on to disability to the upper limb, Shoulder involvement can lead to pain and stiffness in fingers known as shoulder hand syndrome (Ash, 2008).

Deep venous thrombosis (DVT) and subsequent pulmonary embolism (PE) remain a significant cause of morbidity and mortality in stroke patients undergoing rehabilitation (Desmukh et al., 2011). Actual incidence figures for DVT in stroke patients vary considerably; between 22% and 73%. In the absence of prophylaxis, over 60% of dense hemiplegics develop DVTs, 9-15% have pulmonary emboli, with a 1-2% mortality rate. Indeed, pulmonary embolism has been reported to be the fourth most common cause of death in the 30 days after stroke, while the risk of thromboembolism still persists thereafter. High-risk patients have been identified as having lower limb plegia, reduced consciousness, obesity and having a previous DVT (Imberti & Prisco 2005). The prevalence of DVT among patients admitted for rehabilitation is lower (12-40%) and dependent upon the provision of anticoagulants, mobility status and method of detection used (Wilson & Murray 2005).

The clinical diagnosis of pulmonary emboli is unreliable, being both insensitive and nonspecific. Many cases are clinically silent with only 30% having the clinical features of a DVT and only 70% demonstrating a DVT on demography. Patients with a massive

pulmonary embolus who suffer compromise of more than 60% of the pulmonary circulation are critically ill. Right heart failure may progress to cardiovascular collapse with hypertension, coma and death. A submissive pulmonary embolus presents with tachycardia, tachypnea and signs of pulmonary infarction with consolidation, riles, hemoptysis, pleuritic chest pain, pleural friction rub, pleural effusion and fever. In most cases there are usually only a few clinical findings and the presentation may be nonspecific with the major clinical complaints malaise and a fever (Jensen & Lenz, 2005).

Post stroke seizures may occur soon after stroke or be delayed; each appears to be associated with differing pathogeneses. Most seizures are single, either partial or generalized (Ferro & Pinto 2008). Wiebe and Butler (2008) noted that, "Seizures are the clinical expression of excessive, hyper synchronous discharge of neurons in the cerebral cortex."Whether seizures worsen outcome remains unclear. Vernon et al., (2009) reported new-onset seizure among patients with ischemic stroke was an independent risk factor for mortality (Relative risk 1.81; 95%CI 1.16-2.83). It also reported higher mortality among patients with seizures at 30 days and 1 year, compared to patients who were seizure free (25% vs. 7% and 38% vs. 16%). However, the authors did not control for the confounding effects of stroke severity or co morbidity. Similarly, higher mortality risk at 30 days and 1 year was seen in patients with early seizures but the risk disappeared after adjusting for stroke severity and other confounding factors (Hamidou et al., 2013).

"Osteoporosis is a significant complication of stroke, and hip fracture after stroke is a frequent problem" (Saverino et al., 2006). The incidence of hip fracture as a late complication of stroke, caused by a loss of bone mineral density, resulting in falls, has been reported to be between 4% and 15%, with the majority of fractures occurring on the both side. Moreover, Watanabe (2005) found that 40% of patients admitted for inpatient stroke rehabilitation already had osteoporosis. About one hundred years ago, a couple French neurologists described an abnormal pain disorder occurring subsequent to stroke (Segatore 2006). Central post stroke pain (CPSP) is a syndrome characterized by sensory disturbances and neuropathic pain. The condition has received a significant amount of

attention recently. One study reported that as many as 8% of all stroke patients had some form of CPSP. However, given the multitude of clinical impairments/disabilities suffered by stroke patients it is not unusual for pain to be ignored or given a lower priority .In 40-60% of CPSP patients, the onset of central pain occurs more than one month following the stroke and may cause delays in diagnosis and treatment if the primary care providers are no longer actively involved in the patents' care at this point (Hansson 2005).

Although fatigue following stroke is common and may negatively affect progress during inpatient rehabilitation, it has not been well-studied. Fatigue is a subjective term and there is no valid and accepted definition of fatigue (Choi-Kwon & Kim 2011; Van Eijsden et al., 2012). Abnormal, or pathological fatigue has been defined as a state of general tiredness characterized and shoulder hand syndrome by weariness unrelated to precious exertion levels and is usually not ameliorated by rest (De Groot et al., 2009).When people sustain Stroke they need prolonged meticulous care that starts with hospitalization and extend long after discharge.

In stroke, the goals of rehabilitation include, optimizing physical function, facilitating social independence, minimizing medical complications, enhancing emotional adaptation, and promoting reintegration into the community . Rehabilitation involves the combined & coordinated use of medical, socials, educational & vocational measures for training & retraining the individuals to the highest possible level of functional activity Rehabilitation has been defined by the World Health Organization as a progressive, dynamic, goal-oriented and often time limited process, which enables an individual with an impairment to identify and reach his/her optimal mental, physical, cognitive and social functional level (Zeyda, 2009).

Patients need to be transferred to specialist units for Stroke at the earliest opportunity so that they can achieve the greatest degree of functional independence possible, for it appears that delay causes more medical complications prolonging rehabilitation Concluded that optimal rehabilitation care, with regard to the prevention of complications during the acute phase, entails early admission to a specialized multidisciplinary facility (Roy et al., 2014).

CHAPTER-III METHODOLOGY

3.1 Study design

It is used a quantitative cross sectional research model to extract the common secondary complications of stroke patients. A quantitative research design is used so that there would use large number of participants and therefore to collect data. The cross sectional study carried out among patients who are suffering from secondary complications of stroke Centre for the Rehabilitation of the Paralyzed (CRP) at Neurological unit.

3.2 Study site

Data are collected from the Neurological unit of Centre for the Rehabilitation of the Paralyzed (CRP) which is the largest rehabilitation centre for the Stroke patients in the Bangladesh. It is a nonprofit organization which is providing comprehensive rehabilitation of people with spinal cord injury in Bangladesh. CRP the person's impairment alone.CRP focuses on a holistic approach to rehabilitation, recognizing that all aspects are important for its success: Physical rehabilitation, psychological rehabilitation, economic rehabilitation and planned discharge. Support is also extended once the person goes back to a live in the community. CRP also launch stroke rehabilitation of stroke patients. Approximately 60 stroke patients per day are receiving services from CRP as inpatient and outpatient. For that reason CRP was consider as a study place.

3.3 Study sampling and population

The study populations are stroke patients who admitted in CRP for treatment. The sample is chosen convenience sampling. There is developed a semi structural type questionnaire for identifying the common secondary complications.

3.4 Inclusion criteria

1. Both male and female would include.
2. Patient age range is between 40-80 years.

3.5 Exclusion criteria

1. Patients who would medically unstable.
2. Participants who has not speaking and hearing problem.
3. Patients who have cognitive problem.
4. Patients who are not able to communicate

3.6 Sample size

Generally survey needs large sample that is represent whole population. Due to limited set of time frame the number of the sample of the study is fifty one.

$$n = \left\{\frac{Z(1-\frac{\alpha}{2})}{d}\right\}^2 \times pq$$

Here,

$Z(1-\frac{\alpha}{2})$ = Confidence level at 95% (standard value of 1.96).

d = 0.05

p = 0.78

q = (1-p) = (1-0.78)

=0.22

3.7 Sampling technique

Fifty-one participants with stroke are selected through convenience sampling technique due to the time limitation and as it is the one of the easiest, cheapest and quicker method of the sample selection. Data is collected from Neurological unit of CRP. Data is

collected data from the patients who are admitted at CRP to take physiotherapy treatment or continuing their treatment.

3.8 Questionnaire

The questionnaire is structural type for collecting the date for the findings of the study.

3.9 Data collection method and tools

Data are collected by using a semi structural type questionnaire paper set, developed by the investigators and validated by a jury of experts involved in the management of stroke (clinical physiotherapists), by conducting to interview to collect information. The questionnaire sought information on identification demographic information and musculoskeletal related questions, neurological related questions and cardio-respiratory related questions. The tools used in collecting data would pen and pencils, paper, approved forms and consent forms, reflex stick and a bag for storing these tools.

3.10 Data collection procedure

There is a questionnaire for acquiring the participant's demographic information including age, sex, marital status, educational status, occupation, history including types of occupation, disease condition related information such as musculoskeletal related information, neurological related, cardiovascular related and others information. The questionnaire is provided to responsible physiotherapists for patients and also direct to the patients for finding the answers to the questions given in the questionnaire.

3.11 Data Analysis

Descriptive quantitative data is analyzed by using SPSS 16 software. The coded responses on the questionnaire are then entered on the computer general coding forms. They would analyze using Statistical Package for the Social Science (SPSS) Windows version 16.0. The results would present with the use of simple percentage (%). The collected data is illustrated with tables, bar charts and pie charts also.

3.12 Ethical Consideration

The proposal regarding this study is submitted to the Ethical Review Board (ERB) and this is checked by this board. The study followed the guidelines given by local ethical review board according to rules and guidelines of WHO and BMRC. There is explained to the participants and for those who were willingly interested to participate in this study. Written consent is given to all participants to completion of the questionnaire. It is explained to the participants about his or her role in this study and collected a written consent form from every participant with signature. So the participant assured that they could understand about the consent form and their participation is on voluntary basis. The participants would inform clearly that their information would be kept confidential. The researcher assured the participants that the study would not be harmful to them. It is explained that there might not a direct benefit from the study for the participants but in the future cases like them might get benefit from it. The participants have the rights to withdraw consent and discontinue participation at any time without prejudice to present or future treatment at the Neurological unit of CRP. Information from this study is anonymously coded to ensure confidentiality and is not personally identified in any publication containing the result of this study.

3.13 Rigor

This study is conducted in systemic way. All the steps of research would followed by a sequent during data collection and analysis there is avoided influencing the whole process by own perspectives values and biases. When conducting the study it took help from the supervisors and physiotherapists. There is never influenced the participants by personal perception during data collection. A trustful relationship with participants is always maintained and the documents were kept confidential. During data analysis biasness is avoided.

CHAPTER – IV RESULTS

4.1 Age of the participant

Analysis reveals that among the 51 participants who had suffered from secondary complication of stroke, the highest participants in between 50-60 years, 52.9% (n=27) participants in between 60-70 years, 31.4% (n=16) and participants in more than 70 years, 15.7% (n=8) (Figure-1) .

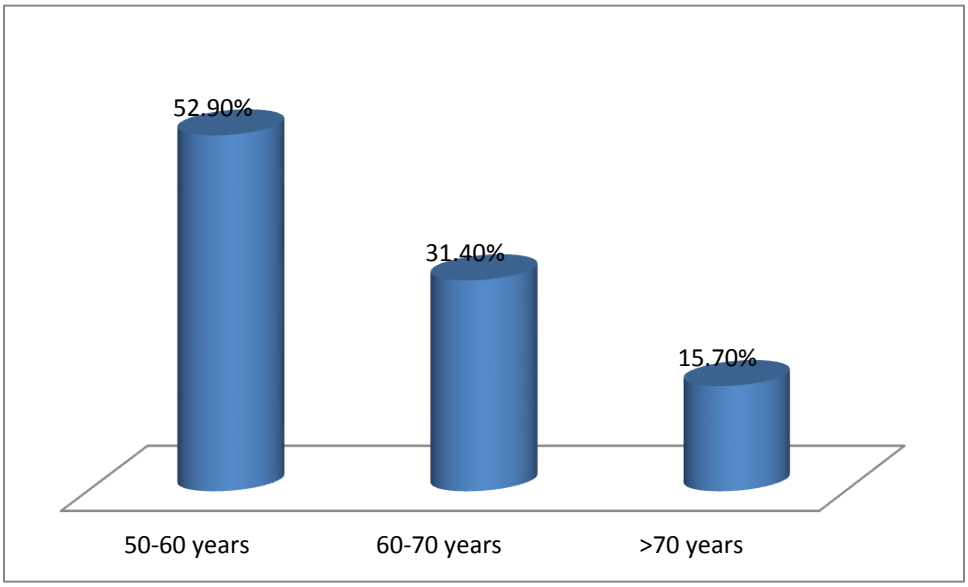

Figure 1: Age of the participants.

4.2 Sex of the participants

Among the participants female were 30% (n=14) and male were 71% (n=36). Result shows that male were more vulnerable than female (Figure-2).

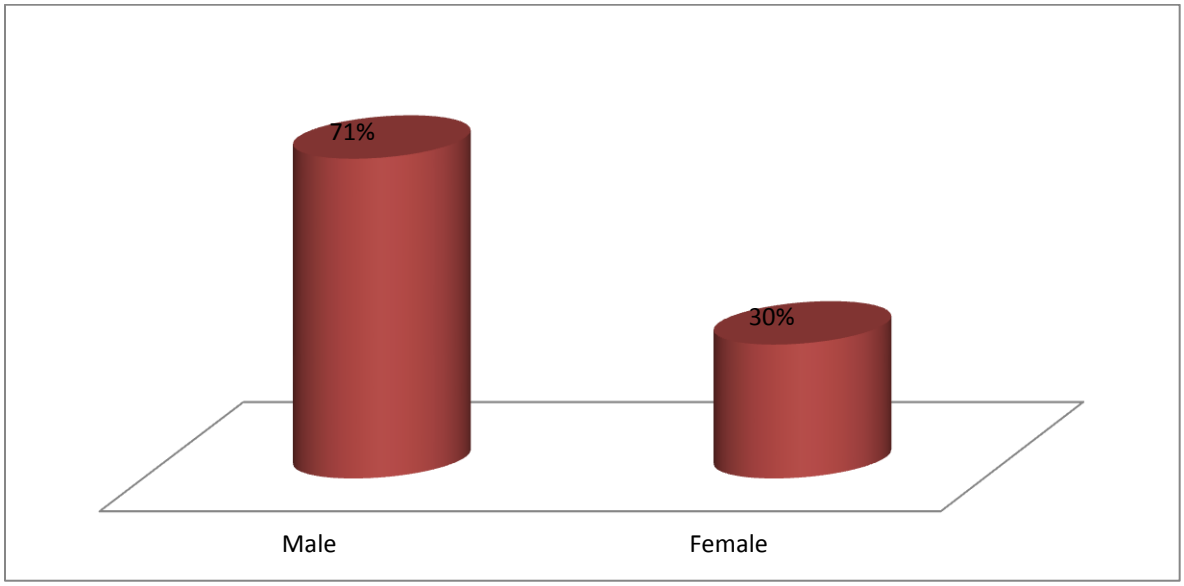

Figure 2: Sex of the participants

4.3 Marital status of participant

Among the participants Married were 70.6% (n=36), Unmarried were 9.8% (n=5), Separated were5.9% (n=3), Divorced were 3.9% (n=2) and window were 9.8% (n=5) (Figure-03).

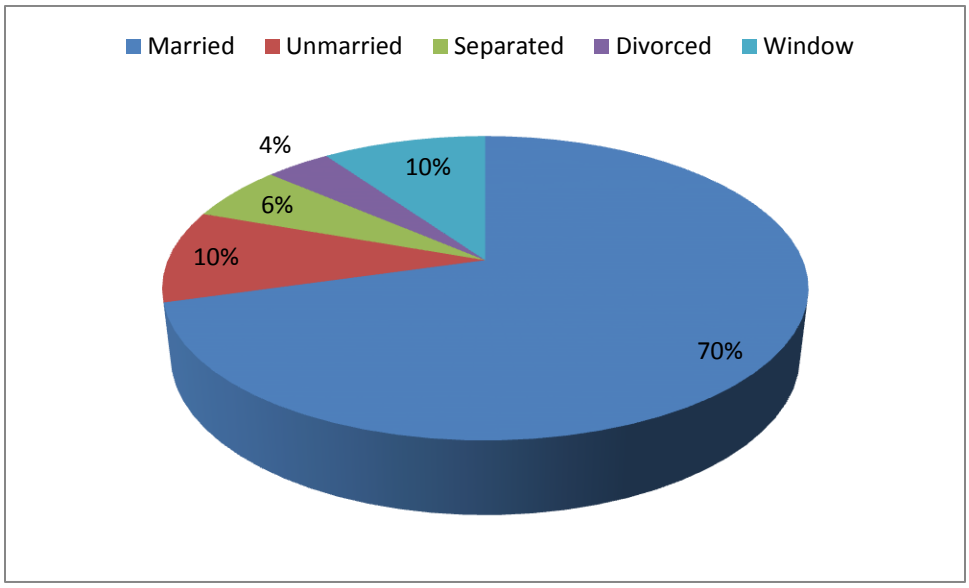

Figure 3: Marital status of participants

4.4 Occupational status of the participant

Among the participants 11.8% (n=6) were day labour, 7.8% (n=4) were farmer, 15.3% (n=8) were housewife, 7.6% (n=9) were businessman , 7.8% (n=4) were driver, 3.9% (n=2) were rickshaw puller , 11.8% (n=6) were service holder, 5.9% (n=3) were electrician , 15.7% (n=8) were job abroad and others 2% (n=1) (Figure-4).

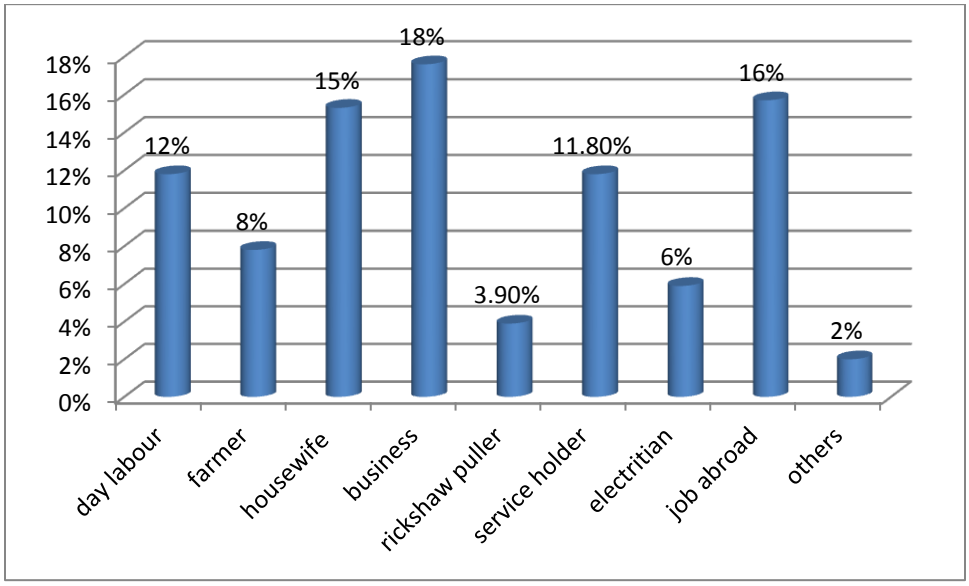

Figure 4: Occupational status of participants

4.5 Living area of the participants

In this study, the people, who lived in rural, were more affected than the people who lived in urban. Among these 55% (n=28) were in Rural and 45% (n=23) were in urban region. (Figure-5).

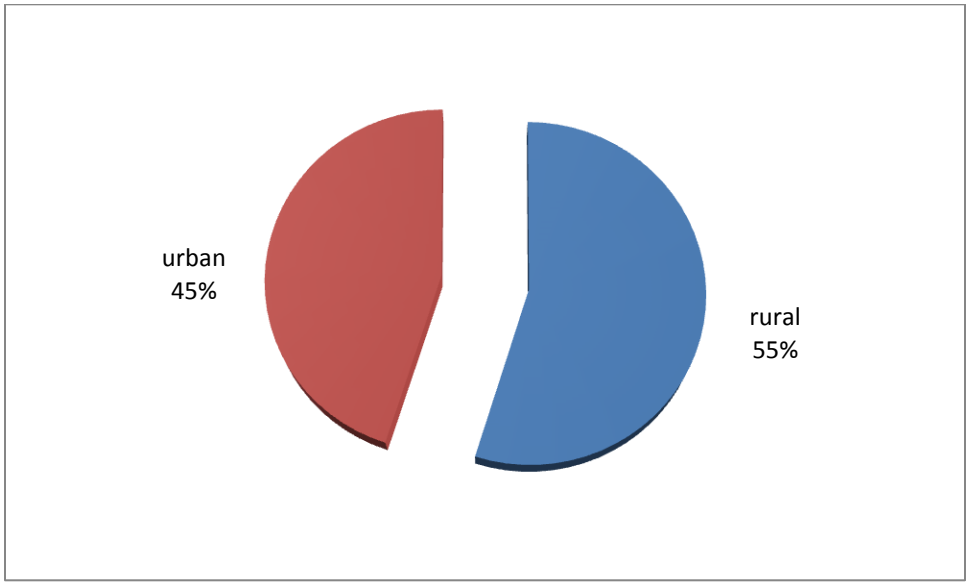

Figure 5: Living area of the participants

4.6 Appearance of pressure sore

Among the 51 participant 65% (n=18) did not develop pressure sore and 35% (n=23) respondent developed pressure sore (Figure-8).

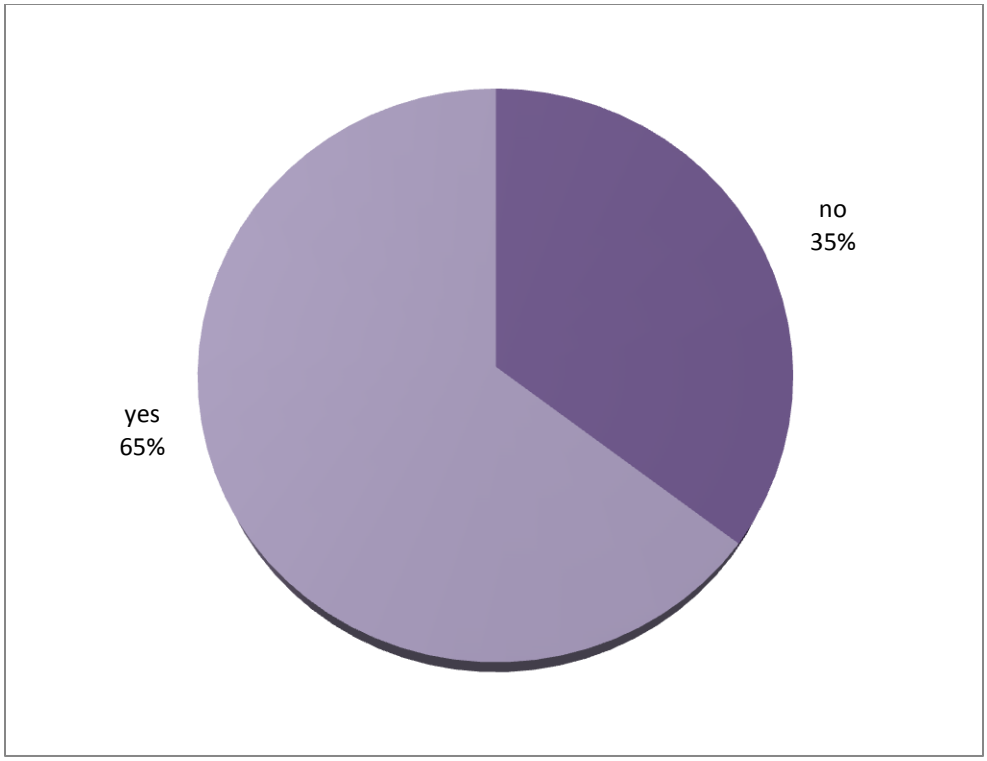

Figure 6: Appearance of pressure sore

4.7 Spasticity among the participants

This study shows that among 51 participants, 78% (n=40) participants had spastic tone and 22% (n=11) participants had not spastic tone (Figure-7).

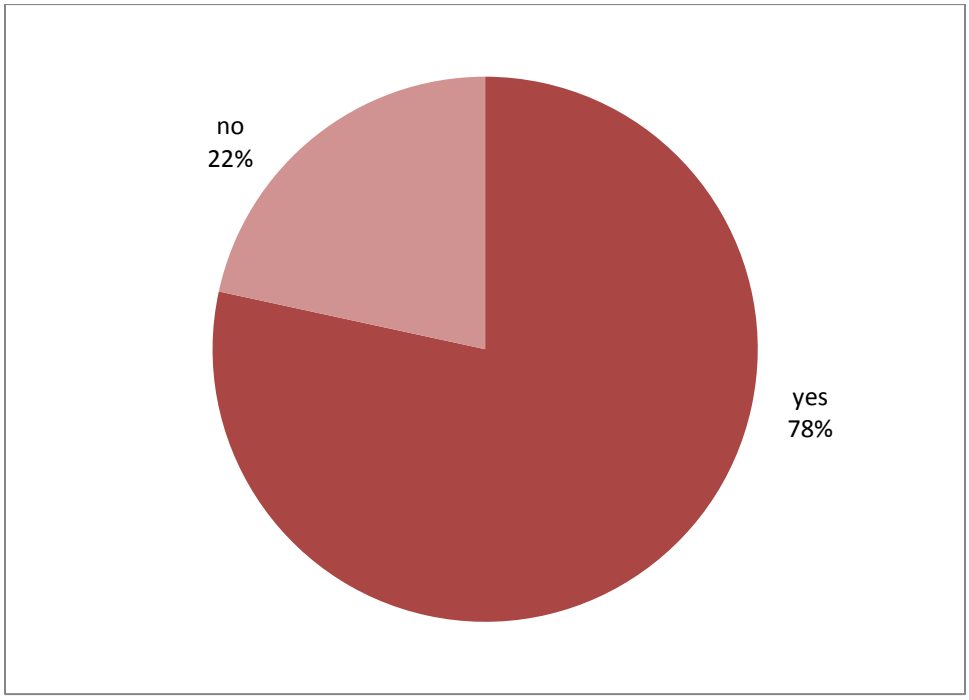

Figure 7: Spasticity among the participants

4.8 Contractures among the participants

This study shows that among 51 participants, 65% (n=33) participants had contracture and 35% (n=18) had not contracture (Figure-8).

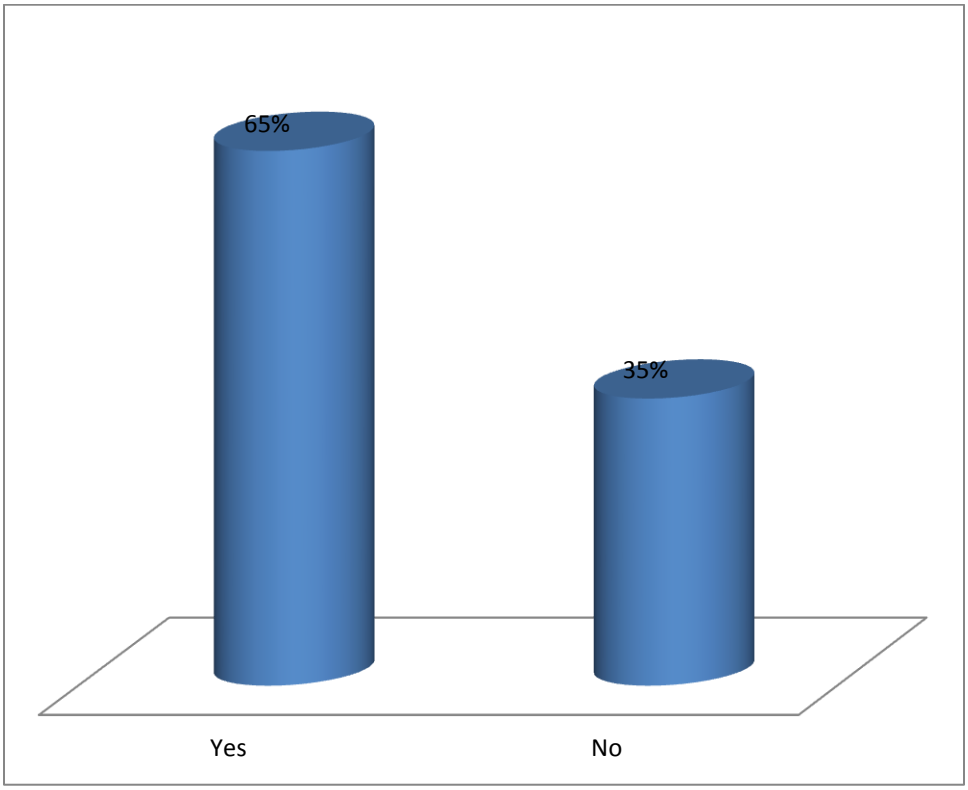

Figure 8: Contractures among the participants

4.9 Muscle atrophy among the participants

Out of 51 stroke patients, 43% (n=22) had not muscle atrophy and 57% (n=29) patients had muscle atrophy (Figure-9).

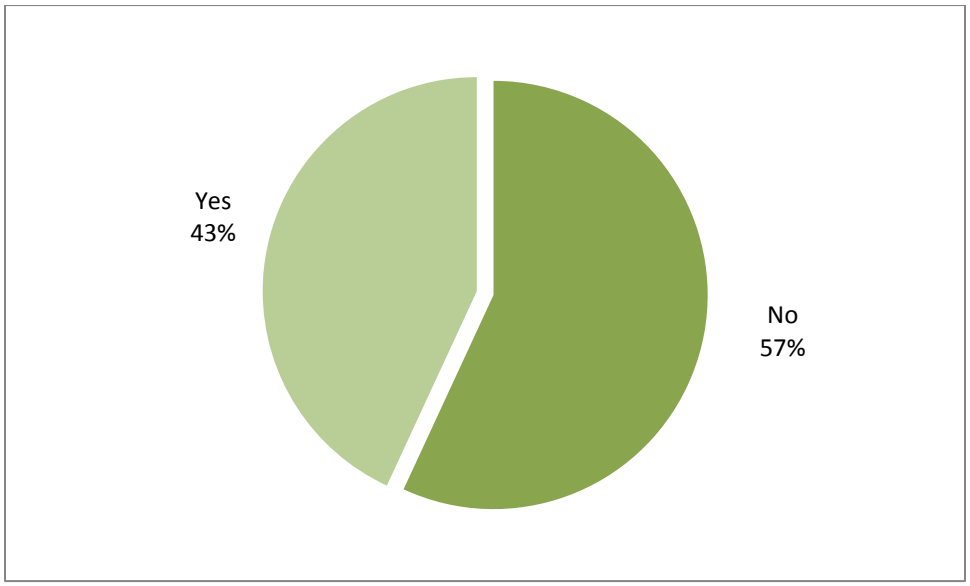

Figure 9: Muscle atrophy of the participants

4.10 Muscle weakness among the participants

Among the 51 stroke patients, 12% (n=45) did not develop muscle weakness and 88% (n=6) patients developed muscle weakness (Figure-10).

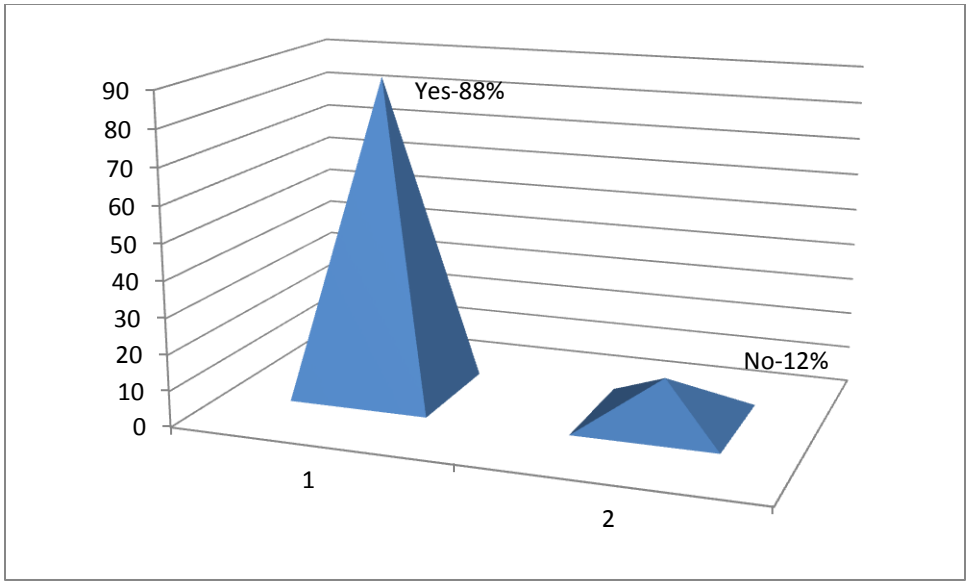

Figure 10: Muscle weakness

4.11 Shoulder subluxation among the participants

This study shows that among 51 participants, 72.5% (n=37) participants had shoulder subluxation and 27.5% (n=14) had not shoulder subluxation (Figure-11).

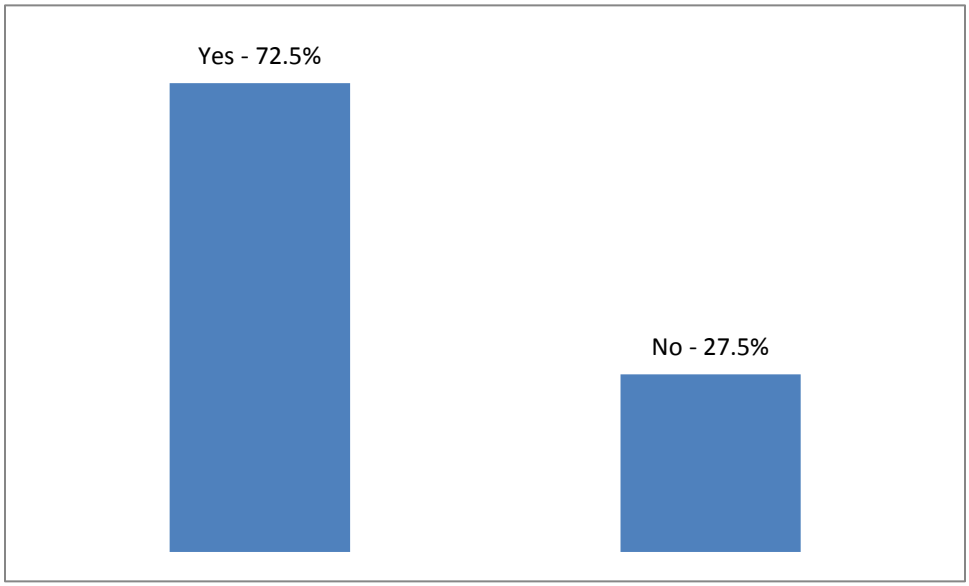

Figure 11: Shoulder subluxation among the participants

4.12 Shoulder hand syndrome among the participants

This study shows that among 51 participants, 55% (n=28) participants had shoulder hand syndrome and 45% (n=23) had not shoulder hand syndrome (Figure-12).

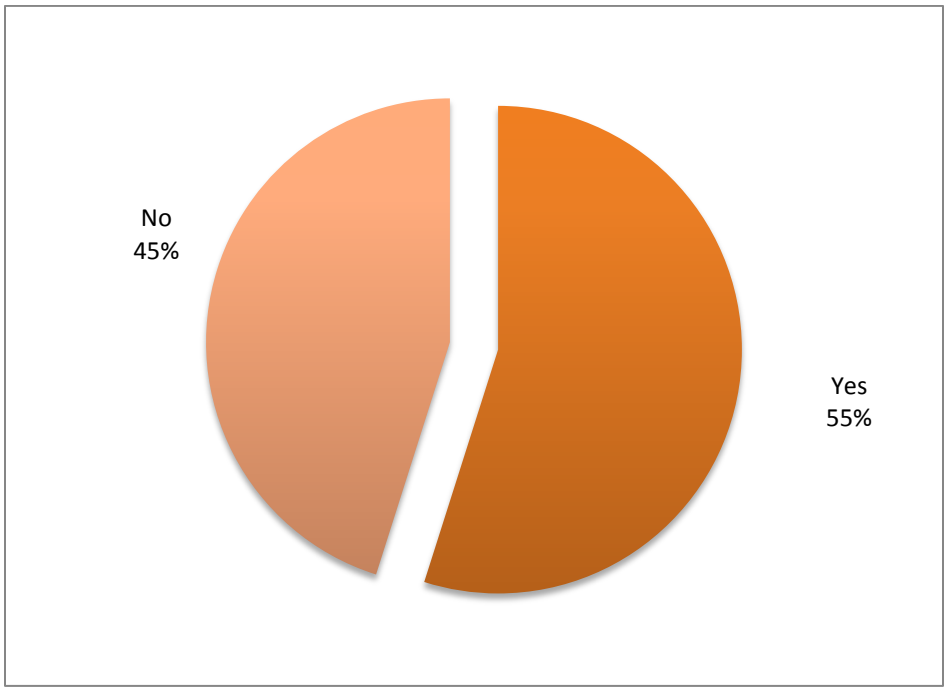

Figure12: Shoulder hand syndrome

4.13 Postural hypotension among the participants

Among 51 stroke patients there were 74% (n=38) patients with postural hypotension and 26% (n=13) patients without postural hypotension (Figure-13).

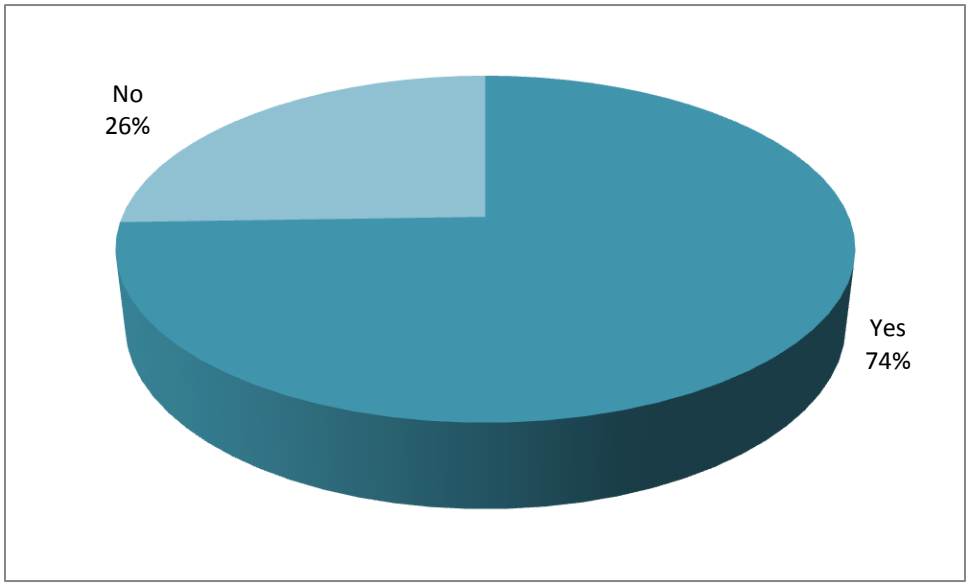

Figure 13: Postural hypotension

4.14 Pusher syndrome among the participants

In this study, among 51 stroke patients there were 71% (n=36) patients with pusher syndrome and 29% (n=15) patients without pusher syndrome (Figure-14).

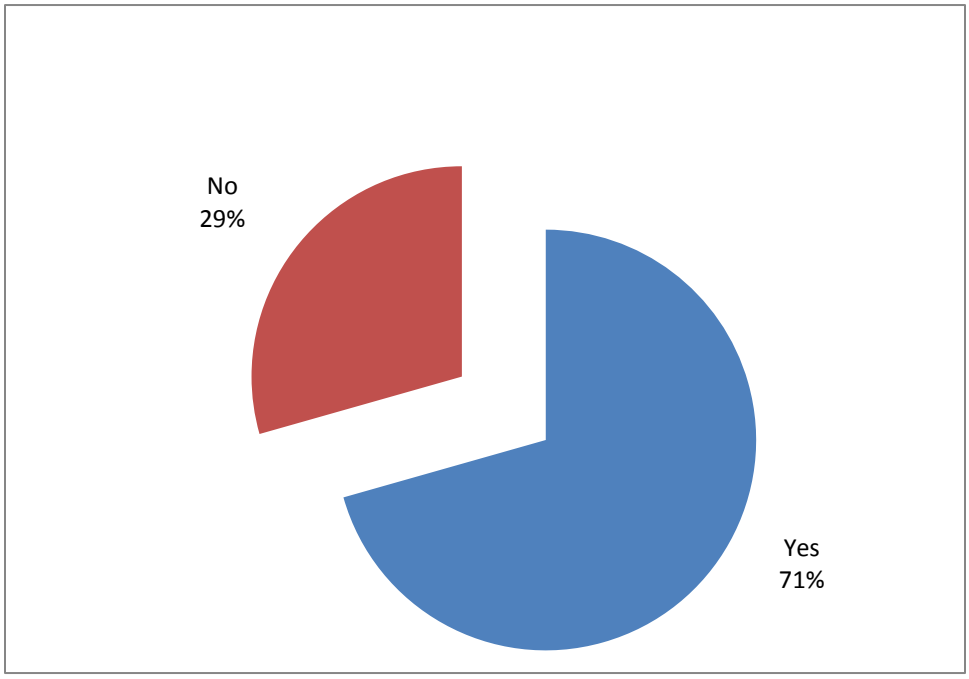

Figure14: Pusher syndrome

4.15 Urinary tract infection among the participants

In this study, among 51 stroke patients there were 31% (n=26) patients with urinary tract infection and 69% (n=25) patients without. Urinary tract infection.(Figure-15).

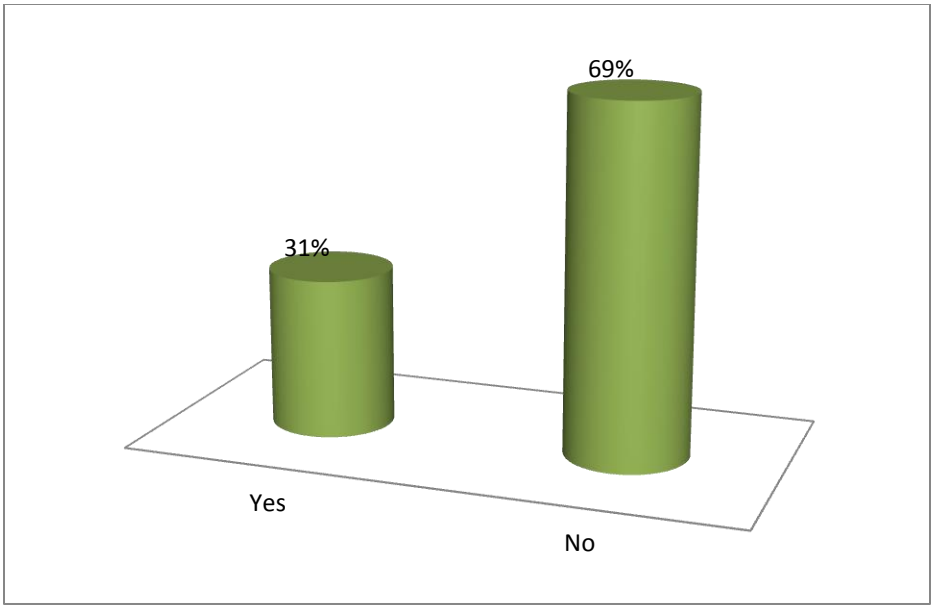

Figure 15: Urinary tract infection among the participants

4.16 Autonomic dysreflexia among the participants

This study shows that among 51 participants, 65% (n=18) participants developed autonomic dysreflexia and 35% (n=33) did not develop autonomic dysreflexia (Figure-16).

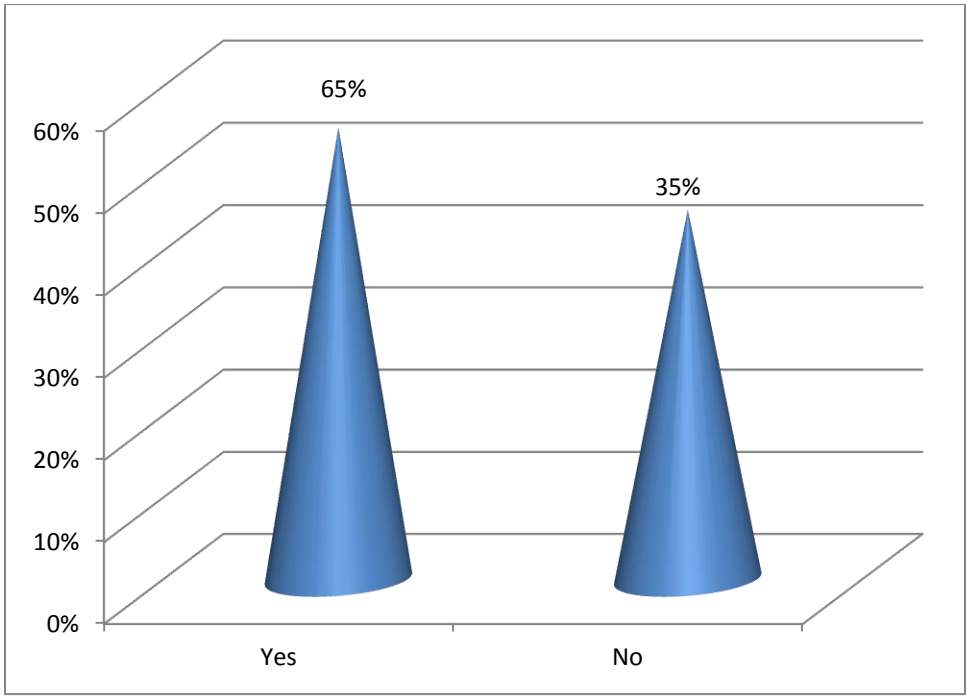

Figure 16: Autonomic dysreflexia

4.17 Pulmonary embolism among the participants

Among 51 participants, 55% (n=22) participants had Pulmonary embolism and 45% (n=29) had not Pulmonary embolism (Figure-17).

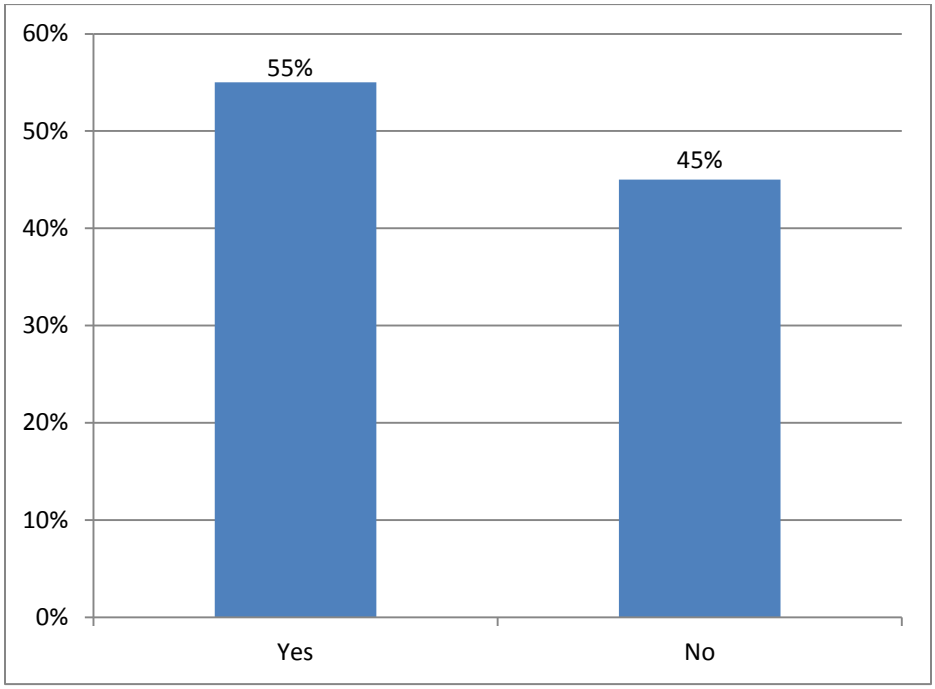

Figure 17: Pulmonary embolism

CHAPTER-V DISCUSSION

The objective of the study was to find the common complications among stroke patients. Currently there is lack of information on stroke in Bangladesh, in this study 51 participants were taken who had stroke where male were (70.6%) and female were (27.5%). In this study it was found that male, female ratio is 7.8:1. In Bangladesh are search had been conducted on stroke and the result shown that male, female ratio was 7.5:1 (Hung et al., 2005).

In Jordan male, female ratio was 5.8..It was found that between age group fifty to sixty, affected persons were (52.9%) and between sixty to seventy affected person were (31.4%), more than seventy affected person were (15.7%), it was found that the biggest sample contain in age range 50 to 60 years and lowest sample range was more than 60 years (Gregory & Kuhlemeier 2009).

One study on the people of Bangladesh shows that 75.59% of all stroke male and 24.41% are female. A study shows that, stroke is more common in male and above the age of 50 years where male to female ratio is 2.3:1. The World health Organization (WHO) estimated that in 2001there were over 20.5 million strokes worldwide. Europe approximates 650,000 people deaths each year by stroke. At all ages, 40,000 more women than men have a stroke. About 47% of stroke deaths occur of hospital. About 47 million stroke survivors are alive today (Hayee, 2012).

Bangladesh is a South Asian country and one of the most densely populated country in the world. More than 150 million people in this independent country. About 80% of the population lives in villages and 60% of the total labor forces are employed in agriculture. In the world of globalization, all the countries of the world are trying to confirmation their ability to remain in the competitive world. Fortis reason there is no scope of neglecting any sector to be considered like economy, education, health, culture etc. Among them health sector is very important issue (Begum, 2005).

Another study shows that people in urban area are more prone (60%) to stroke than rural area in United States. Low socioeconomic status is a reliable correlate of poor physical health. Individuals who are less educated, have lower status jobs, and earn less or no incomes are at greater risk for poor health than their higher socioeconomic status counterpart (Matthews & Gallo, 2011). The study recommended that educational level were, 19.6% cannot read and write, 9.8% can read and write; 17.6% were in primary level; 13.7% passed SSC level, and 25.5% were completed HSC and above. An epidemiological study in India has been found that approximate 20,000 new cases of stroke are added every year; 60-70% of them are illiterate, poor villagers. The study shown that people with lower educational level were more prone to have stroke. It was noted that stroke was more common in rural people. An epidemiological study in India has been found that approximate 20,000 new cases of are added every year, 60-70% of them are illiterate, poor villagers (Frese et al., 2006).

This study found that 62.7% had pressure sore, 35(49%) did not have any pressures ore and 51% were affected from UTI, 49%were not affected from UTI. Netherlands study also claimed that 49% had UTI and 36% had pressure sore (Janneke et al., 2007). In case of spastic tone 78.4%were present and 22.6%) were not present.

In this study almost 31.82% of the participants were age group 53-60 years. In United States a study about epidemiology of shoulder subluxation shows that the age standardized prevalence of shoulder subluxation after stroke in adults age $\geq$ 45 was 25.2% among the participants in the Framingham Study and 27.8% in the Johnston County (Walsh, 2011).

Deep venous thrombosis (DVT) and subsequent pulmonary embolism (PE) remain a significant cause of morbidity and mortality in stroke patients undergoing rehabilitation (Desmukh et al., 2011). Actual incidence figures for DVT in stroke patients vary considerably; between 22% and 73%. In the absence of prophylaxis, over 60% of dense hemiplegics develop DVTs, 9-15% have pulmonary emboli, with a 1-2% mortality rate). Indeed, pulmonary embolism has been reported to be the fourth most common cause of death in the 30 days after stroke, while the risk of thromboembolism still persists

thereafter. High-risk patients have been identified as having lower limb plegia, reduced consciousness, obesity and having a previous DVT (Imberti & Prisco 2005).

Another study found that, the most common complications resulting from stroke were urinary infection (51.3%), muscle spasm (65%) and pressure ulcers (62.7%) (Blanes, 2009). Very few studies have reported shoulder subluxation (62%), spasticity (78.4%) and pressure ulcers (30%). On the other hand muscle atrophy were in 56.9% and were not present 15(21%) (Dumoulin et al., 2005).

This study also found that 35.3% affected from autonomic dysreflexion, shoulder subluxation 72.5%, shoulder hand syndrome 54.4%, postural hypotension 74.5%, pusser syndrome 70.6%, and depression 74.5%, pneumonia 27.4% and pulmonary embolism 43.1%. Another study also found that 25.5% affected from autonomic dysreflexion, shoulder subluxation 62.7%, shoulder hand syndrome (Cowey et al., 2012).

Each and every thesis paper has some limitations and some limitations may exist. Regarding this study, there we some limitations or barriers to consider the result of the study as listed below:

The first limitation of this study is sample size. It is taken fifty-one (51) samples. There is a few research completed in Bangladesh, so there is little evidence to support the result of this project. Another major limitation is time. The period is very limited to conduct the research project on this topic. As the study period short so the adequate number of sample could not arrange for the study. As the study is conducted at Centre for the Rehabilitation of the paralyzed (CRP) which may not represent the whole country.

CHAPTER-VI CONCLUSION & RECOMMENDATION

Stroke is one of the most devastating in human life. Millions of people in every year face Stroke. In Bangladesh there is lack of information and proper data base about Stroke. Even there is no estimate number of Stroke people in Bangladesh. Bangladesh is a developing country. Most of them live with low economic level and poor educational level. In this country there is also lack of awareness about injury especially caused by Stroke. The researcher explored the common complications among the stroke patient. In this study, the total respondents were 51 whereas (52.9%) was male and (31.4%) was female. So it shows that male are most vulnerable than female. From the study it can be concluded that the most vulnerable age range were 15-30 years and the people, who were less educated and the study also found that, the complications which commonly develop within the stroke patient are urinary tract infection, pressure sore, respiratory complication, spasticity. The complications mentioned above repeat more among the Stroke patients. So it is necessary to raise awareness and take steps to reduce the risk of developing complications.

Recommendation

The recommendation evolves out of the content in which the study was conducted. Therefore main recommendation would be made. Further research of the different perspectives emerged from the study, is recommended: In Bangladesh, as a new profession physiotherapy practice should be strong evidenced based so that can develop a interrelationship with other professionals' standard in comparison with the support of the global evidence of rigorous. This type of study should be considered that need to be collected adequate resources that knowledge on this area could be extended and later result can obtain to generalize to the population. During further research it is recommended to take more samples with adequate time to solve the recent problems areas for better result and perspectives.

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APPENDIX

CONSENT FORM

Assalamualaikum, my name is Sabrina Akter Runa. I am conducting this study for partial fulfillment of Bachelor of Science in Physiotherapy degree, titled, "The common secondary complications among the stroke patients at CRP" from Bangladesh Health Professions Institute(BHPI), University of Dhaka. I would like to know about some information. You will answer some questions which are mentioned in this form. This will take approximately 10-15 minutes.

Your participation will be voluntary. You have the right to withdraw consent and discontinue participation at any time. You might not be benefited, but in future may benefit and would not harmful. This projects only for the development of the profession. If you have any query about the study or your right as a participant, you may contact with, researcher Sabrina Akter Runa or , Farjana Sharmin, Incharge of Neurology unit ,Department of physiotherapy, BHPI, CRP,Savar, Dhaka-1343.

I (participant) have read and understand the contents of the form. I agree to participant in the research without any force.

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 _____

Signature of the Interviewer _____

Signature of the witness_____

Questionnaire (English)

	Part- I: Patient's Socio-demographic Information
	Identification Number : ……
	Age? ……
	Gender: 1= Male 2= Female
	Religion? 1= Muslim 2= Hindu 3= Christian 4= Buddhist
	What is your marital status? 1= Married 2= Unmarried 3= Separated 4= Divorced 5= Widowed

6	Educational status? 1= Can not read and write 2= Can read and write

	3= Primary 4= SSC 5= HSC 6=Others
7	What is your Occupation? 1= Daily Labor 2= Farmer 3= Housewife 4= Business 5= Driver 6= Van/ Rickshaw Puller 7= Service(govt.) 8=Service(NGO) 9= Student 10= Electrician 11= Unemployed 12= Helper of Motor Vehicle 13= Tailor 14= Job at Abroad 15= Carpenter 16= Boat Man 17= Other specify(_ _ _ _ _ _ _ _ _)
8	Monthly Family Income: _____(Approximately taka)
9	Family Type: 1= Nuclear Family 2= Extended Family

10	Home District: _____
11	Residential Area: 1= Rural 2= Urban

Musculoskeletal related questions

12	After admission to CRP , had you affected from Pressure sore? 1= Yes 2=No

13	Decrease Joint range of motion , after injury 1=Yes 2=No (Skip question no 2.19)

14	Spastic tone? 1=Yes 2=No
15	Flaccid tone? 1=Yes 2=No

16	Joint stiffness? 1=Yes 2=No
17	Muscle atrophy? 1=Yes 2=No
18	Muscle weekness? 1=Yes 2=No
19	Shoulder subluxation? 1=Yes 2=No
20	Shoulder hand syndrome? 1=Yes 2=No

21	Postural hypotension? 1=Yes 2=No
22	Pusser syndrome? 1=Yes 2=No

Neurological related questions

23	Urinary tract infection after injury? 1=Yes 2=No
24	Autonomic Dysreflexia? 1=Yes 2=No
25	Hypothermia? 1=Yes 2=No
26	Hyperthermia? 1=Yes 2=No

27	Depression? 1=Yes 2=No

Cardio-respiratory and vascular related questions

28	Respiratory complication Before injury? 1=Yes 2= No
29	Pneumonia? 1=Yes 2=No
30	Pulmonary embolism? 1=Yes 2=No

সম্মতিপত্র

(অংশগ্রহনকারীকে পড়ে শোনাতে হবে)

আসসালামুআলাইকুম/নমস্কার,

আমারনামসাবরিনা আক্তার রন্নন্না, আমি এই গবেষনাপ্রকল্পটিবাংলাদেশ হেলথ প্রফেশনসইনষ্টিটিউট (বিএইচপিআই) এ পরিচালনাকরছিযাআমার ৪র্থ বর্ষ বি এসসি ইন ফিজিওথেরাপী কোর্সের অধিভূক্ত। আমারগবেষনারশিরোনাম "স্ট্রোক রোগীদের সেকেন্ডারীজটিলতাসমূহ"। আমিএড়োত্রেআপনাকেকিছু ব্যক্তিগত এবং আনুষাঙ্গিক প্রশ্নকরতেচাচ্ছি। এতে আনুমানিক ১০-১৫ মিনিটসময়নিবো।

আমিআপনাকেঅনুগতকরছি যে, এটাআমারঅধ্যয়নের অংশ এবংযাঅন্য কোনউদ্দেশ্যে ব্যবহৃতহবেনা। গবেষকসরাসরি এই অধ্যয়নের সাথে অন্তর্ভূক্ত নয়। তাই এই গবেষনায়অংশগ্রহণবর্তমান ও ভবিষ্যতচিকিৎসায় কোনপ্রকারপ্রভাব ফেলবেনা। আপনি যে সব তথ্য প্রদানকরবেনতার গোপনীতাবজায় থাকবেএবংআপনারপ্রতিবেদনের ঘটনাপ্রবাহেএটানিশ্চিতকরাহবে যে এই তথ্যের উৎসঅপ্রকাশিত থাকবে। এই অধ্যয়নেআপনারঅংশগ্রহণ স্বেচ্ছা প্রনোদীতএবংআপনি যে কোনসময় এই অধ্যয়ন থেকে কোন নেতিবাচকফলাফলছাড়াইনিজেকেপ্রত্যাহারকরতেপারবেন। এছাড়াও কোননির্দিষ্ট প্রশ্নঅপছন্দ হলেউত্তরনা দেয়ারএবংসাড়্গাৎকারেররসময় কোনউত্তরনাদিতেচাওয়ারঅধিকারআপনারআছে।

এই অধ্যয়নেরঅংশগ্রহণকারীহিসেবেআপনার কোনপ্রশ্ন থাকেতাহলেআপনিআমাকে/ এবংফারজানাশারমিন রোমানা, ইনচার্জ- নিউরোলজীইউনিট, ফিজিওথেরাপীবিভাগ, সিআরপি, সাভার, ঢাকা-১৩৪৩ তে যোগাযোগকরতেপারেন।

সাড়্গাৎকারশুরন্নকরারআগেআপানারকি কোনপ্রশ্নআছে?

আমিআপনারঅনুমতিনিয়ে এই সাড়্গাৎকারশুরন্নকরতেযাচ্ছি।

হ্যা ☐

না ☐

১। অংশগ্রহণকারীর স্বাড়্গারএবংতরিখ .....

২। সাড়্গাৎগ্রহণকারীর স্বাড়্গারএবংতরিখ .....

৩। প্রতড়্গাদর্শীর স্বাড়্গারএবংতারিখ .....

প্রশ্নাবলী

শিরোনামঃ "স্ট্রোক রোগীদের সেকেন্ডারীজটিলতাসমূহ"।

	অংশ-কঃসামাজিকজনসংখ্যাতাত্তিক তত্ত্ব
১	কোডনংঃ .....
২	বয়স? ..... বছর
৩	লিঙ্গ ১= পুরন্নষ ২= মহিলা
৪	ধর্ম ১= মুসলিম ২= হিন্দু ৩= খ্রিষ্টান ৪= বৌদ্ধ
৫	বৈবাহিকঅবস্থা ১= বিবাহিত ২= অবিবাহিত ৩= আলাদাবসবাস ৪= তালাকপ্রাপ্ত ৫= বিধাব
৬	শিড়্গাগত যোগ্যতা ১= পড়তে ও লিখতেনাপারা ২= পড়তে ও লিখতেপারা ৩= প্রাইমারি ৪= এস.এস.সি

	৫= এইচ.এস.সি ৬= অন্যান্য
৭	পেশা? ১= দিনমজুর ২= কৃষক ৩= গৃহিনী ৪= ব্যবসায়ী ৫= গাড়ীচালক ৬= ভ্যান/রিক্সাচালক ৭= সরাকারীচাকুরিজীবি ৮= বেসরাকারীচাকুরিজীবি ৯= ছাত্র ১০= ইলেকট্রিশিয়ান ১১= বেকার ১২= গাড়ীর হেলপার ১৩= দর্জি ১৪= প্রবাসী ১৫= কাঠমিস্ত্রী ১৬= মাঝি ১৭= অন্যান্য (.....)
৮	**মাসিকআয়** ..... (কাছাকাছিটাকায়)
৯	**পরিবারেরধরন** ১= একক পরিবার ২= বহুপরিবার
১০	**জিলা** .....

১১	**বসবাস স্থান** ১= গ্রাম ২= শহর

মাসকিউলোস্কেলেটালসম্পর্কিতপ্রশ্নঃ

১	**স্টোকের পর শরীরেঘাহয়েছিল?** ১= হ্যাঁ ২= না
২	**অনেক স্থানেঘা?** ১= হ্যাঁ (যদি উত্তর ১ হয়তবে ৩ এরউত্তরদিন) ২= না
৩	**ঘা-এরঅবস্থান?** ১= অক্সিপিটাল ২= কাঁধ ৩= ইস্কাপুলা ৪= মেরুন্নদন্ড ৫= পশ্চাদেশ ৬= হিপজয়েন্ট ৭= হাটু ৮= গোড়ালী ৯= অন্যান্য (.....)
৪	**স্ট্রোকের পর জয়েন্টের রেঞ্জহ্রাস** ১= হ্যাঁ ২= না
৫	**স্পাস্টিক টোন?** ১= হ্যাঁ ২= না

৬	**ফ্লাসিড টোন?** ১= হ্যাঁ ২= না	
৭	**জয়েন্ট শক্ত?** ১= হ্যাঁ ২= না	
৮	**পেশীড়ায়িষ্ণুতা?** ১= হ্যাঁ ২= না	
৯	**পেশী দুর্বলতা?** ১= হ্যাঁ ২= না	
১০	**সোলডারসাবলাক্সেশন?** ১= হ্যাঁ ২= না	
১১	**সোলডারহ্যান্ডসিনড্রম?** ১= হ্যাঁ ২= না	
১২	**পসচারালহাইপোটেনশন?** ১= হ্যাঁ ২= না	
১৩	**পুসারসিনড্রম?** ১= হ্যাঁ ২= না	

নিউরোলজিক্যালসম্পর্কিতপ্রশ্নঃ

১	**স্ট্রোকের পর ইউরিনারীনালীরসংক্রমণ?** ১= হ্যাঁ	

	২= না
২	**অটোনোমিকডিসরিফলেক্সিয়া?** ১= হ্যাঁ ২= না
৩	**হাইপোথারমিয়া?** ১= হ্যাঁ ২= না
৪	**হাইপারথারমিয়া?** ১= হ্যাঁ ২= না
৫	**ডিপরেশন?** ১= হ্যাঁ ২= না

কার্ডিও- রেস্পাইরেটোরিএবংভাস্কুলারসম্পর্কিতপ্রশ্নঃ

১	**স্ট্রোকের পর শ্বাস-প্রশ্বাসেরজটিলতা?** ১= হ্যাঁ ২= না
২	**নিওমোনিয়া?** ১= হ্যাঁ ২= না
৩	**পালমোনারিইমবোলিজম** ১= হ্যাঁ ২= না

Permission Letter

Permission letter

September 10, 2015

Head of the department of Physiotherapy

Centre for the Rehabilitation of the Paralysed (CRP)

Chapain, Savar , Dhaka-1343.

Through: Head, Department of Physiotherapy, BHPI.

Subject: Seeking permission of data collection to conduct my research project.

Dear Sir,

With due respect and humble submission to state that I am Sabrina Akter Runa, student of 4th Professional B.Sc. in Physiotherapy at Bangladesh Health Professions Institute (BHPI). The ethical committee has approved my research project entitled on **"Common secondary complication of stroke patients"** under the supervision of Farjana Sharmin Rumana, In-charge of Neurology unit , Department of Physiotherapy, CRP. Conducting this research project is partial fulfillment of the requirement for the degree of B.Sc. in Physiotherapy. I want to collect data for my research project from the patients of CRP. So, I need permission for data collection from the Neurology unit of Physiotherapy department of CRP-Savar campus. I would like to assure that anything of my study will not be harmful for the participants.

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

Sincerely Yours

Sabrina Akter Runa

4th Professional B.Sc. in Physiotherapy

Roll-03, Session: 2010-2011

Bangladesh Health Professions Institute (BHPI)

CRP, Chapain, Savar, Dhaka-1343.

Sabrina Akter Runa She may be allowed for data collection 10/09/15

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

Approved 10/09/15

Rumana 10.09.15 Sr. PT

Contact with Mr. M N Masud Alam as a counterpart of the data collection proces