

**ACTIVITY OF DAILY LIVING OUTCOME IN CHILDREN WITH
CEREBRAL PALSY FOLLOWED BY A TWO-WEEK IN PATIENTS
PEDIATRIC SERVICES AT CRP**

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DU Roll no: 171

Reg. no: 5259

Session: 2012-2013

BHPI, CRP, Savar, Dhaka-1343



Bangladesh Health Professions Institute (BHPI)

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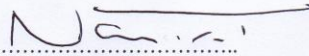
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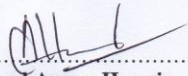
February, 2017

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
“ACTIVITY OF DAILY LIVING OUTCOME IN CHILDREN WITH CEREBRAL PALSY FOLLOWED BY A TWO-WEEK IN PATIENTS PEDIATRIC SERVICES AT CRP”

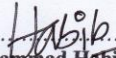
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Declaration

I declare that the work presented here is my own. All sources used have been cited appropriately. Any mistakes or inaccuracies are my own. I also declare that for any publication, presentation or dissemination of information of the study. I would be bound to take written consent from the Department of Physiotherapy, Bangladesh Health Profession Institute (BHPI).

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Acknowledgement

Firstly, I would like to pay my gratitude to almighty God who has given me the ability to complete this project in time with great success. The second acknowledgement must go to my family members who had always inspired me for preparing the project properly.

I would like to express the deepest gratefulness to my Research supervisor Nasirul Islam, Principal and Associate Professor, Bangladesh Health Professions Institute, he continually and convincingly guides me in regard to research. Without his powerful supervision and excellent guidance, I could not be able to complete this project.

I am extremely grateful to my honorable teacher Md. Shofiqul Islam, Assitant Professor of Physiotherapy Department, BHPI; Mohammad Habibur Rahman, Assistant Professor of Physiotherapy Department, BHPI; Ehasanur Rahman, Assistant Professor of Physiotherapy Department, BHPI & Umma Kulsum, Research Monitoring and Evaluation Officer, CRP for the good advice, support & guidance to conduct this research.

I would like to give special thanks to my honorable teachers Md. Obaidul Haque, Associate Professor & Head, Department of Physiotherapy, BHPI; Mohammad Anwar Hossain, Associate Professor, BHPI and Head of the Physiotherapy Department, CRP and all of my teachers for helping me in this study.

My special thanks to in-charge and all the staffs of Pediatric unit of Physiotherapy.

I am grateful to intern Physiotherapist, Pediatric Department of Physiotherapy, CRP, Savar, Dhaka for their excellent guidelines and help during my data collection.

I would like to thank to all participants of the study for their enormous co-operation during data collection. I would also like to special thanks to BHPI librarian for her heartily help and her associates for their kind support.

Finally, I would like to state my grateful feelings towards my friends Farzana Akter, Shanchita Bhowmik, Tithi Anthonia Corraya, Khadeza Akter, Bipul Debnath and my seniors for their continuous suggestions and supports.

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Acronym

ADL	Activities of Daily Living
ANSNAP	The Australian National Subacute and Non-Acute Patient
BHPI	Bangladesh Health Professions Institute
BMRC	Bangladesh Medical Research Council
CP	Cerebral Palsy
CRP	Centre for the Rehabilitation of the Paralysed
ICF	International Classification of Functioning
IRB	Institutional Review Board
LOS	Length of staying
MDT	Multi – Disciplinary Team
PT	Physiotherapist
UN	United Nations
WeeFIM	Functional Independence Measure for Children
WHO	World Health Organization

ABSTRACT

Purpose: Cerebral palsy is a disorder of movement, muscle tone or posture that is caused by damage that occurs to the immature, developing brain, most often before birth. To assess the Activity of daily living outcome after taking 14 days inpatients services at CRP indoor pediatric unit. *Objectives:* The aim of the study is to observe the improvement of Activity of daily livings among Children with Cerebral palsy after taking inpatients pediatric services for 2 weeks. *Methodology:* The study was a Observational study design. Total 40 samples were selected purposively then randomly assigned to single group for pretest, posttest. The study area was inpatient pediatric Unit, Physiotherapy Department, Centre for the Rehabilitation of the Paralysed (CRP), Savar & Mirpur, Dhaka. Data were collected by questionnaires; WeeFIM scale was used for ADL measurement of the patients. Pre-test was performed within 2 days of admission. The same procedure was performed to take posttest at the discharge date. *Result:* The finding of the study was carried out by using Descriptive analysis & Wilcoxon signed rank test to compare the pretest and posttest single Group observation and analyzed by interpreting the probability level of significance. The results were found to be significant at probability level 0.05. Outcome of Self-care was 6%, Mobility was 3%, Cognitive 7% & Total 5%. In addition, the decreasing level of dependency showed on result. Moreover, the Outcome in relation to age, sex and type of CP also showed in the result. *Conclusion:* The study concluded as inpatients pediatric services is significantly capable of producing beneficial effects on the improvement of CP patients Activity of daily livings.

1.1 Background

Cerebral palsy is one of the common neuro developmental disorder among children that associated with motor impairment & disability over the life span. This disorder results from the injury or defect of the developing brain that causes the abnormal formation of nervous system which causes continuous abnormality of limbs strength, control or both (Aisen et al., 2011).

The most recent definition of CP is the outcome of an International Workshop: “Cerebral palsy describes a group of permanent disorders of the development of movement and posture, causing activity limitations that are attributed to non-progressive disturbances that occurred in the developing fetal or infant brain. The motor disorders of CP are often accompanied by disturbances of sensation, perception, cognition, communication, and behavior; by epilepsy, and by secondary musculoskeletal problems.” This definition recognizes that assessing the extent of activity restriction is part of the CP evaluation. A CP classification with four major components was also proposed: (1) motor abnormalities, (2) accompanying impairments, (3) anatomical and neuro-imaging findings, and (4) causation and timing (Rosenbaum et al., 2007).

CP is thought to affect 3 to 4 per 1000 of live birth (Aisen et al., 2011). Although it is estimated that CP is 5 to 10 times more common in underprivileged parts of the world, the exact burden is unknown in most of the poor and medium income countries (Cruz et al., 2006). Among American children from birth to 5 years, there are approximately 50,000 children with cerebral palsy, 100,000 with significant cognitive adaptive disability, 40,000 with autistic spectrum disorders, 40,000 with sensorineural hearing loss, and 10,000 with legal blindness (Msall et al., 2001). Worldwide, 85% of disabled children are from developing countries, but less than 5% of them get rehabilitation services (Maloni et al., 2010).

Although the pathophysiology of the brain in CP patients is static but the clinical manifestation of this disease is not, CP related to motor ability impairments may change

over time. Several secondary conditions, which are not part of the initial state of a disabling condition but occur as a result of the condition may adversely affect function and quality of life (Doralp et al., 2010).

CP is categorized as spastic, ataxic, athetoid & mixed, and the distribution is categorized as bilateral or unilateral. Most cases of CP among children born preterm are of the spastic type, rather than the athetotic or dyskinetic types (Hack & Costello, 2008). The most common spastic subtypes in these children are diplegic (bilateral limb involvement) & hemiplegic (unilateral limb involvement). The diagnosis of CP is typically made after the age of 2 years, but identification of the patterns of abnormal motor posture and function associated with CP can be made as early as 6 months of age (Rosenbaum et al., 2007).

Spastic cerebral palsy is the most common type of CP. Spastic cerebral palsy refers to the increased tone or tension in a muscle when normal muscles work in pairs. Allowing free movement in the desired direction when one group contracts and the other group relaxes. The flow of muscle tension is disrupted due to complications in brain-to-nerve-to-muscle communication. Muscles affected by spastic cerebral palsy become active together and restricted in actual movement. This causes the muscles in spastic cerebral palsy patients to be constantly tense or spastic. Mild cases of spastic cerebral palsy patients may have affect only a few movements or severe cases that can affect the whole body (Darsaklis et al., 2011).

The second most common type of cerebral palsy is athetoid or dyskinetic. Injuries to the basal ganglia can result in athetoid cerebral palsy which causes involuntary muscle movements. The movements often interfere with speaking, feeding, grasping, walking and other skills requiring coordination. Now-a-days about 4% of people have cerebral palsy. Ataxia is defined by inability to activate the correct pattern of muscles during movement. Injuries to the cerebellum can result in ataxic cerebral palsy which causes poor coordination. That in turn affects balance, posture and controlled movements. Ataxic cerebral palsy can cause unsteadiness when walking and difficulties with motor tasks. Other type of CP is mixed CP. Injuries to multiple brain areas usually the cerebral cortex

and basal ganglia can result in more than one kind of abnormal muscle tone. For example, someone could have spasticity, dystonia or dystonia and rigidity.

Cerebral palsy is a neurological disorder the signs or symptoms of cerebral palsy may appear soon after birth or may take several months (Mandal, 2017). The most common early sign of cerebral palsy is developmental delay. Delay in reaching key growth milestones such as rolling over, sitting, crawling and walking are cause for concern. Physicians will also look for signs such as abnormal muscle tone, unusual posture, persistent infant reflexes and early development of hand preference (My child, 2017).

Common signs of severe CP that may be noticed shortly after birth include: problems sucking and swallowing, weak or shrill cry, seizures and unusual positions. Often the body is either very relaxed or floppy or very stiff. In some severe cases many signs and symptoms are not readily visible at birth except and may appear within the first three to five years of life as the brain and child developed (My child, 2017). Severe motor and coordination impairment also occur (Mandal, 2017).

The symptoms of cerebral palsy include: excessive drooling, difficulty swallowing, sucking or speaking, tremors, and trouble with fine motor skills such as fastening buttons or holding a pencil, stiff or tight muscles, low muscle tone, exaggerated reflexes, uncontrolled body movement, toe walking, limping or dragging a foot while walking, walking with a scissor gait, turning in their legs as they walk. Children with cerebral palsy can also have feeding problems, mental retardation, seizures, learning disabilities and problems with their vision and hearing. The symptoms don't worsen with age but symptoms can range from mild to severe (Iannelli, 2008).

Movement and posture problems in CP include walking and balance, gross and fine motor control, and muscle spasticity. These problems may lead to impairments in physical fitness and physical activity levels in persons with CP. Reduced physical fitness and physical activity can interact to cause a cycle of de-conditioning: low physical fitness might result in high physical strain during activities of daily living (ADL), possibly leading to a reduction in activity and consequently, further decreasing physical fitness. Moreover, physical fitness is known to contribute to health and quality of life of persons with chronic conditions (Nooijen et al., 2014).

Children with CP may have a wide range of associated impairments including epilepsy, feeding disorders, orthopedic deformities, visual limitations, learning disorders, intellectual disability, and attention/behavioral dysfunction. Given the range and severity of clinical findings, medical/rehabilitative care is best conducted by a team, with expertise in the diverse problems and challenges these children face. While current long-term goals are to maximize mobility and educational, social, and vocational opportunities (Liptak, 2008).

In everyday activities Cerebral palsy children have certain limitation and also limited participation activities like social and leisure.

Activity of daily living (ADL) are tasks that are major to supporting participation over school, home and community environments. ADL are conceptualized in the 'Activities and Participation' domain of the ICF and defined as life tasks required for self-care and self-maintenance such as grooming, bathing, eating, and doing chores. These tasks are classified as either (1) personal ADL tasks, which are oriented towards self-care (e.g. grooming, bathing); or (2) instrumental ADL tasks, which are oriented towards sustaining independence and require a higher level of physical and cognitive competency than personal ADL (e.g. preparing meals, taking care of pets) (Law et al., 2017). Personal ADL are more commonly performed by younger children, while adolescents also engage in an increasing number of instrumental ADL tasks (James et al., 2014).

Activities of Daily Living also referred to as Self Care Skills, play a major role in a child's overall functional growth, confidence and independence. These essential skills include the child's ability to feed themselves using utensils appropriately and to perform toileting, bathing and grooming activities. When children are born, they depend on their caregivers for most of their ADL's, except for being able to suck from the nipple or bottle. Gradually but slowly, children become more independent. At a certain age, most children begin having the motivation to do things by themselves and enjoy the feeling of achievement. A big part of a caregiver's role is to help the child to gain independence. But due to brain damage CP children are not able to gain these.

ADL can be measured by assessing an individual's Performance, power or capability. Performance describes as the action or process of carrying out or accomplishing an action,

task, or function that essential in daily life, capacity describes as the ability or power to do, experience, or understand something, controlled environment, and capability describes the extent of someone's or something's ability in his or her daily environment (Holsbeeke et al., 2009). Measures of performance are the most relevant for children as they perform every day typical function (James et al., 2014).

The purpose of this investigation is to examine systematically the responsiveness of the inpatients services provided by CRP indoor pediatric unit through MDT approach for 14 days which assessed by WeeFIM Instrument. The WeeFIM instrument provides an indication of functional outcomes in children and is based on the FIM™ instrument (“FIM”). The FIM instrument is broadly used in adult rehabilitation settings. There are 18 measurement items in WeeFIM instrument and can be administered within 20 minutes or less. The goal of the WeeFIM instrument is to “measure changes in function over time to find out the burden of care in terms of physical, technologic, and financial resources.” The recent report of reliability & validity of the WeeFIM instrument indicate it as excellent & it provides stable score in assessment. Good equivalence reliability has also been shown between WeeFIM ratings obtained from both direct observation and from reports by parents & teachers. The responsiveness of the WeeFIM instrument has not been previously examined (Sperle et al., 1997).

A large number of children with cerebral palsy need better physiotherapy treatment for better survival in the community. Cerebral palsy cannot be cured but treatment can improve child capability. The earlier treatment can be made more improvement of the child with cerebral palsy. In realizing this truth some NGO’s such as CRP (Centre for Rehabilitation of the Paralysed), Bangladesh Protibondhi Foundation, BRAC Inclusive Education Programme, Assistant for Blind Children, Impact Foundation Bangladesh, Shishu Bikash, Shishu pally and Shishu hospital, Institute of child and mother health and also some other organization have taken step to provide physiotherapy service (Tanner & Harpham, 2014). Among these NGO’s only CRP have an individual pediatric unit for the children with cerebral palsy which provide Physiotherapy, Occupation therapy and Speech and language therapy service.

1.2 Rationale

The incidence of cerebral palsy worldwide is between 2 to 2.5 cases per 1,000 births (Shoals, 2007) and gives burden on parents both physically and psychologically. Cerebral palsy is a chronic condition that have serious consequences for physical, cognitive and behavior functioning. In recent years there has been increasing interest in measuring the functional status of children with cerebral palsy.

Cerebral palsy is neuro developmental condition, is the common “physical” disability in childhood and severely affect a child's development. It is a neurological disorder and the prevalence of this disorder is increasing day by day. Due to their challenging behavior and interest those children need always high supervision and care-giving.

When comparing participation between children with CP and their able-bodied peers, it has been found that frequency of participation in discretionary activities and social situations, such as community activities, games and pursuing cultural events, is significantly reduced (Parkes et al., 2010). Effective assessment of outcomes in children with chronic health conditions is important to monitor their progress, evaluate interventions, and guide health policy. This measurement is necessary in pediatric practice to plan interventions aimed at improving a child’s level of functioning and social participation (Kinsman et al., 2000). Understanding activities and participation and their relationship with impairments caused by CP is necessary in order to provide answers to questions from children and their parents about current and future functioning, to establish realistic goals for treatment, and to improve activities and participation (Bax et al., 2005).

1.3 Research Question

What are the outcome of activity of daily living in children with cerebral palsy followed by a two week inpatients pediatric services at CRP?

1.4 Objectives

1.4.1 General objective:

To find out the activity of daily living using a WeeFIM scale among CP children attended for inpatient services at CRP indoor pediatric unit.

1.4.2 Specific objectives:

- To find out the level of activity among the children with cerebral palsy before and after taking inpatient services.
- To identify activity of daily living outcome according to age after taking inpatient services.
- To identify activity of daily living outcome according to Gender after taking inpatient services.
- To identify activity of daily living outcome according to type of CP after taking inpatient services.

1.5 List of variables

Independent variables

Dependent variable

Age of the Patients

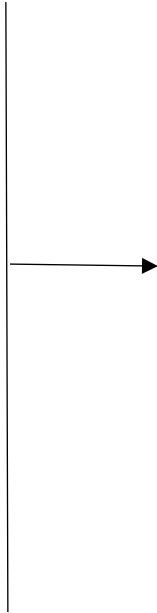
Gender of the patients

Type of CP

Number of treatment session

Weight of patients

Activity of daily living Outcome



1.6 Operational definition

Cerebral palsy

Cerebral Palsy is defined as a group of non-progressive, but often changing, motor impairment syndromes secondary to lesions or anomalies of the brain arising in the early stages of its development.

Activity of daily livings (ADL)

Activities of daily living (ADL) are routine activities that people tend do every day without needing assistance. There are six basic ADLs: eating, bathing, dressing, toileting, transferring (walking) and continence.

Functional Status

Functional status is an individual's ability to perform normal daily activities required to meet basic needs, fulfill usual roles, and maintain health and well-being. Functional status subsumes related concepts of interest: functional capacity and functional performance. While functional capacity represents an individual's maximum capacity to perform daily activities in the physical, psychological, social, and spiritual domains of life, functional performance refers to the activities people actually do during the course of their daily lives. A maximal exercise test measures physical functional capacity, while a self-report of activities of daily living measures functional performance. Functional status can be influenced by biological or physiological impairment, symptoms, mood, and other factors. It is also likely to be influenced by health perceptions. For example, a person whom most would judge to be well but who views himself as ill may have a low level of functional performance in relation to his capacity.

Cerebral palsy is the most common neuro developmental motor disability in early childhood and it persist throughout the whole lifespan. This was first reported by an Orthopedic surgeon name William little, in 1843 as cerebral paresis (Kurt, 2016). The condition requires medical, educational, social, and rehabilitative resources throughout the lifespan (Hurley et al., 2011). Baxter et al. (2007) stated that cerebral palsy (CP) describe a group of permanent disorders of the development of movement and posture, causing activity limitations that are attributed to non-progressive disturbances that occurred in the developing fetal or infant brain.

There is no definite cause of cerebral palsy rather some risk factors contribute to the development of CP during prenatal, natal or postnatal period (Tatla et al., 2013). 70 to 80% of cerebral palsy cases are acquired prenatally with unknown causes and birth complications, including asphyxia, are currently estimated to account for about 6 % of patients with congenital cerebral palsy, on the other hand neonatal risk factors for cerebral palsy include first cousin marriage birth after fewer than 32 weeks gestation, birth weight of less than 5 lb with intrauterine growth retardation, intracranial haemorrhage and trauma and about 10 to 20% patients, Pre-eclampsia affects 3-5% of pregnant women and is characterized by maternal hypertension and proteinuria occurring after 20 weeks of gestation (Strand et al., 2013).

It is estimated that the causes of CP in developing countries are different from developed countries, although this has not been investigated deeply. A recent study from Nigeria found that birth asphyxia (39.0 %), bilirubin encephalopathy (24.4 %) and post-infectious brain damage (18.3 %) were the major causes of CP (Lagunju & Fatunde, 2009). Bangladesh is a densely populated South Asian country where nearly 2.5 million children living with serious disability, but only 1500 children have access on the country's Government sponsored special education(Ackerman et al., 2005).It is estimated by the World Health Organization (WHO) that 10% of children worldwide (about 200 million) are suffering from physical disability, mental weakness or developmental delays and that an even larger number suffer from diminished learning capabilities (Unicef, 2006).

The pathological changes start when the specific causes resulting in neural damage and ending up with impaired neural connectivity as well as transmission. 10-15% of cerebral palsy cases are found during birth including prolonged labour, sudden birth, birth asphyxia, baby did not cry immediately after birth or by forcep delivery (Volpe, 2008).

Postnatal causes include toxic, infectious meningitis, encephalitis, traumatic such as drowning. There is also a relation between coagulopathies causing cerebral infarction and particularly hemiplegic type of CP. Postnatal events account for 12% – 21% of CP. But in a large number of cases, the causes of CP remain unknown (Michelson & Ashwal, 2009).

Head injuries in babies a significant cause of cerebral palsy in the early months of life (American pregnancy association, 2017). There are various complications cerebral palsy such as cognitive impairment, blindness and hearing loss to impairment of short term memory, language delays, learning difficulties and behavioral disorders (My Child, 2017). Cerebral palsy can range from mild to severe. Children with mild cerebral palsy may lead a near-normal life with appropriate treatment. Children with severe symptoms require life-long care. The child may or may not be able to walk, speak and self-care. Proper care and treatment can maximize the child's potential (Livestrong.com, 2017). Prognosis of the child depends on the level of brain damage. Cerebral Palsy can't be cured but due patients can enjoy near-normal lives if their neurological problems are properly managed (Right diagnosis, 2017).

Increased muscle tone responsible for contractures and deformities. In case of low muscle tone due to the effects of gravity the muscles appear flabby, soft, lack springiness, etc. such as dropped shoulders (Xinzhi, 2007).

Abnormal muscle tone affects the improvement of CP children. Muscle tone may be divided into four types, they are, Normal tone, hypertonia, hypotonia & Dystonia. Normal tone refers to free passive movement of the joints without sensing any form of sudden increase or decrease in resistance. Hypertonia refers to an increased resistance to passive motion dependent or independent of the direction of motion. Hypotonia refers to reduced resistance to passive motion often manifesting as floppiness. Dystonia refers general irregularities or disturbance in muscle tone alternating from high to low (Xinzhi, 2007).

Drooling is another but common symptom among children with CP. Children has movement and postural disorder associated with many disabilities such as- including intellectual disability, hearing and visual deficits, nutrition, feeding and swallowing problems, respiratory infections and epilepsy. Cerebral palsy suffers for long term and it affect activities of daily living and quality of life (Bell et al., 2010).

Eating is a primary capacity for self-reliance. A normal infant does not need any training to master eating skills. The process entails going from mastery of sucking (sucking reflex) for the ingestion of liquids. From then, the infant learns how to bring food to the mouth (Babinski reflex), bite and masticate solid food. The primary sucking reflex disappears as the infant learns how to master the art of eating. Completion of the motor process involved in the act of eating entails coordination and equilibrium responses between the head, torso and upper limbs; coordination between hand and mouth reaching, grasping and pinching to split/divide motor activity; and lastly chewing, sucking, swallowing and other motor coordinative actions between mandible, oral cavity, lips and tongue. Due to lack of control at the levels of the mouth, tongue, head and torso, poor sitting equilibrium and incoordination between hand and eyes Cerebral Palsy afflicted children are incapable of putting food properly into their mouths and thus have eating difficulties. It is extremely important to aid the patients in developing eating skills from as early a stage as possible due to the fact that food is a basic building block for the life process and good nutrition is an assurance for health and life (Xinzhi, 2007).

Children with normal development begin to be cooperative during the dressing up process at the age of one. Around one and a half, the infant may voluntarily pull off shoes and socks. At the age of two the infant can pull off relatively loose clothing. At three years of age, the infant can put on loos clothes. By five years of age, the infant can carry out relative difficult procedures such as tying shoelaces, etc. Infants are generally able to put on and pull off clothing at this age. Due to motor developmental retardation or dyskinesia, Cerebral Palsy afflicted infants have difficulty in the dressing up process as it requires time and extra effort to surmount the inherent difficulties they face (Xinzhi, 2007).

Urination in the infant is a reflex action. As from eighteen months of age, after appropriate training, the infant usually indicates that they would like to ease themselves. If there is no appropriate disposition or facility, the infant may urinate on itself. The infant becomes

aware of the need for appropriate toiletry from the age of two to and a half, 50% of most infants no longer wet their beds at night. 75% of three-year olds no longer wet their beds at night and 90% as from the age of five, no longer wet their beds. Cerebral Palsy patients may possibly suffer from several concurrent afflictions and may never be toilet self-reliant depending on the degree of their disability (Xinzhi, 2007).

Speech disorders are a commonly encountered feature occurring in combination with Cerebral Palsy affliction with a 70% -75% occurrence rate. Such a disorder inhibits their speech communication skills and is a handicap that directly affects their lives and capacity to study later years. It may thus be considered an influential handicap causative factor in Cerebral Palsy affliction (Xinzhi, 2007).

The first step towards rehabilitation of Cerebral palsy children is to evaluate the condition. Evaluation refers to assessing the present state of functional status and potential capacity of the CP children without necessarily determining the etiological or pathological cause of disease. The complexity faced by different CP individual are varying in pattern. The obstacles related boundaries with respect to their physical, mental, educational etc. aspect. Through evaluation by gathering information in all aspect about the individual, the plan for appropriate plan for treatment build up (Xinzhi, 2007).

A multidisciplinary team approach is effective for the treatment of CP. The multidisciplinary team includes health care professionals such as pediatricians, rehabilitation specialists, neurologists, physiotherapists, occupational therapists and speech therapists. The multidisciplinary team develops an individualized treatment plan depending on the severity of cerebral palsy (Physician & Nurses, 2017). To achieve their goal strive to: 1) Help children with cerebral palsy achieve maximum physical, intellectual and emotional development 2) Educate patients, parents and the community about children with cerebral palsy 3) Develop and promote clinical research programs that will advance the pharmacological, surgical and therapeutic treatment of cerebral palsy 4) Continue making advances in the diagnosis, management and treatment of cerebral palsy (Children's Hospital, 2017). Cerebral palsy is not progressive disorder (Children's Hospital Colorado, 2017). Medications can lessen the tightness of muscles that is used to improve functional abilities, treat pain and manage complications related to spasticity (Myoclinic, 2017). Moreover, secondary conditions such as spasticity can get worse over time. As the

spasticity continues progressive deformities of the muscles, bones and joints can occur (Children's Hospital Colorado, 2017).

The first and most important treatment option for Cerebral palsy is Physical therapy which usually begins at early age and is geared toward improving independent motor function. The types of physical therapies used for children depends on their specific movement problems and symptoms that coincide with cerebral palsy. Physical therapy can improve Strength, Mobility, Posture, Balance, Flexibility. Before giving physiotherapy intervention Physiotherapist make assessment to identify child's motor capabilities and determine the most appropriate measure for therapy based on the child's needs (CP Guide, 2017).

Physical Therapy (PT) is a general name used to define treatment systems geared at treating muscles, nerves, joints, and bones with exercise, electrical stimulation, hydrotherapy, and the use of massage, heat, cold, and electrical devices. The treatment also consists of exercising specific parts of the body such as the legs, arms, hands or neck, in an effort to strengthen, regain range of motion, relearn movement and/or rehabilitate the musculoskeletal system to improve function (Xinzhi, 2007).

Physical therapy (PT) performs a major role in the management of cerebral palsy; it focuses on function, movement, and favourable use of the child's capability. Physiotherapist use physical approaches to improve & restore physical, psychological & social well-being. For feeding, bathing, dressing and other activities at home physiotherapist also teach parents how to handle their children as well as advice on mobility device also (Anttila et al., 2008).

Whenever possible Physiotherapists emphasize the need for the practice to be evidence based (Anttila et al., 2008). Previous reviews have addressed the effectiveness of Physiotherapy for children with CP which focuses on neuro developmental therapy. Previous reviews have addressed the effectiveness of PT interventions for children with CP focusing on neurodevelopmental therapy (Brown & Burns., 2001), strength training (Dodd et al., 2002), conductive education, various PT interventions, or orthotic devices (Anttila et al., 2008). These systematic reviews covered various study designs, with only a few assessing the study quality, and only 12 randomized controlled trials (RCTs) were identified between 1973 and 1998. More recent systematic review topics included focused interventions, such as constrained-induced movement therapy (Hoare et al., 2007), postural

control (Harris & Roxborough., 2005), passive stretching (Pin et al., 2006), hydrotherapy (Getz et al.,2006), hippo therapy (Snider et al., 2007), and orthotic devices (Autti Ramo et al., 2006). Overall, the effectiveness and efficacy of therapeutic interventions for children with CP has been difficult to determine owing to the lack of high-quality research. Siebes et al. (2002) identified an improvement in the methodological quality of the therapeutic intervention studies during the last decade, and Kunz et al. (2006) found the quality of PT trials to be better than their reputation.

Occupational therapy is a treatment that focuses on helping cerebral palsy patients achieve independence in all areas of their life. Occupational therapy for cerebral palsy patients can provide them positive, fun activities to enhance their physical, cognitive and fine motor skills and increase self-esteem and sense of accomplishment (CP Guide, 2017).

Occupational therapists evaluate a child's needs by testing his or her fine motor skills, perception and oral motor skills. By observing how the child responds to touch and movements, the therapist can determine a treatment plan. The treatment plan typically involves positioning, reaching, grasping and releasing (CP Guide, 2017).

Birth injuries can also affect the parts of the brain that control speech and the muscles that allow us to speak. Many children with CP have issues with speech due to their birth injury. Speech therapy can teach children how to pronounce certain words and communicate more effectively (CP Guide, 2017).

Speech therapists can diagnose speech issues and help improve language skills. They can also help with other skills, such as breathing and eating, because these issues involve the muscles in the mouth and face. Speech therapy also tackles problems that affect a child's ability to eat. Many children with CP struggle to maintain a healthy weight because it's hard to chew or swallow food. Oral motor exercises can improve the ability to chew and swallow food effectively (CP Guide, 2017).

Treating children with CP requires a long-term process by a multidisciplinary team during growth, focusing on all developmental aspects of child and planning interventions according to prime needs of both children & their family. The long-term goal is the optimal functioning in Adulthood (Becher, 2002).

The International Classification of Functioning (ICF) model (International Classification of Impairment Disability and Handicap, WHO, Geneva, 1999) offers a framework for a multidisciplinary, need-oriented team approach. Based on this model, the Rehabilitation Activities Profile for children (Children's RAP) has been developed (Roelofsen et al., 2001).

The strength and stability of a person's body is of paramount concern for individuals with Cerebral Palsy; the more stable a body is, the better a person can ambulate and complete tasks both big and small. Orthotic devices worn on the body help build stability while increasing strength, comfort and independence (My Child, 2017).

In terms of mobility, lower limb orthotic devices can be used separately, or together, to help a child maintain the stability. This is achieved by limiting certain movements that are irregular so that a child can develop and re-learn how to stand, and take steps. Additionally, bringing affected limbs into proper alignment helps correct flexible deformities, stops the progression of fixed deformities, and helps transfer a person's body weight to prevent an unwanted load on affected joints and muscles (My Child, 2017).

For children with Cerebral Palsy, mobile joint deformities caused by unbalanced muscle tone is a vexing problem that can be treated using orthotics. One common condition is the tendency for children with Cerebral Palsy to walk on the tips of their toes, as opposed to their feet – this can be treated over time by using foot-ankle devices that help stabilize, and strengthen, the muscles and joints of the foot and ankle. Because 80 percent of children with Cerebral Palsy have spasticity, orthotic intervention can have a major effect on a child's body mechanics. Once the child has a stable basis for movement, he or she can develop higher levels of functioning (My Child, 2017).

According to estimates, about two-thirds of children with Cerebral Palsy have the ability to walk and ambulate. But because of the nature of Cerebral Palsy and its effect on the muscles, joints, and patterns of motion establishing a gait that is meaningful can be a challenge. When an orthotic device is a successful part of treatment, it should help children establish normal patterns of joint and muscle motion (My Child, 2017).

There are many potential problems a child with CP may face and seek intervention for. The field has chosen a philosophical shift away from almost exclusively redressing physical impairments underlying functional problems to adopting an additional focus on maximizing children's environment, their independence in daily activities, and their community participation (Novak et al., 2013).

Furthermore, clinicians applying the recommended goal-based approach seek to choose interventions guided by what would best help the family achieve their goals (Wallen et al., 2011).

From an ICF perspective, CP impacts on a person's 'functioning', [inclusive of body structures (e.g. limbs), body functions (e.g. intellectual function), activities (e.g. walking), and participation (e.g. playing sport)], which in turn may cause 'disabilities', such as impairments, activity limitations, and participation restrictions. Moreover, each person with CP lives within a personalized environment and thus their context also contributes to determining their independence, comprising personal factors (e.g. motivation) and environmental factors (e.g. architectural accessibility) (Vargus-Adams, 2009).

3.1 Study design

It was an Observational study design. This study was a single group and data were collected by observing participants at admission & at discharge; before & after taking inpatients pediatric services using questionnaire. This design did not have a control group to compare with the experimental group.

3.2 Study area

The Researcher was conducted the patient with Cerebral Palsy at Indoor Pediatric Unit of Centre for the Rehabilitation of the Paralyzed (CRP) - Savar and Dhaka-Mirpur.

3.3 Study Population

The study populations were Cerebral palsy patients who admitted in CRP indoor pediatric unit for treatment.

3.4 Sample size

Researcher took 40 participants from Centre for the Rehabilitation of the Paralyzed (CRP), Savar, and Mirpur. These 40 participants were in a single group for pre-test & post-test intervention.

3.5 Sampling technique

Participants were selected from CRP because they were easily accessible for the researcher. Purposive sampling targets a particular group of people. The samples were collected on the basis of some inclusion and exclusion criteria.

3.5.1 Inclusion criteria

- All consecutive cerebral palsy patients aged between 3years to 10 years
- All types of cerebral palsy are included.
- Never taken physiotherapy before.
- Medically Stable patients

3.5.2 Exclusion criteria

- Age range less than 3 or more than 10 years.
- Previously taken physiotherapy
- Medically unstable patient
- Patient who have other pediatric condition.

3.6 Inpatients pediatric Services

The pediatric services in CRP provided by a MDT approach. The pediatric unit offers comprehensive & quality rehabilitation services for children with Cerebral palsy in inpatient settings in a well organized manner Knowledgeable Physiotherapists, Occupational therapist and Speech & language therapists provide these services to enhance the quality of life as well as ADL. Two week residential inpatient program designed to integrate children with cerebral palsy into their community & become more independent in doing ADL. Two week inpatients services chart given below.

3.7 Data Measurement tools

Data collection method was questionnaire and tools were pen, papers, consent form and outcome was measured by Bangla translated modified WeeFIM scale which is Functional Independent Measurement scale (FIM) for children.

WeeFIM scale

The Functional Independence Measure for children (WeeFIM) is an assessment tool that aims to evaluate the functional status of patients throughout the rehabilitation process. WeeFIM is comprised of 18 items, grouped into 3 subscales – Self-Care, Mobility and cognition.

The **Self-care** subscale includes

Eating

Grooming

Bathing

Dressing, upper body

Dressing, lower body

Toileting

Bladder management

Bowel management

The **Mobility** subscale includes

Transfers - bed/chair/wheelchair

Transfers – toilet

Transfers - bath/shower

Walk/wheelchair

Stairs

The **cognition** subscale includes

Comprehension

Expression

Social interaction

Problem solving

Memory

Each item is scored on a 7-point ordinal scale, ranging from a score of 1 to a score of 7. The higher the score, the more independent the patient is in performing the task associated with that item.

- 1 - Total assistance with helper
- 2 - Maximal assistance with helper
- 3 - Moderate assistance with helper
- 4 - Minimal assistance with helper
- 5 - Supervision or setup with helper
- 6 - Modified independence with no helper
- 7 - Complete independence with no helper

The total score for the WeeFIM Self-care subscale (the sum of the individual Self-care subscale items) will be a value between 8 and 56.

The total score for the WeeFIM Mobility subscale (the sum of the individual Mobility subscale items) will be a value between 5 and 35.

The total score for the WeeFIM cognition subscale (the sum of the individual cognition subscale items) will be a value between 5 and 35.

The total score for the WeeFIM instrument (the sum of the Selfcare, mobility and cognition subscale scores) will be a value between 18 and 126.

3.7.1 Data Collection Process

The Data Collector took the pre data within 2 days of admission & post data on the day of discharge. A Questionnaire which included Subjective information, Diagnosis which confirmed by qualified Doctor and Physiotherapist. Each participant took 2 weeks MDT treatment according to the treatment plan fixed by CRP Pediatric Unit, CRP. The data were collected from direct Observation of the children, Interview of Parents of patients, from Physiotherapist involving on treatment of the patients. The participant was assessed at the time of admission & after taking 2 weeks in patient pediatric services re-assessed at the day of discharge. The data was then re-checked by a qualified Physiotherapist.

3.7.2 Data Analysis

Data was analyzed with the software which named Statistical Package for Social Science (SPSS) version 23.0 and Microsoft Excel 2016. Every questionnaire was rechecked for missing information or unclear information. At first put the name of variables in the variable view of SPSS and the types, values, decimal, label alignment and measurement level of data. The next step was to input data view of SPSS. After input all data researcher checked the inputted data to ensure that all data had been accurately transcribed from the questionnaire sheet to SPSS data view. Then the raw data was ready for analysis in SPSS. Descriptive statistic test, Wilcoxon Test was performed for finding result. Data was presented by using the table.

Wilcoxon Test

This test also known as “Wilcoxon matched pair signed rank test” is an alternative to the paired t test, when the assumption of normality or equality of variances is not met. When there are just two measures to be compared from the same case, and the data are normally distributed or the sample size is large, we apply a paired samples t test (also known as a related sample t test). In this same situation if the data are not normally distributed we use Wilcoxon test.

Assumption 1

Each pair of observations must represent a random sample from a population and must be independent of every other pair of observations.

Assumption 2

The z test yields relatively accurate results to the extent that the sample size is large.

Assumption 3

The Distribution of the differences scores is continuous and symmetrical in the population.

Wilcoxon Test for Large Samples (n>25)

In case of large sample sizes, ranks are assumed to be normally distributed. In this case, T is replaced by z statistic given as

$$Z = \frac{T - \frac{N(N+1)}{4}}{\sqrt{\frac{N(N+1)(2N+1)}{24}}}$$

Here,

Z= Value of Wilcoxon matched pair signed rank test

T= Lowest Value of among Positive & Negative Rank.

N= Total Participants

Interpretation

Calculated z value is compared with table z value to find p value. If $p < 0.05$, we reject the null hypothesis of equality of two groups at $\alpha = 0.05$. If otherwise, we cannot reject the null hypothesis and accept it.

Calculation Wilcoxon matched pair signed rank test z value for Total WeeFIM score stated below-

Here,

$$Z = \frac{0 - \frac{40(40+1)}{4}}{\sqrt{\frac{40(40+1)(2 \times 40 + 1)}{24}}}$$

$$T = 0$$

$$N = 40$$

$$Z = ?$$

$$= \frac{0 - 410}{\sqrt{\frac{1640 \times 81}{24}}}$$

$$= \frac{-410}{\sqrt{\frac{132840}{24}}}$$

$$= \frac{-410}{\sqrt{5535}}$$

$$= -5.521$$

3.7.3 Level of Significance

In order to find out the significance of the study, the “p” value was calculated. The p values refer to the probability of the results for experimental study. The word probability refers to the accuracy of the findings. A p value is called level of significance for an experiment and a p value of < 0.05 was accepted as significant result for health service research. If the p value is equal or smaller than the significant level, the results are said to be significant.

3.8 Ethical consideration

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

In this study Observational study design was used to describe outcome of ADL Status using Modified WeeFIM questionnaire. Total number of participants was 40. Data were collected using questionnaire and a descriptive analysis & Wilcoxon signed rank test performed to interpret the result.

4.1 Socio-demographic Information

4.1.1 At a Glance Socio-demographic information

Table 1: At a Glance Socio-demographic information

Domain	Criteria	Frequency
Age Range	3-6	30
	7-10	10
Gender	Male	26
	Female	14
Type of CP	Spastic	33
	Athetoid	7
Weight of Participants	10-16	22
	17-23	12
	24-30	6

4.1.2 Age of the participants

Among 40 participants 75% was 3-6 years and 25% was 7-10 years children with cerebral palsy.

Table 2: Age of the Participants

Age Range (Years)	Frequency	Percent
3-6	30	75%
7-10	10	25%
Total	40	100%

4.1.3 Gender of the participants

Among 40 participants 65% was Male and 35% was female. This result showed two statement either males are more affected than female or parents are interested to treat male children than female.

Table 3: Gender of the participants

Gender	Frequency	Percentage
Male	26	65%
Female	14	35%
Total	40	100%

4.1.4 Diagnosis of the Participants

Among 40 participants 82.5% (33 Children) was diagnosed with spastic CP & 17.5% (7Children) were diagnosed with athetoid type of CP. This results shows that Spastic type of Cerebral palsy are most common type.

Table 4: Diagnosis of the participants

Type	Frequency	Percent
Spastic	33	82.5%
Athetoid	7	17.5%
Total	40	100%

4.1.5 Weight of the Participants:

Among the participants in 10-16kg range there were 22 children, in 17-23kg range there were 12 children and in 24-30 age range there were 6 children.

Table 5: Weight of the participants

Weight range(In Kg)	Frequency	Percentage(%)
10-16	22	55
17-23	12	30
24-30	6	15
Total	40	100

4.2 Activity of Daily living Outcome:

4.2.1 WeeFIM Outcome

Total WeeFIM

Table-6: Rank and test statistics of patients Total WeeFIM Score

Total WeeFIM post-test – Total WeeFIM pre-test	N	Mean Rank	Sum of Ranks	Test Statistics Signed-Rank Test)	(Wilcoxon Based on Negative ranks Z	P value
Positive rank	40	20.50	820.00	-5.521		0.000
Negative rank	0	.00	.00			
Ties	0					
Total	40					

Table described the comparison of the participants before (pretest) and after (post-test) WeeFIM score. The table's legend displayed Positive rank 40 that mean 40 participants total WeeFIM score increased after taking inpatients services. In addition, Negative rank 0 that mean none of the participant's total WeeFIM score decreased after taking inpatients services. Moreover 'ties' = 0 indicate that no participant's remained same as pretest WeeFIM score after taking inpatients services. P value is <0.05 which indicate that there is less than a 5% chance that the results are due to random error and it is significant. Therefore, it is can be said that, the inpatients services improved activity of daily living among participants.

Table-7: Descriptive Staistics of patients Total WeeFIM Score

Domain	Admission	Discharge	Outcome in Parcentage
Total WeeFIM (18 to 126)	34.68 (28%)	42.03 (33%)	5%

Self Care WeeFIM

Table-8: Rank and test statistics of patients Selfcare WeeFIM Score

Self Care WeeFIM post- test – Self Care WeeFIM pre-test	N	Mean Rank	Sum of Ranks	Test Statistics (Wilcoxon Signed-Rank Test)	
				Based on Negative ranks Z	P value
Positive rank	40	20.50	820.00	-5.539	0.000
Negative rank	0	.00	.00		
Ties	0				
Total	40				

Table described the comparison of the participants before (pretest) and after (post-test) Self Care WeeFIM score. The table's legend displayed Positive rank 40 that mean 40 participant's Self Care Self Care WeeFIM score increased after taking inpatients services. In addition, Negative rank 0 that mean none of the participant's Self Care WeeFIM score decreased after taking inpatients services. Moreover 'ties' = 0 indicate that no participant's remained same as pretest Self Care WeeFIM score after taking inpatients services. P value is <0.05 which indicate that there is less than a 5% chance that the results are due to random error and it is significant. Therefore, it is can be said that, the inpatients services improved activity of daily living among participants.

Table-9: Descriptive Staistics of patients Self Care WeeFIM Score

Domain	Admission	Discharge	Outcome in Percentage
Total Self Care WeeFIM (8 to 56)	13.92 (25%)	17.60 (31%)	6%

Mobility WeeFIM

Table-10: Rank and test statistics of patients Mobility WeeFIM Score

Mobility WeeFIM post-test – Mobility WeeFIM pre-test	N	Mean Rank	Sum of Ranks	Test Statistics (Wilcoxon Signed-Rank Test)	
				Based on Negative ranks Z	P value
Positive rank	21	11.00	231.00	-4.086	0.000
Negative rank	0	.00	.00		
Ties	19				
Total	40				

Table described the comparison of the participants before (pretest) and after (post-test) Mobility WeeFIM score. The table's legend displayed Positive rank 21 that mean 21 participant's Self Care Mobility WeeFIM score increased after taking inpatients services. In addition, Negative rank 0 that mean none of the participant's Mobility WeeFIM score decreased after taking inpatients services. Moreover 'ties' = 19 indicate that 19 participant's remained same as pretest Mobility WeeFIM score after taking inpatients services. P value is <0.05 which indicate that there is less than a 5% chance that the results are due to random error and it is significant. Therefore, it is can be said that, the inpatients services improved activity of daily living among participants.

Table-11: Descriptive Staistics of patients Mobility WeeFIM Score

Domain	Admission	Discharge	Outcome in Percentage
Mobility WeeFIM (5 to 35)	7.90 (23%)	9.18 (26%)	3%

Cognitive WeeFIM

Table-12: Rank and test statistics of patients Cognitive WeeFIM Score

Cognitive WeeFIM post- test – Cognitive WeeFIM pre-test	N	Mean Rank	Sum of Ranks	Test Statistics (Wilcoxon Signed-Rank Test)	
				Based on Negative ranks Z	P value
Positive rank	38	19.50	741.00	-5.429	0.000
Negative rank	0	.00	.00		
Ties	2				
Total	40				

Table described the comparison of the participants before (pretest) and after (post-test) Cognitive WeeFIM score. The table's legend displayed Positive rank 38 that mean 38 participant's Cognitive WeeFIM score increased after taking inpatients services. In addition, Negative rank 0 that mean none of the participant's Cognitive WeeFIM score decreased after taking inpatients services. Moreover 'ties' = 2 indicate that 2 participant's remained same as pretest Cognitive WeeFIM score after taking inpatients services. P value is <0.05 which indicate that there is less than a 5% chance that the results are due to random error and it is significant. Therefore, it is can be said that, the inpatients services improved activity of daily living among participants.

Table-13: Descriptive Staistics of patients Cognitive WeeFIM Score

Domain	Admission	Discharge	Outcome in Percentage
Cognitive WeeFIM (5 to 35)	12.80 (37%)	15.33 (44%)	7%

4.2.2 Functional Independence Measure of Eating score

During admission among the participants 32.5% children needed Total assistance, 37.5% children needed Maximal assistance, 12.5% children needed moderate assistance, 5% children needed minimal assistance, 10% children needed Supervision, 2.5% children was Modified independence to perform eating activity.

On the other hand, during Discharge among the participants 5% children needed Total assistance, 30% children needed Maximal assistance, 37.5% children needed moderate assistance, 7.5% children needed minimal assistance, 10% children needed Supervision, 10% were Modified independence to perform eating activity.

So We can say that the level of dependency decreased to perform eating activity after taking inpatients pediatric services.

Table 14: Functional Independence Measure of Eating score

Domain	Admission	Discharge
Total assistance	13 (32.5%)	2 (5%)
Maximal assistance	15 (37.5%)	12 (30%)
Moderate assistance	5 (12.5%)	15 (37.5%)
Minimal assistance	2 (5%)	3 (7.5%)
Supervision	4 (10%)	4 (10%)
Modified independence	1 (2.5%)	4 (10%)

4.2.3 Functional Independence Measure of Bathing

During admission among the participants 50% children needed Total assistance, 37.5% children needed Maximal assistance, 5% children needed moderate assistance, 2.5% children needed minimal assistance 5% children needed Supervision to perform bathing activity.

On the other hand, during Discharge among the participants 7.5% children needed Total assistance, 50% children needed Maximal assistance, 30% children needed moderate assistance, 2.5% children needed minimal assistance, 7.5% children needed Supervision, 2.5% was Modified independence to perform bathing activity.

So We can say that the level of dependency decreased to perform bathing activity after taking inpatients pediatric services.

Table 15: Functional Independence Measure of Bathing

Domain	Admission	Discharge
Total assistance	20 (50%)	3 (7.5%)
Maximal assistance	15 (37.5%)	20 (50%)
Moderate assistance	2 (5%)	12 (30%)
Minimal assistance	1 (2.5%)	1 (2.5%)
Supervision	2 (5%)	3 (7.5%)
Modified independence	0	1 (2.5%)

4.2.4 Functional Independence Measure of Grooming

During admission among the participants 57.5% children needed Total assistance, 30% children needed Maximal assistance, 7.5% children needed moderate assistance, 5% children needed minimal assistance to perform bathing activity.

On the other hand, during Discharge among the participants 25% children needed Total assistance, 52.5% children needed Maximal assistance, 15% children needed moderate assistance, 5% children needed minimal assistance, 2.5% children needed Supervision, to perform grooming activity.

So We can say that the level of dependency decreased to perform grooming activity after taking inpatients pediatric services.

Table 16: Functional Independence Measure of Grooming

Domain	Admission	Discharge
Total assistance	23 (57.5%)	10 (25%)
Maximal assistance	12 (30%)	21 (52.5%)
Moderate assistance	3 (7.5%)	6 (15%)
Minimal assistance	2 (5%)	2 (5%)
Supervision	0	1 (2.5%)

4.2.5 Functional Independence Measure of Dressing Upper Body

During admission among the participants 70% children needed Total assistance, 22.5% children needed Maximal assistance, 7.5% children needed moderate assistance to perform dressing activity of upper body.

On the other hand, during Discharge among the participants 45% children needed Total assistance, 42.5% children needed Maximal assistance, 7.5% children needed moderate assistance, 2.5% children needed minimal assistance, 2.5% children needed Supervision, to perform dressing activity of upper body.

So We can say that the level of dependency decreased to perform upper body dressing activity after taking inpatients pediatric services.

Table 17: Functional Independence Measure of Dressing Upper Body

Domain	Admission	Discharge
Total assistance	28 (70%)	18 (45%)
Maximal assistance	9 (22.5%)	17 (42.5%)
Moderate assistance	3 (7.5%)	3 (7.5%)
Minimal assistance	0	1 (2.5%)
Supervision	0	1 (2.5%)

4.2.6 Functional Independence Measure of Dressing Lower Body

During admission among the participants 70% children needed Total assistance, 20% children needed Maximal assistance, 10% children needed moderate assistance to perform dressing activity of lower body activity.

On the other hand, during Discharge among the participants 15% children needed Total assistance, 60% children needed Maximal assistance, 17.5% children needed moderate assistance, 5% children needed minimal assistance, 2.5% children needed Supervision to perform dressing activity of lower body.

So We can say that the level of dependency decreased to perform lower body dressing activity after taking inpatients pediatric services.

Table 18: Functional Independence Measure of Dressing Lower Body

Domain	Admission	Discharge
Total assistance	28 (70%)	6 (15%)
Maximal assistance	8 (20%)	24 (60%)
Moderate assistance	4 (10%)	7 (17.5%)
Minimal assistance	0	2 (5%)
Supervision	0	1 (2.5%)

4.2.7 Functional Independence Measure of Toileting

During admission among the participants 57.5% children needed Total assistance, 35% children needed Maximal assistance, 7.5% children needed moderate assistance to perform Toileting activity.

On the other hand, during Discharge among the participants 50% children needed Total assistance, 40% children needed Maximal assistance, 7.5% children needed moderate assistance, 2.5% children needed minimal assistance to perform toileting activity.

So We can say that the level of dependency decreased to perform toileting activity after taking inpatients pediatric services.

Table 19: Functional Independence Measure of Toileting

Domain	Admission	Discharge
Total assistance	23 (57.5%)	20 (50%)
Maximal assistance	14 (35%)	16 (40%)
Moderate assistance	3 (7.5%)	3 (7.5%)
Minimal assistance	0	1 (2.5%)

4.2.8 Functional Independence Measure of Bladder Control

During admission among the participants 40% children needed Total assistance, 37.5% children needed Maximal assistance, 15% children needed moderate assistance, 2.5% children needed minimal assistance 2.5% children needed Supervision, 2.5% children was Modified independence to perform bladder control activity.

On the other hand, during Discharge among the participants 37.5% children needed Total assistance, 37.5% children needed Maximal assistance, 15% children needed moderate assistance, 5% children needed minimal assistance, 2.5% children needed Supervision, 2.5% were Modified independence to perform bladder control activity.

So We can say that the level of dependency decreased to perform bladder control activity after taking inpatients pediatric services.

Table 20: Functional Independence Measure of Bladder Control

Domain	Admission	Discharge
Total assistance	16 (40%)	15 (37.5%)
Maximal assistance	15 (37.5%)	15 (37.5%)
Moderate assistance	6 (15%)	6 (15%)
Minimal assistance	1 (2.5%)	2 (5%)
Supervision	1 (2.5%)	1 (2.5%)
Modified independence	1 (2.5%)	1(2.5%)

4.2.9 Functional Independence Measure of Bowel Control

During admission among the participants 37.5% children needed Total assistance, 37.5% children needed Maximal assistance, 17.5% children needed moderate assistance, 2.5% children needed minimal assistance 2.5% children needed Supervision, 2.5% children was Modified independence to perform bowel control activity.

On the other hand, during Discharge among the participants 35% children needed Total assistance, 37.5% children needed Maximal assistance, 17.5% children needed moderate assistance, 5% children needed minimal assistance, 2.5% children needed Supervision, 2.5% were Modified independence to perform bowel control activity.

So We can say that the level of dependency decreased to perform bowel control activity after taking inpatients pediatric services.

Table 21: Functional Independence Measure of Bowel Control

Domain	Admission	Discharge
Total assistance	15 (37.5%)	14 (35%)
Maximal assistance	15 (37.5%)	15 (37.5%)
Moderate assistance	7 (17.5%)	7 (17.5%)
Minimal assistance	1 (2.5%)	2 (5%)
Supervision	1 (2.5%)	1 (2.5%)
Modified independence	1 (2.5%)	1 (2.5%)

4.2.10 Functional Independence Measure of Chair Wheelchair Transfer

During admission among the participants 72.5% children needed Total assistance, 12.5% children needed Maximal assistance, 7.5% children needed moderate assistance, 2.5% children needed minimal assistance 5% children needed Supervision to perform chair/wheelchair transfer activity.

On the other hand, during Discharge among the participants 72.5% children needed Total assistance, 7.5% children needed Maximal assistance, 10% children needed moderate assistance, 2.5% children needed minimal assistance, 7.5% children needed Supervision to perform chair/wheelchair transfer activity.

So We can say that the level of dependency decreased to perform chair/wheelchair transfer activity after taking inpatients pediatric services.

Table 22: Functional Independence Measure of Chair Wheelchair Transfer

Domain	Admission	Discharge
Total assistance	29 (72.5%)	29 (72.5%)
Maximal assistance	5 (12.5%)	3 (7.5%)
Moderate assistance	3 (7.5%)	4 (10%)
Minimal assistance	1 (2.5%)	1 (2.5%)
Supervision	2 (5%)	3 (7.5%)

4.2.11 Functional Independence Measure of Toilet transfer

During admission among the participants 75% children needed Total assistance, 10% children needed Maximal assistance, 10% children needed moderate assistance, 2.5% children needed minimal assistance 2.5% to perform toilet transfer activity.

On the other hand, during Discharge among the participants 60% children needed Total assistance, 22.5% children needed Maximal assistance, 7.5% children needed moderate assistance, 5% children needed minimal assistance, 5% children needed Supervision to perform toilet transfer activity.

So We can say that the level of dependency decreased to perform toilet transfer activity after taking inpatients pediatric services.

Table 23: Functional Independence Measure of Toilet transfer

Domain	Admission	Discharge
Total assistance	30 (75%)	24 (60%)
Maximal assistance	4 (10%)	9 (22.5%)
Moderate assistance	4 (10%)	3 (7.5%)
Minimal assistance	1 (2.5%)	2 (5%)
Supervision	1 (2.5%)	2 (5%)

4.2.12 Functional Independence Measure of Tub & Shower transfer

During admission among the participants 75% children needed Total assistance, 10% children needed Maximal assistance, 10% children needed moderate assistance, 2.5% children needed minimal assistance 2.5% children needed Supervision to perform tub & shower transfer activity.

On the other hand, during Discharge among the participants 60% children needed Total assistance, 22.5% children needed Maximal assistance, 7.5% children needed moderate assistance, 5% children needed minimal assistance, 5% children needed Supervision to perform tub & shower transfer activity.

So We can say that the level of dependency decreased to perform tub & shower transfer activity after taking inpatients pediatric services.

Table 24: Functional Independence Measure of Tub & Shower transfer

Domain	Admission	Discharge
Total assistance	30 (75%)	24 (60%)
Maximal assistance	4 (10%)	9 (22.5%)
Moderate assistance	4 (10%)	3 (7.5%)
Minimal assistance	1 (2.5%)	2 (5%)
Supervision	1 (2.5%)	2 (5%)

4.2.13 Functional Independence Measure of Walk/Wheelchair/Crawl

During admission among the participants 45% children needed Total assistance, 32.5% children needed Maximal assistance, 7.5% children needed moderate assistance, 5% children needed minimal assistance 5% children needed Supervision, 2.5% children was Modified independence, 2.5% was Complete independence to perform Walk/Wheelchair/Crawl transfer activity.

On the other hand, during Discharge among the participants 27.5% children needed Total assistance, 32.5% children needed Maximal assistance, 25% children needed moderate assistance, 2.5% children needed minimal assistance, 5% children needed Supervision, 5% were Modified independence, 2.5% was Complete independence to perform Walk/Wheelchair/Crawl transfer activity.

So We can say that the level of dependency decreased to perform Walk/Wheelchair/Crawl transfer activity after taking inpatients pediatric services.

Table 25: Functional Independence Measure of Walk/Wheelchair/Crawl

Domain	Admission	Discharge
Total assistance	18 (45%)	11 (27.5%)
Maximal assistance	13 (32.5%)	13 (32.5%)
Moderate assistance	3 (7.5%)	10 (25%)
Minimal assistance	2 (5%)	1 (2.5%)
Supervision	2 (5%)	2 (5%)
Modified independence	1 (2.5%)	2 (5%)
Complete Independence	1 (2.5%)	1 (2.5%)

4.2.14 Functional Independence Measure of Stairs transfer

During admission among the participants 75% children needed Total assistance, 10% children needed Maximal assistance, 10% children needed moderate assistance, 2.5% children needed minimal assistance 2.5% children needed Supervision to perform stairs transfer activity.

On the other hand, during Discharge among the participants 72.5% children needed Total assistance, 10% children needed Maximal assistance, 7.5% children needed moderate assistance, 7.5% children needed minimal assistance, 2.5% children needed Supervision, to perform stairs transfer activity.

So We can say that the level of dependency decreased to perform stair transfer activity after taking inpatients pediatric services.

Table 26: Functional Independence Measure of Stairs transfer

Domain	Admission	Discharge
Total assistance	30 (75%)	29 (72.5%)
Maximal assistance	4 (10%)	4 (10%)
Moderate assistance	4 (10%)	3 (7.5%)
Minimal assistance	1 (2.5%)	3 (7.5%)
Supervision	1 (2.5%)	1 (2.5%)

4.2.15 Functional Independence Measure of Comprehension

During admission among the participants 17.5% children needed Total assistance, 30% children needed Maximal assistance, 22.5% children needed moderate assistance, 7.5% children needed minimal assistance 17.5% children needed Supervision, 5% children was Modified independence to perform Comprehension activity.

On the other hand, during Discharge among the participants 2.5% children needed Total assistance, 22.5% children needed Maximal assistance, 40% children needed moderate assistance, 12.5% children needed minimal assistance, 5% children needed Supervision, 15% were Modified independence & 2.5% was Complete independence to perform comprehension activity.

So We can say that the level of dependency decreased to perform comprehension activity after taking inpatients pediatric services.

Table 27: Functional Independence Measure of Comprehension

Domain	Admission	Discharge
Total assistance	7 (17.5%)	1 (2.5%)
Maximal assistance	12 (30%)	9 (22.5%)
Moderate assistance	9 (22.5%)	16 (40%)
Minimal assistance	3 (7.5%)	5 (12.5%)
Supervision	7 (17.5%)	2 (5%)
Modified independence	2 (5%)	6 (15%)
Complete Independence	0	1 (2.5%)

4.2.16 Functional Independence Measure of Expression

During admission among the participants 20% children needed Total assistance, 40% children needed Maximal assistance, 15% children needed moderate assistance, 5% children needed minimal assistance, 15% children needed Supervision, 5% children was Modified independence to perform expression activity.

On the other hand, during Discharge among the participants 5% children needed Total assistance, 35% children needed Maximal assistance, 30% children needed moderate assistance, 10% children needed minimal assistance, 5% children needed Supervision, 12.5% were Modified independence & 2.5% was complete independence to perform expression activity.

So We can say that the level of dependency decreased to perform expression activity after taking inpatients pediatric services.

Table 28: Functional Independence Measure of Expression

Domain	Admission	Discharge
Total assistance	8 (20%)	2 (5%)
Maximal assistance	16 (40%)	14 (35%)
Moderate assistance	6 (15%)	12 (30%)
Minimal assistance	2 (5%)	4 (10%)
Supervision	6 (15%)	2 (5%)
Modified independence	2 (5%)	5 (12.5%)
Complete Independence	0	1 (2.5%)

4.2.17 Functional Independence Measure of Social Interaction

During admission among the participants 17.5% children needed Total assistance, 42.5% children needed Maximal assistance, 25% children needed moderate assistance, 12.5% children needed Supervision, 2.5% children was Modified independence to perform social interaction activity.

On the other hand, during Discharge among the participants 2.5% children needed Total assistance, 15% children needed Maximal assistance, 52.5% children needed moderate assistance, 15% children needed minimal assistance, 12.5% children needed Supervision, 2.5% were Modified independence & 2.5% was complete independence to perform social interaction activity.

So We can say that the level of dependency decreased to perform social interaction activity after taking inpatients pediatric services.

Table 29: Functional Independence Measure of Social Interaction

Domain	Admission	Discharge
Total assistance	7 (17.5%)	1 (2.5%)
Maximal assistance	17 (42.5%)	6 (15%)
Moderate assistance	10 (25%)	21 (52.5%)
Minimal assistance	0	6 (15%)
Supervision	5 (12.5%)	5 (12.5%)
Modified independence	1 (2.5%)	1 (2.5%)
Complete Independence	0	1 (2.5%)

4.2.18 Functional Independence Measure of Memory

During admission among the participants 25% children needed Total assistance, 35% children needed Maximal assistance, 17.5% children needed moderate assistance, 7.5% children needed minimal assistance, 12.5% children needed Supervision, 2.5% children was Modified independence to perform memorizing activity.

On the other hand, during Discharge among the participants 17.5% children needed Total assistance, 40% children needed Maximal assistance, 20% children needed moderate assistance, 7.5% children needed minimal assistance, 7.5% children needed Supervision, 7.5% were Modified independence to perform memorizing activity.

So We can say that the level of dependency decreased to perform memorizing activity after taking inpatients pediatric services.

Table 30: Functional Independence Measure of Memory

Domain	Admission	Discharge
Total assistance	10 (25%)	7 (17.5%)
Maximal assistance	14 (35%)	16 (40%)
Moderate assistance	7 (17.5%)	8 (20%)
Minimal assistance	3 (7.5%)	3 (7.5%)
Supervision	5 (12.5%)	3 (7.5%)
Modified independence	1 (2.5%)	3 (7.5%)

4.2.19 Functional Independence Measure of Problem Solving

During admission among the participants 47.5% children needed Total assistance, 20% children needed Maximal assistance, 15% children needed moderate assistance, 2.5% children needed minimal assistance, 12.5% children needed Supervision, 2.5% children was Modified independence to perform problem solving activity.

On the other hand, during Discharge among the participants 42.5% children needed Total assistance, 15% children needed Maximal assistance, 25% children needed moderate assistance, 2.5% children needed minimal assistance, 7.5% children needed Supervision, 7.5% were Modified independence to perform problem solving activity.

So We can say that the level of dependency decreased to perform problem solving activity after taking inpatients pediatric services.

Table 31: Functional Independence Measure of Problem Solving

Domain	Admission	Discharge
Total assistance	19 (47.5%)	17 (42.5%)
Maximal assistance	8 (20%)	6 (15%)
Moderate assistance	6 (15%)	10 (25%)
Minimal assistance	1 (2.5%)	1 (2.5%)
Supervision	5 (12.5%)	3 (7.5%)
Modified independence	1 (2.5%)	3 (7.5%)

4.2.20 Total WeeFIM Outcome in relation to variable

According to age among 3-6 years children (n=30) the mean difference was 6.9 & among 7-10 years children (n=10) the mean difference was 8.4.

According to gender among male children(n=26) the mean difference was 6.23 & among female children(n=14) the mean difference was 9.21.

According to Type of CP among Spastic type of CP children(n=33) the mean difference was 7.97 & among athetoid type of CP children(n=7) the mean difference was 4.

Table-32: Total WeeFIM outcome in relation to variable

Age	Number	Admission	Discharge	Outcome
3-6 years	30	32.10 (25%)	39 (31%)	6.9 (6%)
7-10 years	10	42.70 (34%)	51.10 (41%)	8.4 (7%)

Gender	Number	Admission	Discharge	Outcome
Male	26	34.35 (27%)	40.58 (32%)	6.23 (5%)
Female	14	35.50 (28%)	44.71 (35%)	9.21 (7%)

CP Type	Number	Admission	Discharge	Outcome
Spastic	33	37.12 (29%)	45.09 (36%)	7.97 (7%)
Athetoid	7	23.57 (19%)	27.57 (22%)	4 (3%)

The objectives of the study were to find out the sociodemographic information, Diagnosis of CP patients and activity of daily living status after taking a 2 week inpatients services at CRP indoor pediatric unit. In this study among 40 participants 75% were 3-6 years and 25% were 7-10 years children with cerebral palsy. Among 40 participants 65% was Male and 35% was female. Among 40 participants 82.5% (33 Children) were diagnosed with spastic CP & 17.5% (7 Children) were diagnosed with athetoid type of CP.

In Turkey a study by Içagasioglu et al. (2015) found that mean age was 8 years and participants were between 3-15 years. In this Analysis almost 65.7% of the participants were male and 34.3% were female and 94.28% was diagnosed with spastic CP where only 5.72% were athetoid.

In Chicago a study by Schneider et al. (2001) found that mean age was 8 years 6 months, 17 females and 13 males, all were spastic CP.

Erkin et al. 2005 in their study found that 19 (42.2%) of the children with CP were spastic diplegic, 15 (33.3%) were spastic quadriplegic, 6 (13.3%) were mixed (spastic athetoid), 4 (8.8%) were spastic hemiplegic and 1 (2.2%) was dyskinetic type of CP.

In Chicago a study by Chen et al. (2004) found that 68% children were more than 7 years of age and 32% were less than 7 years of age.

In this study Outcome of Self-care were 3.68 (6%), Mobility were 1.28 (3%), Cognitive were 7% & Total were 7.35 (5%). During Discharge the self-care score was 17.60, Mobility 9.18, Cognitive 15.33 & Total 42.03.

Chen et al. (2004) found that after taking total 239 session of therapy units in MDT approach which include Physiotherapy, Occupational therapy and speech & language therapy Between admission and discharge, children made an average gain of 25.5 Rasch transformed points in self-care, 24.7 points in mobility, and 17.2 points in cognition.

Schneider et al. (2001) in their study found that the self-care & cognitive score was significant except mobility sub-score.

In This study, During admission among the participants 50% children needed Total assistance, 37.5% children needed Maximal assistance, 5% children needed moderate

assistance, 2.5% children needed minimal assistance 5% children needed Supervision to perform bathing activity.

On the other hand, during Discharge among the participants 7.5% children needed Total assistance, 50% children needed Maximal assistance, 30% children needed moderate assistance, 2.5% children needed minimal assistance, 7.5% children needed Supervision, 2.5% was Modified independence to perform bathing activity.

During admission among the participants 57.5% children needed Total assistance, 30% children needed Maximal assistance, 7.5% children needed moderate assistance, 5% children needed minimal assistance to perform bathing activity.

On the other hand, during Discharge among the participants 25% children needed Total assistance, 52.5% children needed Maximal assistance, 15% children needed moderate assistance, 5% children needed minimal assistance, 2.5% children needed Supervision, to perform grooming activity.

During admission among the participants 70% children needed Total assistance, 22.5% children needed Maximal assistance, 7.5% children needed moderate assistance to perform dressing activity of upper body.

On the other hand, during Discharge among the participants 45% children needed Total assistance, 42.5% children needed Maximal assistance, 7.5% children needed moderate assistance, 2.5% children needed minimal assistance, 2.5% children needed Supervision, to perform dressing activity of upper body.

During admission among the participants 70% children needed Total assistance, 20% children needed Maximal assistance, 10% children needed moderate assistance to perform dressing activity of lower body activity.

On the other hand, during Discharge among the participants 15% children needed Total assistance, 60% children needed Maximal assistance, 17.5% children needed moderate assistance, 5% children needed minimal assistance, 2.5% children needed Supervision to perform dressing activity of lower body.

During admission among the participants 57.5% children needed Total assistance, 35% children needed Maximal assistance, 7.5% children needed moderate assistance to perform Toileting activity.

On the other hand, during Discharge among the participants 50% children needed Total assistance, 40% children needed Maximal assistance, 7.5% children needed moderate assistance, 2.5% children needed minimal assistance to perform toileting activity.

During admission among the participants 40% children needed Total assistance, 37.5% children needed Maximal assistance, 15% children needed moderate assistance, 2.5% children needed minimal assistance 2.5% children needed Supervision, 2.5% children was Modified independence to perform bladder control activity.

On the other hand, during Discharge among the participants 37.5% children needed Total assistance, 37.5% children needed Maximal assistance, 15% children needed moderate assistance, 5% children needed minimal assistance, 2.5% children needed Supervision, 2.5% were Modified independence to perform bladder control activity.

During admission among the participants 37.5% children needed Total assistance, 37.5% children needed Maximal assistance, 17.5% children needed moderate assistance, 2.5% children needed minimal assistance 2.5% children needed Supervision, 2.5% children was Modified independence to perform bowel control activity.

On the other hand, during Discharge among the participants 35% children needed Total assistance, 37.5% children needed Maximal assistance, 17.5% children needed moderate assistance, 5% children needed minimal assistance, 2.5% children needed Supervision, 2.5% were Modified independence to perform bowel control activity.

During admission among the participants 72.5% children needed Total assistance, 12.5% children needed Maximal assistance, 7.5% children needed moderate assistance, 2.5% children needed minimal assistance 5% children needed Supervision to perform chair/wheelchair transfer activity.

On the other hand, during Discharge among the participants 72.5% children needed Total assistance, 7.5% children needed Maximal assistance, 10% children needed moderate

assistance, 2.5% children needed minimal assistance, 7.5% children needed Supervision to perform chair/wheelchair transfer activity.

During admission among the participants 75% children needed Total assistance, 10% children needed Maximal assistance, 10% children needed moderate assistance, 2.5% children needed minimal assistance 2.5% to perform toilet transfer activity.

On the other hand, during Discharge among the participants 60% children needed Total assistance, 22.5% children needed Maximal assistance, 7.5% children needed moderate assistance, 5% children needed minimal assistance, 5% children needed Supervision to perform toilet transfer activity.

During admission among the participants 75% children needed Total assistance, 10% children needed Maximal assistance, 10% children needed moderate assistance, 2.5% children needed minimal assistance 2.5% children needed Supervision to perform tub & shower transfer activity.

On the other hand, during Discharge among the participants 60% children needed Total assistance, 22.5% children needed Maximal assistance, 7.5% children needed moderate assistance, 5% children needed minimal assistance, 5% children needed Supervision to perform tub & shower transfer activity.

During admission among the participants 45% children needed Total assistance, 32.5% children needed Maximal assistance, 7.5% children needed moderate assistance, 5% children needed minimal assistance 5% children needed Supervision, 2.5% children was Modified independence, 2.5% was Complete independence to perform Walk/Wheelchair/Crawl transfer activity.

On the other hand, during Discharge among the participants 27.5% children needed Total assistance, 32.5% children needed Maximal assistance, 25% children needed moderate assistance, 2.5% children needed minimal assistance, 5% children needed Supervision, 5% were Modified independence, 2.5% was Complete independence to perform Walk/Wheelchair/Crawl transfer activity.

During admission among the participants 75% children needed Total assistance, 10% children needed Maximal assistance, 10% children needed moderate assistance, 2.5% children needed minimal assistance 2.5% children needed Supervision to perform stairs transfer activity.

On the other hand, during Discharge among the participants 72.5% children needed Total assistance, 10% children needed Maximal assistance, 7.5% children needed moderate assistance, 7.5% children needed minimal assistance, 2.5% children needed Supervision, to perform stairs transfer activity.

During admission among the participants 17.5% children needed Total assistance, 30% children needed Maximal assistance, 22.5% children needed moderate assistance, 7.5% children needed minimal assistance 17.5% children needed Supervision, 5% children was Modified independence to perform Comprehension activity.

On the other hand, during Discharge among the participants 2.5% children needed Total assistance, 22.5% children needed Maximal assistance, 40% children needed moderate assistance, 12.5% children needed minimal assistance, 5% children needed Supervision, 15% were Modified independence & 2.5% was Complete independence to perform comprehension activity.

During admission among the participants 20% children needed Total assistance, 40% children needed Maximal assistance, 15% children needed moderate assistance, 5% children needed minimal assistance, 15% children needed Supervision, 5% children was Modified independence to perform expression activity.

On the other hand, during Discharge among the participants 5% children needed Total assistance, 35% children needed Maximal assistance, 30% children needed moderate assistance, 10% children needed minimal assistance, 5% children needed Supervision, 12.5% were Modified independence & 2.5% was complete independence to perform expression activity.

During admission among the participants 17.5% children needed Total assistance, 42.5% children needed Maximal assistance, 25% children needed moderate assistance, 12.5%

children needed Supervision, 2.5% children was Modified independence to perform social interaction activity.

On the other hand, during Discharge among the participants 2.5% children needed Total assistance, 15% children needed Maximal assistance, 52.5% children needed moderate assistance, 15% children needed minimal assistance, 12.5% children needed Supervision, 2.5% were Modified independence & 2.5% was complete independence to perform social interaction activity.

During admission among the participants 25% children needed Total assistance, 35% children needed Maximal assistance, 17.5% children needed moderate assistance, 7.5% children needed minimal assistance, 12.5% children needed Supervision, 2.5% children was Modified independence to perform memorizing activity.

On the other hand, during Discharge among the participants 17.5% children needed Total assistance, 40% children needed Maximal assistance, 20% children needed moderate assistance, 7.5% children needed minimal assistance, 7.5% children needed Supervision, 7.5% were Modified independence to perform memorizing activity.

During admission among the participants 47.5% children needed Total assistance, 20% children needed Maximal assistance, 15% children needed moderate assistance, 2.5% children needed minimal assistance, 12.5% children needed Supervision, 2.5% children was Modified independence to perform problem solving activity.

On the other hand, during Discharge among the participants 42.5% children needed Total assistance, 15% children needed Maximal assistance, 25% children needed moderate assistance, 2.5% children needed minimal assistance, 7.5% children needed Supervision, 7.5% were Modified independence to perform problem solving activity.

In this Study according to age among 3-6 years children (n=30) the outcome was 6.9 (6%) & among 7-10 years children (n=10) the outcome was 8.4 (7%).

In a study Erkin et al. 2005 found that the total WeeFIM score in between age of 24-47 month was 44.3, 48-71 month was 52.6, 72-95 month was 63.2, 96-120 month was 63.6.

In this study according to gender among male children(n=26) the outcome was 6.23 (5%) & among female children(n=14) the outcome was 9.21 (7%).

According to Type of CP among Spastic type of CP children(n=33) the outcome was 7.97(7%) & among athetoid type of CP children(n=7) the outcome was 4 (3%).

The rehabilitation program of children with CP is determined according to the age and functional condition of the child and the general treatment approach shows significant changes according to the age (Ketelaar et al., 2001).

Limitation

The study had several limitations. The Study period was limited. Cerebral palsy is a non progressive brain disorder although it is not curable but proper rehabilitation can minimize the disability & maximize performance. This process need a long time/life long duration, so 2 weeks intervention is not enough to get the proper outcome.

There were only two type of CP Children found during the observation so Researcher couldn't identify the outcome of other type of CP children.

6.1 Conclusion

The study was an observational single group pre-test and post-test design to observe the Activity of daily living status before & after taking inpatient pediatric services, where the results of the study have demonstrated that the change was very significant. Inpatients services which given in MDT approach had beneficial effects on the improvement of the activity of daily living status of CP patient.

From this research, researcher concluded the specific variables and comparison of their improvement. This research will help the professionals to predict patient's recovery time and progress.

6.2 Recommendation

The first recommendation that comes from this study is to increase the duration of the inpatients services or services like this. About 40 week inpatients pediatric services can give expected outcome. Moreover, athetoid type of CP children need inpatients services for a long duration when comparing with the spastic type of CP children. In addition, there are very few research conducted on Activity of daily living status for children with cerebral palsy but it is very important to find out actual improvement on children after treatment which will help in modifying treatment as well as improving quality of treatment. So we need to do more research on this subject.

REFERENCES

Ackerman, P., Thormann, M.S., Huq, S., Baten, E., Soma Dutta, M., Hossain, A., Islam, M.M., Khan, S.J., Mahfuz, S.K., Nipa, F.A. and Sayem, M.A., (2005). Assessment of educational needs of disabled children in Bangladesh. Washington, DC: Creative Associates International Incorporation/USAID.

Aisen, M.L., Kerkovich, D., Mast, J., Mulroy, S., Wren, T.A., Kay, R.M. and Rethlefsen, S.A., (2011). Cerebral palsy: Clinical care and neurological rehabilitation. *The Lancet Neurology*, 10(9):844-852.

American Pregnancy Association, (2017). Cerebral palsy, [online]. USA:American Pregnancy Association. Available at: <http://americanpregnancy.org/birth-defect/cerebral-palsy.html> [Accessed on 20th May 2017].

Anttila, H., Autti-Rämö, I., Suoranta, J., Mäkelä, M. and Malmivaara, A., (2008). Effectiveness of physical therapy interventions for children with cerebral palsy: a systematic review. *BioMed Central Pediatrics*, 8(1):14.

Autti-Ramo, I., Suoranta, J., Anttila, H., Malmivaara, A. and Mäkelä, M., (2006). Effectiveness of upper and lower limb casting and orthoses in children with cerebral palsy: An overview of review articles. *American Journal of Physical Medicine and Rehabilitation*, 85(1):89-103.

Bax, M., Goldstein, M., Rosenbaum, P., Leviton, A., Paneth, N., Dan, B., Jacobsson, B. and Damiano, D., (2005). Proposed definition and classification of cerebral palsy, April 2005. *Developmental Medicine and Child Neurology*, 47(8):571-576.

Baxter, P., Morris, C., Rosenbaum, P., Paneth, N., Leviton, A., Goldstein, M., Bax, M., Colver, A., Damiano, D., Graham, H.K. and Brien, G.O., (2007). The definition and classification of cerebral palsy. *Developmental Medicine & Child Neurology*, 49(s109):1-44.

Becher, J.G., (2002). Pediatric rehabilitation in children with cerebral palsy: general management, classification of motor disorders. *Journal of Prosthetics and Orthotics*, 14(4):143-149.

Bell, K.L., Boyd, R.N., Tweedy, S.M., Weir, K.A., Stevenson, R.D. and Davies, P.S., (2010). A prospective, longitudinal study of growth, nutrition and sedentary behaviour in young children with cerebral palsy. *BioMed Central Public Health*, 10(1):179.

Brown, G.T. and Burns, S.A., (2001). The efficacy of neurodevelopmental treatment in paediatrics: a systematic review. *British Journal of occupational therapy*, 64(5):235-244.

Cerebral Palsy Guide, (2017). Cerebral Palsy Treatment, [Online]. Orlando: Cerebral Palsy Guide. Available: <https://www.cerebralpalsyguide.com/treatment> [Accessed on 9th June 2017].

Chen, C.C., Heinemann, A.W., Bode, R.K., Granger, C.V. and Mallinson, T., (2004). Impact of pediatric rehabilitation services on children's functional outcomes. *American Journal of Occupational Therapy*, 58(1):44-53.

Children's Hospital Colorado, (2017). Cerebral Palsy Overview, [Online]. USA: Children's Hospital Colorado. Available: <http://orthopedics.childrenscolorado.org/conditions/cerebralpalsy> [Accessed on 7 June 2017].

Cruz, M., Jenkins, R. and Sliberg, D., (2006). The burden of brain disorder. *Science*, 312(5770):53-53.

Darsaklis, V., Snider, L.M., Majnemer, A. and Mazer, B., (2011). Predictive validity of Prechtl's method on the qualitative assessment of general movements: a systematic review of the evidence. *Developmental Medicine and Child Neurology*, 53(10):896-906.

Dodd, K.J., Taylor, N.F. and Damiano, D.L., (2002). A systematic review of the effectiveness of strength-training programs for people with cerebral palsy. *Archives of Physical Medicine and Rehabilitation*, 83(8):1157-1164.

Doralp, S. and Bartlett, D.J., (2010). The prevalence, distribution, and effect of pain among adolescents with cerebral palsy. *Pediatric Physical Therapy*, 22(1):26-33.

Early Child Development. New York: UNICEF, (2006). Available:<http://www.unicef.org/earlychildhood>.

Erkin, G., Aybay, C., Kurt, M., Keles, I., Cakci, A. and Ozel, S., (2005). The assessment of functional status in Turkish children with cerebral palsy (a preliminary study). *Child: care, health and development*, 31(6):719-725.

Gershon, Z.T., Willoughby, W.M., Getz, R.D., and Smith, R.R., (2017). Cerebral Palsy signs and symptoms, [Online]. USA: Gershon, Willoughby, Getz and Smith, LLC. Available: <http://www.cerebralpalsydoctor.com/symptoms/> [Accessed on 7 June 2017].

Getz, M., Hutzler, Y. and Vermeer, A., (2006). Effects of aquatic interventions in children with neuromotor impairments: a systematic review of the literature. *Clinical rehabilitation*, 20(11):927-936.

Hack, M., and Costello, D. W., (2008). Trends in the rates of cerebral palsy associated with neonatal intensive care of preterm children. *Clinical Obstetrics and Gynecology*, 51(4):763-774.

Harris, S.R. and Roxborough, L., (2005). Efficacy and effectiveness of physical therapy in enhancing postural control in children with cerebral palsy. *Neural Plasticity*, 12(2-3):229-243.

Hoare, B.J., Wasiak, J., Imms, C. and Carey, L., (2007). Constraint-induced movement therapy in the treatment of the upper limb in children with hemiplegic cerebral palsy. *The Cochrane Library*, doi: 10.1002/14651858.CD004149.pub2.

Holsbeeke, L., Ketelaar, M., Schoemaker, M.M. and Gorter, J.W., (2009). Capacity, capability, and performance: different constructs or three of a kind? *Archives of Physical Medicine and Rehabilitation*, 90(5):849-855.

Hurley, D.S., Sukal-Moulton, T., Msall, M.E., Gaebler-Spira, D., Krosschell, K.J. and Dewald, J.P., (2011). The cerebral palsy research registry: development and progress toward national collaboration in the United States. *Journal of Child Neurology*, 26(12):1534-1541.

Iannelli V., (2008). Cerebral palsy Pediatric Basics, [Online]. USA: About.com. Available: <http://pediatric.about.com/od/cerebralpalsy.html> [Accessed on 1st June 2017].

İçgasioglu, A., Mesci, E., Yumusakhuyly, Y., Turgut, S.T. and Murat, S., (2015). Rehabilitation outcomes in children with cerebral palsy during a 2 years period. *Journal of Physical Therapy Science*, 27(10):3211-3214.

James, S., Ziviani, J. and Boyd, R., (2014). A systematic review of activities of daily living measures for children and adolescents with cerebral palsy. *Developmental Medicine and Child Neurology*, 56(3):233-244.

Ketelaar, M., Vermeer, A., Hart, H.T., van Petegem-van Beek, E. and Helders, P.J., (2001). Effects of a functional therapy program on motor abilities of children with cerebral palsy. *Physical Therapy*, 81(9):1534-1545.

Kinsman, S.L., Levey, E., Ruffing, V., Stone, J. and Warren, L., (2000). Beyond multidisciplinary care: a new conceptual model for spina bifida services. *European Journal of Pediatric Surgery*, 10(S1):35-38.

Krigger, K.W., 2006. Cerebral palsy: an overview. *American family physician*:73(1).

Kunz, R., Autti-Rämö, I., Anttila, H., Malmivaara, A. and Mäkelä, M., (2006). A systematic review finds that methodological quality is better than its reputation but can be improved in physiotherapy trials in childhood cerebral palsy. *Journal of Clinical Epidemiology*, 59(12):1239-e1.

Kurt, E.E., (2016). Definition, Epidemiology, and Etiological Factors of Cerebral Palsy. In *Cerebral Palsy-Current Steps*. intechopen.com, doi: 10.5772/64768.

Lagunju, I.A. and Fatunde, O.J., 2009. The child with cerebral palsy in a developing country—diagnosis and beyond. *Journal of Pediatric Neurology*, 7(04):375-379.

Law, M., Baum, C. and Dunn, W., (2017). *Measuring Occupational Performance: Supporting Best Practice in Occupational Therapy*. Thorofare, Name of Journal: Slack Books.

Liptak, G.S., (2008). Health and well being of adults with cerebral palsy. *Current Opinion in Neurology*, 21(2):136-142.

Live Strong.com, (2017). *Prognosis of Cerebral Palsy*, [Online]. USA: Demand Me, Inc. Available: <http://www.livestrong.com/article/62675-prognosis-cerebral-palsy/> [Accessed on 27th May 2017].

Maloni, P.K., Despres, E.R., Habbous, J., Primmer, A.R., Slatten, J.B., Gibson, B.E. and Landry, M.D., (2010). Perceptions of disability among mothers of children with disability in Bangladesh: Implications for rehabilitation service delivery. *Disability and Rehabilitation*, 32(10):845-854.

Mandal, A., (2017). *Cerebral Palsy symptoms*, [Online]. UK: News-Medical.net. Available:<http://www.news-medical.net/health/Cerebral-Palsy-Symptoms.aspx> [Accessed on 6 June 2017].

Michelson, D. J., and Ashwal, S., (2009). *Non-perinatal Acquired Brain Injury. Neurodevelopmental Disabilities: Clinical and Scientific Foundations*, 1:352.

Msall, M. E., Tremont, M. R., and Ottenbacher, K. J., (2001). *Functional Assessments of Preschool Children: Optimizing Developmental and Family Supports in Early Intervention. Infants & Young Children*, 14(1):46-66.

My child, (2017). Signs and symptoms of Cerebral Palsy, [Online]. USA: Stern Law Group, PLLC. Available: <http://cerebralpalsy.org/about-cerebral-palsy/symptoms/> [Accessed on 7 May 2017].

Myoclinic, (2017). Cerebral Palsy, [Online]. USA: Mayo Foundation for Medical Education and Research. Available:<http://www.mayoclinic.com/health/cerebral.palsy/D500302/DSECTION=treatments-and-drugs> [Accessed on 2nd June 2017].

Nooijen, C., Slaman, J., Van der Slot, W., Stam, H. J., Roebroek, M. E., van den Berg-Emons, R., and Learn to Move Research Group. (2014). Health-related physical fitness of ambulatory adolescents and young adults with spastic cerebral palsy. *Journal of Rehabilitation Medicine*, 46(7):642-647.

Novak, I., McIntyre, S., Morgan, C., Campbell, L., Dark, L., Morton, N., Stumbles, E., Wilson, S.A. and Goldsmith, S., (2013). A systematic review of interventions for children with cerebral palsy: state of the evidence. *Developmental Medicine & Child Neurology*, 55(10):885-910.

Parkes, J., McCullough, N., and Madden, A., (2010). To what extent do children with cerebral palsy participate in everyday life situations? *Health & Social Care in the Community*, 18(3):304-315.

Pin, T., Dyke, P., and Chan, M., (2006). The effectiveness of passive stretching in children with cerebral palsy. *Developmental Medicine and Child Neurology*, 48(10):855-862.

Right diagnosis, (2017). Prognosis of Cerebral Palsy, [Online]. USA: Health Grades Inc. Available: http://www.rightdiagnosis.com/c/cerebral_palsy/prognosis.htm [Accessed on 9th June 2017].

Roelofsen, E. Gustaaf J. Lankhorst, Lex M. Bouter, E., (2001). Simultaneous development and implementation of the children's rehabilitation activities profile: a communication instrument for pediatric rehabilitation. *Disability and Rehabilitation*, 23(14):614-622.

Rosenbaum, P., Paneth, N., Leviton, A., Goldstein, M., Bax, M., Damiano, D., & Jacobsson, B. (2007). A report: the definition and classification of cerebral palsy April 2006. *Developmental Medicine and Child Neurology*, 109(suppl 109):8-14.

Schneider, J. W., Gurucharri, L. M., Gutierrez, A. L., and Gaebler-Spira, D. J., (2001). Health-related quality of life and functional outcome measures for children with cerebral palsy. *Developmental Medicine and Child Neurology*, 43(9):601-608.

Shoals, M. G., (2007). *Cerebral palsy: Diagnosis, Risk factors, Early intervention and Management of the spastic child. Advances in Pediatrics*. 1st ed. New Delhi: Jaypee Publishers:623.

Siebes, R. C., Wijnroks, L., and Vermeer, A., (2002). Qualitative analysis of therapeutic motor intervention programmes for children with cerebral palsy: an update. *Developmental Medicine and Child Neurology*, 44(9):593-603.

Snider, L., Korner-Bitensky, N., Kammann, C., Warner, S., and Saleh, M., (2007). Horseback riding as therapy for children with cerebral palsy: is there evidence of its effectiveness? *Physical & Occupational Therapy in Pediatrics*, 27(2):5-23.

Sperle, P.A., Ottenbacher, K.J., Braun, S.L., Lane, S.J. and Nochajski, S., (1997). Equivalence reliability of the Functional Independence Measure for Children (WeeFIM®) administration methods. *American Journal of Occupational Therapy*, 51(1):35-41.

Strand, K. M., Heimstad, R., Iversen, A. C., Austgulen, R., Lydersen, S., Andersen, G. L., and Vik, T., (2013). Mediators of the association between pre-eclampsia and cerebral palsy: population based cohort study. *British Medical Journal*, 347:f4089.

Tanner, M., and Harpham, T. (2014). *Urban health in developing countries: progress and prospects*. Routledge.

Tatla, S. K., Sauve, K., Virji-Babul, N., Holsti, L., Butler, C., and Loos, H. F. M. (2013). Evidence for outcomes of motivational rehabilitation interventions for children and adolescents with cerebral palsy: an American Academy for Cerebral Palsy and Developmental Medicine systematic review. *Developmental Medicine & Child Neurology*, 55(7):593-601.

Unicef, (2006). *Programming experiences in early child development*. New York: Early Child Development Unit.

Vargus-Adams, J., (2009). Understanding function and other outcomes in cerebral palsy. *Physical Medicine and Rehabilitation Clinics of North America*, 20(3):567-575.

Volpe, J. J., (2008). *Neurology of the Newborn E-Book*. Elsevier Health Sciences. World Health Organization. Disability and Rehabilitation Team. *World Report on Disability and Rehabilitation*. Available:http://www.who.int/disabilities/publications/dar_world_report_concept_note.pdf.

Wallen, M., Ziviani, J., Naylor, O., Evans, R., Novak, I. and Herbert, R.D.,(2011). Modified constraint-induced therapy for children with hemiplegic cerebral palsy: a randomized trial. *Developmental Medicine & Child Neurology*, 53(12):1091-1099.

Xinzhi, Guo., (2007). *A Research Synthesis: Diagnosis and Treatment of Infantile Cerebral Palsy for Rehabilitation Medicine*. China: China Science Press.

APPENDIX

Consent Form

Assalamualaikum\ Namashker,

I am Soumik Biswas, Final Year B.Sc. in Physiotherapy student of Bangladesh Health Professions Institute (An academic institute of CRP) under the Faculty of Medicine, University of Dhaka. To obtain my Bachelor degree, I have to conduct a research project and it is a part of my study. The participants are requested to participate in the study after a brief of the following. My research title is **“ACTIVITY OF DAILY LIVING OUTCOME IN CHILDREN WITH CEREBRAL PALSY FOLLOWED BY A TWO WEEKS IN PATIENTS PEDIATRIC SERVICES AT CRP.”** The purpose of my this experimental study is to find the status of activity of daily living status in children with cerebral palsy. For this research I need to collect data, according to the criteria of my research I found perfect match on your children for being my study part So, you can be a respected participant of this research. I am requesting you to be a part of my research. It will take approximate 20-30 minutes.

I would like to inform you that this is a purely academic study and will not be used for any other purposes. I assure that all data will be kept confidential. Your participation will be voluntary. You may have the rights to withdraw consent and discontinue participation at any time of the experiment. You also have the rights to answer a particular question that you don't like.

Do you have any questions before I start?

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

Yes No

Signature of parents and date

Signature of the researcher and Date.....

Signature of the Data verifier & Date.....

During Admission

	Self Care	Score
1	Eating (Taking food from plate to mouth, Chewed, swallow)	
2	Grooming(Care of face, Wash hand, mouth, decorate hair)	
3	Bathing (Wash face and hand & dry wipe)	
4	Dressing – Upper body (Wear & remove cloth above waist)	
5	Dressing – Lower body (Wear & remove cloth below waist)	
6	Toileting(Management of proper toileting & dressing)	
Sphincter Control		
7	Bladder management (Can control urine or not)	
8	Bowel management (Can control stool or not)	
	<i>Self-Care Total</i>	

Transfer		Score
9	Transfer: Chair/Wheelchair (Between bed/chair/wheelchair & standing)	Mode: W- Walk; C- Wheelchair; B- Both
10	Transfer: Toilet (To and from toilet)	
11	Transfer: Tub/Shower (To and from tub/shower)	

Mobility:		
12	Locomotion: Walk/Wheelchair/Crawl (Walk from standing or sit to wheelchair/crawl)	Mode: W- Walk; C- Wheelchair; L- Crawl; B- Both
13	Locomotion: Stairs (Up down minimum 12 steps of stairs)	
	Mobility Sub-Total	

	Cognition	Score
14	Comprehension (Understanding of vision & hearing dependent way of communication)	Mode: A- Auditory; V- Visual; B- Both
15	Expression (ability to express expression by vocal or non vocal language)	Mode: V- Vocal; N- Non-Vocal(Sign); B- Both
16	Social interaction (Ability to cope with other in society & during therapy)	
17	Problem Solving (Solve of daily life problem)	
18	Memory (Ability to memorize visual & auditory memory)	
	Cognitive Subtotal	

WeeFIM Total Rating:

During Discharge

	Self Care	Score
1	Eating (Taking food from plate to mouth, Chewed, swallow)	
2	Grooming(Care of face, Wash hand, mouth, decorate hair)	
3	Bathing (Wash face and hand & dry wipe)	
4	Dressing – Upper body (Wear & remove cloth above waist)	
5	Dressing – Lower body (Wear & remove cloth below waist)	
6	Toileting(Management of proper toileting & dressing)	
Sphincter Control		
7	Bladder management (Can control urine or not)	
8	Bowel management (Can control stool or not)	
	<i>Self-Care Total</i>	

Transfer		Score
9	Transfer: Chair/Wheelchair (Between bed/chair/wheelchair & standing)	Mode: W- Walk; C- Wheelchair; B- Both
10	Transfer: Toilet (To and from toilet)	
11	Transfer: Tub/Shower (To and from tub/shower)	

Mobility			
12	Locomotion: Walk/Wheelchair/Crawl (Walk from standing or sit to wheelchair/crawl)		Mode: W- Walk; C- Wheelchair; L- Crawl; B- Both
13	Locomotion: Stairs (Up down minimum 12 steps of stairs)		
	<i>Mobility Sub-Total</i>		

	Cognition	Score	
14	Comprehension (Understanding of vision & hearing dependent way of communication)		Mode: A- Auditory; V- Visual; B- Both
15	Expression (ability to express expression by vocal or non vocal language)		Mode: V- Vocal; N- Non-Vocal(Sign); B- Both
16	Social interaction (Ability to cope with other in society & during therapy)		
17	Problem Solving (Solve of daily life problem)		
18	Memory (Ability to memorize visual & auditory memory)		
	<i>Cognitive sub-Total</i>		

WeeFIM Total Rating:

Signature of parents and date

Signature of the researcher and Date.....

Signature of the Data verifier & Date.....

“Thank you for participating”

সম্মতিপত্র

আসসালামুয়ালাইকুম / নমস্কার,

আমি সৌমিক বিশ্বাস, ঢাকা বিশ্ববিদ্যালয়ের চিকিৎসা অনুষদের অধিভুক্ত বাংলাদেশ হেলথ প্রফেশনস ইনস্টিটিউট (সিআরপি এর একটি শিক্ষা প্রতিষ্ঠান) এর বি. এস. সি ইন ফিজিওথেরাপি কোর্সের চূড়ান্ত বর্ষের একজন শিক্ষার্থী। অধ্যয়নের অংশ হিসেবে আমাকে একটি গবেষণা সম্পাদন করতে হবে এবং এটা আমার প্রাতিষ্ঠানিক কাজের একটা অংশ। নিম্নোক্ত তথ্যাদি পাঠ করার পর অংশগ্রহণকারীদের গবেষণায় অংশগ্রহনের জন্য অনুরোধ করা হলো।

আমার গবেষণার বিষয় হল “সিআরপি শিশু বিভাগ এ দুই সপ্তাহ অন্তর্বিভাগীয় শিশু চিকিৎসা সেবায় সেরিব্রাল পালসি শিশুদের মধ্যে দৈনন্দিন কর্মকান্ডের মানের পরিবর্তন”। আমার এই পরীক্ষামূলক গবেষণার উদ্দেশ্য হলো সিআরপি তে ভর্তিকৃত সেরিব্রাল পালসি বাচ্চাদের দৈনন্দিন জীবনযাত্রার মান নির্ণয় করা। গবেষণাটি সম্পাদনের জন্য, আমার তথ্য সংগ্রহ করার প্রয়োজন হবে। গবেষণার ক্ষেত্র বিবেচনা করে আপনার বাচ্চার মাঝে আমার গবেষণায় অংশগ্রহণ করার জন্য প্রয়োজনীয় বৈশিষ্ট্য লক্ষ্য করা গেছে। এজন্য, আপনি আমার গবেষণার একজন সম্মানিত অংশগ্রহণকারী হতে পারেন এবং আমি আপনাকে আমার গবেষণায় অংশগ্রহন করতে অনুরোধ জানাচ্ছি। এতে আনুমানিক ২০-৩০ মিনিট সময় নিবো।

আমি প্রতিজ্ঞা করছি যে, এই গবেষণা আপনার জন্য ঝুঁকিপূর্ণ হবে না অথবা আপনার কোন ক্ষতি করবে না। গবেষণা চলাকালীন সময়ে কোন রকম দ্বিধা বা ঝুঁকি ছাড়াই যেকোন সময়ে আপনি এটাকে বাদ দিতে পারবেন। এই গবেষণার প্রাপ্ত তথ্য সম্পূর্ণভাবে গোপনীয় থাকবে এবং অংশগ্রহণকারীর ব্যক্তিগত তথ্য অন্য কোথাও প্রকাশ করা হবে না।

শুরু করার আগে আপনার কি কোন প্রশ্ন আছে ?

আমি কি শুরু করতে পারি ?

হ্যাঁ

না

বাচ্চার অভিভাবকের স্বাক্ষর ও তারিখ

গবেষকের স্বাক্ষর ও তারিখ

তথ্য যাচাইকারীর স্বাক্ষর ও তারিখ.....

প্রশ্নাবলী (বাংলা)

অংশ ১: আর্থ-সামাজিক অবস্থা তথ্য

নাম:

বয়স:

লিঙ্গ: পুরুষ/মহিলা

ভর্তির তারিখ:

পিতা/মাতার নাম:

ইউনিট: আউটডোর / ইনডোর

রোগ নির্ণয়:

তারিখ:

ওজনঃ

অংশ ২: সংশোধিত WeeFIM স্কোর শীট

WeeFIM মাত্রা

সাহায্যকারী ছাড়াই

৭ সম্পূর্ণ স্বাধীনতা (সময়মত, নিরাপদে)

৬ সংশোধিত স্বাধীনতা (ডিভাইস)

সাহায্যকারী - সংশোধিত নির্ভরতা

৫ রক্ষণাবেক্ষণ

৪ সংক্ষিপ্ত সহায়তা

৩ মধ্যম সহায়তা

সাহায্যকারী - সম্পূর্ণ নির্ভরতা

২ সর্বাধিক সহায়তা

১ সম্পূর্ণ সহায়তা

ভর্তির সময়ঃ

ক্রম	এলাকা	স্কোর
নিজের যত্ন		
১	আহার(পাত্র থেকে খাবার মুখে তোলা,চিবানো,গলাধকরণ)	
২	সাজগোজ(মুখের যত্ন, হাত ধোঁয়া, মুখ ধোঁয়া,চুলের সাঁজ)	
৩	গোসল(মুখ ও হাত ধোঁয়া ও মোছা, স্নান করা)	
৪	কাপড় পরিধান - শরীরের উপরের(কাপড় পরিধান ও পরিত্যাগ কোমড়ের উপরের অংশে)	
৫	কাপড় পরিধান - নিম্নতর শরীর(কাপড় পরিধান ও পরিত্যাগ কোমড়ের নিচের অংশে)	
৬	সৌচালয় ব্যবস্থাপনা/টয়লেটিং(টয়লেট এর স্বাস্থ্যসম্মত ব্যবহার এবং ব্যবহার এর পূর্বে ও পরে কাপড় এর সঠিক ব্যবস্থাপনা)	
শিক্ষকের নিয়ন্ত্রণ		
৭	মূত্রাশয় নিয়ন্ত্রণ(প্রসাব আটকে/নিয়ন্ত্রণ রাখতে পারে কিনা)	
৮	মলাশয় নিয়ন্ত্রণ(পায়খানা আটকে/নিয়ন্ত্রণ রাখতে পারে কিনা)।	
নিজের যত্ন উপমোট		

স্থানান্তর		
৯	স্থানান্তর: বেড/চেয়ার / হুইলচেয়ার (বেড/চেয়ার / হুইলচেয়ার এবং দাঁড়ানোর মধ্যে)	প্রকার: W- হাঁটা; C- হুইলচেয়ার; B- উভয়
১০	স্থানান্তর: টয়লেট(টয়লেট এ যাওয়া এবং আসা)	
১১	স্থানান্তর: স্নানাগার(স্নানাগার এ যাওয়া এবং আসা)	

গতিশক্তি		
১২	গতিশক্তি: হাঁটা / হুইলচেয়ার / হামাণ্ডি(দাঁড়ানো থেকে হাঁটা অথবা বসা থেকে হুইলচেয়ার/হামাণ্ডি)।	প্রকার: W- হাঁটা; C- হুইলচেয়ার; L-হামাণ্ডি; B- উভয়
১৩	গতিশক্তি: সিঁড়ি (নুন্যতম সিঁড়ির ১২টি ধাপ ওঠানামা)।	
গতিশীলতা উপমোট		

	এলাকা	স্কোর
যোগাযোগ		
১৪	বোধশক্তি(শ্রবণ অথবা দর্শন কেন্দ্রিক যোগাযোগ মাধ্যমের বোধগম্যতা)	প্রকার: A- শ্রবণ; V দর্শন; B- উভয়
১৫	অভিব্যক্তি(স্বর অথবা স্বরবিহীন ভাষার মাধ্যমে অভিব্যক্তি প্রকাশের ক্ষমতা)	প্রকার: V- স্বর; N- স্বরবিহীন(ঈশারা); B- উভয়
সামাজিক চেতনা		
১৬	সামাজিক যোগাযোগ(সমাজে এবং থেরাপীর সময় অন্যান্য দের সাথে মানিয়ে চলার ক্ষমতা)	
১৭	সমস্যা সমাধান(দৈনন্দিন জীবন সম্বন্ধীয় সমস্যার সমাধান)	
১৮	স্মৃতি(শ্রবণ ও দর্শন কেন্দ্রিক স্মৃতি মনে রাখার	
জ্ঞানীয় উপমোট		

WeeFIM মোট রেটিং :

ডিসচার্জ এর সময়ঃ

ক্রম	এলাকা	স্কোর
নিজের যত্ন		
১	আহার(পাত্র থেকে খাবার মুখে তোলা,চিবানো,গলাধকরণ)	
২	সাজগোজ(মুখের যত্ন, হাত ধোঁয়া, মুখ ধোঁয়া,চুলের সাঁজ)	
৩	গোসল(মুখ ও হাত ধোঁয়া ও মোছা, স্নান করা)	
৪	কাপড় পরিধান - শরীরের উপরের(কাপড় পরিধান ও পরিত্যাগ কোমড়ের উপরের অংশে)	
৫	কাপড় পরিধান - নিম্নতর শরীর(কাপড় পরিধান ও পরিত্যাগ কোমড়ের নিচের অংশে)	
৬	সৌচালয় ব্যবস্থাপনা/টয়লেটিং(টয়লেট এর স্বাস্থ্যসম্মত ব্যবহার এবং ব্যবহার এর পূর্বে ও পরে কাপড় এর সঠিক ব্যবস্থাপনা)	
শিক্ষকের নিয়ন্ত্রণ		
৭	মূত্রাশয় নিয়ন্ত্রণ(প্রসাব আটকে/নিয়ন্ত্রণ রাখতে পারে কিনা)	
৮	মলাশয় নিয়ন্ত্রণ(পায়খানা আটকে/নিয়ন্ত্রণ রাখতে পারে কিনা)।	
নিজের যত্ন উপমোট		

স্থানান্তর		
৯	স্থানান্তর: বেড/চেয়ার / হুইলচেয়ার (বেড/চেয়ার / হুইলচেয়ার এবং দাঁড়ানোর মধ্যে)	প্রকার: W- হাঁটা; C- হুইলচেয়ার; B- উভয়
১০	স্থানান্তর: টয়লেট(টয়লেট এ যাওয়া এবং আসা)	
১১	স্থানান্তর: স্নানাগার(স্নানাগার এ যাওয়া এবং আসা)	

গতিশক্তি		
১২	গতিশক্তি: হাঁটা / হুইলচেয়ার / হামাগুড়ি(দাঁড়ানো থেকে হাঁটা অথবা বসা থেকে হুইলচেয়ার/হামাগুড়ি)।	প্রকার: W- হাঁটা; C- হুইলচেয়ার; L-হামাগুড়ি; B- উভয়
১৩	গতিশক্তি: সিঁড়ি (নূন্যতম সিঁড়ির ১২টি ধাপ ওঠানামা)।	
গতিশীলতা উপমোট		

	এলাকা	স্কের
যোগাযোগ		
১৪	বোধশক্তি(শ্রবণ অথবা দর্শন কেন্দ্রিক যোগাযোগ মাধ্যমের বোধগম্যতা)	প্রকার: A- শ্রবণ; V দর্শন; B- উভয়
১৫	অভিব্যক্তি(স্বর অথবা স্বরবিহীন ভাষার মাধ্যমে অভিব্যক্তি প্রকাশের ক্ষমতা)	প্রকার: V- স্বর; N- স্বরবিহীন(ঈশারা); B- উভয়
সামাজিক চেতনা		
১৬	সামাজিক যোগাযোগ(সমাজে এবং থেরাপীর সময় অন্যান্য দের সাথে মানিয়ে চলার ক্ষমতা)	
১৭	সমস্যা সমাধান(দৈনন্দিন জীবন সম্বন্ধীয় সমস্যার সমাধান)	
১৮	সৃতি(শ্রবণ ও দর্শন কেন্দ্রিক সৃতি মনে রাখার	
জ্ঞানীয় উপমোট		

WeeFIM মোট রেটিং :

বাচ্চার অভিভাবকের স্বাক্ষর ও তারিখ

গবেষকের স্বাক্ষর ও তারিখ

তথ্য যাচাইকারীর স্বাক্ষর ও তারিখ.....

‘‘অংশগ্রহণের জন্য আপনাকে ধন্যবাদ’’



বাংলাদেশ হেল্থ প্রফেশন্স ইনষ্টিটিউট (বিএইচপিআই)
BANGLADESH HEALTH PROFESSIONS INSTITUTE (BHPI)
(The Academic Institute of CRP)

CRP-Chapain, Savar, Dhaka, Tel: 7745464-5, 7741404, Fax: 7745069
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তারিখ : ০৮.০৫.২০১৭

প্রতি
বিভাগীয় প্রধান
ফিজিওথেরাপি বিভাগ
সিআরপি, সাভার, ঢাকা।

বিষয় : রিসার্চ প্রজেক্ট (dissertation) প্রসঙ্গে।

জনাব,

বিএইচপিআই'র ৪র্থ পেশাগত বিএসসি ইন ফিজিওথেরাপি কোর্সের ছাত্র সৌমিক বিশ্বাসকে তার রিসার্চ সংক্রান্ত কাজের জন্য আগামী ০৯.০৫.২০১৭ তারিখ থেকে ২০.০৬.২০১৭ তারিখ পর্যন্ত সময়ে আপনার নিকট প্রেরণ করা হলো। তার রিসার্চ শিরোনাম

“Activity of daily living outcome in Children with cerebral palsy followed by a Two week in patients pediatric services at CRP”

তাই তাকে সার্বিক সহযোগীতা প্রদানের জন্য অনুরোধ করছি।

ধন্যবাদান্তে

মোঃ গুয়ায়দুল হক
সহযোগী অধ্যাপক ও বিভাগীয় প্রধান
ফিজিওথেরাপি বিভাগ
বিএইচপিআই।

Approved

11/05/17
Mohamud Arifur Rossain
Associate Professor &
Head of Physiotherapy Dept.
CRP, Chapain, Savar, Dhaka-1343

Approved

20/5/17
Nowab Reza Md. Rashid
Sr. Physiotherapist & In-charge
Physiotherapy Dept. CRP-Mirpur



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

Ref.

CRP-BHPI/IRB/10/17/139

Date: 15.10.2017

To
Soumik Biswas
B.Sc.in Physiotherapy
Session: 2012-2013, Student ID 112120028
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Subject: "Activity of daily living outcome in children with Cerebral Palsy followed by a two week in patients pediatric services at CRP"

Dear Soumik Biswas,

The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application on 14/08/2016 to conduct the above mentioned thesis, with yourself, as the Principal investigator. The Following documents have been reviewed and approved:

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

Since the study involves modified "WeeFIM Scale" that takes 20 to 30 minutes and have no likelihood of any harm to the participants. The members of the Ethics committee have approved the study to be conducted in the presented form at the meeting held at 09:00 AM on August 17, 2016 at BHPI.

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

Best regards,

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

সিআরপি-চাপাইন, সাভার, ঢাকা-১৩৪৩, বাংলাদেশ, ফোন : ৭৭৪৫৪৬৪-৫, ৭৭৪১৪০৪ ফ্যাক্স : ৭৭৪৫০৬৯

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