

**EFFECTIVENESS OF GROUP THERAPY WITH
CONVENTIONAL THERAPY AMONG CEREBRAL PALSY (CP)
CHILDREN**

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Bachelor of Science in Physiotherapy (B.Sc. PT)

Session: 2006-2007

BHPI, CRP, Savar, Dhaka.



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

**EFFECTIVENESS OF GROUP THERAPY WITH
CONVENTIONAL THERAPY AMONG CEREBRAL PALSY (CP)
CHILDREN**

Submitted by **MD. Tareq Mahmud**, of the partial fulfillment of the requirements for the degree of Bachelor of Science in Physiotherapy (B.Sc.PT).

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Declaration

I declare that the work presented here is my own. All sources used have been cited appropriately. Any 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 my supervisor.

Signature:

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Abbreviations

&:	And
BHPI:	Bangladesh Health Professions Institute
CP:	Cerebral Palsy
CRP:	Centre for the Rehabilitation of the Paralyzed.
FIM:	Functional Independence Measurement
M&C:	Mother and child
P:	Probability
SPSS:	Statistical Package for the Social Sciences
WHO:	World Health Organization

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Abstract

Purpose: To explore the effectiveness of group therapy with conventional therapy among cerebral palsy child. *Objectives:* To compare the initial and discharge functional level of cerebral palsy child, to know the socio-demographic information of children with cerebral palsy, to test the efficacy of group therapy with conventional therapy for cerebral palsy children. *Methodology:* A quasi-experimental design used same subject group under quantitative methodology. Total 18 participants with cerebral palsy were selected through convenience sampling from indoor of pediatric department, CRP, Savar, Dhaka. Data was collected by mixed type questionnaire and FIM scale. Descriptive statistics were used for data analysis which focused through pie chart, bar chart. *Results:* The result showed that mean age of the participant was 5.22, approximately 67% was boy and 33% was female, 83% lived in rural area. 18 participants were selected and all of them got two weeks therapy. After two week's intervention of group therapy with other therapy significant changes found in functional activities of rolling prone to supine, bridging, four point kneeling, squatting, half kneeling, standing, walking by using paired 't' test and the result became significant. The significant level was ($p=.005$). *Conclusion:* at last it was found that Group therapy with conventional therapy helped in improving functional activity. From the small project it can be suggested that group therapy with conventional therapy is effective for cerebral palsy children. But it is not possible to generalize the result in wider population due to small number of sample.

Key words: Group therapy, Conventional therapy, Cerebral palsy.

1.1 Background

Human beings have the most elaborate, sophisticated, versatile & creative means of communication, which is made possible by their more complex neurophysiological mechanisms (Suresh & Swapna, 1997). Bangladesh is considered to be one of the least develop countries if the world as measured in terms of average income, calories consumed per person, high infant mortality rate and low literacy rate (Khan & Ferdous, 2003). Over population is the major problem in Bangladesh. The literacy rate is increasing but most of the people are less aware about health.

According to the World Health Organization (WHO) 10% of total population in Bangladesh are disable. According to Bangladesh bureau of statistics 16.41% of total disabilities are child disability due to birth injury (Khan & Ferdous, 2003). All of the major conditions resulting in physical disability are treated in the physiotherapy department e.g. cerebral palsy, Muscular Dystrophy, Brachial plexus Injuries, Spina Bifida and Arthrogyrosis. Babies with developmental delay and other more unusual syndromes with associated primary physical disability also attend. Cerebral palsy is the most common condition amongst the client population (CRP annual reports 2010-11). A large epidemiological study of children with disabilities aged 2-9 years in Bangladesh indicated a prevalence rate of 6.8% for all grades and types of disability and of 1.5% for serious disabilities (Damiano, 2004). Worldwide, the incidence is the same those 1 in 400 births. There is no per birth test and no known cure for most & the cause is unknown (Steinbok & Mcleod, 2005). An estimated 20% of infants are born prematurely in Bangladesh, and 30% have low birth weight (LBW) , With a total population of greater than 146 million people, including 20 million children greater than 5 years of age, large, unrecognized populations may be at risk for neurodevelopmental morbidity, particularly considering that 85% of deliveries occur at home, often with no skilled care; only 7% of birth are ever registered; and primary health care services do not include screening for the developmentally delayed child (Cerebral palsy source 2007). According to data based report of CRP's pediatric unit from July 2010 to June 2011 showed that types of conditions treated lead to impairment among 1468 patients; 1221 was cerebral palsy, autism 73, erb's palsy 30,

down's syndrome 13, club feet 45 and others 86. From these statistics it is clearly seen that Cerebral palsy has covered a large area in the field of child disability in Bangladesh (CRP Pediatric unit, 2012). Cerebral palsy (CP) is the most common cause of permanent movement disorder requiring continuous rehabilitation from infancy through adulthood (Cerebral palsy fact sheet, 2002).

Cerebral palsy is not a disease. It is not contagious and it can not be passed from one generation to the next. There is no cure for cerebral palsy, but physiotherapy treatments, medications, and surgery can help many individuals improve their motor skills and ability to communication with the world (NINDS, 2006). In New Zealand approximately 7000 people are affected by some degree of Cerebral palsy. Cerebral palsy has a prevalence of 2 to 2.5 per 1000 live births and affects males and females in equal numbers (Damiano, 2004).

Cerebral Palsy is a disorder that affects movement and coordination, and it can also affect intellectual development. The prognosis will depend upon the type of Cerebral Palsy from which the child is suffering, as well as the child's ability both physically and mentally (Cerebral palsy information, 2007).

The importance of patient centered care has been recognized in Physiotherapy along with general medicine, nursing and other allied health professions (Wilmington & Delaware, 2003). It has been found that patient and practitioner have different views of health and to measure patient satisfaction, few researchers have attempted to determine patient's opinion regarding quality of care and the priorities patients assign to attributes of care (Carlsson, 2002).

1.2 Rationale

Cerebral palsy is the commonest condition encountered by pediatric physiotherapists. All over the world physiotherapists treat and rehab the cerebral palsy children with their own method of treatment. Physiotherapy is a newly introduced health care profession in Bangladesh. In CRP pediatric unit, physiotherapist used different treatments for cerebral palsy children. Large number of children with Cerebral Palsy needs better physiotherapy treatment, for their survival in the community. Physiotherapy has an important role to improve functional ability of Cerebral palsy child. It is found that physiotherapist of pediatric unit of CRP uses combination of some techniques and group therapy for improving functional ability of cerebral palsy child. There was no previous evidence about the evaluation of the effectiveness of group therapy among CP child. This study was to investigate the effectiveness of group therapy with conventional therapy commonly used by physiotherapist practicing in CRP for the management of cerebral palsy children. This helped the physiotherapist to modify, redesign and continue the service of children with cerebral palsy. Moreover to develop an evidence to help stronger the physiotherapy profession in Bangladesh and for special interest, researcher would like to do the study. But it is time consuming to do the study in the whole area.

1.3 Hypothesis

Group therapy with conventional therapy is effective for cerebral palsy children.

1.4 Alternative hypothesis

Group therapy with conventional therapy is not effective for cerebral palsy children.

1.5 Objectives

1.5.1 General objective

- To explore the effectiveness of group therapy with conventional therapy among cerebral palsy (CP) children.

1.5.2 Specific objective

- To know the socio-demographic information of children with cerebral palsy.
- To test the efficacy of group therapy with conventional therapy for cerebral palsy children.

1.6 Operational definition

Cerebral palsy (CP)

Cerebral palsy is a term used to describe a broad spectrum of motor disability, which non-progressive and is caused by damage to the brain at or around birth.

Group therapy

Group therapy is the combination of structured, adapted group process and tasks or activities aimed at fostering change and adaptation in people with acute and chronic illness, impairment or disabilities

Child

Child is defined as an unborn or recently born person or a young person especially between infancy and youth. For the purposes of the present Convention, a child means every human being below the age of 18 years unless under the law applicable to the child, majority is attained earlier.

Effectiveness

The capability of producing desired results. When something is deemed effective, it means it has an intended or expected outcome, or produces a deep, vivid impression.

Cerebral palsy is the result of a lesion or mal development of the brain, it is non-progressive in character and exists from earliest childhood (Carlsson, 2002). Cerebral palsy is a term used to describe a broad spectrum of motor disability, which non-progressive and is caused by damage to the brain at or around birth (palisano et al, 1997). Cerebral palsy (CP) a heterogeneous group of persistent disorder of movement and posture caused by non- progressive defects or lesions of immature brain, is the most common cause of childhood physical disability (Aneja, 2004).

Cerebral palsy (CP) is a term used to describe a group of disorders effecting body movement and muscle co-ordination. The medical definition of cerebral palsy is “a non-progressive but not unchanging disorder of movement and posture, due to an insult or anomaly of the developing brain” because Cerebral Palsy influences the way children develop, it is known as a developmental disability. (Anwar, 2007) Cerebral Palsy is a term used to describe a group of disorders that affect motor function. It is caused by damage particular areas of the brain and is characterized by lack of muscle control and impairment in the co-ordination of movement (Cerebral palsy source, 2007). So Cerebral Palsy is defined as a permanent impairment of movement and posture resulting from a non progressive brain disorder due to hereditary factors or events occurring during pregnancy, delivery, neonatal period and the first two years of life (Carlson, 2002).

A clinical presentation of Cerebral palsy (CP) may result from an underlying structural abnormality of the brain, early prenatal, perinatal, or postnatal injury due to vascular insufficiency, toxins of infections; of the pathophysiologic risks of prematurity. Evidence suggests that prenatal factors result in 70-80% of cases of cerebral palsy (McConachie et al, 2006). Cerebral palsy, except in its mildest forms, can be seen in the first 12-18 months of life. It present when children fail to reach movement milestone. Babies most at risk of cerebral palsy are those born prematurely or with low birth weight (Chowdhury, 2005). “ Cerebral palsy is an umbrella term covering 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 development” (Damiano, 2004).

The term Cerebral palsy refers to any one of a number of neurological disorders that appear in infancy or early childhood and permanently affect body movement and muscle coordination but don't worsen over time (Keynes, 2006). Cerebral palsy occurs as the result of damage to specific areas of the brain. Cerebral palsy describes a group of disorders of the development of movement and posture, causing activity limitations, which are attributed to non-progressive disturbances that occurred in the developing fetal or infant brain. The motor disorder of Cerebral palsy are often accompanying by disturbances of sensation, cognition, communication, perception, and or behavior, and or by a seizure disorder. (Cerebral palsy Society of New Zealand, 2004).

Cerebral palsy is not a degenerative condition, which means that it will not get worse over time. However, neither is it a treatable condition, and both childhood and parents will have to come to terms with living with Cerebral palsy. It is not an independent isolated disease. It includes many non-advancing movement dysfunction of never center type resulting from brain injuries, which have many different causes (Cerebral palsy information, 2007). The term Cerebral palsy is used when this damage occurs early in life. The damage that causes Cerebral palsy may occur during fetal development, during delivery, shortly after birth, or in early infancy. Damage to the brain can occur for number of reasons. These include: insufficient oxygen reaching the baby during pregnancy and birth, maternal infection during pregnancy (e.g. German measles), Mothers with thyroid abnormalities, mental retardation, or seizures, complicated labor and delivery, breech presentation, premature birth or low birth weight, blood group incompatibility between mother and baby, severe jaundice following birth (Zisock, 2003). Less commonly, the following can lead to damage to the brain and the development of Cerebral palsy: head injuries in early childhood, illnesses in early childhood (e.g.: meningitis), genetic disorder (Anam & Zaman, 2003)

Spastic CP is where there is too much muscles tone or tightness. Movements are stiff, especially in the legs, arms, and/or back. Children with this form of CP move their

legs awkwardly, turning in scissoring their legs as they try to walk. This is the most common type of CP. Athetoid CP (also called dyskinetic CP) can effect movements of the entire body. Typically, this form of CP involves slow, uncontrolled body movements and low muscle tone that makes it hard for the person to sit straight and walk. Ataxic CP is a combination of the symptoms listed above. A child with mixed CP has both high and low muscle. Some muscles are too tight, and others are too loose, creating a mix of stiffness and involuntary movements. Other different types of CP include: Diplegia – This means only legs are affected. Hemiplegia – This means one half of the body is affected. Quadriplegia – This means both arms and legs are affected (Zisock, 2003).

Cerebral palsy is a common neurological disorder amongst children in Bangladesh (Anam & Zaman, 2003).it is know that child who is at highest risk for developing Cerebral palsy is the premature, very small who does not cry in the first five minutes after delivery, who needs to be on a ventilator for over four weeks, and who has bleeding in this brain (Bachrach et al, 2002). Toxemia of pregnancy, infections, Rh incompatibility, inherited, lack of oxygen, birth injuries, prematurity, very high fever, acute jaundice, brain infection, head injuries, poisoning, bleeding or blood clots in the brain, brain tumors these are causes of CP (Werner, 1987)

A risk factor is not a cause, it is a variable which, when present, increase the chance of something occurring. Risk factors can be associated with the parents, as well as the child. The following are risk of cerebral palsy: Mothers are 40 years or older and 20 years or younger, Father 20 years or younger, African - American ethnicity (Zisock, 2003). The following are risk factors related to the child that can Increase the risk of cerebral palsy: A first child or child born fifth or later in the family, One of a pair of twins, especially if one twin dies, Low birth weight, less than 3.5 pounds, Premature infant, less than 37 weeks, Rh or ABO blood type incompatibility between mother and infant (Sultana & Munir, 1990). Infection of the mother with German measles or other virus in clearly pregnancy attacked by microorganisms on the central nervous system of the infant. Early recognition of risk factors can reduce incidence of cerebral palsy and multidisciplinary approach can improve the quality of life of cerebral palsy children (Zisock, 2003).

Activities for children with cerebral palsy include: Physiotherapy, Occupational therapy, Speech and language therapy, Medical intervention, family support service, early education, assistive technology (Anam & Zaman, 2003). According to disability profile of the clients assessed in the sishu bikash clinic (Rural center) during January to December 1998 shows that cerebral palsy 40% and spastic CP 75%, athetoid CP 20%, ataxic CP 1% (Sultana & Munir, 1990). The child needs for group activities have long been recognized in habilitation of handicapped children. Motor handicapped children often isolated from their peers. Parents find it difficult to bring the handicapped into contact with other children whether normal or handicapped. Childs need group therapy for contact with other children, sharing and act with others, feeling part of a group and responding to cooperation, group activity in therapy as well as in education or opportunities for the Childs social and emotional developments.

“Group treatment is the combination of structured, adapted group process and tasks or activities aimed at fostering change and adaptation in people with acute and chronic illness, impairment or disabilities” (Bower, 2007). “Group play therapy model is very structured especially at the outside of the intervention and is designed for use with children who exhibit significant difficulties with respect to their pair interaction” (O’connor, 1991). Individual session sometime create too much pressure on the handicapped Childs. In the group such children often cooperate because all the other children present are doing what is expected of them. The therapist use of group process requires knowledge of theories of group process and group dynamics, understanding of conceptual models that describe group principle and parallel therapeutic techniques. This structured group works to treat or train a specific area of function. Group therapist must be able to use this information, along with their knowledge of diagnosis, illness, and reason about the individual patient in the group context. Group integrate the gross motor, fine motor perceptual, speech and language activities, but with more focus any one of the areas. This focus may be one the disability of the children in the group, e.g. - motor problem in CP children. Andras peto in Budapest, Hungary, originated this conductive education is known as Peto group. The ideas of Peto, Hari and the work of physiotherapists have influenced the structured inter disciplinary groups in Britain (Bower, 2007). In CRP’s M&C care unit follows the Peto group in every morning for one hour by physiotherapist,

occupational therapist and speech and language therapist. In group activity children show pretend and symbolic plays. The term “pretended play reflex as well as transcending reality, pretend play encompasses both symbolic play and conventional imaginative play” (Stagnittik & Unsworth, 2000). For example of pretend play in CRP’s morning group work, lying very still and straight. Symbolic play is involving the substitution of one object to represent another. For example of CRP’s group activity in Peto group, sitting on box, arm out to side –aero plane. Conductive education has a fixed time table include get out of bed in the morning, dressing, feeding, toileting, movement training, speech etc.

Groups can be as small as three or four people, but group therapy sessions generally involve around seven to twelve individuals. The session might begin with each member of the group introducing themselves and sharing why they are in group therapy. The specific manner of the session depends largely on the goals of the group and the style of the therapist. According to Oded Manor “the minimum number of group therapy sessions is usually around six, but a full year of sessions is more common.” There are many benefits of group therapy such as: the group can afford the opportunity to be real with others in an environment of safety and respect. Members are able to try out new behaviors. The group can allow members the chance to explore and better understand themselves. In group, members can learn new social techniques, ways of relating, and how to better cope with difficulties (Cherry, 2011).

Activity	Boys	Girls	Total
Children completing in patient treatment	316	196	512
Children attended for follow up session	1547	875	2422
Children attended as a new outpatient	892	576	1468

Duration: July 2010 to June 2011

No. of indoor patients: 512

No. of outdoor patients: 1451

Total no.: 1963

CRP annual reports (2010-2011)

The FIM scale was developed to resolve a long standing problem of lack of uniform measurement and data on disability and rehabilitation outcomes. The FIM emerged from through developmental process, sponsored by the American Congress of Rehabilitation medicine and the American Academy of Physical Medicine and rehabilitation (Bachrach et al, 2002).

FIM scores range from one to seven: a FIM item score of seven is categorized as complete independence while a score of one is total assist performs less than 25% of task (Damiano, 2004). Scores falling below six requires another person for supervision or assistance. During rehabilitation, admission and discharge scores are rated by clinicians observing patient function The FIM has clinically appropriate validity and interpreter agreement (Bachrach et al, 2002).

3.1 Study design

The purpose of the study was to find out the effectiveness of group therapy with conventional therapy among CP child. Pre-post experimental design of quantitative research was selected for this study. The researcher conducted the study with a single group. The design had no have a control group to compare with the experimental group (Bowling, 1997). The pre-post experimental design could be shown by: One group pretest- post test design O X O.

The pretest-posttest design is valuable to describing what occurs after the introduction of the independent variable.

3.2 Study site

The study was conducted in pediatric unit of Center for the Rehabilitation of the Paralyzed (CRP). It is a non-government organization working for the development of health care delivery system of Bangladesh through providing Physiotherapy, Occupational therapy, Speech and Language therapy services in indoor and outdoor programs.

Pediatric unit provides service for child with different types of disability. The unit had indoor and outdoor program, 40 cerebral palsy children with their mother or career accommodate two weeks time.

3.3 Sample

A group of individuals or items that shared one or more characteristics from which data could be gathered and analyzed is known as population (Hicks, 2000). In this study population was CP child and their mother of CRP pediatric unit.

3.4 Sample size

A sample is a smaller group that was taken from the population. Sample size may be big or small, depending on the population and the characteristics of the study. As this research was in course curriculum, there were varieties of limitation e.g. Time length. Due to time limitation 18 sample was selected for the study.

3.5 Sampling procedure

Finding the appropriate number and type of people to take part in the study is called sampling (Hicks, 2000). Sample was taken by using convenience sampling method due to time limitation and as it is the one of the easiest, cheapest and quicker method of sample selection.

3.7 Inclusion criteria

- Cerebral palsy child was completed successfully two weeks indoor program at CRP pediatric unit because the research was held on CRP pediatric unit and to determine the changes or improvement of child's condition after group therapy
- Child who was diagnosed as CP
- 2-10 years of children: - as in this range of age appropriate for group therapy.
- In patient of CRP Mother and child care unit.

3.8 Exclusion criteria

- Children with undiagnosed cerebral palsy
- Out patient
- Children were with other types of disability.

3.9 Method of data collection

In this study there were 18 samples. For the study the data was collected for 18 patients by using a number of tools. These included:

Initial assessment form

In data was included information on age, gender, diagnosis of the cerebral palsy children.

FIM Scale (Functional Independence Measurement)

In CRP's pediatric unit, the FIM scale was used to assess and analyze the functional progression of children with cerebral palsy. Data about functional ability was collected from this scale in order to assess initial and discharge functional ability of children.

3.10 Materials for the research project

To conduct the study the researcher collected data by using different types of data collection tools. The researcher organized the materials to successfully complete the interview session. The organized material was questionnaires, consent forms, a pen & a pencil. SPSS (Statistical Package for the Social Sciences) software-16 version and Computer used to analyze data.

3.11 Ethical consideration

For conducting this research ethics committee have checked the proposal and allowed to carry out the research project. The formal permission was taken from the head of the physiotherapy department and in charge of pediatric unit to collect the data. Data collection was started and complete within the allocated time frame. All the data was reviewed in strict secure and maintained confidentiality. The assessment files were strictly secured and it was not open in front others without researcher.

3.12 Informed Consent

Written consent (appendix) was given to all participants prior to completion of the questionnaire. The researcher explained to the participants about his or her role in this study. The researcher received a written consent form every participants including signature. So the participant assured that they could understand about the consent form and their participation was on voluntary basis. The participants were informed clearly that their information would be kept confidential. The researcher assured the participants that the study would not be harmful to them. The participants had the rights to withdraw consent and discontinue participation at any time without prejudice to present or future treatment at the pediatric unit of CRP.

3.13 Rigor

During the data collection and data analysis the author always tried not to influence the process by his own perspectives, values and biases. No leading questions were asked and judgments were avoided. When conducting the study the researcher took help from the supervisor when needed. The other researchers can use the results in their related area.

3.14 Limitation of the study

The duration of the study was limited and 14 days were not enough time fully for effectiveness of therapy for cerebral palsy child.

The amount of participants was very small for the study. There were only 18 participants involved in this study. Small number of samples inclusion may be affected by external validity of the study and the results might not be representative of the population.

As the study was quasi-experimental and one group data is used so there is no comparison group and so there is no generalizability.

The study support only physiotherapy intervention but the patients also got occupational therapy which was not included. So it was not measured exactly that only physiotherapy with group therapy was effective for children with cerebral palsy.

The recent literature especially the recently issued journals were not accessible. For this reason some of the latest information was not able to be included in the literature part.

This research project was a part of 4th year physiotherapy course and this type of work is first at this level, so there may have some problems in techniques and short out in term of practical aspect.

Time and resources were limited which have a great deal of impact on the study such as literature relevant to this topic, data collection time and financial support for conducting the research project.

4.1 Socio-demographic characteristics

Age group

Among 18 participants mean age of the participant was 5.22 and standard deviation was 2.58. Approximately 72% (13 of 18) was less or equal than six years and approximately 28% (5 of 18) participant was more than or equal seven years children with cerebral palsy.

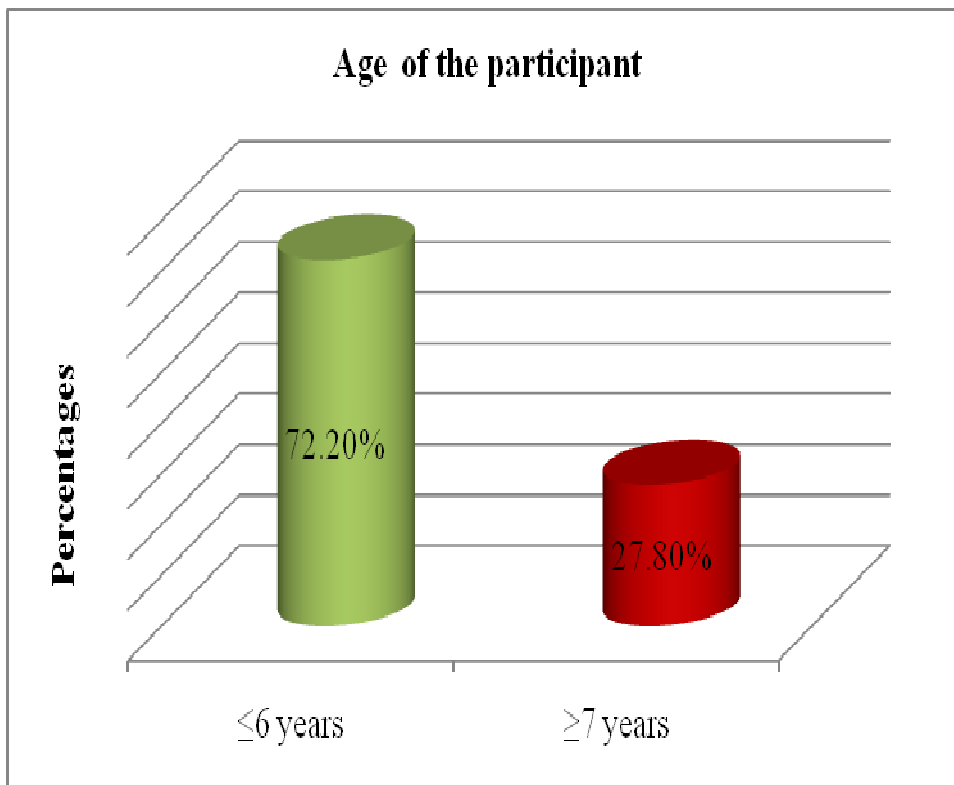


Figure 1: Age group of the participant

Sex

Among all the participants approximately 67% (12 of 18) was boy and approximately 33% (6 of 18) was girl. Male female ratio was 2:1. Result showed that boys were more affected than girl.

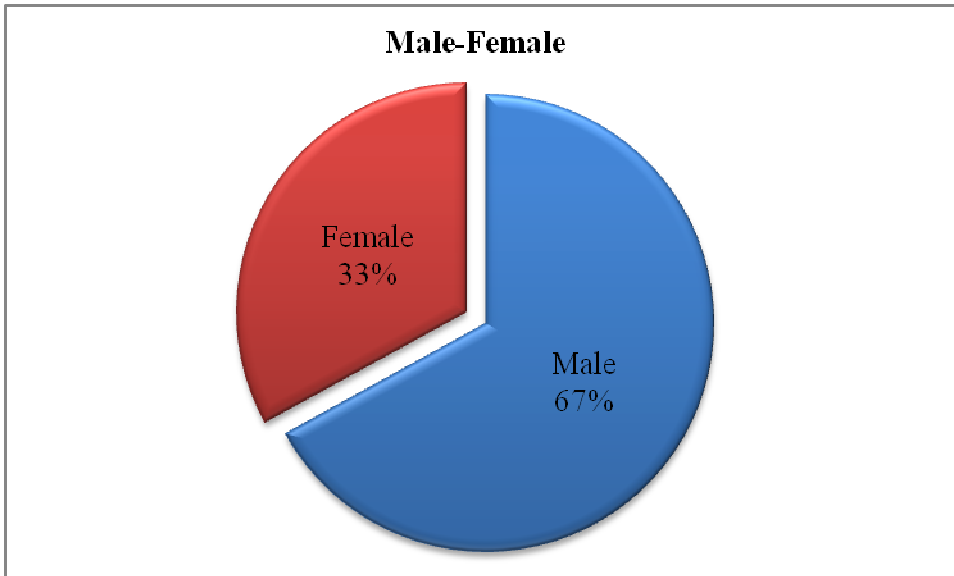


Figure 2: Sex of the participant

Religion

Study showed that 94.44% (17 of 18) was Muslim and 5.56% (1 of 18) was Hindu. Other religion was not found.

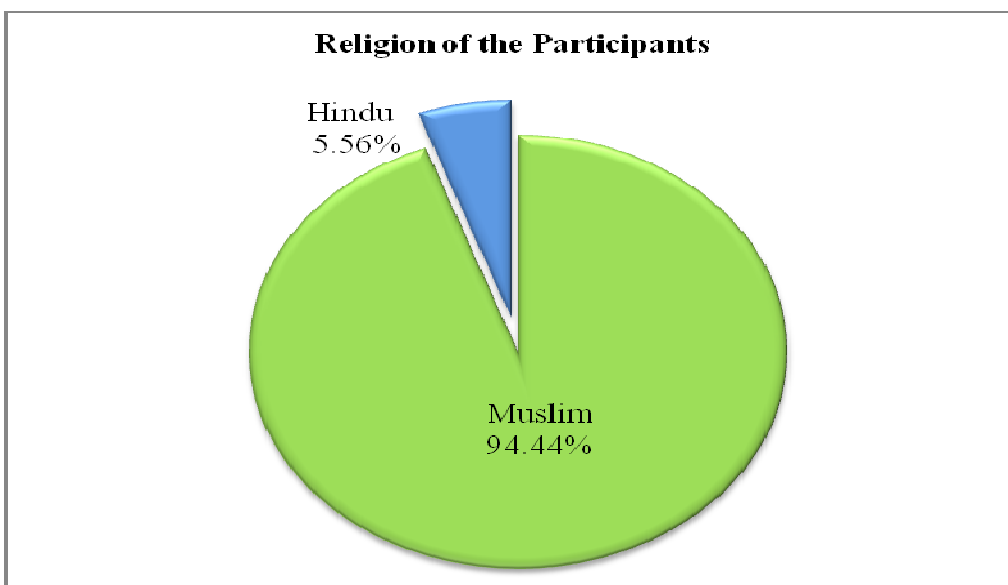


Figure 3: Religion of the participant

Living area

Study revealed that approximately 83% (15 of 18) was lived in rural area and approximately 17% (3 of 18) was lived in urban area.

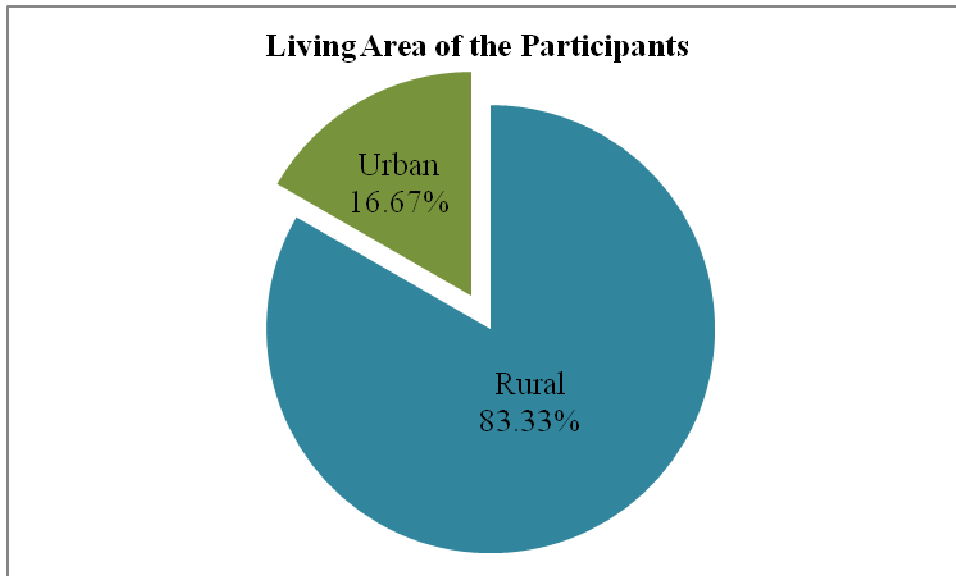


Figure 4: Living area of the participant

Family type

Study showed that 55.56% (10 of 18) was single family and 44.44% (8 of 18) was nuclear family.

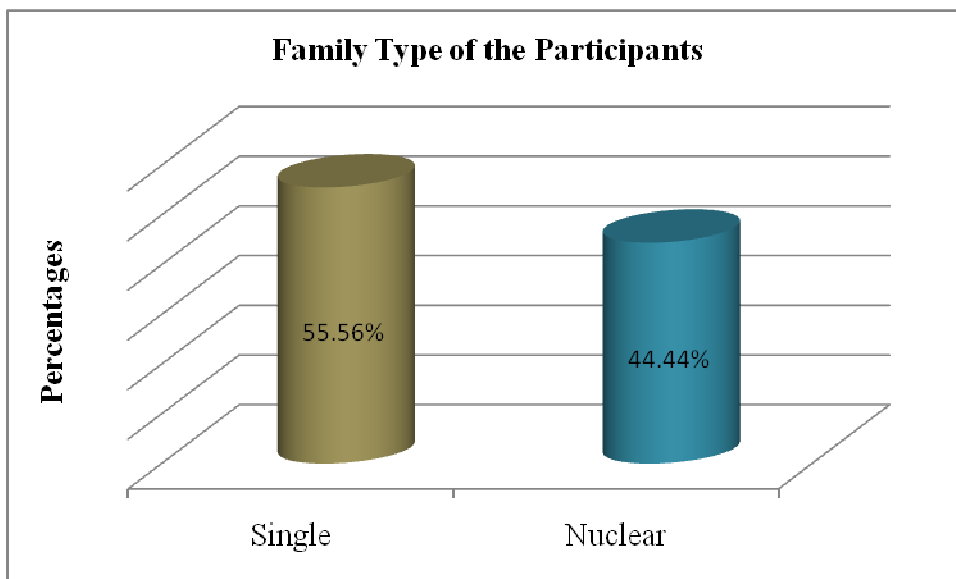


Figure 5: Family type of the participant

4.2 Effect of group therapy on functional level

Supine to prone

The researcher found that mean functional level score of rolling from supine to prone before group therapy was 5.94. After group therapy the average score became 6.33. When researcher compared this changes in a paired t-test researcher found that changes in functional level score due to group therapy with conventional therapy differ significantly ($p=0.015$) and researcher failed to reject the null hypothesis. So there was a significant difference in functional level due to group therapy & after the treatment session children were able to rolling prone from supine position independently.

Prone to Supine

The researcher found that mean functional level score of rolling from prone to supine before group therapy was 5.94. After group therapy the average score became 6.33. When the researcher compared this changes in a paired sample t-test researcher found that changes in functional level score due to group therapy with conventional therapy differ significantly ($p=0.015$) and researcher failed to reject the null hypothesis. So there was a significant difference in functional level due to group therapy.

Moving from supine to box sitting

The researcher revealed that mean functional level score of moving from supine to box sitting before group therapy was 4.11. After group therapy the average score became 4.89. When researcher compared this changes in a paired sample t-test found that changes in functional level score due to group therapy with conventional therapy differ significantly ($p=0.000$) and researcher failed to reject the null hypothesis. So there was a significant difference in functional level due to group therapy. After two weeks intervention maximum children able to move from supine to box sitting modified independently who were able to perform it with moderate support.

Bridging

The researcher found that mean functional level score of bridging practice before group therapy was 4.67. After group therapy the average score became 5.50. When compared this changes in a paired sample t-test researcher found that changes in

functional level score due to group therapy with conventional therapy differ significantly ($p=0.000$) and researcher failed to reject the null hypothesis. So there was a significant difference in functional level due to group therapy. After two weeks intervention maximum children able to perform bridging with minimum support who needed maximum support.

Sitting on box

The researcher revealed that mean functional level score of sitting on box before group therapy was 4.89. After group therapy the average score became 5.50. When researcher compared this changes in a paired sample t-test found that changes in functional level score due to group therapy with conventional therapy differ significantly ($p=0.002$) and researcher failed to reject the null hypothesis. So there was a significant difference in functional level due to group therapy.

Moving from box sitting to standing

Study showed that mean functional level score of moving from box sitting to standing before group therapy was 3.72. After group therapy the average score became 4.67. When researcher compared this changes in a paired sample t-test found that changes in functional level score due to group therapy with conventional therapy differ significantly ($p=0.000$) and researcher failed to reject the null hypothesis. So there was a significant difference in functional level due to group therapy.

Sitting on cross leg sitting

The researcher found that mean functional level score of sitting on cross leg sitting before group therapy was 4.67. After group therapy the average score became 5.44. When researcher compared this changes in a paired sample t-test found that changes in functional level score due to group therapy with conventional therapy differ significantly ($p=0.015$) and researcher failed to reject the null hypothesis. So there was a significant difference in functional level due to group therapy.

4 point kneeling

Study showed that mean functional level score of 4 point kneeling before group therapy was 4.28. After group therapy the average score became 5.28. When

researcher compared this changes in a paired sample t-test found that changes in functional level score due to group therapy with conventional therapy differ significantly ($p=0.000$) and researcher failed to reject the null hypothesis. So there was a significant difference in functional level due to group therapy.

Squatting

The researcher found that mean functional level score of squatting position before group therapy was 3.22. After group therapy the average score became 4.28. When researcher compared this change in a paired sample t-test found that changes in functional level score due to group therapy with conventional therapy differ significantly and failed to reject the null hypothesis. So there was a significant difference in functional level due to group therapy.

High kneeling

The researcher revealed that mean functional level score of high kneeling position before group therapy was 3.50. After group therapy the average score became 4.39. When researcher compared this change in a paired sample t-test researcher found that changes in functional level score due to group therapy with conventional therapy differ significantly and failed to reject the null hypothesis. So there was a significant difference in functional level due to group therapy.

Half kneeling

Study showed that mean functional level score of half kneeling position before group therapy was 2.39. After group therapy the average score became 2.67. When compared this changes in a paired sample t-test researcher found that changes in functional level score due to group therapy with conventional therapy differ Significantly ($p=0.020$) and researcher failed to reject the null hypothesis. So there was a significant difference in functional level due to group therapy.

Standing

The researcher found that mean functional level score of standing position before group therapy was 3.28. After group therapy the average score became 4.00. When compared this changes in a paired sample t-test researcher found that changes in

functional level score due to group therapy with conventional therapy differ significantly ($p=0.002$) and failed to reject the null hypothesis. So there was a significant difference in functional level due to group therapy.

Walking

The researcher revealed that mean functional level score of walking before group therapy was 2.67. After group therapy the average score became 3.17. When compared this changes in a paired sample t-test researcher found that changes in functional level score due to group therapy with conventional therapy differ significantly ($p=0.024$) and failed to reject the null hypothesis. So there was a significant difference in functional level due to group therapy.

The purpose of the study was to evaluate the effectiveness of group therapy with conventional therapy among cerebral palsy child and objective was to compare the initial and discharge functional level of the cerebral palsy child.

In this quasi-experimental study 18 subjects with cerebral palsy were conveniently allocated to treatment group. This group participates in the group therapy and also takes other therapy. Each subject of the group had participated two weeks of group therapy session with conventional therapy at mother and child care unit at CRP. The outcome was measured by FIM scale.

In this study it was tried to explore the effectiveness of group therapy for CP child to improve their functional activities. The findings of the study shows that following two weeks of intervention there is a marked difference in the initial and discharge score.

Initial score was measured at the beginning of patient management to get idea about the participants functional ability as rolling supine to prone, rolling prone to supine, bridging, cross sitting, moving from supine to box sitting, box sitting, box sit to standing, squatting, four point kneeling, half kneeling, high kneeling, standing, walking. After completion of two weeks intervention the discharge score was measured and the data was analyzed by using SPSS software.

Initially the mean score of rolling supine to prone was 5.94 and discharge score was 6.33 and $p = .015$. Initial mean score of rolling prone to supine was 5.94 and discharge score was 6.33 and $p = .015$. Initial mean score of moving supine to box sitting was 4.11 and discharge was 4.89. P value was $p = <.001$. Initial mean score of bridging was 4.67 and discharge was 5.50. P value was $p = <.001$. Initial mean score of sitting on box was 4.89 and discharge was 5.50 in which $p = .002$. Initial mean score of moving from box sitting to standing was 3.72 and discharge was 4.67 with $p = <.001$. In sitting on cross leg initial mean score were 4.67, discharge score was 5.44. $p = .015$. Initial mean score of four point kneeling was 4.28, discharge score was 5.28 where p value was $<.001$. Initial mean score of squatting was 3.22, discharge was 4.28 and $p = <.001$. Initial mean score of high kneeling was 3.50 and discharge was 4.39. P

value was $p = <.001$. In half kneeling the initial mean score was 2.39, discharge was 2.67 where $p = .020$. The pretest mean score of standing was 3.28 and posttest was 4.00 where $p = .002$. The pretest mean score of walking was 2.67 and posttest was 3.17 where $p = .024$. So among all the post-test score was more than the pre-test score.

In inclusion criteria of this study was 2 to 10 years, because according to NINDS (2006) most of the cerebral palsy children are diagnosed from birth to 2 years. So after 2 years the diagnosis is confirmed and not overlaps with the motor delay. Among 18 participants more than half of the patient 72.2% was less or equal than six years old. (Anttila et al, 2008) did a research where in between the age group 7-18 years in between the only spastic type of children.

Within 18 participants 12 participants were male and 6 were female in this study. According to (protibha, 2004), male are more improving in functional activity than female.

Pidroda (2008) showed in the study entitled -The effect of play therapy over conventional therapy in improving the hand function of spastic diplegic cerebral palsy children that after the treatment period Group II who received play therapy in addition to conventional therapy scored significantly higher on the Box and block test and Nine hole peg test for grasp and release showing $p < 0.05$.

The duration of the application of treatment and the recording was too short in relation to the condition. It takes a long time to improve functional activity. Due to limitation of time frame, it was not conduct the study for long duration. Again it might not be possible to get a strong significant improvement in two weeks. However in this study the researcher wanted to prove the experimental hypothesis and by statistical analysis (paired t test) it has been proved significantly that group therapy with conventional therapy is effective among cerebral palsy child and the significance level is 1% ($p > 0.01$).

Sterba et al, (2002) provide a study about 'Horseback riding (HBRT) in children with cerebral palsy: effect on gross motor function'. The result was significance ($p < 0.04$) after 18 weeks.

From over all discussion researcher can be said that group therapy with conventional therapy is effective for cerebral palsy children. Alternative hypothesis of this study is group therapy with conventional therapy is not effective for cerebral palsy child. But in this study it is proved that group therapy with conventional therapy is significantly effective for cerebral palsy child. So alternative hypothesis was rejected in this study.

Cerebral palsy is a common condition in Bangladesh. But most of the people in this country are not aware about the cerebral palsy and physiotherapy treatment. But in the developed countries physiotherapy is considered as an important treatment for the cerebral palsy children. As a developing medical profession, it is the duty of physiotherapist working in the Bangladesh should make some strong evidence, which will improve strength and skill for the physiotherapy practice.

The study was aiming to “Effectiveness of group therapy with conventional therapy among CP child.” For the fulfillment of the study a quasi-experimental method was designed and collected 18 cerebral palsy children as sample. Than a pre-test and post-test was done and score measured. From the data base less than or equal of six years age range and male cerebral palsy were most common. Also rural areas child was common. As a whole the cerebral palsy children getting functional improvement after group therapy with conventional therapy and the result were significant. Last of all this study will try to represent the strong evidence of the effectiveness of group therapy with conventional therapy among cerebral palsy children.

By conducting the study the researcher found effectiveness of group therapy with conventional therapy among the cerebral palsy child at CRP’s pediatric unit. But it is not always possible to gain complete achievement from every work. Same things happened in the study, what the researcher wanted to gain from the study not achieved fully. So, some further steps that might be taken for better accomplishment for further research. A much large subject should be chosen randomly because it will be more significant. In the study participant were taken only from indoor patient at CRP pediatric unit but the participant also can be taken from the outdoor patient. A further study could be done with longer duration of time and with good combination of the assessment and treatment.

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APPENDIX

সম্মতি পত্র

চিকিৎসা কেন্দ্র: পক্ষাঘাত গ্রন্থদের পুনর্বাসন কেন্দ্র(সি আর পি) সাভার।

গবেষণা শিরোনাম “সেরেব্রাল পলসি (সি পি) বাচ্চাদের অন্যান্য থেরাপির সাথে গ্রুপ থেরাপির কার্যকারিতা নিরূপণ সম্পর্কিত গবেষণা”।

গবেষক বাংলাদেশ হেলথ প্রফেশনস ইনস্টিটিউট (বিএইচপিআই) এ বিএসসি ইন ফিজিওথেরাপি এর ৪র্থ বর্ষের একজন ছাত্র। নিম্নোক্ত তথ্যাদি পাঠ করার পর অধ্যয়নে অংশগ্রহণ করার জন্য আপনাকে অনুরোধ করা হচ্ছে।

এ গবেষণার উদ্দেশ্য হল বাংলাদেশে কেন্দ্র সি আর পিতে সি পি বাচ্চাদের অন্যান্য থেরাপির সাথে গ্রুপ থেরাপির কার্যকারিতা নিরূপণ করা।

বাংলাদেশ হেলথ প্রফেশনস ইনস্টিটিউট, সি আর পি গবেষককে এই গবেষণা করার অণুমতি প্রদান করেছে। তথ্য সংগ্রহ করার জন্য গবেষক অংশগ্রহণকারীর কাছ থেকে ২০-৩০ মিনিট সময় নেবেন। আপনার দেয়া সব তথ্য গোপন রাখা হবে এবং এক্ষেত্রে যেকোনো সংবাদ অথবা প্রকাশনার উৎস যে নামবিহীন তা নিশ্চিত করা হবে। আপনি যে কোন সময় কোন নেতিবাচক ধারণা ছাড়াই নিজেকে সরিয়ে ফেলতে পারবেন। সাক্ষাৎকার চলাকালীন সময় কোন প্রশ্ন অপছন্দ করা কিংবা উত্তর না দেয়ার ব্যাপারে আপনার অধিকার রয়েছে। এই গবেষণায় কোন ক্ষতিকর ঘটনা নেই এবং তথ্য সংগ্রহের জন্য গবেষককে কোন প্রকার ভাতা প্রদান করা হবেনা।

আমি (অংশগ্রহণকারী) উক্ত গবেষণার সকল তথ্যাদি সম্পর্কে বিস্তারিত ভাবে অবগত হয়ে অংশগ্রহণ করার জন্য সম্মতি প্রদান করছি

অংশগ্রহণকারীর স্বাক্ষর:.....

গবেষকের স্বাক্ষর:

থেরাপিস্টের (সাক্ষীর) স্বাক্ষর:.....

Informed consent

Clinical setting: Centre for Rehabilitation of the paralyzed (CRP) – Savar

The study entitled “Effectiveness of group therapy with conventional therapy among cerebral palsy (CP) children” is the topic of my research project. The researcher is a student of Bangladesh Health Professions Institute (BHPI), CRP at 4th year B.Sc. in Physiotherapy. The participant is request to participate in study after reading the following information.

The aim of the research topic is to determine the Effectiveness of group therapy with conventional therapy among CP child at CRP in Bangladesh.

For the kind information Bangladesh Health Professions Institute (BHPI), CRP has permitted the researcher to do the research. The conversation time will be 20-30 minutes. The participant reserves the right to refuse the study at anytime. The information obtained from the study would be kept confidential and during publishing the result of the study, personal identification of the participants would not be published. There is no harmful event in the study. No T/A, D/A is given for data collection.

Ideclare that I am giving my consent to participating in the study after being informed about all the information in details

Signature of the participant _____

Signature of the Interviewer _____

Signature of the Therapist (witness) _____

প্রশ্নপত্র

শিরোনাম: সেরেন্সাল পলসি (সি পি) বাচ্চাদের অন্যান্য থেরাপির সাথে গ্রুপ থেরাপির কার্যকারিতা
নিরূপণ

কোড নং: তারিখ:-----/-----/-----

রোগীর নাম:

ঠিকানা:

সামাজিক জনসংখ্যাতাত্ত্বিক তথ্য:

১) বয়স.....

২) লিঙ্গ:

১, পুরুষ

২, মহিলা

৩) আপনার ধর্ম কি?

১, মুসলিম

২, হিন্দু

৩, বৌদ্ধ

৪, খৃষ্টান

৪) আপনার বসবাসের জায়গা কোথায়

১, শহরে

২, গ্রামে

৫) আপনার পরিবার কি ধরণের?

১, একক পরিবার

২, যৌথ পরিবার

সি পি বাচ্চাদের অন্যান্য থেরাপির সাথে গ্রুপ থেরাপির কার্যকারিতা নিরূপণের জন্য তথ্য:

১	পুরোপুরি সাহায্য বা জায়গায় থাকতে সক্ষম
২	সর্বোচ্চ সাহায্য প্রয়োজন(বাচ্চা ২৫ ভাগ কাজ করতে সক্ষম)
৩	মার্মরি বা অর্ধেক সাহায্য প্রয়োজন(বাচ্চা ৫০ ভাগ কাজ করতে সক্ষম)
৪	অল্প সাহায্য প্রয়োজন(বাচ্চা ৭৫ ভাগ কাজ করতে সক্ষম)
৫	পর্যবেক্ষণের প্রয়োজন
৬	পরিবর্তিত স্বাধীনভাবে কাজ করতে সক্ষম, বা অস্বাভাবিকভাবে নড়াচড়া করা
৭	পুরোপুরি স্বাধীনভাবে কাজ করতে সক্ষম, বা স্বাভাবিকভাবে নড়াচড়া করা

	শুরুর অবস্থান	প্রি টেস্ট স্কোর	পোস্ট টেস্ট স্কোর
১	চিং থেকে উপুড় হওয়া		
২	উপুড় থেকে চিং হওয়া		
৩	চিং হওয়া থেকে বক্সে বসা		
৪	কোমর উচু করা		
৫	বক্সে বসা		
৬	বক্সে বসা থেকে উঠে দাঁড়ানো		
৭	দুই পা আড়াআড়ি ভাবে বসা		
৮	চার হাত পায়ে বসা		
৯	টয়লেটে বসার মত করে বসা		
১০	হাঁটুর উপর ভর দিয়ে বসা		
১১	এক হাঁটুর উপর ভর দিয়ে বসা		
১২	দাঁড়িয়ে থাকা		
১৩	হাঁটা		

Questionnaire

Title: Effectiveness of group therapy with conventional therapy among cerebral palsy (CP) children

Code no: _____ Date: _____

Patient's Name: _____

Address: _____

Part-A: Socio-demographic information

1. Age: _____

2. Gender:

1. Male 2. Female

3. Religion:

1. Muslim 2. Hindu 3. Buddha 4. Christian

4. Living area:

1. Urban 2. Rural

5. Family type:

1. Nuclear family 2. Extended family

Part-B: This part is designed to determine the effectiveness of group therapy with conventional therapy.

FIM Scale

1	Total assistance or unplaceable in position
2	Maximum assistance required (child does 25% of work)
3	Moderate assistance required (child does 50% of work)
4	Minimum assistance required (child does 75% of work)
5	Required supervision
6	Modified independence (abnormal movement patterns or not able to dynamically moved from the base of support)
7	Complete independence (full dynamic movement and able to maintain balance for 30 second)

	Starting position	Pre test score	Post test score
1.	Rolling supine to prone		
2.	Rolling prone to supine		
3.	Moving from supine to box sitting		
4.	Bridging		
5.	Sitting on box		
6.	Moving from box sitting to standing		
7.	Sitting on cross leg sitting		
8.	4 point kneeling		
9.	Squatting		
10.	High kneeling		
11.	Half kneeling		
12.	Standing		
13.	Walking		

“Thank you for your participation”

Date: 09-09-2012

To

The head of the Physiotherapy Department,

Centre for the Rehabilitation of Paralyzed (CRP),

Savar, Dhaka-1343.

Subject: Application for permission of data collection from paediatric department of CRP for the research project.

Dear Sir,

I beg most respectfully to state that, I am a student of 4th year B. Sc in physiotherapy at Bangladesh Health Professions Institute (BHPI) under the University of Dhaka. I am conducting research on "effectiveness of group therapy with conventional therapy among CP child" as a part of our course curriculum, under supervision of Muhammad Anwar Hossain, Assisstant Professor, BHPI. So I need to collect data from paediatric department of CRP.

I therefore, pray and hope that you would be kind enough to grant me and thus oblige thereby.

Sincerely yours,

Md. Tareq Mahmud

09-09-2012

Md. Tareq Mahmud

B.Sc in physiotherapy

4th year, Roll-23,

Session: 2006-2007

BHPI, CRP, Savar, Dhaka.

Pls Allowed
Incharge. Jam

Md. Sohrab Hossain
M.D., D.O. Orthopaedics, Cyprus (Belgium), MPH
Mechanical Diagnosis & Therapy / A.B. UKP
Assistant Professor, Physiotherapy, BHPI
Head of the Physiotherapy Department, CRP

please help
him for data
collection. Thanks
of

09-09-12
SHOSNEARA PERVEEN
Incharge Paediatric Unit
CRP, Savar, Dhaka.