

**Use of Hand splint perception of Mothers of child with Cerebral  
Palsy and Qualified Occupational Therapists**

**By**

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This thesis is submitted in total fulfillment of the requirements for the subject  
Research 2 & 3 and partial fulfillment of the requirements for degree:

Bachelor of Science in Occupational Therapy  
Bangladesh Health Professions Institute (BHPI)  
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**February, 2014**

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## **Statement of Authorship**

Except where reference is made in the text of the thesis, this thesis contains no material published elsewhere or extracted in whole or in part from a thesis presented by me for any other degree or diploma or seminar.

No other person's work has been used without due acknowledgement in the main text of the thesis.

This thesis has not been submitted for the award of any other degree or diploma in any other tertiary institution.

The ethical issue of the study has been strictly considered and protected. In case of dissemination of the findings of this project for further publication, it will be duly acknowledgement as undergraduate thesis.

In my research study any mistake or inaccuracy in my own responsibility.

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4<sup>th</sup> year B.Sc. in Occupational Therapy

## **Dedication**

**My honorable and beloved parents**

## Acknowledgement

First of all, all praised go the almighty god for enabling me to carry out this dissertation. Then I would like to gratitude my parents who always inspired me for completing my research project.

Then I would like to gratefully acknowledge my honorable supervisor, Umme Aeyman for helping me by providing idea, instruction, encouragement and skill full guiding in every step of the study and also the honorable Assistant Professor and head of the department, Nazmun Nahar for her encouragement to conduct this study. Thanks go to all teachers of Occupational Therapy Department for their continuous academic support throughout my study period. I am grateful to Head of the paediatric unit, Hosnara Perveen to give the permission for collected data.

I would like to thank my senior brother and sister who helped me by giving valuable advice and experience. I am also thankful to Arifa Jahan Ema for her helping hand in several times during conducting the study. In addition, I am grateful to those people who helped me to translate the interview from Bengali to English, and also those who corrected the English grammar. Thanks to my entire friend for giving their direct and indirect inspiration.

Above all I would like to give special thanks to all the participants for their cooperation of this study.

## KEY TO ABBREVIATION

CP : Cerebral Palsy

FGD : Focus Group Discussion

CRP : Center for the Rehabilitation of the Paralyzed

BHPI : Bangladesh Health Professions Institute

WHO : World Health Organization

OT : Occupational Therapy

## Abstract

**Background:** The children with Cerebral Palsy have a problem in extremity like – upper or lower both. So, the children face difficulties during perform any type of activities due to abnormal tone, balanced coordination and they cannot perform daily living activity independently like normal children. Therapists provide different type of splint but the therapists do not evaluate the mothers understanding about splint. Researcher wants to know about whether hand function has been really changed or not after using the splint.

**Methodology:** The study was a qualitative content analysis under qualitative design. The study was conducted in the paediatric unit of Center for the Rehabilitation of the Paralyzed (CRP) at savar. 5 mothers of child with Cerebral Palsy and 5 qualified Occupational Therapists of paediatric unit were identified by convenient sampling. FGD with open ended question were used for data collection from qualified Occupational Therapists. Semi structure questioners with face to face interview were used for data collection from the mothers of child with CP.

**Result and Conclusion:** From the finding of the research, it was seen that mothers of child with cerebral palsy have a good understanding about splint. They feel realistic changes in their child hand function. Most of the mothers easily learn the wearing technique but they feel difficulty to maintain wearing time & they show less interest because of its poor cosmetic outlook.

**Key ward:** Children with Cerebral Palsy, Hand splint, Hand function, Mothers Perception, Occupational Therapists perception.

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## **1.1 Introduction**

Over a billion people, about 15% of the world's population, have some form of disability. Cerebral palsy is one kind of disability .Cerebral palsy represents a group of chronic, non-progressive motor disorders characterized by impaired voluntary movement resulting from prenatal developmental abnormalities or prenatal or postnatal central nervous system damage. Some people with cerebral palsy are also affected by other medical disorders, such as seizures, mental retardation, hearing and vision problems, and communication problems. Campbell (2007) mentioned that the prevalence of children with CP in worldwide population is 1.5-2.5 per thousand children per year. Most of the cerebral palsy child has difficulty in performing daily activities such as self-feeding, dressing, toileting, hygiene after toileting etc. As an occupational therapist we work in improving performance of daily living activities. For this reason splinting is provided to the patient in Hand Therapy unit. Splinting is very helpful for improving child hand function and reduces deformity.

## **1.2 Background**

Cerebral palsy (CP) is a common disorder with an estimated prevalence of 2/1000 in the general population. (Steultjens et al. 2004, p.1-14). At present, in developed countries, about 2 live born children per 1000 have Cerebral Palsy. (Mass et al.2012, p.38). It occurs early in life and is present throughout a person's lifetime. (Steultjens et al. 2004, p.1-14). It is mainly caused by an insult to the developing brain. (Fowler et al.2007, p.18). Cerebral palsy children are faced with a variety of motor and sensory impairments that have an impact on their function. (Fowler et al.2007, p.18) They demonstrate reduced manual dexterity and pinch strength and a lack of spontaneous manipulation. Spasticity can lead to reduced range of motion and muscle contractures. (Blackmore et al.2006, p.3). The motor disorders of CP are often accompanied by disturbance of sensation, cognition, communication, perception, and/or behavior, and seizure disorder (Sgandurra et al.2011,p.80).Children diagnosed with spastic Cerebral Palsy (CP) often show perceptual and cognitive Problems,

Which may contribute to their functional deficit (Rosenbaum et al.2011, p.150). The management of a child with cerebral palsy, with the objective of optimizing functional abilities, typically includes the input of many disciplines; including occupational therapy .One study reported that 50% of children with CP receive OT. (Steultjens et al. 2004, p.1-14) Occupational therapy focuses on the development of skills necessary for the performance of activities of daily living. These activities include play, self-care such as dressing, grooming and feeding, and motor tasks such as writing and drawing. OT also addresses cognitive and perceptual disabilities, especially in the visual-motor area. Researcher has found that the children who are diagnosis as CP have major and minor problem in their hand. They cannot perform activities of daily living due to their major hand skill problem. CP children cannot perform the pattern (Reach, grasp, carry, release, bilateral hand using) sequentially. Splint is a part of Occupational Therapy intervention for improving the hand function. Therapist provided the hand splint to increase the child hand function. Researcher is confused about the mothers really understand the purpose of giving splint. Till now no researcher has been conducted to find out mother and therapist perception about splint to improve the hand function. So the researcher tries to find out actual functional outcome of splinting for the cerebral palsy child.

### **1.3 Aim of the study:**

To identify the perception of mothers of child with cerebral palsy and the qualified occupational therapists of paediatric unit about splint to increase the hand function of children with cerebral palsy.

### **1.4 Objectives of the study:**

- ❖ To identify the understanding of mothers of child with cerebral palsy about importance of splint.
- ❖ To identify the changes in hand function of child with cerebral palsy from their mothers and Qualified Occupational Therapists.
- ❖ To identify the strength and limitations of splint influencing on hand function from mothers of child with Cerebral Palsy and Qualified Occupational Therapists.

## **1.5 Significance of the study:**

The main focus of this study is to find out the changes in hand function of child with cerebral palsy after using of the hand splint and their mothers perception about the hand splint. Mother's perception is very important to identify the benefit of splint to improve the hand function of child with cerebral palsy because mother is child's nearest person. Splint is a part of Occupational Therapy intervention for improving the hand function. If the mothers know the outcome of the splint, it will be easy for the therapists to motivate them to engage their child in wearing the splint. Therapists will also provide a proper education about the importance and benefit of hand splint. It will be helpful for mothers to understand the importance and therefore to continue follow up session. If the therapists know the limitation of the splint, they will try to reduce the limitation. When the therapists know its strength they can motivate the mothers to use the splint regularly. The researcher will share the data, information and result with the paediatric Occupational Therapists, so the study may help the therapists to raise their confidence about their intervention in these challenging health care professions. Other Occupational Therapists who worked with another paediatric rehabilitation center could be benefited by this study after sharing this information.

## **1.6. Children with Cerebral palsy**

According to Bax (2005) cerebral palsy is —A group of 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 cerebral palsy are often accompanied by disturbances of sensation, cognition, communication, perception and/or behavior and/or a seizure disorder. As discussed by Wood (2000) despite advances in medical care, cerebral palsy remains a significant health problem. The number of people affected by cerebral palsy has increased over time. This may be because more and more premature infants are surviving. In Bangladesh, about 1 to 2 children per 1,000 have cerebral palsy. As many as 1,000,000 people of all ages are affected. Cerebral palsy affects both sexes and all ethnic and socioeconomic groups.

All children with Cerebral Palsy have damage to the area of brain that controls muscle tone. As a result, they may have increase muscle tone, reduce muscle tone or combination of the two (fluctuating tone). 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. 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. (Gillette childrens specialty Healthcare 2009, p.10-11) When present low tone, seen and birth but later classify as spastic, athetoid or ataxic is called floppy. Injuries to the cerebral cortex can result in spastic cerebral palsy, which causes abnormally stiff muscles. This condition the most common type of cerebral palsy can also cause bone deformities and shortened muscles. (Case smith 1996, p.128-129)

**In each child with cerebral palsy, the parts of the brain that are damaged are different. The causes are often difficult to find.**

According to Hagberg 2005 Causes around the time of birth is lack of oxygen (air) at birth. The baby does not breathe soon enough and becomes blue and limp. In some areas, misuse of hormones (oxytocics) to speed up birth narrows the blood vessels in the womb so much that the baby does not get enough oxygen. The baby is born blue and limp-with brain damage. Birth 8 injuries from difficult births. These are mostly large babies of mothers who are small or very young. The baby's head may be pushed out of shape, blood vessels torn, and the brain damaged. Babies born before 9 months and who weigh less than 2 kilos (5 pounds) are much more likely to have cerebral palsy. In rich countries, over half the cases of cerebral palsy happen in babies that are born early. (Wood 2000)

According to Siegle 2009 Causes after birth are very high fevers due to infection or dehydration (water loss from diarrhea). It is more common in bottle-fed babies, brain infections (*meningitis, encephalitis*). There are many causes, including malaria and tuberculosis, head injuries, lack of oxygen from drowning, gas poisoning or other causes, poisoning from lead glazes on pottery, pesticides sprayed on crops, and other poisons, bleeding or blood clots in the brain, often from unknown cause, brain tumors.

These cause progressive brain damage in which the signs are similar to cerebral palsy but steadily get worse. (Khan 2009)

### **1.6.1. Common Physical and Functional problem**

Children with cerebral palsy (CP) experience many daily challenges as a result of the upper motor neuron syndrome. Symptoms include the following: spasticity, weakness, loss of dexterity, poor motor control, and sensory impairment (Lowe et al.2006, p.170-175). The Child is slow to hold up his head, to sit, or to move around, he may not use his hands or he only uses one hand and does not begin to use both. The baby may have communication difficulties with not respond or react as other babies do. This may partly be due to floppiness, stiffness, or lack of arm gestures, or control of face muscles. Also, the child may be slow in beginning to speak. Later some children develop unclear speech or other speaking difficulties. (Bax 2005) some child move so much and awkwardly they may appear stupid. Their faces twist, or they may drool because of weak face muscles or difficulty swallowing. This can make an intelligent child appear mentally slow.

The baby may have difficulties in feeding with sucking, swallowing and chewing. She may choke or gag often. Even as the child gets bigger, these and other feeding problems may continue. Body may stiffen when she is carried, dressed, or washed, or during play. Later she may not learn to feed or dress herself, to wash, use the toilet, or to play with others. This may be due to sudden stiffening of the body, or to being so floppy she 'falls all over the place. (Ackerman 2005)

### **1.6.2. General intervention to reduce the risk factor**

We prevent the cerebral palsy to improve maternal and early childhood nutrition, immunization against bacterial and viral infections which cause brain damage, genetic testing and counseling, family education to reduce consanguineous and intermarriage partners, improve pre-natal and peri-natal care and condition, the elimination of environmental hazards, the early identification of symptom and appropriate reactions to them, control of drug usage, particularly during pregnancy and to prevent accident. (Mandl1981, p.59-60)

### **1.6.3. General Treatment for CP child**

Children with cerebral palsy may be supported by a team of professionals including health professionals and community-based support services who work together to help the child and family reach their goals. The team is generally coordinated by one health care professional and may include pediatricians, physical medicine and rehabilitation physicians, orthopedic surgeons, physical and occupational therapists, ophthalmologists, speech/language pathologists, social workers and psychologists. Physician trained to help developmentally of Cerebral palsy child. An orthopedist, a surgeon who specializes in treating bones, muscles, tendons, and other parts of the body's skeletal system. Physical therapist can help the child become as mobile as possible. They designs and implements special exercise programs to improve movement and strength. Occupational therapist can help to learn new skills for day-to-day living, school, or work and improve their life. Speech and language therapist treats the child to improve their Communication skill. Social worker can help the child community assistance and education programs. (Gillette children's specialty Healthcare 2009, p.24) psychologist can help CP children cope with the special stresses and demands of cerebral palsy. In some cases, psychologists may also oversee therapy to modify unhelpful or destructive behaviors or habits. Occupational and Physiotherapist provide different types of devices depend on a child's needs. These devices and equipment may include special crutches, splint orthotics, casts, standers, special seats, walkers, wheelchairs, special shoes, and other methods to help with specific problems. (Mosby1996, p.282)

### **1.6.4. Occupational Therapy intervention for CP child**

An Occupational therapist specializes in improving the development of the small muscles of the body, such as the hand, feet, face, fingers and toes. Therapist also teach daily living skills such as dressing and eating, as well as making sure children are properly positioned in wheelchairs. Occupational Therapy interventions enhance children's functional performance by achieving the gross and fine motor skills. Occupational Therapy intervention has been shown to have a positive effect on CP with hand function. (Case smith 2001, p.792) Occupational therapists also help to



make home and community accessible to the child. Many adaptations may need to be accommodated in order for child to reach his maximum level of independence. Occupational therapists also address visual-motor and visual-perceptual skills, which are necessary for reading, writing and computer work. (Gillette children's specialty Healthcare 2009, p.24) Occupational Therapist generally provides different type of hand splint to improve the hand function and to prevent the deformity. Splint usually is placed on the palmar surface of the hand and forearm. Therapists tell the patient to remove the splint to clean the hand or to do gentle range-of-motion exercises, the splint should be removed only under their supervision. However, be sure to show the patient how to wrap the splint in place so that it can be loosened if the patient feels that the splint is tight. (Mosby1996, p.282) Some studies advocate wearing the splint for two hours a day, others for twenty –four hours a day and others suggest an intermittent wearing schedule .Thus wearing a splint for only two hours may be too short to be effective. While wearing a splint for twenty –two hours, may be uncomfortable and may result in the client's poor or non-compliance. (Delgado 2006) Initially using the splint, the area involved should be checked every one-half to one hour. (Cindytomac 2010)

**Occupational therapy interventions were classified into five specific intervention categories:**

- (1) Training of sensory motor functions including play activities to facilitate motor performance.
- (2) Training of skills including training of daily activities such as feeding, personal hygiene, writing etc.
- (3) Parental counseling in which parents are educated how to stimulate independence in their child.
- (4) Advice and instruction regarding the use of assistive devices including the provision of mobility aids like wheelchairs and bathroom devices.
- (5) Provision of splints such as hand orthoses to facilitate hand function.

(Steultjens et al. 2004, p.726-731)

### **1.6.5. Patient responsibility in splinting intervention**

Splinting is a non-invasive and inexpensive procedure and additionally it more focuses on the functional position of the hand. (Delgado 2006) Generally the splinting material and the wearing management are made by the therapist with minimal contribution of the patient. In many instances no choice offered as the patient is either too sick, or has no experience or foundation about splinting intervention. The nature of the injury determines the splint requirements. A clear explanation as to the purpose for splinting intervention, the reasons and rationale for the design, the wearing regime and precautions, should be discussed prior to the patient making decision that splint fabrication should proceed. The literature suggests that splinting intervention is greater when the benefits of the intervention are immediately understandable and patient family supports the intervention. The therapist provides education to the patient of the benefits of the splint and expected wearing system. The therapist affirms his or her belief in the positive benefits of splinting intervention for the client. (Willton1997, p.15)

### **1.7. Hand Splint**

Children hand skill difficulties one of the more common problems is inadequate isolation of movements. Children who demonstrate significant problem in this area tend to use total pattern of flexion or extension throughout the upper extremities. Inadequate isolation of movements is handicapping even in early infancy because it affects the most basic reach and grasp. (Kumar et al.2012, p.30) Splinting is an important aspect of optimizing upper limb function for client with upper limb injuries and functional impairment. Splint is a device for immobilization, support or restrains any part of body. It is a temporary device as part of treatment program. Splints are often used for children with neurological conditions to improve limb positioning and increase functional movement (Lannin et al.2003, p.299). Splinting is a major treatment modality used by occupational therapists for children with Cerebral palsy. Parents play a central role in whether, when and how splints are used with their children on a daily basis. For occupational therapists, splinting is a major focus (Schroder& Crabtree &Watson 2002, p.75-80).

The purpose of the splint is to allow the hand to rest in a safe position—that is, a position that will not lead to hand dysfunction if stiffness results. (Mosby1996, p.277) Hand splinting can have one of two purposes: Immobilization or mobilization. Both splints are help to gain the function. The main purpose of splint is immobilization, support or restrains any part of body. Splint Prevent deformity through maintaining muscle length, it also provides joint stability and alignment and Substitute impaired muscle function. Splint is very essential to improve and support the development of movement. (Colditz 1992,p.2391)

## **1.8. Hand function**

Children with cerebral palsy (CP) often have impaired hand function .The impaired motor skill of these children has been attributed to central dyscoordination and decreased integration of somatosensory and visual information and weakness in specific hand and arm muscles and spasticity in other hand muscles. The functional position of the hand is- The wrist is placed in 20-30 degree dorsi-flexion, the metacarpophalangeal (MCP) joints are positioned in 45° of flexion, and the interphalangeal (IP) joints should be straight, PIP 30 degree flexion DIP 20 degree flexion, splint usually is placed on the volar side of the hand. (Willton1997, p.3) Common disorders of the arm and hand in CP include weakness and sensory impairment spasti-city and/or reduced muscle length associated with spasticity dystonia or disuse. Various combinations of these impairments contribute to the difficulties experienced in reaching, pointing, grasping, releasing and manipulating objects. Postural instability can also compromise the child's ability to perform upper limb tasks, owing to lack of a stable base from which to perform activities such as writing, dressing, grooming or throwing. The therapies are based on a variety of theoretical constructs, with deferent treatment elements. Constraint induced therapy has also been advocated as an effective intervention for spasticity and weakness and may be effective in children with CP. This therapy is based on the premise that 'leaned non- use' occurs when individuals fail to use the affected limb on a frequent basis for a variety of functional tasks. It has been suggested that early use of Occupational- therapy and splinting have the potential to enhance motor skill development and reduce the development of contracture and deformity (Boyd & Morris and Graham 2001, p.150-166).

## **1.9. CRP Paediatric Unit**

The Centre for the Rehabilitation of the Paralyzed (CRP) was established in 1979 by a group of therapists. CRP is a non-government organization (NGO) which treats and rehabilitates people with disabilities regardless of their socio-economic means and aims to improve the quality of life of people with disability. CRP runs Paediatric unit service since 1995. This unit runs both inpatient and outpatient unit program in more organized through two different service systems from 1999. In 1999, there was a room for 8 mothers with their child were admitted for inpatient service for 14 days. At the same time the follow up of discharged inpatient and new outpatients also treated in outpatient service. After feeling the great need for paediatric service and high quality reputation of this unit service convinced the concern authority to expand inpatient service in 2001 by 10 beds and 2004 by 21 beds. The program is designed to integrate children with disabilities into their own family and community. Therapists educate the mother about the child's condition, and teach them how to take care of the child at home. In these two weeks the mother and child are involved in different group therapy, individual and combined treatment sessions and an educational program.

Besides this outdoor system also become rich by more number of therapists. The discharge patients of indoor unit will return to outpatients for follow up. This service is usually for children with conditions such as cerebral palsy, autism, Down syndrome, behavioral problems, intellectual impairment, muscular dystrophy, Erb's palsy, club feet, flat feet, and congenital deformity. Here they are treated by both physical and psychological aspect of the child and their family by qualified OT, PT and SLT. Occupational Therapist Provide Different type of hand splint to improve the client hand function and quality of life. In the hand therapy unit therapist make different type of hand splint. (Annual report of CRP, 2012-2013, p.17-19)

## **1.10. Mothers perception**

Mother is the child nearest person. When asked whether splinting was effective, the informants identified both advantages and disadvantages of splints, which each mother had carefully weighed up in determining whether to apply the splints or not. The mothers identified three major beneficial effects of splints. First, they overwhelmingly responded that splinting had a positive effect on joint range of

motion by preventing the development of joint contractures and deformities in their children. The mothers reported that factors such as periods of remission and negative reactions (discomfort, disruption to sleep and restriction to movement) made it difficult for them to continue splinting their children(Schroder& Crabtree &Watson 2002,p.75-80).

### **1.11. Occupational Therapists perception**

Occupational therapy is the art and science of helping people do the daily activities that are important health and wellbeing and valued in Occupation. Occupational Therapy based on researched evidence. Occupational Therapy refers to all of the activities that occupy people's time and give meaning to their lives. Occupational therapy practitioner often works with the disable people and their caregiver. Occupational Therapist carefully analyses of the person capacity, the task demands, and the performance context. (Case smith 1996, p.28-29) Pediatricians commonly refer children with cerebral palsy to occupational therapists. Pediatricians can advise families that Occupational Therapy Home Program is very essential for cerebral palsy child and it's developed with a collaborative, evidence-based approach and implemented by parents at home were clinically effective. (Novak et al. 2009, p.606)

Occupational therapy (OT) for cerebral palsy focuses on the development of skills necessary for the performance of activities of daily living. The aim of the Occupational therapist is to improve the functional ability of children with Cerebral palsy (Steultjens et al.2004, p.726-731).

### **2.1. Study Design**

Researcher used Qualitative Content Analysis under Qualitative design for this study. The qualitative study design was selected because qualitative methods help to explore the experience of participants. Qualitative study also helps to developed to study natural phenomena. (Myers 2009).

Qualitative research is exploratory in nature by which the researcher can gain insights into another person's view's opinion, feelings and beliefs within their own natural setting. (Hick 2000, p.7)

Content analysis is a research method that has come into wide use in health studies in recent years. It is a journey from textual data to contextual meaning through the development of emergent themes. Researchers regard content analysis as a flexible method for analyzing text data. (Hsieh & Shannon 2005, p. 1277).

### **2.2. Study Setting**

This study conducted in the paediatric unit of Center for the Rehabilitation of the Paralyzed (CRP) at savar.

### **2.3. Participant Size**

Researcher was selected 5 mothers of child with cerebral palsy and 5 qualified occupational therapist of paediatric unit for her study.

### **2.4. Study Population**

Mothers of child with Cerebral Palsy at CRP and Qualified Occupational Therapists of outpatient paediatric unit at center for the rehabilitation of the paralyzed.

### **2.5. Study Participant**

Researcher was selected the Mothers of child with cerebral palsy who takes the hand splint for their child from the hand therapy unit at center for the rehabilitation of the paralyzed and the qualified occupational therapist of outpatient paediatric unit who work in the center for the rehabilitation of the paralyzed (CRP) at savar.

## **2.6. Inclusion Criteria for the participant:**

Mothers of children with cerebral palsy who was matched the following criteria:

- Mothers of cerebral palsy children. Many other conditions child also use splint but researcher select cerebral palsy children because at present there a huge number of cerebral palsy children may be this condition children number is the highest and this condition children use hand splint lot. Researcher also choose this childrens mothers for easily collect data as the follow-up mothers of cerebral palsy children are available in paediatric outpatient unit at CRP.
- Children who take hand splint from hand therapy unit at center for the rehabilitation of the paralyzed.
- Children with cerebral palsy who use the hand splint more than three months.
- Children with cerebral palsy who are regularly use the hand splint.(at list 6 hours per day)

## **2.7. Participant selection procedure:**

Researcher used the convenient sampling. Researcher used the convenient sampling because the participants of this study were selected conveniently from the paediatric unit of Center for the Rehabilitation of the Paralyzed (CRP) at saver. After taking permission from the paediatric unit researcher discussed with responsible Occupational Therapist of outdoor paediatric unit about the research. Researcher makes a list of children who were fulfill the inclusion criteria. Researcher also selected the Occupational Therapist who works in Paediatric outdoor unit. Qualitative research tents to focus on the collecting of detail amount of data from relatively small sample of subjects by asking question or observing behavior. (Hair & Bush 2003, p.212-214)

## **2.8. Field Test:**

Before starting the collection of data the researcher accomplished the field test with one participant. During the interview, researcher informed the participants about the aim and objectives of the study. This test had been performed to find out the

difficulties that are existing in the questioners. By this test the researcher had re-modeled his questionnaires for those participants as they can understand the voice that the researcher wants to get from them.

## **2.9. Data Collection:**

Researcher conducted semi-structure face to face interview to collect information from the mothers. (Appendix-7 & 8) Through the face to face interview the researcher can develop rapport with the mothers with helping to observe and taking in-depth information. “Interview conducted face to face is more innovate allowing the interviewer to interact directly and develop rapport with the interview.”(Bailey 1997, p.96) Researcher also arranged a focus group discussion for collecting data from the Qualified Occupational therapist in paediatric unit who provide the outdoor service. In the focus group discussion researcher collected data by open ended questioners. (Appendix- 10 & 11)

## **2.10. Data Collection procedure:**

Researcher made some **semi –structured questioners** in bangle for collecting data from the mothers of child with cerebral palsy. Researcher first made some standard questioners with match her Objectives. A qualitative approach was selected and semi-structured questionnaire and face to face Interviews was conducted.

A semi-structure and face to face interview system was used to gather information from the participants. In semi-structured interview, participants give opinions about their Actual experience. A quite place was selected for interview to avoid distraction and environment noise. So, the participant could felt comfort and gave adequate attention to interview. The researcher collected all the data herself through interview. Before start recording the formal interview researcher build rapport with the participants and made them comfortable for interview. In built rapport, researcher introduced with participant about self, explained about the cause of interview about the aim of the study and its importance. Participants could understand easily about interview most of the time, participants showed interest to talk for interview. Researcher was made bangla questionnaire and conducted interview in bangle because the entire participants were Bangladeshi. In some case, researcher explained



the question into local language that was helpful to the participant. Researcher was need 7-10 minutes to collect the data. Interviewer were recorded by an audio-recorder, after completed the interview, recording part was listened from of the participants for ensuring clear recording.

### **Focus group Discussion:**

Researcher arranged a focus group discussion for collecting data from the Qualified Occupational therapist in paediatric unit who provide the outdoor service. A quite place was selected for Focus group discussion to avoid distraction and environment noise. So, the participant could fell comfort and gave adequate attention to Focus group discussion. In the focus group discussion researcher collected data by open ended questioners. In focus group discussion data was collected by interview of a group of people about the same topic at the same time. The researcher was focusing the discussion by providing specific topics or questions for the participants to discuss. In focus group discussion a small group of people share their opinions or perceptions with each other. In total one focus group discussions was conducted for this study. Additionally there were one moderator, one observer and the observer recorded the total discussion session. Before the discussion the group members were welcomed and the purpose and topic of the discussion were introduced. The focus group discussion guide was also discussed with the participants before starting the discussion. The discussion was conducted in Bengali language. Researcher focused the discussion by providing specific topics or questions for the participant to discuss. During the discussion participants were probed to share their ideas and opinion in the discussion. At the same time the observer took important notes and recorded the discussion. (Tucker 2000, p.397) suggests that during focus group discussion, it has four important steps: probing ideas during discussion through the use of questions recording key notes, transcription and data analysis. After the discussion researcher transcribed the taped discussion and these transcript were then translated in English. At the end of the discussion all the participants were thanked by the researcher for their participation. (FGD Guide Appendix- 9)

### **2.11. Data Collection Tools/Materials:**

- A mobile phone recorder was used to record the interview of the participants. The use of recording method in interview requires great trust in the judgment. Information recording method of interview is the most appropriate. (Polgar & Thomas 1991, p.121-124)
- Pen and Paper was used to write down field notes or observation note from all participants.
- A semi-structured questionnaire was used to conduct interview for mothers of children with Cerebral Palsy.
- An open ended questionnaire was used to conduct Focus Group Discussion for qualified Occupational Therapist.
- Consent form for the taking permission from the participants.

### **2.12. Ethical Consideration:**

- Researcher takes permission from the authority of BHPI (Bangladesh Health Professions Institute). (Appendix-1)
- Researcher maintains confidentiality about service information of the institute.
- Researcher obtains permission from the Paediatric Unit. (Appendix-2)
- Researcher collected consent from the participants. (Appendix- 5 &6)
- Researcher ensures the confidentiality is maintained about the participants.

### **2.13. Informed Consent**

Written consent was obtained from all participants before beginning of formal interview (See in appendix- 5&6). All of them were verbally informed about the title, aim and objectives of the study. They were voluntarily participating in this study and they had right to withdrawal their participation in any time of research conduction. They were informed that all of the information given by them would not be shared with others without research purpose. The recorded information and transcripts would be shared with supervisor only for research purpose. Participant's address or identity would not used in this study in any reason. They were also informed that they had not any direct benefit indirectly in future. Finally they filled up the written consent form as document of their permission and voluntary participation.

## **2.14. Data Analysis:**

Researcher was analyzed the data by qualitative content analysis. In this type of analysis, coding categories are derived from the text data. At the beginning of the data analysis, researcher listened to the recorded data several times. The recorded data were then transcribed into Bengali.

Researcher started the data analysis with reading all data repeatedly to achieve immersion and obtain a sense of whole, and then researcher was read the data word by word to derive the code. Codes were then being sorted into categories. Categories used to organize and generate themes. At first, Researcher systematic organizing of the, transcripts of interviews and other associated materials to ensure the research question was addressed. Then data was effaced through transcription from the interviews of audio recording. After formulating the transcription, the researcher gave it to six individuals who were good in English with the intention that they could transform it separately from Bengal to English. Then the researcher confirmed the accuracy of the data. After that the researcher read it several times to recognize what the participants wanted to say. All data was analyzed using three stages: question analysis, content analysis and analysis of enough themes. Data was coded into broad categories as dictated by the research question. Content analysis started when the researcher notes the answers of the participants according to every question and determines the codes from these answers. Finally analysis of interview data was done by analyzing text from the categorized data and coded themes.

In the data analysis section, information is discussed in the following general categories-

- To identify the understanding of mothers of child with cerebral palsy about importance of splint.
- To identify the changes in hand function of child with cerebral palsy from their mothers and Qualified Occupational Therapists.
- To identify the strength and limitations of splint influencing on hand function from mothers of child with Cerebral Palsy and Qualified Occupational Therapists.

**Theme 1:** Mothers understand about the importance of hand splint.

**Theme 2:** Children hand function is change after using the splint.

**Theme 3:** Mothers easily learn the wearing technique but they feel difficulty to maintain wearing time & they show less interest because of its poor cosmetic outlook.

## Summary of data analysis and result

Objective	Question no.	Category	Theme
To identify the understanding of mothers of child with cerebral palsy about importance of splint.	Question no-1, 2. FGD Question no-2, 3.	1. Mothers understand about the necessity of splint for their child. 2. Mothers understand the purpose of splint.	Most of the mothers understand about the importance of hand splint.
To identify the changes in hand function of child with cerebral palsy from their mothers and Qualified Occupational Therapists.	Question no-4,5,7,9, 11. FGD Question no-5	3. Children did not hold any object and could not perform any activity before using splint. 4. Children can do different kind activities by using their hands after using splint. 5. Mothers think that their child's hand function is increased after using hand splint. 6. Mothers expect that in future their child's hand function can be improved and their child perform her daily living activity as like a normal child.	Children hand function is change after using the splint.

<p>To identify the strength and limitations of splint influencing on hand function from mothers of child with Cerebral Palsy and Qualified Occupational Therapists.</p>	<p>Question no-3,6,8 FGD Question no- 3, 4.</p>	<p>7. Mothers do not face any difficulties during wearing hand splint to their child. 8. Mothers have not exact Knowledge about wearing time of splint. 9. Mothers have lack of interest in taking splint because of its poor cosmetic outlook.</p>	<p>Mothers easily learn the wearing technique but they feel difficulty to maintain wearing time &amp; they show less interest in taking because of its poor cosmetic outlook.</p>
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**3.1. Category 1:** Mothers understands about the necessity of splint for their child.

Codes	P1	P2	P3	P4	P5	Total
Necessary		√			√	2
Very necessary	√		√	√		3
Not necessary						

[Here P1= Participant no. 1, P2= Participant no. 2, P3= Participant no. 3, P4= Participant no. 4, P5= Participant no. 5]

Most of the participant mentioned splint is very necessary to improve hand function and hand function is very essential to perform daily living activity. Mothers said that before using the splint of her child cannot hold any object but now her child can hold some object.

Two participants said that

After using the splint grasp power, release power and reach power of the child were mostly improve. So splint is necessary to improving the child hand function.

splint are immobilize, protect and support the joints of the wrist and hand, prevention of joint mal alignment, prevention and reduction of soft tissue shortening and contracture sand improvement of function. (Curtin 1994)

### 3.2 Category 2: Mothers understanding about the purpose of giving splint.

The researcher has made the result available at a glance as bellow:

Codes	P1	P2	P3	P4	P5	Fp1	Fp2	Fp3	Fp4	Fp5	Total
To improve the balance		√									1
To become smooth		√									1
To improve hand function			√	√		√		√		√	5
To maintain proper position				√					√	√	3
To change abnormal position					√				√		2

[Here P1= Participant no. 1, P2= Participant no. 2, P3= Participant no. 3, P4= Participant no. 4, P5= Participant no. 5, Fp1=focus group participant no.1, Fp2=focus group participant no.2, Fp3=focus group participant no.3, Fp4=focus group participant no.4, Fp5=focus group participant no.5]

Most of the participant mentioned about the purpose of hand splint is given to the child to improve hand function and hand function is very essential to perform daily living activity. Mothers said that before using the splint of their child could not held any object but now their child can hold some object.

P4 told that, *At before my child could not raise his/her to catch hand anything, to take anything in under, unable to grasp, unable to reach near the mouth. Now she can do those things.*



One of the main purposes of splinting is to improve hand function of clients. Splints are helpful if there's limited joint motion, and they help in correcting or reducing deformity. (Cindytomac 2010) Splints to restore function and it can stimulate brain function by maximizing the functional length of both intrinsic and extrinsic muscles and by maintaining appropriate joint structure function. Splinting prepares the hand and upper extremity for functional retraining. Tradition splints can increase the potential for sensory-motor input, with the result of maximizing functional length and the hand's ability to do gross motor and fine motor dexterity tasks. (Pitts&Brien2008, p.456-467) According to Mckie splints cerebral palsy grasp study-As a result of wearing the splint plus supinator strap the children gained, on average, 15 degrees of supination.

Three participants said that –

Therapists provide the splint for the cerebral palsy child to maintain the child hand position.

Splints play a role in the appropriate positioning of one or more joints. (Cindytomac 2010) Splints can be constructed to assist in immobilization of one joint while allowing isolated movement of another joint. Similarly, "mobilization splints" can place a stiff joint into a prolonged, low load gentle stretch to improve mobility. (Hombach 2011)

Another two participants said that-

Splints help the cerebral palsy child to change the abnormal position of hand.

Thumb opposition splint positions the thumb more opposite to the fingers, enabling the patient to form a better pinch grip between the thumb and the fingers. (Videler et al. 2012, p.249–253)

Another one participant said that –

Therapists provide the splint to their children to become smooth and to improve the balance of their children hand.

Researcher thinks that mother of child with cerebral palsy has general understanding about hand splint. One of the main purposes of splinting is to improve hand function

of clients. Most of the participant said that hand splint is very essential to perform their child’s daily living activity. But some mothers have poor knowledge about the purpose of splint.

**3.3 Category 3:** Childrens do not hold any object and cannot perform any activity before using splint.

The researcher has made the result available at a glance as bellow:

Codes	P1	P2	P3	P4	P5	Total
Unable to use hand before using splint		√	√			2
Unable to hold and perform any activity	√	√	√	√	√	5
Unable to bring anything in front of mouth				√		1

P1, p2, p3, p4 and p5 told that-

Before using splint their child could not hold any object and perform any activity.

There was a small increase (from 29% to 35.5%) in the proportion of children who acquired the ability to use the affected hand for holding with a consequent decrease (from 32.3% to 26.8%) in the proportion who did not use the hand at all. ( Fedrizzi et al.2003,p.85-91 )

Two participants said that-

Their child could not use hand before using of splint.

Common disorders of the arm and hand in CP include weakness and sensory impairment spasticity and/or reduced muscle length associated with spasticity dystonia or disuse. Various combinations of these impairments contribute to the difficulties experienced in reaching, pointing, grasping, releasing and manipulating objects. (Boyd& Morris& Graham2001, p.150-166)

Another one participant said that-

Before using the splint their child could not bring anything in front of mouth.

Hand grip before age 4 years showed mild impairment (pincer grip) in 38.7%, moderate impairment (three-finger grip) in 41.9%, and severe impairment (no grasp/whole hand grasp) in 19.4% of the children. The description should include other deficits, and the level of functioning with and without assistive devices. (LAUGHTON 2004, p.434)

**3.4 Category 4:** Childrens can do different kind activities by using their hands after using splint.

The researcher has made the result of functional outcome of splint available at a glance as bellow:

<b>Codes</b>	P1	P2	P3	P4	P5	Fp1	Fp2	Fp3	Fp4	Fp5	Total
Improve reach and grasp ability	√	√	√	√	√		√	√		√	8
Improve bi-lateral hand use	√	√	√								3
Improve eating ability by using hand	√			√							2
Improve writing skill	√					√	√	√	√	√	6
Improve playing ability by using hand				√							1
Improve tendency of using had	√	√	√	√	√						5
To increase release power								√		√	2
Not any improvement occur					√						1

Most of the participant said that-

Before using splint child did not want to use hand to hold any object but now he/she can held object. After using the splint most important improve is he/she can hold many things with his hand and he try also. When she is giving anything to eat she can take hold by his own hand and also reach food near the mouth and after using the splint grasp power, release power and reach power of the child are mostly improve. By using cock-up splint their wrist bring normal position then their grasp, release, hold any object or by using this they can help the other fine motor activity.

Reach and grasp movements are basic and important upper arm motor components in completing daily living activities such as self-feeding, opening a door etc. (Chang 2004)

Reaching has been defined as the voluntary positioning of the hand at or near a desired location so that it may interact with the environment. Performance of reach movement may be used to reflect the coordination multiple joints and involvement of both the musculoskeletal and neural system. (Ramos 1997)

Six participants said that-

After using the splint a child can show good performance in schooling such as- drawing, recreational activity or perform their daily living activity and increase their hand function.

Five participants said that-

At before their child don't catch anything by raising hand. Now she/he can do those things.

Three participants said that-

After using the splint their children try to hold something by using both hands. Now they try to play with her friends by using both hands and try to open the jug independently.

Two participants said that-

Before using the splint they cannot hold anything but now they can eat anything with his hand.

One participant focused that-

Now her child plays with her friends by using different type of object.

Another one participants reflect that-

After using the splint she cannot see any improvement occur of her child's hand function.

Researcher thinks that before using the splint cerebral palsy child do not perform any activity by using their hand. But when they started to use the splint their hand function was improving day by day. Hand splint helps the child in their self care and productivity.

### **3.5 Category 5:** Mothers thinking that the child's hand function is increased after using hand splint.

The researcher has made the result available at a glance as bellow:

<b>Codes</b>	<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P4</b>	<b>P5</b>	<b>Total</b>
Increase hand function after using hand splint.	√	√	√	√	√	5
No change in functional Performance						

P1, p2, p3, p4, p5 told that- before using the splint child could not use his hand. By using this splint they can use their hands and try to hold anything with his hand. At before my child could not rise anything with his hand, to put down anything, could not grasp, could not reach his/her hand near the mouth. Now she can do those things and can also grasp, raise, that means she can do everything.

The hand function was accepted as "good" if the fine movements such as pinching, picking up small objects, writing, and doing and undoing a button, could be accomplished, as "fair" if the gross hand movements such as grasping, holding a

spoon and fork, and manipulating the large objects was possible, and as “poor” if there was no gross movement. (Ten et al.2007,p.197-202)

Researcher thinks that maximum time the functional outcome of hand splint is very good. But it is depend on the family member or carer of the child. Most of the time mothers do not follow the therapist instruction. If mother follow the therapist instruction, the hand function of their child will be better from the previous.

**3.6 Category 6:** Mothers expect if they use it properly with maintaining therapist instruction, in future their child’s hand function will be improved and their child perform her daily living activity as like a normal child.

The researcher has made the result available at a glance as bellow:

Codes	P1	P2	P3	P4	P5	Total
Deformity can be change			√		√	2
If use it properly with maintaining therapist instruction, hand function will be improved and they perform their daily living activity as like a normal child	√	√	√	√		4
Any improvement cannot be occurred					√	1

Most of participant focused that-

If the children use the splint properly with maintaining therapist instruction, hand function can be improved and they perform their daily living activity as like a normal child.

Parent's expectations are also probably a combination of realistic and unrealistic goals for the child, but in time, with professional help, the parent will develop a set of mostly realistic goals. Parents and caregivers spend the most time with the child, know his or her everyday needs, and seek options on how best to fulfill the needs. Parents and caregivers can take certain common steps to optimize the child's care and quality-of-life. (The Cerebral Palsy Care Plan Outline 2013)

Two participants said that-

After using the splint child deformity will change if they use this according to the therapist instruction.

According to Miller, when it comes to expectations and questions of what the future holds for the child with CP, it is important to maintain a combination of optimism and realism, just as one would with any child. Parents of a child's with cerebral palsy to understand the child's present and future abilities.

Another one participant focused that-

Any improvement cannot be occurred because she/he cannot see any change of her child hand function.

**3.7 Category 7:** Mothers has lack of interest to take splint because of its poor cosmetic look.

The researcher has made the result as follows:

Codes	Fp1	Fp2	Fp3	Fp4	Fp5	Total
Lack of interest because of its cosmetic purpose	√		√		√	3
Mothers give interest to splint because of their child functional outcome					√	1
Tendency of using splint use more rather than Therapy		√		√		2
Mother became more interested to take writing splint because of writing purpose	√			√		2

Three participants focused that-

Mothers have lack of interest to take splint because of its poor cosmetic outlook.

Fp1 told that, *we saw that a few mother become demotivate to take splint, because when they go to school, that their mother see that other normal children can write easily with pen then they also want their children will write easily like normal children.*

FP3, Fp5 told that *mother do not use this because of its cosmetic purpose or out looking.*

The limitations of hand splints may include-Decreased use of the hand when wearing splint, Skin irritation or breakdown after splint use, Complaints by the patient that the splint is unattractive. (Cindytomac 2010)



Another two participants said that-

Mother became more interested to take writing splint because of writing purpose.

Fp2 and Fp4 told that-

Mothers are more eager to wear splint instead of therapy.

One participant said that-

There are many mothers who give importance to take splint for their child's functional outcome and they are getting agreed so that their children can show attitude like normal children in the future.

Researcher thinks that mothers do not show interest to take splint because of cosmetic purpose and its vulnerability. They expected that after a few times her child hand skill pattern will be change but when they see any vital change did not occur in her child hand function they cannot show interest to use the splint properly.

**3.8 Category 8:** Mothers do not face any difficulties during the time of wearing hand splint to their child. The researcher has made the result available at a glance as bellow:

Cods	P1	P2	P3	P4	P5	Fp1	Fp2	Fp3	Fp4	Fp5	Total
Do not face any difficulties	√	√	√	√							4
Child hold his hand tightly		√									1
Injured others surround the child					√						1
Easily vulnerable					√						1

Facing difficulty to raise the hand because of weight of splint					√						1
Skin infection					√		√		√		3

P1, p2, p3 and p4 said that they do not face any difficulties during the wearing time of hand splint to their child.

Three participants said that-

Mothers think that how many times they wear this splint to their child the condition of their child's hand will improve on the basis of this perception they wear this splint maximum time as a result they face skin infection or other kind of side effects.

One participant said that-

She was facing difficulty to raise the hand because of weight of splint.

One participant said that-

Child holds his hand tightly during the wearing time of splint.

Another One participant said that-

Child injured others surround the child by using the splint.

P5 focused that-

Sometime it can be broken at the time of wearing because of slight pressure.

### 3.9 Category 9: Mothers have Poor Knowledge about wearing time of splint.

The researcher has made the result available at a glance as bellow:

Codes	P1	P2	P3	P4	P5	Fp1	Fp2	Fp3	Fp4	Fp5	Total
Hand will have to smooth before wearing splint		√									1
Knowledge about proper technique of wearing splint					√						1
If any complication arise then need to remove	√										1
Do not have knowledge about proper technique of wearing splint		√									1
Follow the therapist instruction			√								1
Do not follow the therapist instruction						√	√	√	√	√	5
Poor Knowledge about wearing time				√		√	√	√	√	√	6

Most of the participant focused that-

They maintain the schedule properly at the first time but after some days they cannot maintain the schedule. In this case it is told every child should have to adapt for half hour but most of the mothers forget it. It is seen that mother may wear it to their children at a stretch six to seven hours.

Fp1, Fp2, Fp4 and Fp5 told that- about using splint therapist instructions are followed more in the very first week but maximum mother mistake about time duration.

The wearing schedule variation is both in hours worn per day as well as in measured by weeks. Some studies advocate wearing the splint for two hours a day, others for twenty –four hours a day and others suggest an intermittent wearing schedule .Thus wearing a splint for only two hours may be too short to be effective. While wearing a splint for twenty –two hours, may be uncomfortable and may result in the client's poor or non-compliance. (Delgado 2006)

Initially using the splint, the area involved should be checked every one-half to one hour. (Cindytomac 2010)

Five participants said that-

At the first time mothers follow the therapist instruction but when she/he came to follow up they say that they don't continue it properly.

One participant said that-

Hand must be remain smooth before wearing

One participant focused that-

15 min break is needed after each 2 hour.

One participant said that-

When any complication arises then need to remove the splint.

Another One participant said that-

She has no knowledge about technique of wearing splint.

Researcher thinks that mothers have very poor knowledge about the wearing time. Most of the time they could not follow the therapist instructions in this way they face many difficulties in their child.

This was an under graduate study of approximately nine months. It was the first time had conducted any such type of study. There was therefore some limitation to be kept in mind while conducting the study. The researchers always tried to consider these limitations. In the focus group discussion researcher do not differentiate the male and female group because in the focus group discussion total participant was five and most of the participant was female only one participant was male so it is not possible differentiate the male and female group. Researcher selects the Children with cerebral palsy who use the hand splint more than three months because the long duration patient did not available in that time.

From the Research findings some issues are found that need to be recommended.  
Recommendation of further research-

- Due to time limitation a few number of participant was taken. In further study large group of participants could be selected.
- Participants can be selected from different Organization who work with disable children.

Occupational Therapy is a growing profession in Bangladesh serving for the person with disability and or the disabling condition. Cerebral Palsy is one of the major disabling condition Where Occupational Therapists Can play very important role to maximize daily living activities of the children with cerebral palsy. Occupational Therapist Provide different types of hand splint for the cerebral palsy child. We showed that the introduction of hand splint for children who need support to perform their daily living activity could have a meaningful positive impact on important aspects of everyday life. According to the data analysis it is identified that if mothers wear the splint regularly for their children according to the therapist instruction the child hand function will improve. The findings from our study will help health professionals by adding much needed evidence to support the provision, development, and funding of new assistive devices and related services for children.

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## APPENDIX

## Appendix 1

### Permission letter for conducting research

Date: 21.08.13

The Head of the Department,  
Department of Occupational Therapy  
Bangladesh Health Professions Institute (BHPI)  
CRP-Chapain, Savar, Dhaka-1343.

Through: Research Supervisor.

**Subject:** Prayer for seeking permission to conduct the research project.

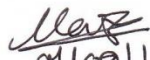
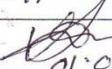
Madam,

I am Popy Sarkar, 4th year student of Bachelor of Science in Occupational Therapy program at Bangladesh Health Professions Institute (under the medical faculty of Dhaka University), the academic institute of Centre for the Rehabilitation of the Paralyzed (CRP). As I am a student of 4th year, I have to do a dissertation for my academic purpose. My dissertation title is *“Effectiveness of splint as perceived by the mother of child with cerebral palsy and occupational therapist”*. For my dissertation purpose, I need permission from you to continue my research project.

So, I therefore pray and hope that you would be kind enough to give me the permission to continue the research project for my study.

Sincerely yours,  
~~Popy Sarkar~~  
Popy Sarkar

4th year B. Sc in Occupational Therapy  
Bangladesh Health professions Institute (BHPI)  
Center for the Rehabilitation of the Paralyzed (CRP).

Permission will be approved by	Signature
<b>Head of the Department</b> Nazmun Nahar Assistant professor & head of the department Occupational Therapy Department BHPI,CRP,Savar,Dhaka	It may allow to Conduct the study as per supervisor comment.   01/09/13
<b>Supervisor</b> Umme Aeyman Lecturer, Occupational Therapy Department Bangladesh Health Professions Institute (BHPI) CRP, Savar, Dhaka-1343	she has got the potential to carryout study. suggested to conduct the study following the proposal.   01.09.13

## Appendix 2

### Permission letter for data collection

Date: 26. 9. 2013  
The in charge, Pediatric Unit  
CRP-Chapain, Savar, Dhaka-1343.

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

Madam,

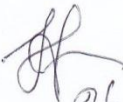
I am Popy sarkar, 4<sup>th</sup> year student of Bachelor of Science in Occupational Therapy program at Bangladesh Health Professions Institute (under the medical faculty of Dhaka University), the academic institute of Centre for the Rehabilitation of the Paralyzed (CRP). As I am a student of 4<sup>th</sup> year, I have to do a dissertation for my academic purpose. My dissertation title is "*Effectiveness of hand splint as perceived by the mother of child with cerebral palsy and qualified Occupational Therapist.*" Researcher will collect data who are taking outdoor service. For my dissertation purpose, I need permission from you to collect data. Researcher need maximum 20 minutes to collect data from 1 participant.

So, I therefore pray and hope that you would be kind enough to give me the permission of data collection to continue the research project for my study.

Sincerely,

POPY SARKAR

Popy sarkar  
4th year B. SC in Occupational Therapy  
Bangladesh Health professions Institute (BHPI)  
Center for the Rehabilitation of the Paralyzed (CRP).  
P.O: CRP-Chapain, Savar, Dhaka-1343, Bangladesh.

Permission will be approved by	Signature
In charge, Pediatric Unit CRP, Savar, Dhaka	 26-09-13 <b>HOSNEARA PERVEEN</b> Incharge Paediatric Unit CRP, Savar, Dhaka



## **Appendix 3**

### **Information Sheet**

This is to inform that Popy Sarkar, a student of 4<sup>th</sup> year, B. Sc in Occupational therapy Department of Bangladesh Health Professions Institute (BHPI), the academic institute of Centre for the Rehabilitation of the Paralyzed (CRP), is doing a research project which is part of course curriculum. This is take part of Use of Hand splint perception of Mothers of child with Cerebral Palsy and Qualified Occupational Therapist.

As a participant researcher will ask some questions to you and observe to you during work. For participating in this research you will not get any financial help and face any problem or trouble.

If you have any question about this research now or in future then you can ask without any hesitation to following person.

Popy Sarkar

B. Sc in Occupational Therapy

4<sup>th</sup> year, Session: 2009-10

Department of Occupational Therapy

Bangladesh Health Professions Institute

## Appendix 4

### তথ্য বিবরণী

আমি পপি সরকার, বাংলাদেশ হেলথ প্রফেশনস ইন্সটিটিউট (বিএইচপিআই) এ বিএসসি ইন অকুপেশনাল থেরাপী এর ৪র্থ বর্ষের একজন ছাত্রী। আমাকে কোর্সটা সম্পন্ন করার জন্য এই গবেষণা সম্পন্ন করতে হবে। আমার গবেষণার বিষয় হল মস্তিস্কের পক্ষাঘাতগ্রস্ত শিশুদের মা এবং অভিজ্ঞ অকুপেশনাল থেরাপি চিকিৎসকদের ধারণা জানা যে স্প্লিন্ট ব্যবহারের ফলে মস্তিস্কের পক্ষাঘাতগ্রস্ত শিশুদের হাতের কাজকর্মের কি ধরনের উন্নতি হয় এবং তারা এটাকে কতটা দরকারি বলে মনে করে।

আমি আপনাকে জানাচ্ছি যে, এটা হচ্ছে কেবল একাডেমিক অধ্যয়ন এবং অন্য কোন কাজে ব্যবহার করা হবে না। আপনি চাইলে, এই গবেষণায় অংশগ্রহন করতে পারেন এবং যে কোন সময় আপনি আপনাকে গবেষণা থেকে সরিয়ে নিতে পারবেন। আপনি গবেষণায় স্বেচ্ছাই অংশগ্রহন করতেছেন।

এই জন্য আপনাকে, কতগুলো প্রশ্ন জিজ্ঞাসা করা হবে এবং কাজের সময় আপনাকে পর্যবেক্ষণ করা হবে। আপনার দেয়া সব তথ্য গোপন রাখা হবে এবং কি যদি প্রকাশনার কাজে ব্যবহার করা হয় তাহলেও নামহীন ভাবে প্রকাশ করা হবে। সাক্ষাৎকার চলাকালীন সময়, কোন প্রশ্ন অপছন্দ করা কিংবা উত্তর না দেয়ার ব্যাপারে আপনার অধিকার রয়েছে।

অংশগ্রহনকারী হিসেবে এই অধ্যয়ন নিয়ে আপনার কোন সংশয় বা প্রশ্ন থাকলে আমাকে জিজ্ঞাসা করতে পারেন। আমি এই অধ্যয়ন সম্পর্কিত সকল প্রশ্নের উত্তর দিতে বাধ্য থাকিব।

পপি সরকার

বিএসসি ইন অকুপেশনাল থেরাপী

ডিপার্টমেন্ট অফ অকুপেশনাল থেরাপী

বাংলাদেশ হেলথ প্রফেশনস ইন্সটিটিউট (বিএইচপিআই)

সি.আর.পি, চাপাইন, সাভার, ঢাকা-১৩৪৩

## Appendix 5

### Consent form

In this study I am participant ..... a participant and clearly inform about the aim of the study. In the study as a participant my participation is fully voluntary and I have the right to withdraw consent and discontinue participation in the study at any time.

I am..... Inform that, the all information from the participation will be keep confidential and use safety. Here only the researcher and supervisor permitted to access in the information.

I ..... have been informed about all mentioned and agree to willingly participating in the study.

Participant signature: .....

Date: .....

Researcher signature: .....

Date: .....

## Appendix 6

# সম্মতি পত্র

এই গবেষণায় আমি ..... একজন অংশগ্রহণকারী এবং আমি এই গবেষণার উদ্দেশ্য পরিস্কারভাবে জানতে পেরেছি। আমি যে কোন সময় এবং গবেষণার যে কোন পর্যায়ে আমার অংশগ্রহণ প্রত্যাহার করতে পারি। এ জন্য আমি কারো কাছে জবাবদিহি ও ক্ষতিপূরণ দিতে বাধ্য নই।

সাক্ষাৎকারের সকল তথ্য যেগুলো গবেষণার কাজে ব্যবহৃত হবে, সেগুলো গোপনীয়তার সাথে নিরাপদ স্থানে রাখা হবে। শুধুমাত্র গবেষক এ তথ্যগুলোর প্রবেশাধিকার পাবে এবং কারও নাম কোথাও না ছাপিয়ে এ তথ্যগুলো গবেষণা পত্রে প্রকাশিত হবে।

আমি উপরোক্ত সকল তথ্য গুলো সম্পর্কে জানি এবং আমি এই গবেষণার একজন অংশগ্রহণকারী হতে রাজী আছি।

অংশগ্রহণকারীর স্বাক্ষর \_\_\_\_\_ তারিখ \_\_\_\_\_

তথ্যগ্রহণকারী-

আমি অংশগ্রহণকারীকে অধ্যয়ন সম্পর্কে ভাল ভাবে ব্যাখ্যা করেছি এবং সে স্বেচ্ছাই অংশগ্রহণ করেছেন।

তথ্যগ্রহণকারীর স্বাক্ষর \_\_\_\_\_ তারিখ \_\_\_\_\_

## **Appendix 7**

### **Questioners for the mothers of child with Cerebral Palsy**

1. Do you think that the splint is necessary for your child?
2. What do you think about the reason of giving the splint to your child?
3. Do you know about the rules of using splint? If you know please describe-
4. Do you think that the condition of the hand of your child is improved after using splint?
5. Is increase the tendency of use the hand of your child after using the splint?
6. Is there any problem have occurred due to use splint of your child's hand?
7. Before using splint, what type of activity was performed by using hand of your child and after using the splint what type of activity they can do?
8. Do you face any difficulties at the time of using splint?
9. What types of improvement have occurred due to wearing splint at the hand of your child?
10. What do you think about the result of wearing splint?
11. Do you observe any changes of your child's hand after using the splint? Please describe-

## Appendix 8

### প্রশ্নপত্র মায়েদের জন্য

- ১। আপনি কি আপনার বাচ্চার জন্য স্প্লিন্টটি দরকারি বলে মনে করেন?
- ২। আপনার বাচ্চাকে স্প্লিন্ট টা কেন দেওয়া হয়েছে বলে আপনি মনে করেন?
- ৩। স্প্লিন্ট ব্যবহারের সময় কি কি জিনিসগুলো মেনে চলতে হয়? যদি জানেন তাহলে বলুন?
- ৪। আপনি কি মনে করেন যে স্প্লিন্ট ব্যবহারের ফলে আপনার বাচ্চার হাতের সমস্যার উন্নতি হয়েছে?
- ৫। স্প্লিন্ট ব্যবহারের ফলে আপনার বাচ্চার হাত ব্যবহার করার প্রবণতা কি বেড়েছে? হলে কি ধরনের -
- ৬। স্প্লিন্ট ব্যবহারের ফলে আপনার বাচ্চার হাতে কি কোন ধরনের সমস্যা হয়েছে? হলে কি ধরনের -
- ৭। স্প্লিন্ট ব্যবহারের আগে আপনার বাচ্চা হাত দিয়ে কি ধরনের কাজ করত এবং ব্যবহারের পর কি ধরনের কাজ করছে?
- ৮। স্প্লিন্ট ব্যবহারের সময় কোন ধরনের সমস্যার মুখমুখি হচ্ছেন কিনা? হলে কি ধরনের -
- ৯। স্প্লিন্ট ব্যবহারের ফলে আপনার বাচ্চার হাতে কি কি ধরনের উপকার হয়েছে? হলে কি ধরনের -
- ১০। স্প্লিন্ট ব্যবহারের ফলে কি ধরনের ফলাফল আসতে পারে বলে আপনি মনে করেন?
- ১১। স্প্লিন্ট ব্যবহারের ফলে আপনার বাচ্চার হাতের কোন পরিবর্তন হয়েছে কিনা? হলে কি ধরনের

## Appendix 9

### FGD guide

**Topic: Effectiveness of splint as perceived by the mothers of child with Cerebral Palsy and qualified Occupational Therapist.**

<b>Moderator:</b>	Arifa Jahan Ema
<b>Assistant:</b>	Popy sarkar
<b>Time:</b>	1.00 pm-1.30 pm
<b>Place:</b>	Occupational therapy classroom/Peadiatric Unit
<b>Participant:</b>	Qualified Occupational Therapist in Peadiatric Unit
<b>The Number of Participants:</b>	5
<b>Participants working experience:</b>	Minimum 2 month
<b>Participant educational level:</b>	B.Sc. in Occupational Therapy
<b>Total Participant time required:</b>	120 minutes
<b>Total focus group time:</b>	30 minutes
<b>Break:</b>	0 minutes
<b>Date:</b>	23-11-2013
<b>Signature of moderator:</b>	

#### **Opening:**

Good noon. I am Arifa Jahan Ema,

Today we will discuss with you about a topic. I hope you all will participate and share your opinion and cooperate with each other. I want to tell you first that this is not a debate session its only discussion about a topic. This discussion session will help us to

identify your opinion about the topic. The topic is the “**Effectiveness of splint as perceived by the mother of child with Cerebral Palsy and qualified Occupational Therapist**”. You all are requested to share the opinion about your perception about splint.

If they don't know anything and can't understand, the moderator will give a short description about the topic to the participants. Then the FGD will be started.

Before starting I will give each of you an individual code number and I wish when you will want to say anything you will raise your hand and mention your code number. I would like the discussion to be informal, so there's no need to wait for me to call on you to respond. If you don't understand anything regarding this question, you can ask. I ensure that we will maintain confidentiality about your identity. I want that you all give opportunity to another member to share their opinion. If we seem to be stuck on a topic, I may interrupt you and if you aren't saying much, I may call on you directly.

As discussed, we will take tapes recording of the discussion, because we don't want to miss any of your comments. No one outside of this room will have access to these tapes and they will be destroyed after our report is written. I hope you'll feel free to speak openly and honestly and the session will be vigorous. My assistant will help me in taking notes and be here to assist me if I need any help.

Let's begin.

**The initial question:**

1. What type of splint therapist provided for the Cerebral palsy child?
2. Mother how much interest to take splint?
3. What is the mother's importance about splint from therapist point of view?
4. Factor influence child to use the splint as therapist's instruction?
5. What type of functional outcome has come after using the splint?

**Closing**

Thank you for your participations. You have discussed a lot about the topic which is very much helpful to us to take the important information. It was a very good session. Again thanks for your cooperation and for giving us your important time. Have a nice day!



## Appendix 10

### Questioners for FGD

1. What type of splint therapist provided for the Cerebral palsy child?
2. Mother how much interest to take splint?
3. What is the mother's importance about splint from therapist point of view?
4. Factor influence child to use the splint as therapist's instruction?
5. What type of functional outcome has come after using the splint?

## Appendix 11

### প্রশ্নপত্র থেরাপিস্টদের জন্য

- ১। সেরেব্রাল পালসি বাচ্চাদের চিকিৎসার ক্ষেত্রে অকুপেশনাল থেরাপিস্টেরা সাধারণত কি কি স্প্লিন্ট দিয়ে থাকেন?
- ২। মায়েরা এই স্প্লিন্ট নিতে আগ্রহী কিনা? হ্যাঁ বা না ব্যাখ্যা করুন-
- ৩। মায়েরা স্প্লিন্ট ব্যবহারের ক্ষেত্রে কতটা গুরুত্ব দিচ্ছে বলে আপনি মনে করেন এবং কেন?
- ৪। থেরাপিস্টদের নির্দেশনা অনুসারে মায়েরা বাড়িতে সঠিকভাবে স্প্লিন্টটি ব্যবহার করে কি না? হ্যাঁ বা না ব্যাখ্যা করুন-
- ৫। স্প্লিন্ট ব্যবহারের ফলে সেরেব্রাল পালসি বাচ্চাদের হাত ব্যবহার করে কাজ করার ক্ষেত্রে কি কি কার্যকরী পরিবর্তন আসে?