CHARACTERISTICS OF CEREBRAL PALSY ATTENDED AT CENTRE FOR THE REHABILITATION OF THE PARALYSED

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

CHARACTERISTICS OF CEREBRAL PALSY ATTENDED AT CENTRE FOR THE REHABILITATION OF THE PARALYSED

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Declaration

I declare that the work presented here is my own. All source used have been cited appropriately. Any mistakes or inaccuracies are my own. I also declare that for any publication, presentation or dissemination of the study. I would be bound to take written consent from my supervisor.

Signature: **Date:**

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Acronyms

BHPI	Bangladesh Health Professions Institute
CRP	Centre for Rehabilitation for the Paralyzed
CP	Cerebral Palsy
GMFCS	Gross motor function score
SPSS	Statistical Package for the Social Sciences
WHO	World Health Organization
MDT	Multi Disciplinary Team

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Abstract

Purpose: To identify characteristics of children with cerebral palsy attended at centre for the rehabilitation of Paralysed in Bangladesh. *Objective:* To investigate the socio-demography information; to explore birth characteristics and clinical manifestation of cerebral palsy. *Methodology:* The study was hospital based cross sectional Study. Convenience sampling technique was used to carry out the study. Total sample was 70. The data were collected through using structured questionnaire by face to face interview. The area of the study was Pediatric Unit of CRP, Savar and Mirpur, Dhaka. Descriptive statistics were used for data analysis. *Results*: Investigator found among 70 participants there is 44% are from urban area and 56% are from rural area, 54.3% mothers had one child, 52.9% mothers faces prolonged labor, 52.9% mothers were attended by doctor and 28.6% were by midwife, 68.6% children are term baby, 54.3% children had birth asphyxia, 72.9% children had the history of seizure, 32.4% children communicated by crying, 22.9% children communicated by speaking word, 98.6% children have hearing ability, 62.9% children have both upper and lower limb involvement, 48.5% children have the hyper tone in the muscles, 38.6% have the alteration of tone in the muscle, 42.8% children had poor neck control and 45.7% had good neck control, 50% children had no pelvic control whether 34.3% had poor pelvic control and 15.7% had good pelvic control, 24.2% children can stand with support and 12.9% children can stand without support, 17.1% children can walk with support and 2.9% children can walk without support. *Conclusion:* The result of research is including the all general people who have the child with cerebral palsy at the age of 1-9 years who attended at the Centre for the Rehabilitation of the Paralysed. Acknowledging these characteristics of cerebral palsy will be useful for the prevention and treatment of this condition in Bangladesh.

CHAPTER-I: INTRODUCTION

1.1Background

Bangladesh is a developing country in the World. Disability is the most common challenging issue in this country. Cerebral palsy is the most common condition that is responsible for the child disability. A child is born with any disability then it bears curse for its family, even the parents are treated as the results of great sin. This thinking has been changing day by day in most of the countries of the developed world, but some developing countries like Bangladesh have to aware enough of disability (Werner, 1988). A 1999 United Nations International Children'sEmergency Fund (UNICEF) study concluded that,half of the world's population under 15 years old children with disabilities appear to be overrepresented in developing regions of the world, with an estimated 85% of children with disability living in thedeveloping world (Maloni, 2010). In UK, One in five children with CP (20.2%) was found. They had asevere intellectual deficit and were unable to walk. Among babies born weighting less than 1500g, the rate of CP was more than 70 times higher compared with those weighting 2500g or more at birth. The rate of CP rose during the 1970s, but remained constant during the late1980s (Johnson, 2002).

In recent years, the prevalence of CP has been consistently expected at 2.0 to 2.5 cases per 1000 live births. These estimates turn into 15000 to 20000 children with CP in Canada and 150000 in the United States, that the massive majority of whom are cared for at home by their parents and families (Brehaut et al., 2004). Campbell (1998) stated that the prevalence rate of cerebral palsy is 2-25 per 1000 children in developing country. Bangladesh has recently seen an increase in the number of children diagnosed with cerebral palsy. According to disability profile, the client assess in the shishubikash clinic (Rural Centre) during January to December 1998 showed a report of child disability were 42% of total disability was cerebral palsy, among these spastic cerebral palsy is 9%. Athetoid cerebral palsy is 2%, Ataxic cerebral palsy is 3% and rest of the patient is other type of cerebral palsy (Khan &Rahman, 2000). Gage's study stated that cerebral palsy is primarily characterized by central nervous system abnormalities, such as loss of selective motor control and abnormal muscle tone. As a result of growth these primary

characteristics often lead to secondary deficits, including bony deformities, muscle contractures and gait abnormalities, and among all type of cerebral palsy spastic cerebral palsy is the most common type of cerebral palsy (Behrman, 2004).

Albert (2005) described that, in children with CP spastic tone on foot is the most common complication and also children suffer from foot drop or inability to raise the foot, abnormality in walking patterns, unwanted and uncontrolled movements associated with muscle imbalances and increased tone in the lower leg and foot and ankle. Abnormal movement with reference to the child with diplegia usually means a tip toe walking pattern (Equinus or a Planter flexed Gait), with the added complication of the ankle become twisted outwards (valgus ankle) or inwards (varus ankle).

As CP causes disability, the consequence of it affects physical health, social relationship of people, life in the realms of the family, friends and neighbors, psychological state and level of independence. This study showed that disability could have devastating effect on the life of disabled people, mostly in the rural area of the Bangladesh (Hosain et al., 2002).

Rationale

Cerebral Palsy is one of the causes of physical disability in our country. The number of affecting people is increasing day by day due to lack of awareness. It affects a large number of individual that create devastating affect on a family a society as well as in whole country. To minimize the occurrence of cerebral palsy,it is important to build up awareness about of it. This study will help to identifythe birth characteristics and clinical manifestation of cerebral palsy in Bangladesh. After accomplishing this study people will know what can cause the cerebral palsy and what is the impact of the CP. So, they can aware and can take some preventive measure and also they can take care of children with cerebral palsy in a right way. This study is not conducted before so I am interested in this study to do. And also I want to know which type of cerebral palsy is common in Bangladesh.

Still in Bangladesh there has no research been conducted to explore the current birth defect among children with cerebral palsy. So this study may be helpful to know which factors are responsible or influence birth defect among cerebral palsy children.

There is limited good number of researches in Bangladesh in this area. After accomplishing the graduation course a physiotherapist can acknowledge the different characteristics and clinical manifestation of children with cerebral palsy in Bangladesh. Child disability increases day by day and physiotherapists should help to ensure the guidance of preventive measure of cerebral palsy and reading this study will help them.

1.3Research Question

- What are the characteristics of Cerebral Palsy attended at Centre for the Rehabilitation of the Paralysed?

1.4. Objective

1.4.1. General objective

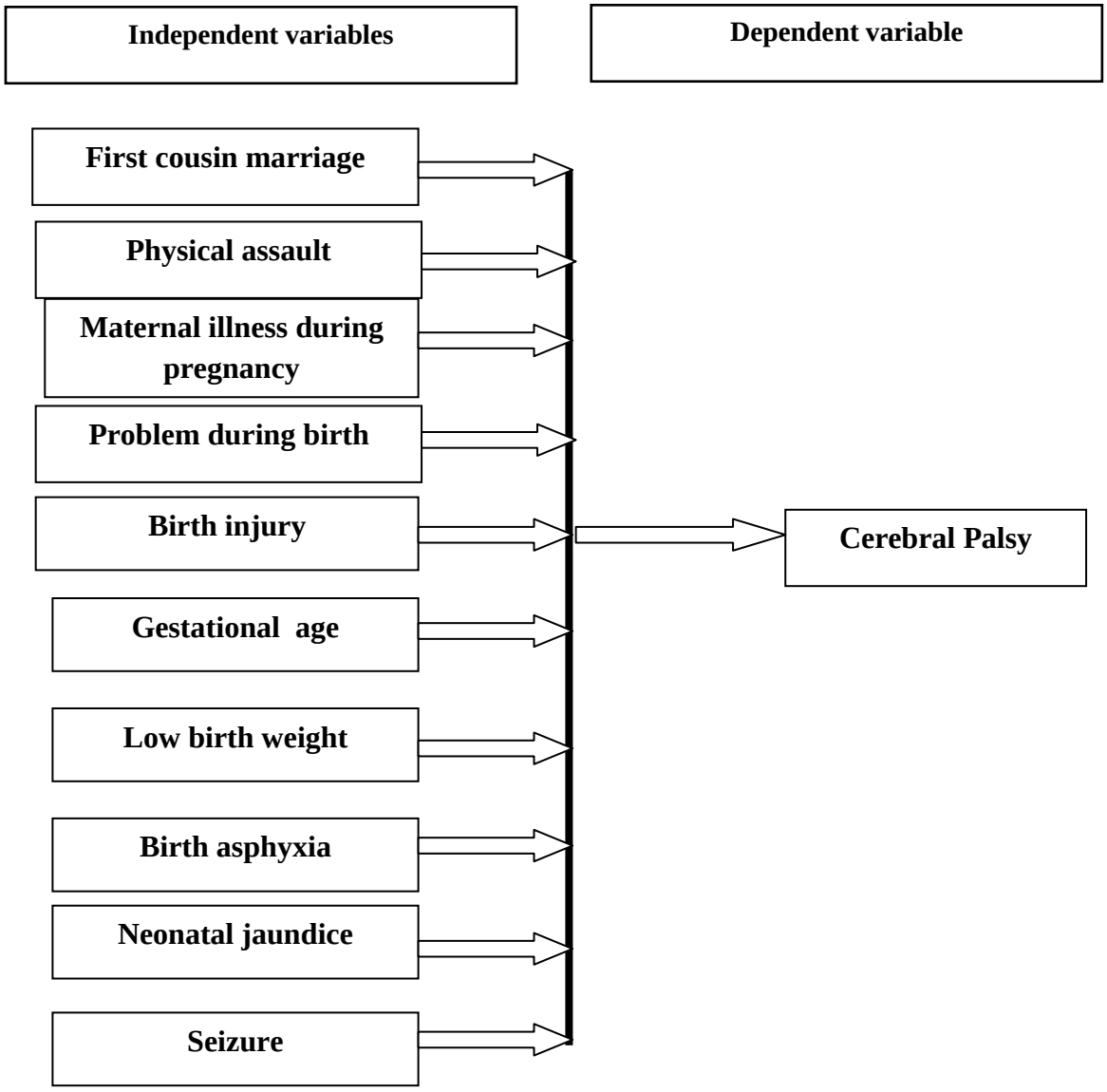
- To identify the characteristics of the children with cerebral palsy.

1.4.2. Specific Objective

- To investigate the socio demographic information.
- To find out the birth characteristics of children with cerebral palsy.
- To explore the clinical presentation of the children with cerebral palsy.

1.5 List of Variables

CONCEPTUAL FRAMEWORK



1.6 Operational definition

Pregnancy complication/infection

Preeclampsia, High blood pressure, bleeding disorder, high fever, diabetes, jaundice, anemia.

Physical assault

Have the mother had any direct or indirect trauma during pregnancy.

Premature birth history

Child born before 37 weeks of gestation.

Cerebral Palsy

A disorder of posture and movement caused by non-progressive brain damage before, during or after delivery at the age of 2 years of age.

Health care facilities

Available primary health care facilities or available hospital or clinics around the patient's home.

Pre natal care

Who continued follows up pregnancy care.

Trauma during pregnancy

Fall down, direct trauma due to any accident or event.

Prolonged labor

A labor that lasts more than 18 hours.

Unskilled birth attendance

Who has not been trained in delivery.

Pre mature delivery

Delivery before 37 weeks of gestation.

Birth asphyxia

Identified sign of becoming bluish color of infants, didn't cry immediate after birth.

Low birth weight

Weight of infants are less than 2500grams.

CHAPTER-II: LITERATURE REVIEW

CP can be defined as a disorder of movement and posture that is caused by a non progressive brain lesion that occurs in uterus during or shortly after birth and is expressed throw variable impairments in the co-ordination of muscles action and sensation (Gordon, 1996). Cerebral palsy is not a single disease or any illness. The disability of CP persistent and caused by a non progressive brain lesion arising before, during or after birth, during the period of brain development (Sundar, 2002).Cerebral palsy is the most common physical disability in childhood. Children with cerebral palsy usually survive into adulthood, and the condition is often poorly understood in adulthood. Cerebral palsy is a long term condition. There is a slightly higher prevalence in the male population, with a male: female ratio of 1.5:1 (Clinical Key, 2012).CP is neither progressive nor communicable disease.But due to lesion or damage in immature brain at early stages of development motor impairment syndrome occurs. One literature also supported this, "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" (Levitt, 2004). A group of disorder of the development of movement and posture causing activity limitations that are attribute 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 disturbances in gait and other active movement (Albert, 2005). Cerebral palsy can also have a genetic cause or may be due to head injuries or meningitis that occurs after birth (Brown, 2007). Some things increase the chance that a child will have CP and these are called risk factors. It is important to remember that having a risk factor does not mean that a child will have CP. Some risk factors are like low birth weight, premature birth, multiple births, infections during pregnancy, jaundice and kernicterus, birth complications, medical condition of the mother such as thyroid problem, intellectual disability and seizure (Centre for Disease Control and Prevention, 2013). Some antenatal risk factors are repeatedly observed to related to CP; low gestational age, male gender, multiple gestation, intrauterine viral infections (Jacobsson and Hegberg, 2004).

The specific forms of cerebral palsy are determined by the extent, type, and location of a child's abnormalities. Doctors classify cerebral palsy according to the type of movement disorder involved - spastic (stiff muscles), athetoid (writhing movements), or ataxic (poor balance and coordination) - plus any additional symptoms. Doctors will often describe the type of cerebral palsy a child has based on which limbs are affected (National Institute of Neurological Disorder and Stroke, 2012). About two thirds of the children with cerebral palsy are not only physically, developmentally disabled, but also have sort of mental retardation. There are six major clinical presentation like muscle spasm and tightness, seizure, clumsiness in walking and overall mobility, distorted sensation and perception, and impaired hearing, speech and eye sight (Cerebral palsy statistics, 2010). Spastic cerebral palsy is the most common type of CP. This affects approximately 70 to 80 percent of individuals with the disorder. It occurs due to damage of motor cortex of the brain (Cerebral palsy statistics, 2010). In this type of CP muscle become stiff and the child face difficulty to move the body parts (Cerebral palsy statistics, 2010). There are varying degrees of spastic cerebral palsy. Some patients have mild causes that affect vary few movement and some have moderate spasticity. Other with more severe causes can have their entire bodies affected. Spastic cerebral palsy also limits stretching of muscle in daily activity and causes the development of muscle and joints deformity. Children born with spastic cerebral palsy do not have any deformity of the extremity but develop them over time due to joint contracture (Brody, 2005).According to Raj (2006), this is a rare form of cerebral palsy which affects an estimated 5 to 1o percent of individuals with cerebral palsy. Ataxic cerebral palsy affects sense of balance and depth perception. Ataxic cerebral palsy is caused by damage to the cerebellum that is responsible for balance and coordination and coordinates the actions for different groups of muscle. Ataxic cerebral palsy therefore affects coordination of movement. Ataxic cerebral palsy usually affects all four limbs and trunk. Typically, persons affected by ataxic cerebralpalsy have poor coordination, unsteady walking and difficulty with precise movements such as using a pen or buttoning a shirt.

The athetoid children have certain features in common. Tone is abnormal and varies in character & intensity, ranging in the one child from hypotonia to hypertonia, frequently with surprisingly sudden fluctuations. Involuntary movement occurs which may not be movements at all but really tonus changes, and the lower the tone the greater the fluctuation appears to be. When this type of children attempt to move a limb there is an immediate relaxation of the lengthening group of muscles and control over middle ranges of movement in particular is very poor (Shepherd, 1990).

This type of CP was the result of injury of pyramidal and ex-pyramidal tract. It was common for children to have symptoms that didn't correspond to any single type of cerebral palsy. There symptoms were a mix of types (Gillette, 2007). According to Dietz (1995), this type of cerebral palsy typically affected the arm and hand on one side of the body, but it can also include the leg. Children with spastic hemiplegic generally walk later and on tiptoe because of tight heel tendons. The arm and leg of the affected side are frequently shorter thinner. Some children would develop an abnormal curvature of the spine (scoliosis). Another is diplegia, in this type of cerebral palsy, muscle stiffness was predominantly in the legs and less severely affects the arms and face, although the hands may be clumsy. The word diplegia breaks down into "di" meaning two and "plegia" the latin word for weakness. Therefore, spastic diplegia means two extremities causing weakness. Spastic diplegic CP shows a pattern similar to that of the average developing child. According to Dietz (1995) the characteristics of spastic diplegic CP include the legs often turn in and cross at the knees. Tendon reflexes are hyperactive. Toes point up. Tightness in certain leg muscle makes the legs move like arms of a scissor, in which the hips are flexed, the knees nearly touch, the feet are flexed, and the ankles turn out from the leg, causing toe walking. Children with this kind of cerebral palsy may require a walker or leg braces.

Quadriplegia is the most severe form cerebral palsy, often associated with moderate to severe mental retardation. It caused by widespread damage to the brain or significant brain malformations. Children will often have severe stiffness in their limbs but a floppy neck. They are rarely able to walk Raj (2006).Based on degree of severity: Forfar (1998) has described the following types of cerebral palsy.Spastic hemiplegic, diplegia and

ataxia type of CP Independent living, walking, intelligence >70.Spastic hemiplegic, diplegia and ataxia type of CP. Supported self propelled wheelchair, independent or assisted walking with brace and other orthotic devices. Spastic quadriplegic, athetosis type of CP. Totally dependent, pushchair, and intelligence <50.The various sub types of CP vary with the reporting surface, a series for Sweden noted that Hemiplegia-36.4%, Quadriplegia- 7.3%, Diaplegia-41.5%, Athetosis- 10%, Ataxic-5%.A study showed that approximately 81% had spastic CP. Among children with CP, 8% had an autism spectrum disorder and 35% had epilepsy. Using the GMFCS, 38.1% functioned at the highest level (I), with 17.1% at the lowest level (V). Fifty six percent were able to walk independently and 33% had limited or no walking ability (Russell et al., 2011).

A study showed that characteristics of the parents, infants, and deliveries for children with and without subsequent CP. Children with CP were slightly more likely to have single mothers and parents with less education, Complications of labor and delivery (breech presentation, cesarean delivery) were up to twice as likely for infants who were later diagnosed with CP. Boys were overrepresented among CP children. Children with CP had lower mean birth weight (3437 g vs. 3585 g) and smaller head circumference (35.1 cm vs. 35.3 cm). Children with CP were 82 times more likely to have had birth asphyxia and were 8 times more have been transferred to a pediatric unit after delivery. Most of these associations were present at each gestational age of delivery (Moster et al., 2010). The union between two people genetically related by descent from a common ancestor is called consanguineous marriage. All human societies however primitive or geographically isolated prohibit the mating of first degree relatives, namely the mating between parents and children and brothers and sisters. Any marriage between relatives less close than siblings (brothers and sisters) or parents and offspring are not necessarily outlawed, but the dividing line between legal and illegal is vague and varies between countries. In about one-half of the USA, uncle-niece and aunt-nephew (second degree) and first cousin (third degree) mating are forbidden by law. In most African societies consanguineous marriages are not allowed. But in Japan, India, Pakistan and the Middle East consanguineous marriages is high. Children produced from such close marriages show an increase in various types of genetic disorders such as birth defects, mental

retardation deafness and blindness. Many pregnancies of such unions terminate prematurely; which in itself is sign of an unhealthy pregnancy, perhaps one caring a defect (Jayasekera, 2004). According to the data the main causes of child physical disability were birth asphyxia, birth injury, high fever, and high intake of drugs by mothers, pneumonia, and neonatal jaundice. A retrospective study by Jahan (2002) from the child development and neurology unit of Dhaka Shishu Hospital shows the significance of birth asphyxia as risk factor of childhood disability. A retrospective study conducted by Chowdhuryet. al. Showed that birth asphyxia is a significant risk factor for childhood disability.From total diagnosed population on fifth has epilepsy; seventeen percent had multiple type of disability. 50percent had history of birth asphyxia. More than half of these children had severe gross motor disability (Chowdhury, 2002).

Many women today are waiting until later in life to have children. In the United States, birth rates for women in their 30s are at the highest levels in three decades. However, an older mother may be at increased risk for miscarriage, birth defects, and pregnancy complications such as twins, high blood pressure, gestational diabetes, and difficult labors. Some studies show that while there may be a greater likelihood of pregnancy complications in older women, their babies may not have more problems than babies of younger women. This is more likely when women receive prenatal care and give birth in a healthcare facility equipped to care for high-risk mothers and babies. One researchers Nabors in his research "Maternal age and parity in relation to Cerebral palsy in their infants" showed that the patient who is more than 35 years old is more likely to produce a child with cerebral palsy than younger women (Brown, 2007). In a study by Khan showed that most problems associated with malnutrition, gross feeding problems like swallowing difficulty or seizures (Khan &Rahman, 2000). A study showed that low birth weight was also strongly associated with cerebral palsy. A total of 9% of the children with a birth weight of less than 1000 g means low birth weights were diagnosed with cerebral palsy. Birth asphyxia was still strongly linked with cerebral palsy and birth weight (Kari et al., 2010).Neonatal jaundice in children born at term is associated with disorders of psychological development (Rikke et al, 2010).

In the study it was also found that parents who are primary educated or uneducated have more children who are disabled. When parents are not educated about child's normal development, food and nutrition and how to nurture child, it causes a major problem for child's development disabilities. Due to ignorance some people do not understand the importance of proper nutrition. This leads to high incidence of nutritional deficiency disability (Behrman, 2004). A study conducted by Al-Abdul-Kareem, with 1307 subjects has shown that the rate of cousin marriage was the most common (39%) of all mating. This group child weight was not statistically significant from child weight from couples of marriages who were not related (Al-Abdul-Kareem, 2004). There is more chance of identical unfavorable genes meeting in relative marriage than unrelated marriage. In unrelated marriage the contribution of unfavorable genes are 4-8 and this figures doubles in double in first cousin marriage. This kind of the disorders that originates from the gene disorders by cousin marriage are birth defects (Jayasekara, 2004).

A study showed that among the cerebral palsy children there were seizure in 31.8%, vision defect in 19.8%, speech defect in 29.5%, hearing defect in 6.7% and learning disability in 25.4% children. Spastic CP is the most common type of CP and involvement four limbs is rapid. Children with CP have delay on independent sitting, standing, crawling and walking or can never achieve these abilities in their life span (Ozgun et al., 2012).

CHAPTER-III: METHODOLOGY

3.1 Study design

Cross sectional study design is used to identify the characteristics of Children with Cerebral Palsy. Children with Cerebral Palsy were selected at a point in time with and without follow-up.

3.2 Study area

Data was collected from the outdoor and indoor Pediatric Physiotherapy unit of Centre for the Rehabilitation of the Paralyzed (CRP) Savar and Mirpur.

3.3 Study population

The study populations were the patients with Cerebral Palsy who attended at CRP for their treatment.

3.4 Sample size

The equation of sample size calculation are given below-

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

Here,

$Z(1-\frac{\alpha}{2})$= 1.96

P= 0.25 (Here P=Prevalence and P=25%)

q= 1-p

=1-0.25

=0.75

d= 0.05

The calculated sample size is about 288 people but due to lack of opportunityof time, the study was conducted with 70 patients attending at physiotherapy department Centre for

the Rehabilitation of the Paralysed both Savar and Mirpur branches in Dhaka selected randomly.

3.5 Inclusion criteria

- Children with cerebral palsy with their guardian
- Age (1-9) years

3.6 Exclusion criteria

- Adult patient with cerebral palsy
- Non co operative care giver.

3.7 Sampling technique

Non-probability sampling that is unrestricted is known as convenience sample. Researchers have the freedom to choose whomever they find; for this the name is convenience. The convenience sampling technique may consist of respondents living in an easily accessible locality. It is the simplest and least reliable from of non-probability sampling. Seventy participants with CP were selected through convenience sampling technique from outdoor and indoor Pediatric Physiotherapy unit of CRP Savar and Mirpur. Participants were selected from CRP because they were easily accessible for the researcher. Researcher took data from the patients (medically diagnosed as CP) randomly who came at CRP to take Physiotherapy treatment or continuing their treatment. It is therefore more representative and investigator used convenience sampling technique to get the appropriate sample and to maintain the standard of the study.

3.8 Data collection

All patients who diagnosed as Cerebral Palsy by the Physician and came at CRP for first time or continuing their Physiotherapy treatment were asked to participate in the study. There was a developed structured questionnaire after reviewing literature for asking to the participants.

3.9 Data collection tools

Data were collected using questionnaire consisting of structured and semi structured questions through face to face interview. This data collection procedure was completed

within 16 weeks. A cross sectional study is used to consider questioning respondents about past as well as current events. Cross sectional design is the most common survey approach to focus the past as well as present experience. Considering this, choosing this method and design to accomplish the research purpose and it is important to acknowledge about the work settings of the graduate physiotherapist who are doing job at CRP Pediatric unit in Savar and Mirpur, Dhaka. In order to collect data there were used those working settings where they work and then collected data from them. There were used Bengali questionnaires with simple wording, because all the parents have understood better in Bengali. All parents do not speak English. This means that the participants didn't face any difficulty in understanding the questions included in questionnaire. There were thirty two questions in the questionnaire of this study. Data collected using questionnaire. The questions of this questionnaire are consisting of structured and semi-structured questions, which were set up sequentially. The duration of data collection was approximately 16 weeks. It took approximately 30 minutes from each participant for this purpose. Within sixteen weeks the investigator conducted this study project with the participants and collected the data very carefully while all recorded manually in a paper.

3.10 Data Analysis

Quantitative data was analyzed by using SPSS 16 software. Descriptive statistics was used for data analysis. The investigator input the variables in the variable view and the data in the data view of this software. Then frequency of data was measured and collect the results.

3.11 Ethical Considerations

A research proposal was presented and submitted to Physiotherapy department of BHPI for approval and this proposal approved by the faculty members. The necessary information has been approved by the ethical committee of CRP and the investigator was permitted to do research. Beginning the data collection, permission was obtained from the concerned authorities ensuring the safety of the participants. The formal permission was taken from the Head of Physiotherapy department for data collection from who attended

at CRP. A inform consent was given to the participants. The consent paper was included the purpose of the study, data collection time and ensure the security of the information of the participants. World Health Organization (WHO) and Bangladesh Medical and Research Council (BMRC) rules were followed to conduct the study.

3.12 Limitations

The main limitation of this study is its sample selection. The samples were collected from CRP Savar and Mirpur though patients were coming from all over the Bangladesh. Convenience sampling was used and only 70 children's are surveyed. Therefore the wider cerebral palsy children are not reflected. Time and resources were limited which had a great deal of impact on the study. If adequate time and resources were available then knowledge on this area could be extended and a better result can be obtained. The limitation for the investigator was to collect the literature related to the topic. The researcher searched the libraries and internet but the researcher do not find out the topic related enough literature to support the study.Among the patients attended at pediatric unit there was possibility of choosing many sample within this period but due to uncertain and incomplete diagnosis the investigator was unable to include those sample.

CHAPTER-IV: RESULTS

4.1 Socio-demographic information

Cross tabulation between age and gender of the child

Among 70 participants there is in the age group of 1-4 years male children are 32 (45.7%) and female children are 23 (32.9%) and in the age group of 5-9 years there are male children 11 (15.7%) and female children are 4 (5.7%).

	Gender		
Age of the participants	Male (%)	Female (%)	**Total**
1-4 years	32 (45.7%)	23 (32.9%)	55 (78.6%)
5-9 years	11 (15.7%)	4 (5.7%)	15 (21.4%)
Total	**43 (61.4%)**	**27 (38.57%)**	**70 (100%)**

Table-1: Cross tabulation between age and gender

Educational status of mother

Among the 70 child's mothers educational status were 2.9% (n=2) had no formal schooling,25.7% (n=18) were in less than primary,15.7%(n=11) were completed primary,14.3% (n=10) were completed S.S.C., 18.6% (n=13)were completed H.S.C., 15.7% (n=11) were completed bachelor, 1.4% (n=1) were completed masters and 5.7%(n=4) were in the group of any other means.

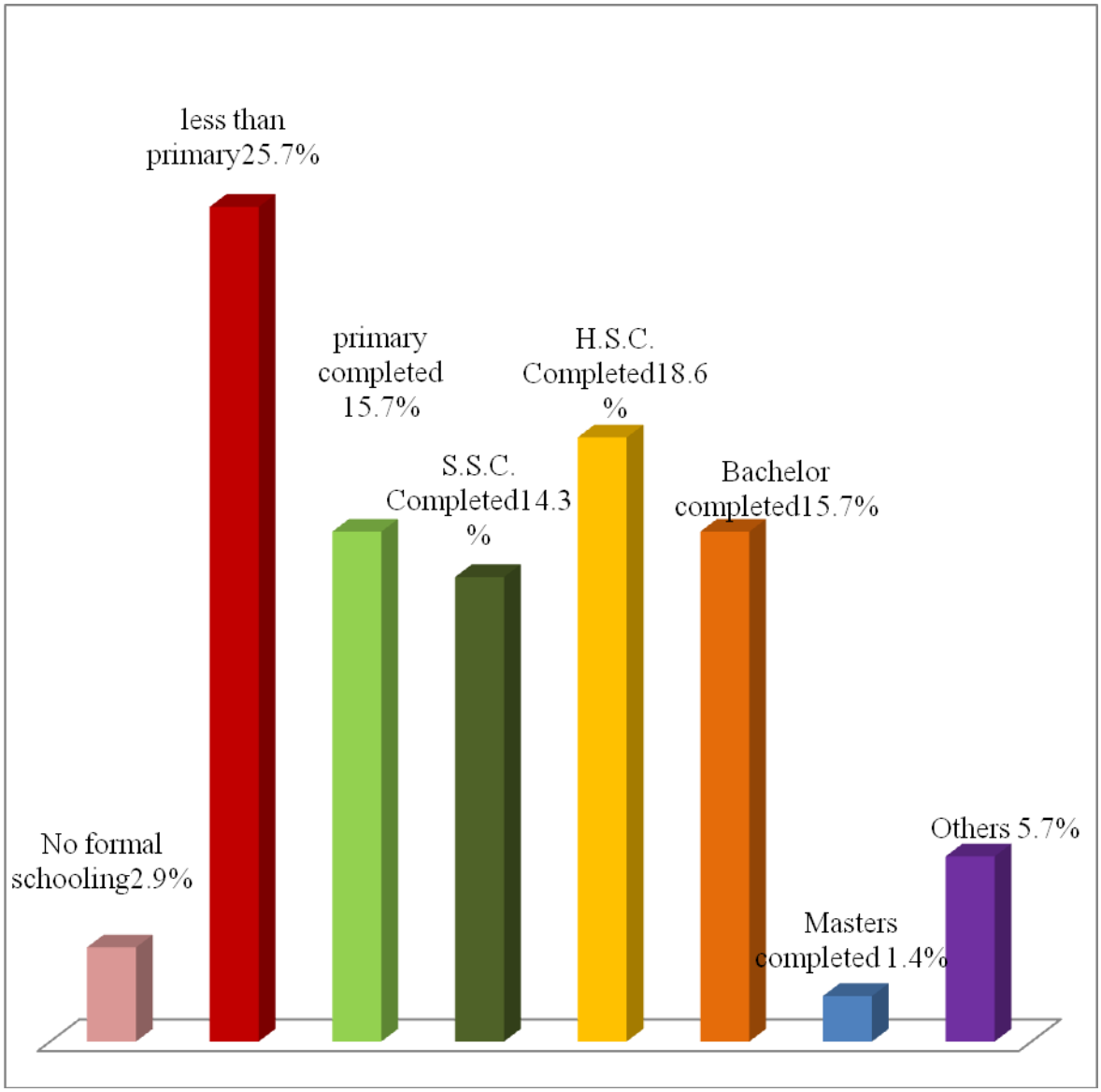


Figure-1: Educational status of the mother of the participants or children

Residential area

Forty four percent (n=31) participants were living in Urban area among the 70 participants and the rest of 56% (n=39) participants were living in Rural area of the country.

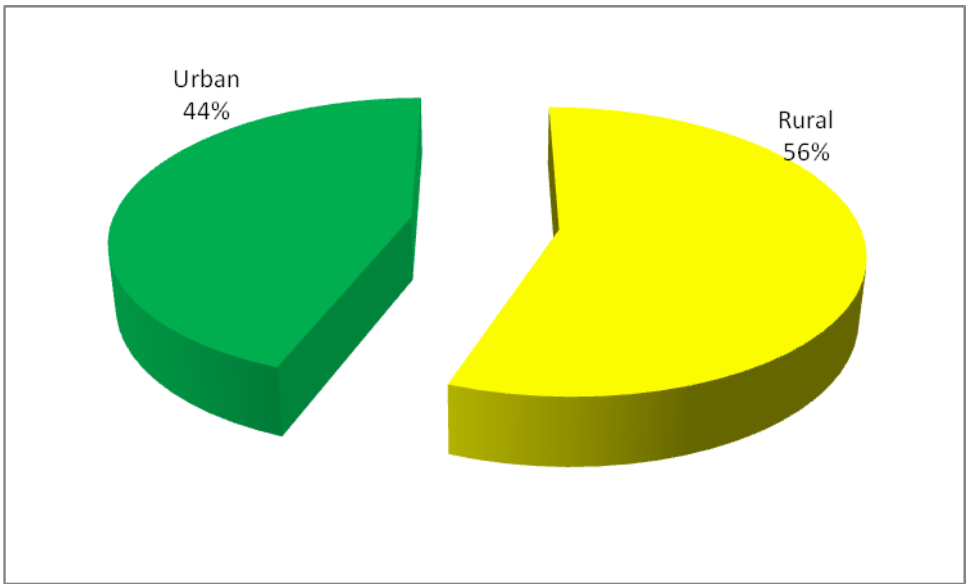


Figure-2: Residential area of the participants or the child

Average monthly income of the family

Among the participants 62.9 %(n=44) had less than 10000 taka monthly family income and 35.7%(n=25) had more than 10000 taka monthly family income and rest of the 1.4%(n=1) had monthly income of exact 10000 taka.

Average monthly income of the family	**Number**
10000 taka	1 (1.4%)
Less than 10000 taka	44 (62.9%)
More than 10000 taka	25 (35.7%)
Total	**70 (100%)**

Table-2: Average monthly income of the family

4.2 Maternal history

First cousin marriage

Among the 70 participants most of the participants parents had not the first cousin marriage which represents 86% (n=60) and rest of them had first cousin marriage which represents 14% (n=10).

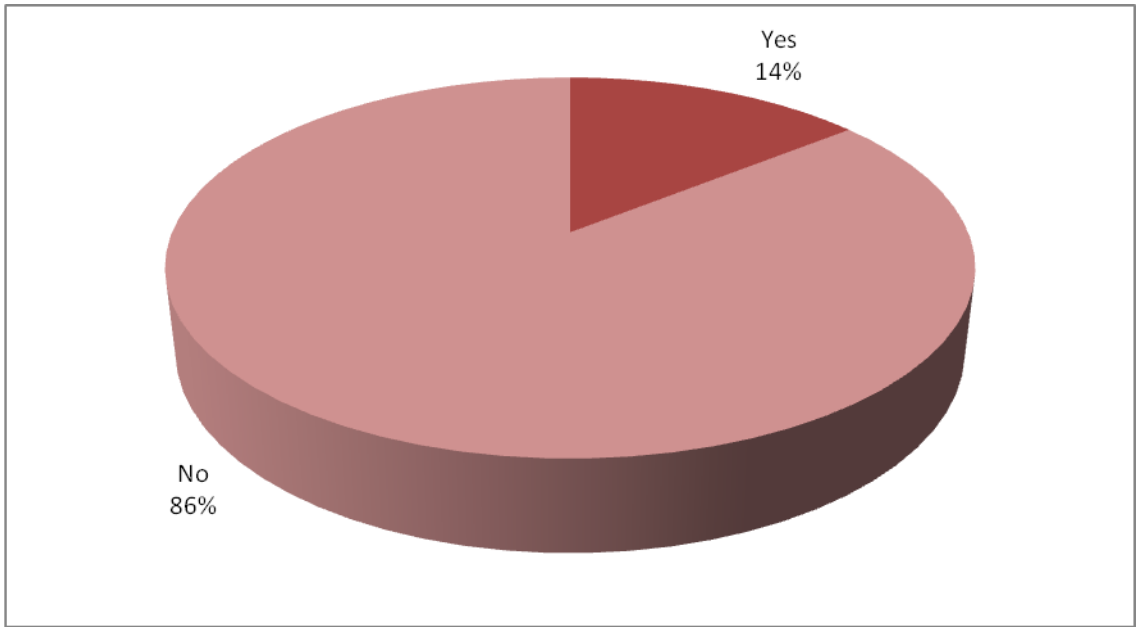


Figure-3: First cousin marriage frequency of the parents of the child

Number of child

Among the 70 mothers 54.3% (n=38) mothers had one child,34.3% (n=24) mothers had two child and 11.4% (n=8) mothers had more than two child. The largest group of mother had the first and only child had cerebral palsy.

Number of child	**Number**	**Percentage**
one	38	54.3%
two	24	34.3%
More than two	8	11.4%
Total	**70**	**100%**

Table-3: Number of child of the mother of the participants

Any physical assault during pregnancy

Eighty percent (n=56) mother had no physical assault during pregnancy and the rest of 20%(n=14) mother had physical assault history during pregnancy.

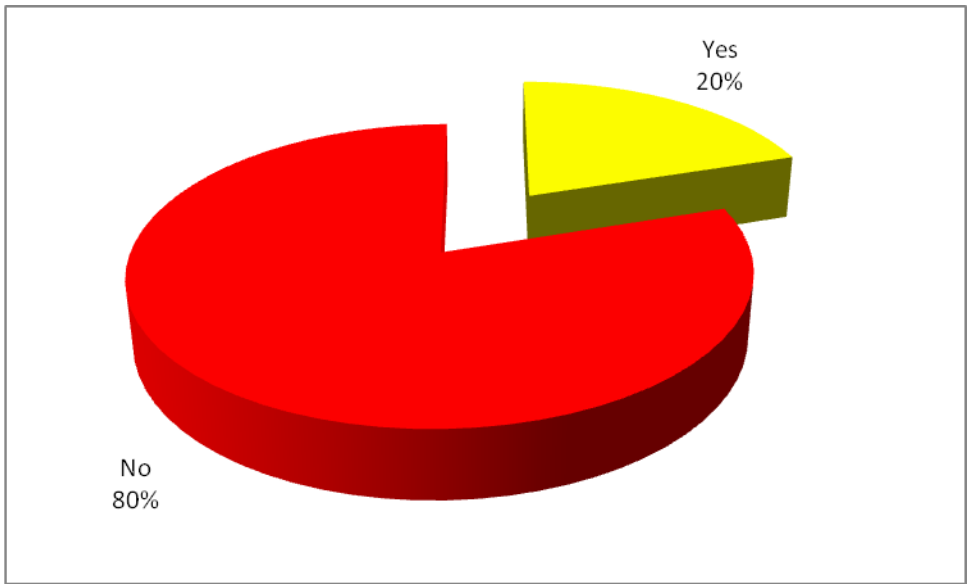


Figure-4: Physical assault during pregnancy

If yes than which type of

The type of physical assault, there are 12.9% (n=9) mother had fallen down during pregnancy,1.4%(n=1) mother got beaten during pregnancy by someone and 1.4% (n=1) mother had vehicle injury during pregnancy and 1.4%(n=1) mother had others type of physical assault. But the rest of 82.9%(n=58) mothers had no physical assault so the type of physical assault is not applicable for them.

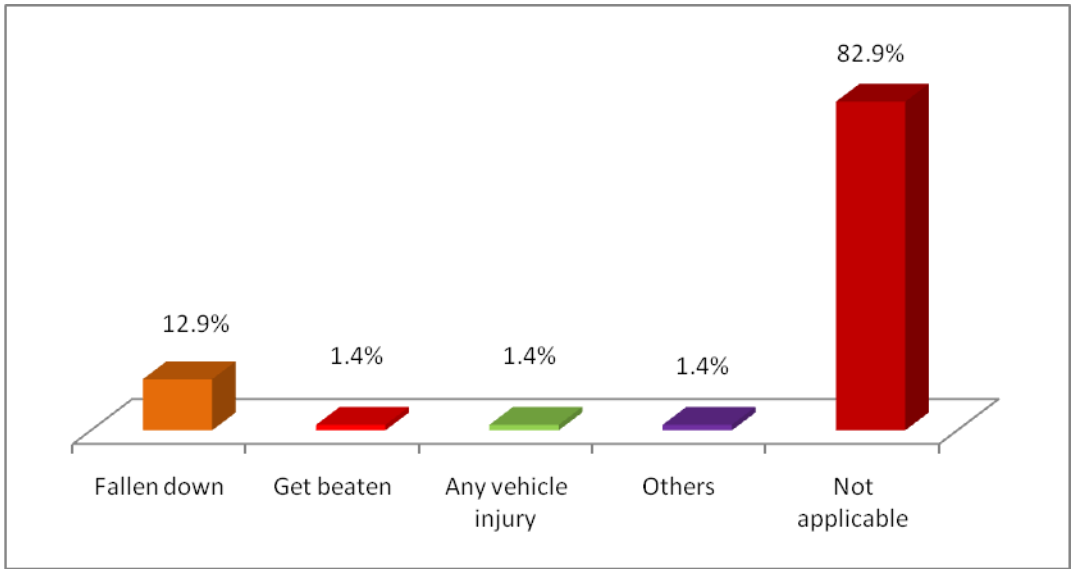


Figure-5: Type of physical assault during pregnancy

Illness during pregnancy of mother

Among 70 mothers most of the mother had no illness during pregnancy, which represents 65.7%(n=46) mothers. Mothers had High BP of 7.1%(n=5), mothers had anemia 5.7%(n=4), mothers had diabetes 4.3% (n=3), mother had infectious disease 7.1%(n=5), early discharge of amniotic fluid 7.1%(n=5) and other illness during pregnancy which represents 2.9%(n=2).

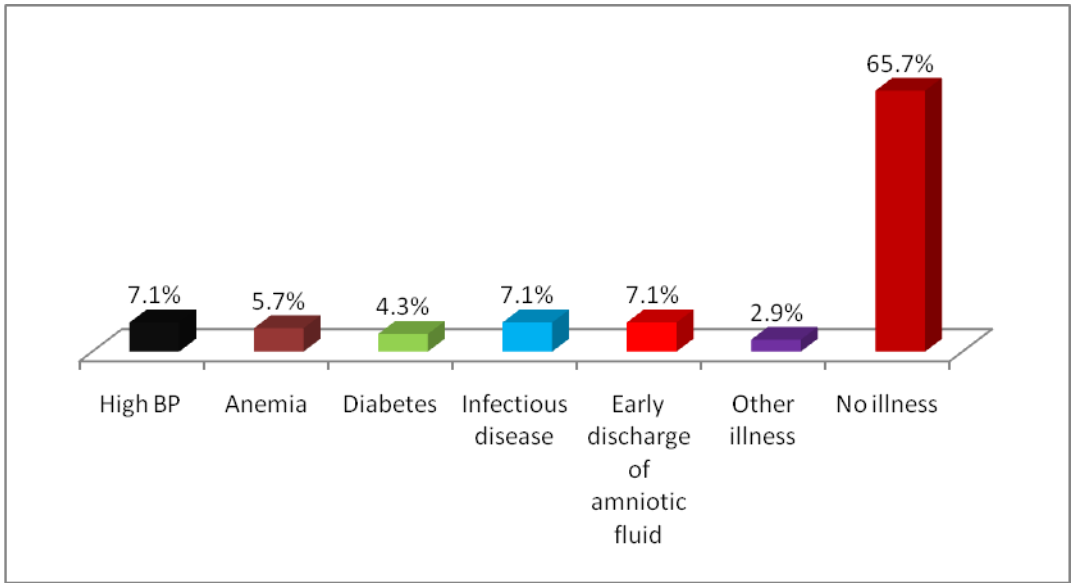


Figure-6: Illness during pregnancy of the mother

Problem during birth

Among 70 mothers 52.9% (n=37) mother faced problem during birth was prolonged labor,38.6%(n=27) mother faced short labor during giving the child birth the rest of had sudden birth of child which represents 8.6%(n=6) of mother.

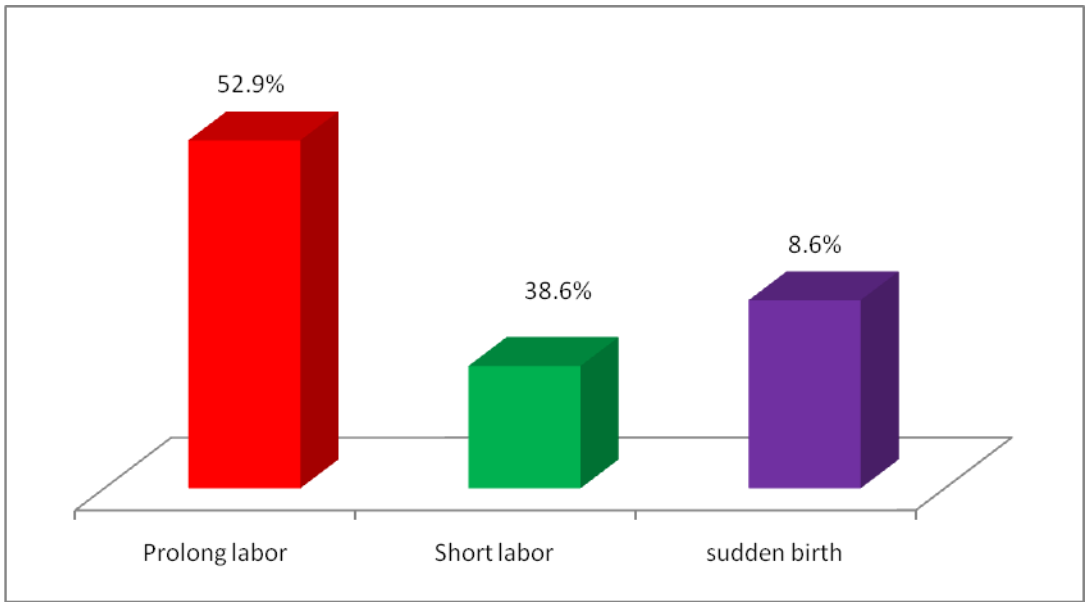


Figure-7: Problem during birth

Attended by

The number of mothers among the 70 mothers were attended by doctor was 52.9% (n=37), attended by nurse were 18.6% (n=13) of the mothers, attended by midwife 28.6%(n=20) of the mothers.

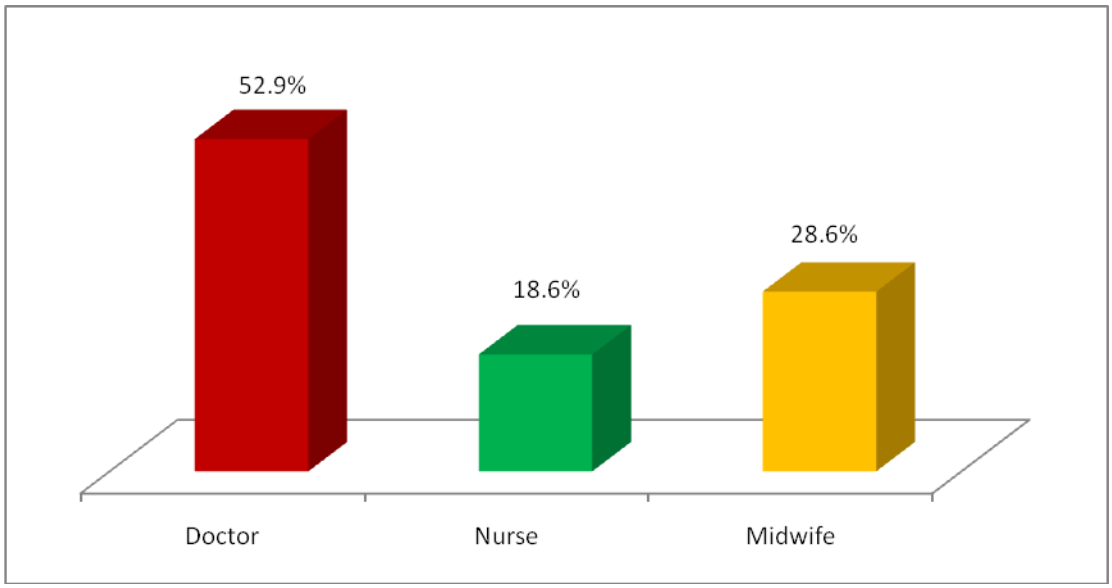


Figure-8: Mothers attended by during child birth

Birth injury

Among 70 child 17.1% (n=12) had birth injury and the rest of child had not birth injury which represents 82.9%(n=58).

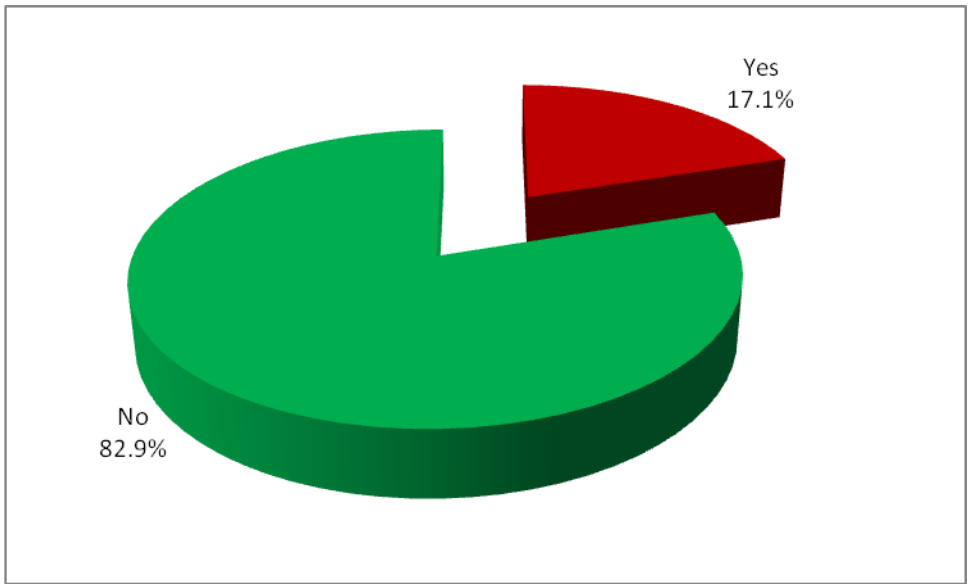


Figure-9: Birth injury

4.3: Child history

Birth history of the child

There were 68.6% (n=48) children were term baby where rest of 31.4% (n=22) of child are premature baby.

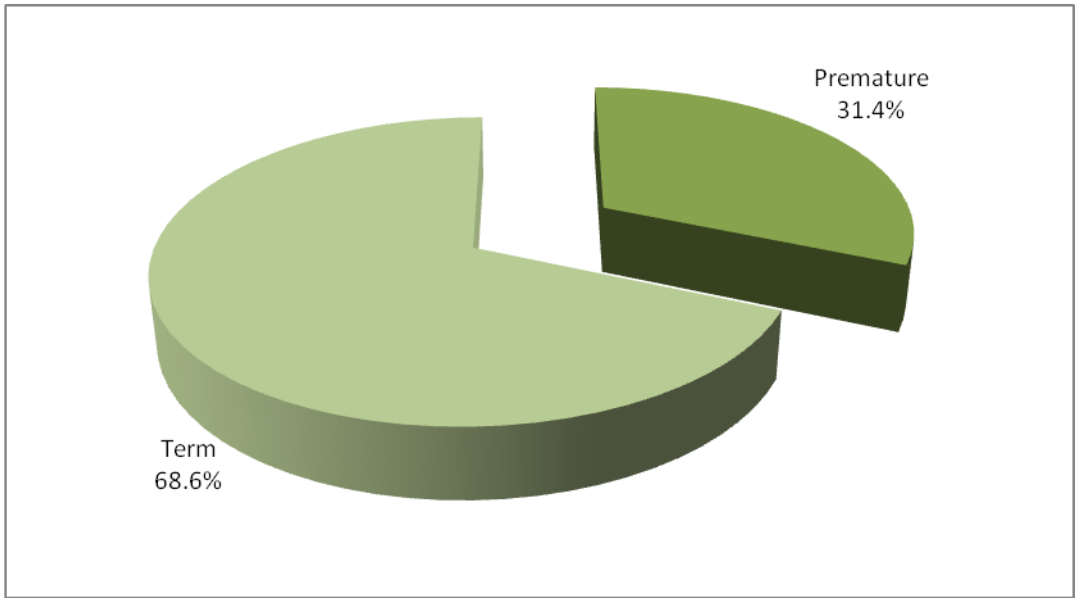


Figure-10:Birth history of the child or participant

Low birth weight

Among 70 participants 35.7% (n=25) of the children had low birth weight where 64.3% (n=45) of children had normal birth weight.

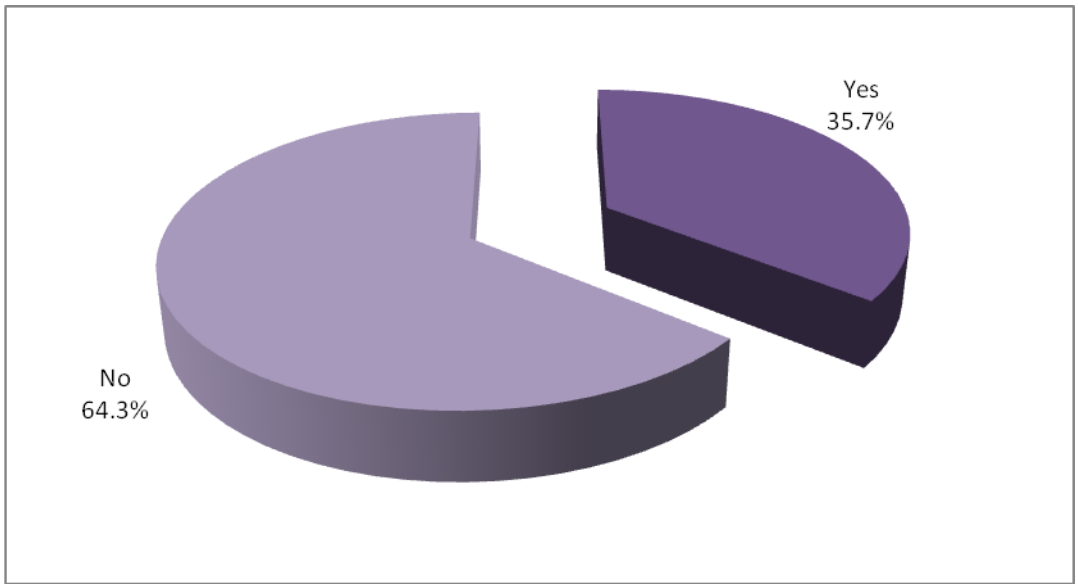


Figure-11: Low birth weight of the children

Birth asphyxia

Among 70 participants 54.3% (n=38) of the children had birth asphyxia where,45.7% (n=32) of children had no history of birth asphyxia.

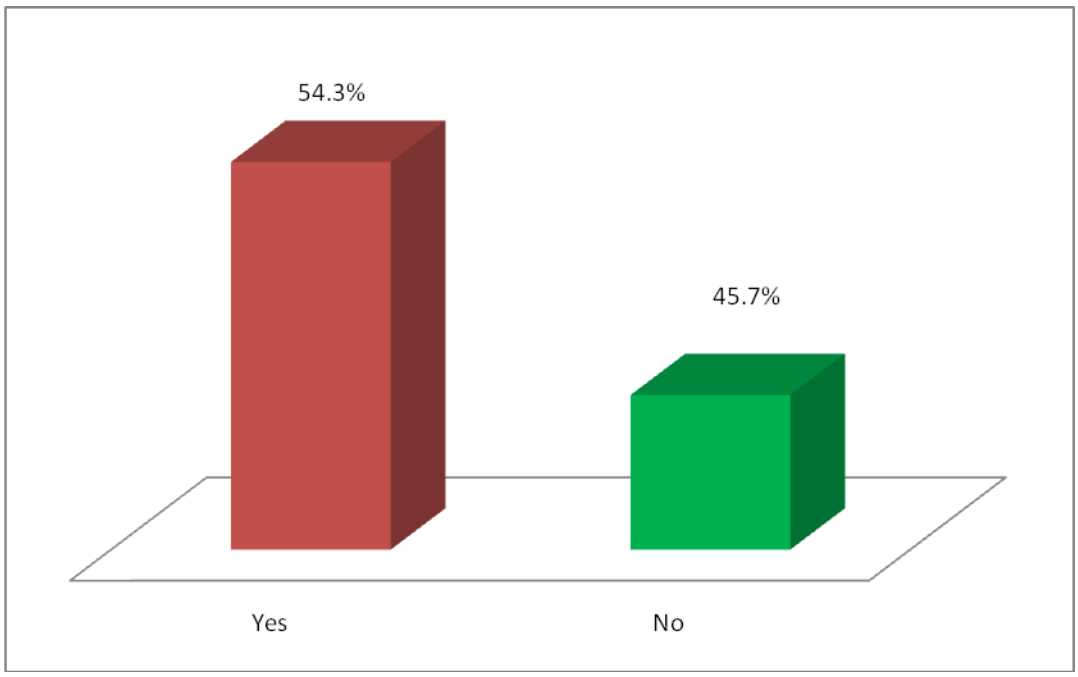


Figure-12: History Birth asphyxia of the children

Neonatal jaundice

Among 70 participants 27.1%(n=19) of the children had neonatal jaundice where, 72.9%(n=51) of the children had no history of neonatal jaundice.

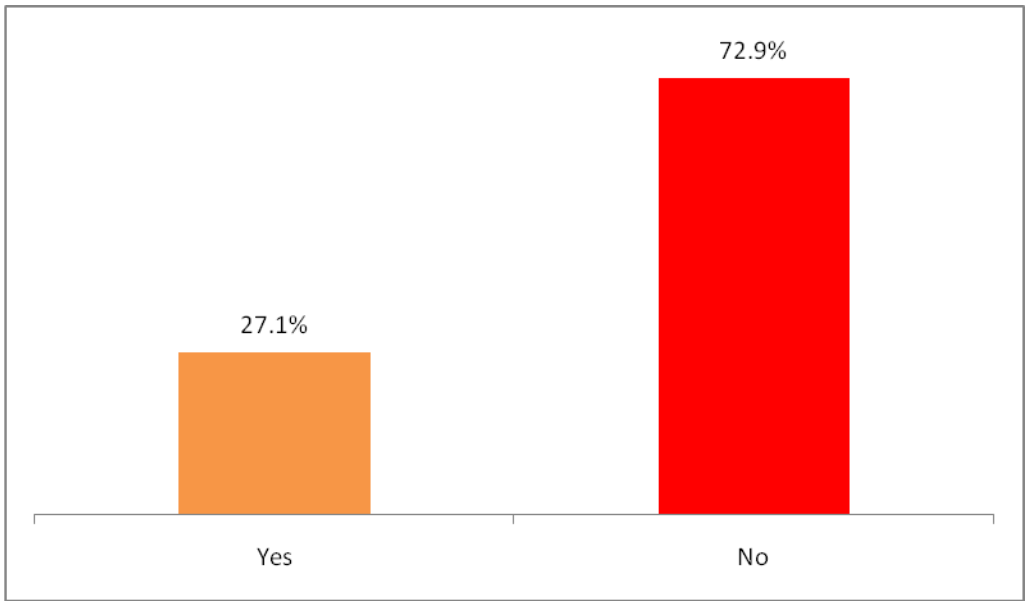


Figure-13: History of neonatal jaundice of the children

Dehydration

Among 70 participants 7.1% (n=5) of the children had dehydration after birth but the largest group of 92.9%(n=65) of children had no history of dehydration after birth.

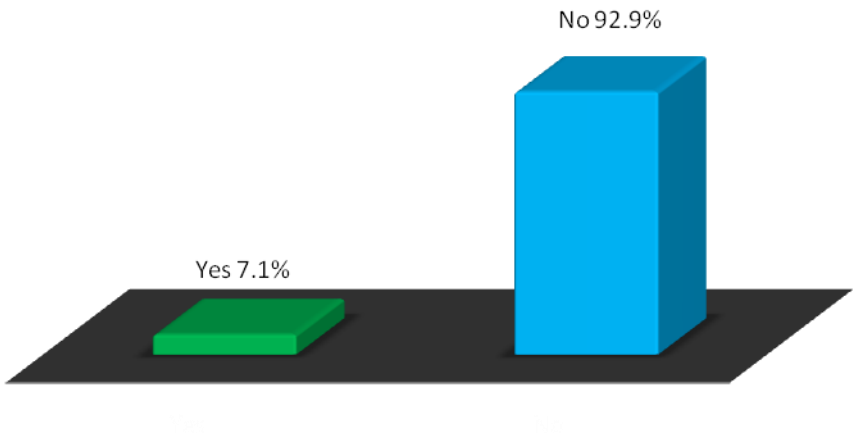


Figure-14: History of dehydration after birth of the children

Seizure

Among 70 participants 72.9% (n=51) of children had the history of seizure where, 27.1% (n=19) of children had no history of seizure. The largest group of children had seizure in common.

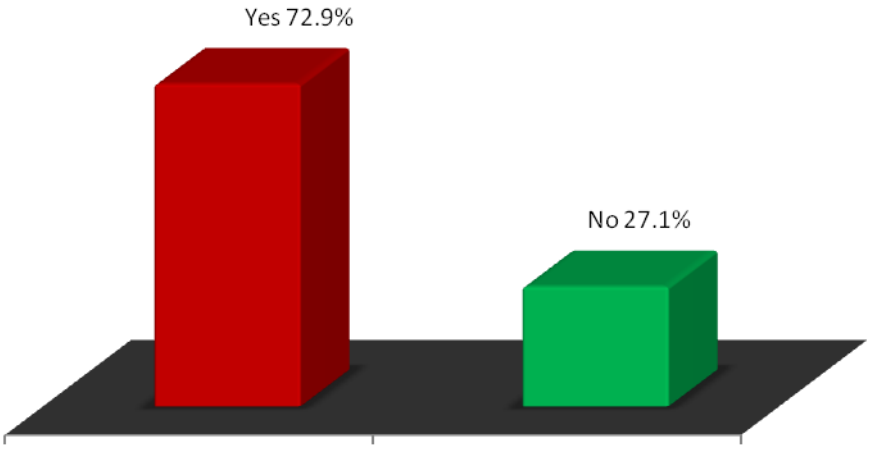


Figure-15: History of seizure of the children

Respiratory problem

Among 70 participants 31.4% (n=22) of children had the history of respiratory problem where, 68.6% (n=48) of children which is the largest group of children had no history of respiratory problem after birth.

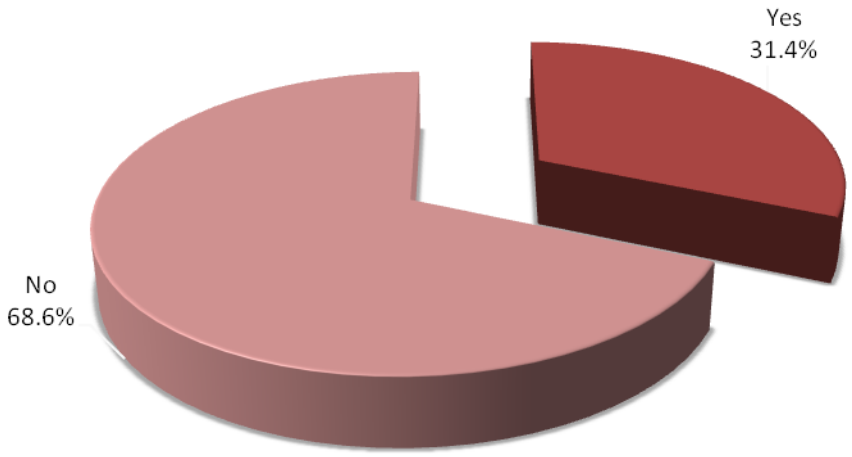


Figure-16: Respiratory problem of the children

Drooling of saliva

The chart showed that 44.3% (n=31) of children had the presence of drooling of saliva where 55.7% (n=39) of children had not the presence of drooling of saliva.

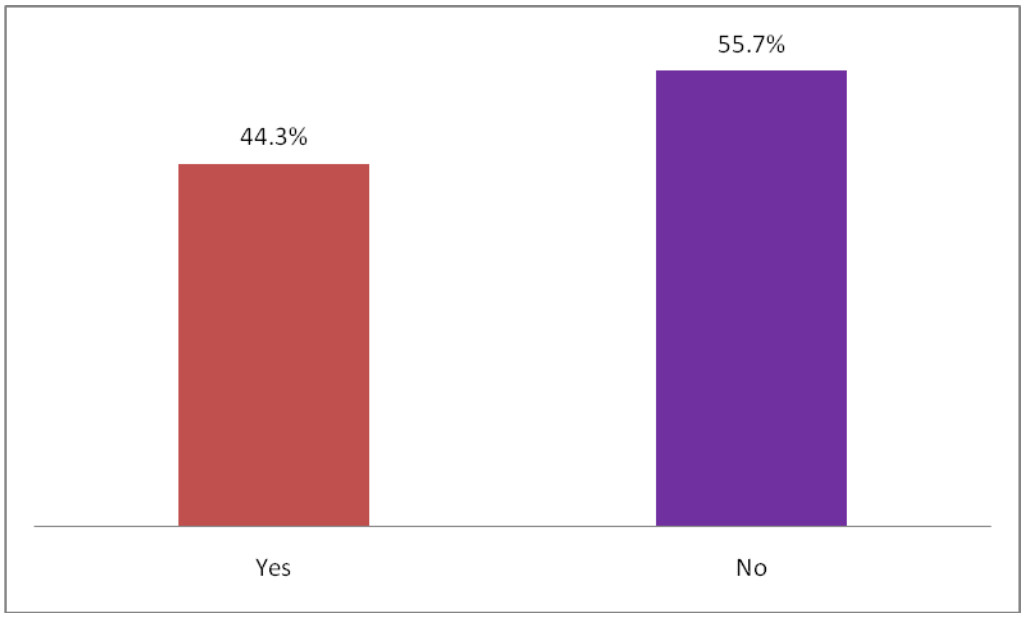


Figure-17: Presence of drooling of saliva of the children

Swallowing difficulty

Among 70 participants 37.1% (n=26) of children had swallowing difficulty where 62.9% (n=44) of children had no swallowing difficulty among the 70 children.

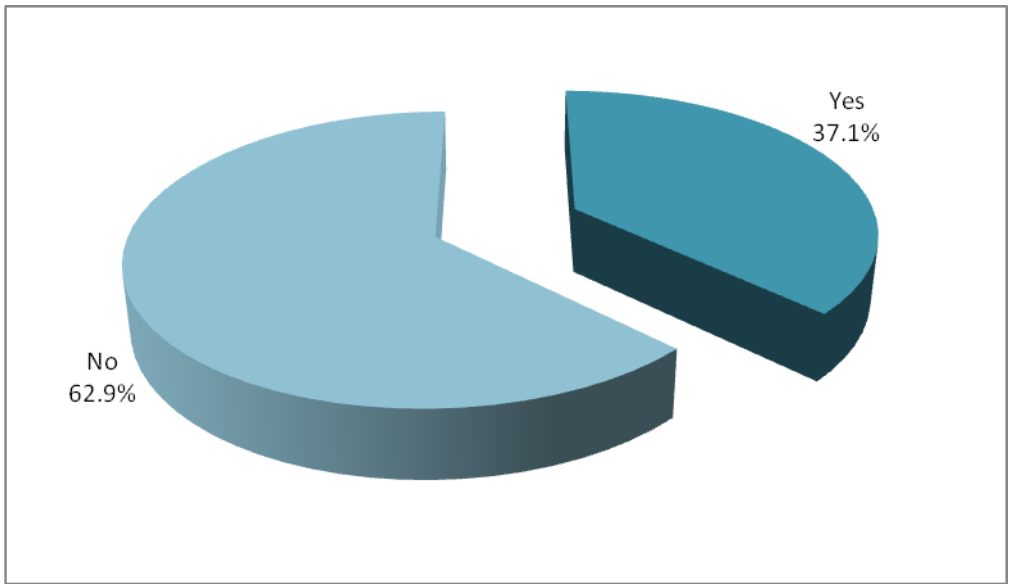


Figure-18: Presence of swallowing difficulty

Communicating way of the child

Among 70 participants 34.3% (n=24) of the children communicated by crying, 4.3%(n=3) of children used facial expression, 17.1%(n=12) of the children were making gesture, 4.3%(n=3) of the children were making sounds, 22.9%(n=16) of the children were speaking words and 17.1%(n=12) of the children were speaking sentences to communicate with their parents and others.

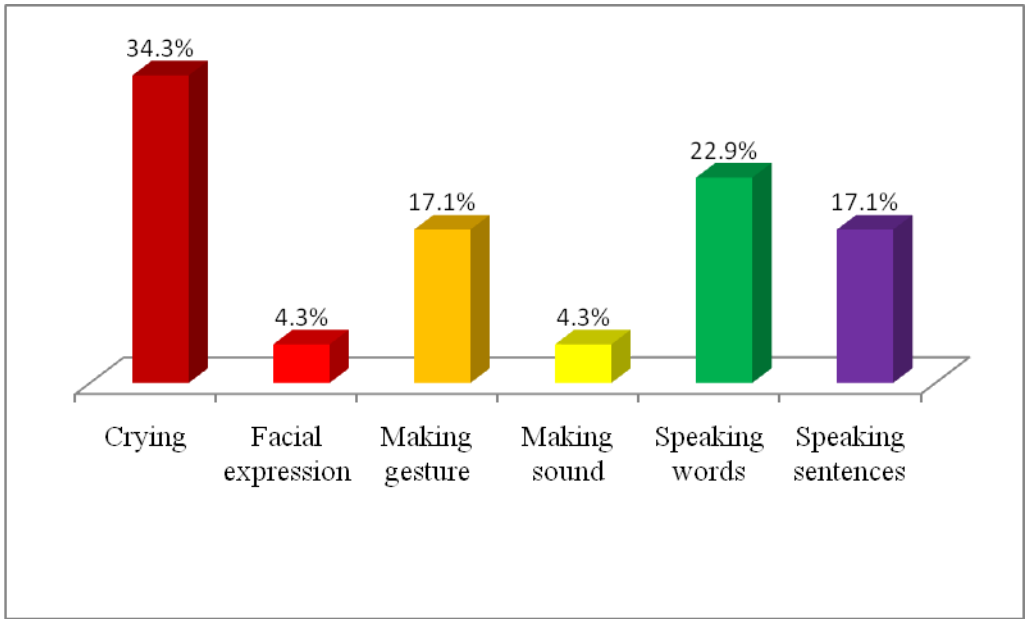


Figure-19: Communicating way of the child

Vision

This chart shows that 71% (n=50) of the children among the 70 children had the normal eye sight but 29% (n=20) of the children were squint.

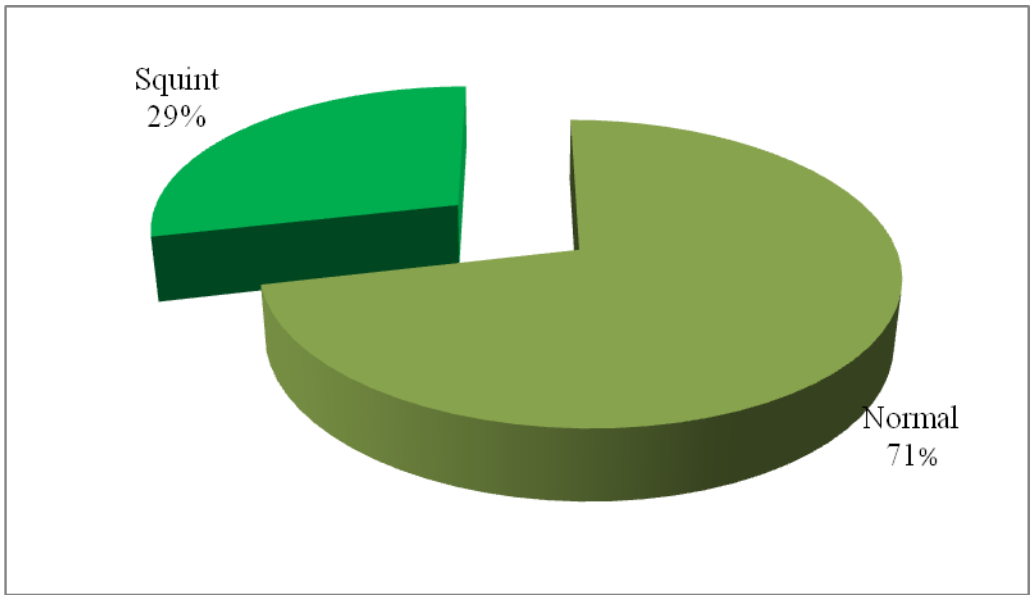


Figure-20: Vision of the children

Hearing ability

Among 70 participants 98.6% (n=69) of the children had the hearing ability but only 1.4% (n=1) of the children had not the ability of hearing.

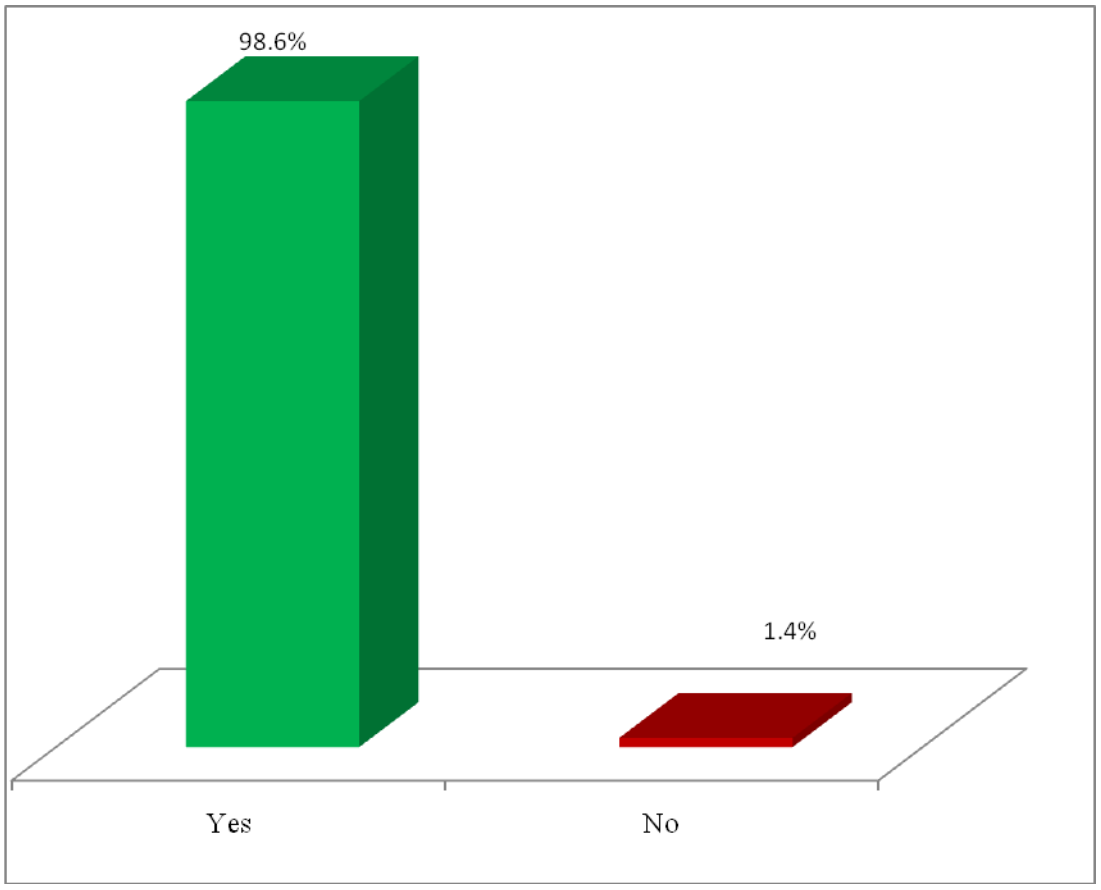


Figure-21: Hearing ability of the children

Involvement of limb

Involvement of the limb of the children among the 70 children 11.4% (n=8) were one side of the body part, 25.7% (n=18) of the children had both lower limb involved, 62.9%(n=44) had both upper and both lower limb involved and this is the largest group of children among the participants.

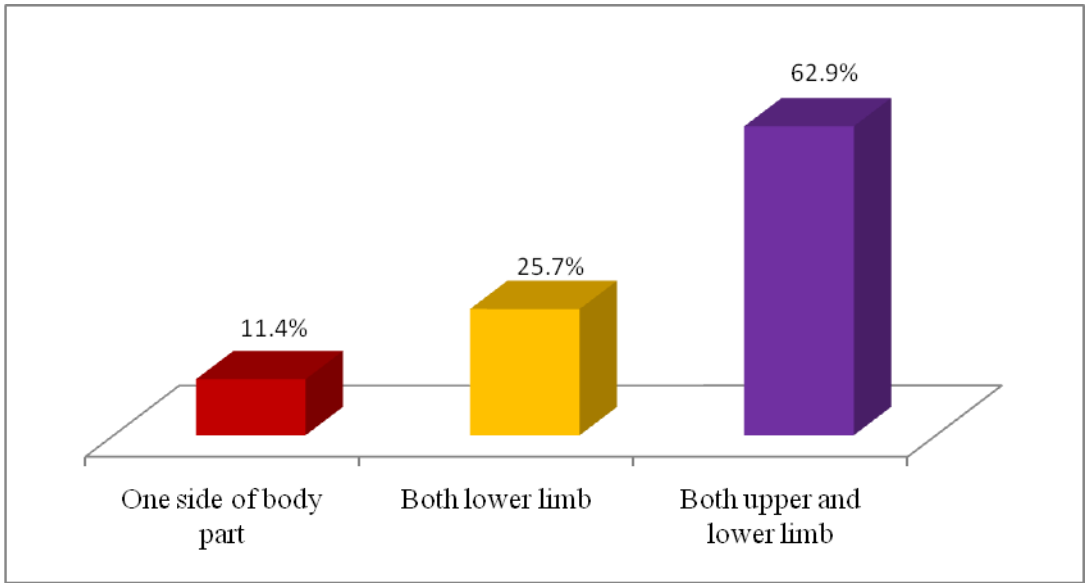


Figure-22: Involvement of the limbs of the children

Muscle tone

Among 70 participants 48.5% (n=34) of the children which is the largest group of the children represent hyper tone of the muscle tone of the children, 12.9%(n=9) of children had the muscle tone of hypo tone and 38.6%(n=27) of the children had fluctuating tone where they had the alternation tone.

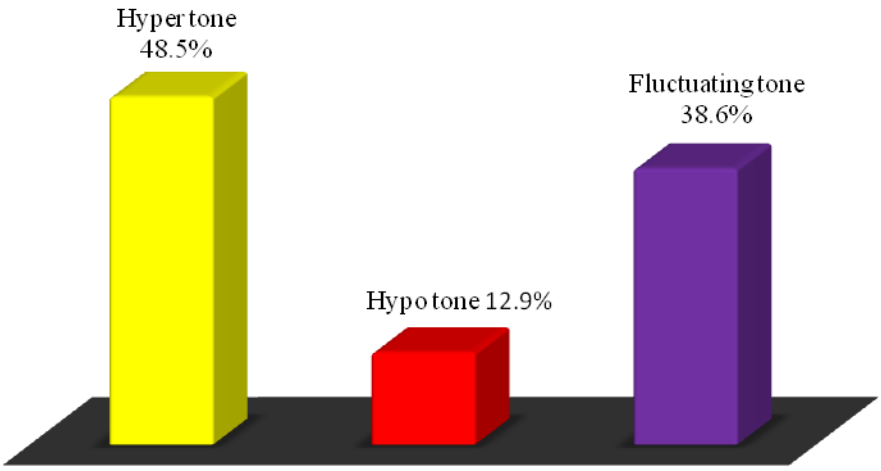


Figure-23: Muscle tone of the children

Neck control

Among 70 participants 42.9% (n=30) of the children had poor neck control, 45.7%(n=32) of children had good neck control and 11.4%(n=8) of children had no neck control.

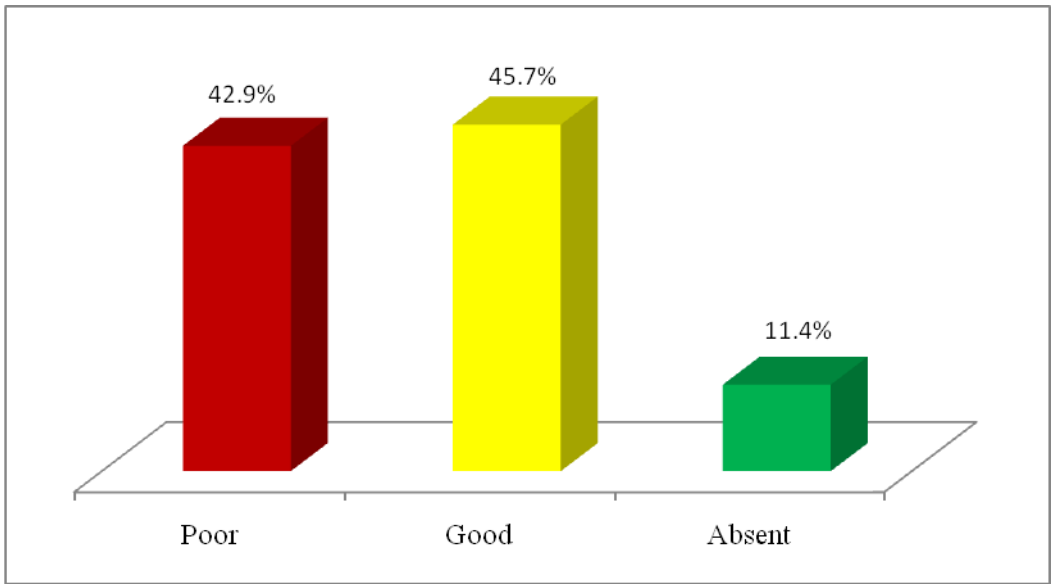


Figure-24: Neck control of the children

Trunk control

Among 70 participants 25.7% (n=18) of the children had poor trunk control, 35.7%(n=25) of the children had good trunk control and 38.6%(n=27) of the children had no trunk control.

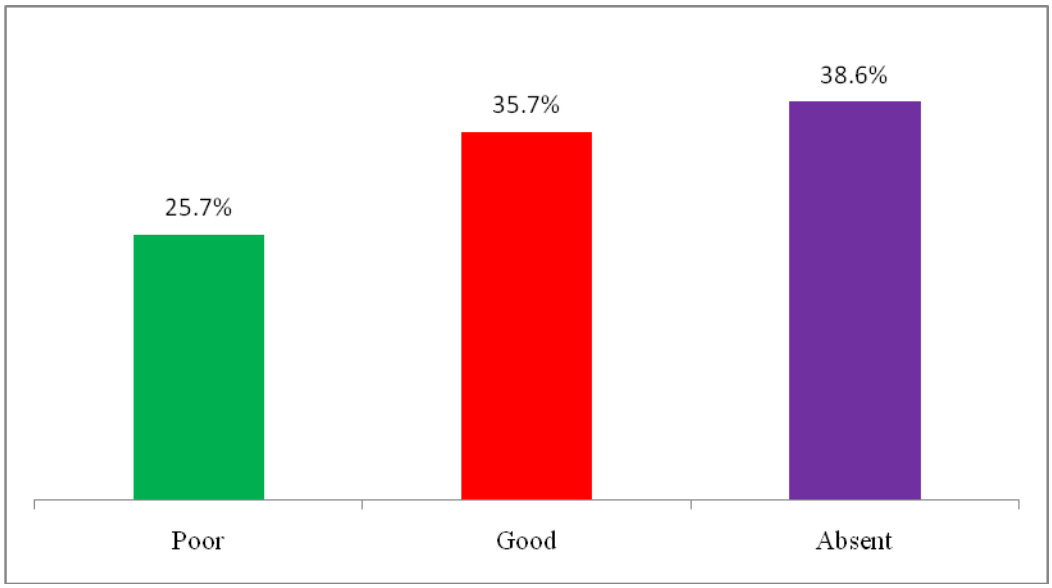


Figure-25: Trunk control of the children

Pelvic control

Among 70 participants 34.3% (n=24) of the children had poor pelvic control, 15.7% (n=11) of the children had good pelvic control and 50% (n=35) of the children had no pelvic control

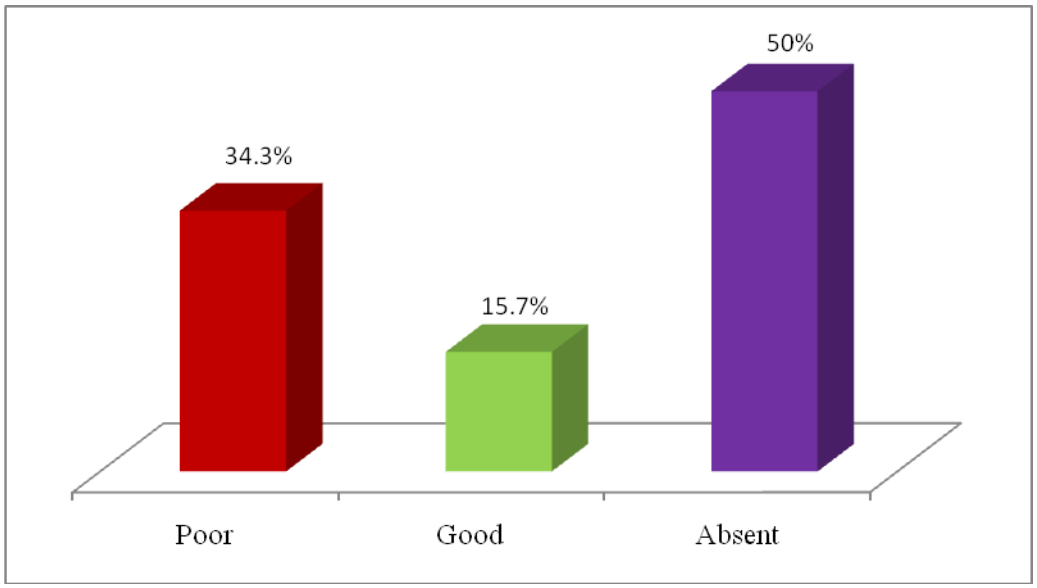


Figure-26: Pelvic control of the children

Standing

Among 70 participants 24.2% (n=17) of the children could stand with support, 12.9% (n=9) of the children could stand without support but for the 62.9% (n=44) of the children standing was not applicable.

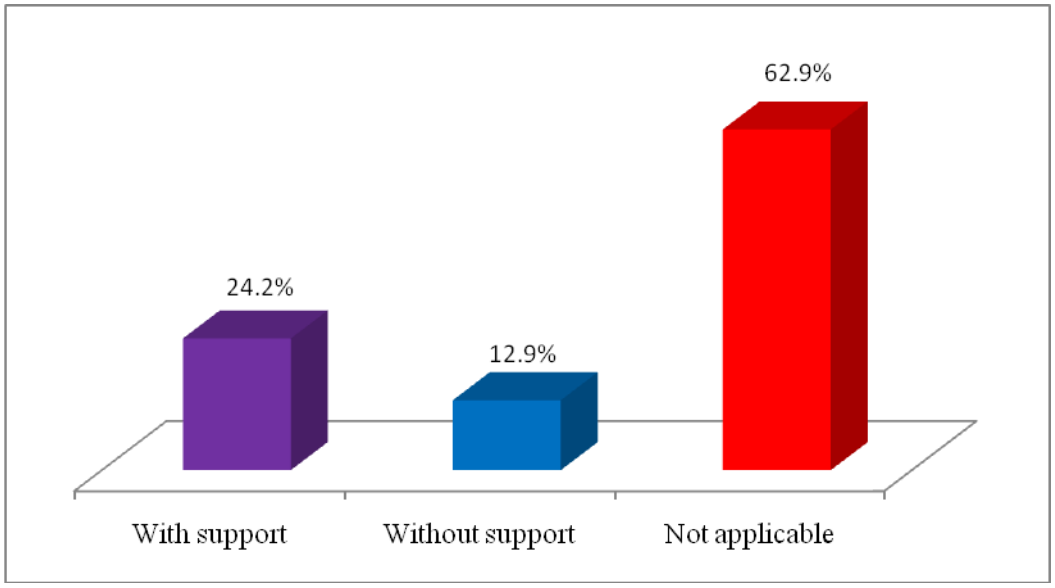


Figure-27: Standing ability of the children

Walking ability

This chart shows that 17.1% (n=12) of the children could walk with support, 2.9% (n=2) of the children could walk without support but for the 80% (n=56) of the children among the 70 participant walking was not applicable for them.

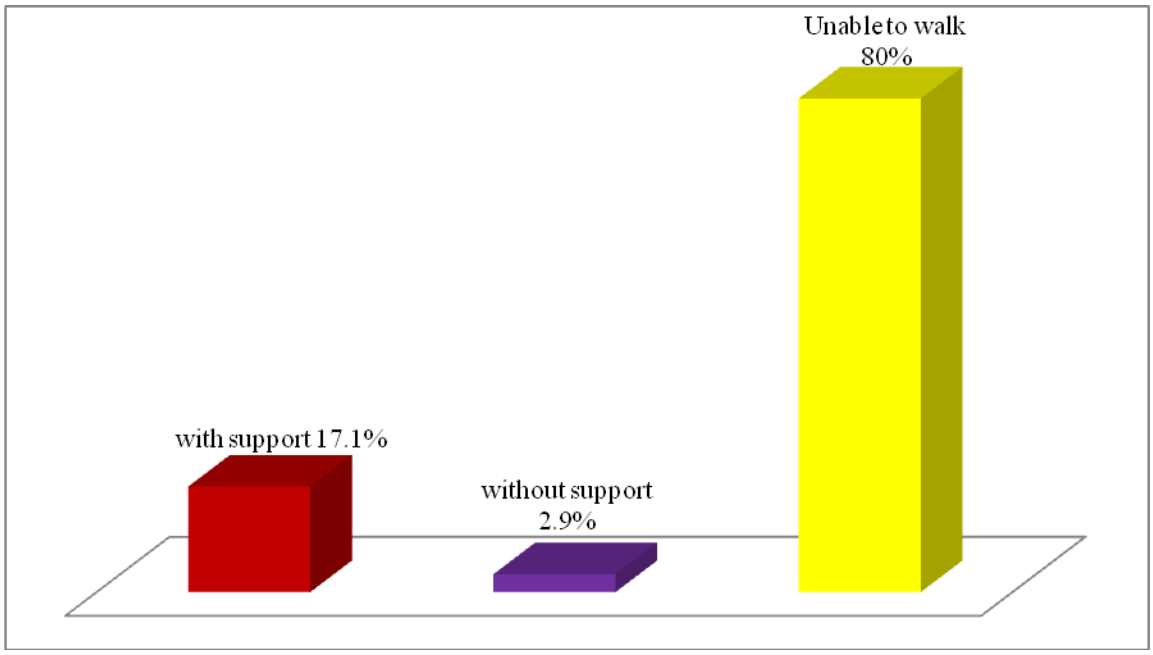


Figure-28: Walking ability of the children

CHAPTER-V: DISCUSSION

The purpose of the study was to explore the characteristics of children with CP in Bangladesh. This study was carried out from November 2012 to May 2013 at the pediatric unit in the Centre for the Rehabilitation of the Paralysed. Total children with cerebral palsy of below 10 year of age were the respondent. Most of the mother came from the rural area of different districts of Bangladesh. The age range of respondents was 1 to 9 year. Most of the children's mother's educational status is less than primary and the average monthly family income is below 10000 taka BDT.

The result of the study shows that mothers had High BP of 7.1%(n=5), mothers had anemia 5.7%(n=4), mothers had diabetes 4.3% (n=3), mother had infectious disease 7.1%(n=5), early discharge of amniotic fluid 7.1%(n=5) and other illness during pregnancy which represents 2.9%(n=2). Mann et.al (2010) mentioned that Pre-eclampsia is a leading cause of preterm birth, which is strongly associated with cerebral palsy. However there is controversy about whether pre-eclampsia is associated with increased risk of cerebral palsy. Eclampsia, jaundice, diabetes and High BP are the predominant history among the mother of CP Children. These are the variables which influences to CP.

In this study shows the number of mothers among the 70 mothers were attended by doctor was 52.9% (n=37), attended by nurse were 18.6% (n=13) of the mothers, attended by midwife 28.6%(n=20) of the mothers. Another study conducted in Bangladesh by McCarthy with 219 subjects and his result demonstrated that delivery by doctors 37.4%, nurse 13.7% and midwife 36.1% and 9.3% by relatives. In village, most deliveries happen at home without midwives or untrained midwives. Untrained midwives may not be aware of the need for oxygen resulting in problem related to delivery as a result child disability may occur (McCarthy, 1999). This study shows that among the 70 participants most of the participants parents had not the first cousin marriage which represents 86% (n=60) and rest of them had first cousin marriage which represents 14%(n=10).But Japan, India, Pakistan and the Middle East cousin marriages is high. Children produced from

such close marriages show an increase in various types of genetic disorders such as birth defects, mental retardation deafness and blindness. Many pregnancies of such unions terminate prematurely; which in itself is sign of an unhealthy pregnancy, perhaps one caring a defect (Jayasekera, 2004).In this study Among 70 mothers 52.9%(n=37) mother faced problem during birth was prolonged labor,38.6%(n=27) mother faced short labor during giving the child birth the rest of had sudden birth of child which represents 8.6% (n=6) of mother. This study represents 35.7%(n=25) of the children had low birth weight where 64.3% (n=45) of children had normal birth weight. A study showed that low birth weight was also strongly associated with cerebral palsy. A total of 9% of the children with a birth weight of less than 1000 g means (low birth weight) were diagnosed with cerebral palsy. Birth asphyxia was still strongly linked with cerebral palsy and birth weight (Kari et al., 2010).This study represents 54.3%(n=38) of the children had birth asphyxia where,45.7% (n=32) of children had no history of birth asphyxia.A retrospective study by Jahan (2002) from the child development and neurology unit of Dhaka Shishu Hospital shows the significance of birth asphyxia as a risk factor of childhood disability.

In this study 27.1%(n=19) of the children had neonatal jaundice where, 72.9%(n=51) of the children had no history of neonatal jaundice.72.9% (n=51) of children had the history of seizure which is the largest group of children.27.1%(n=19) of children had no history of seizure.48.5%(n=34) of the children which is the largest group of the children represent hyper tone or spastic type of the muscle tone of the children, 12.9%(n=9) of children had the muscle tone of flaccid type and 38.6%(n=27) of the children were athetoid where they had the alternation of tone.A study showed that among the cerebral palsy children there were seizure in 31.8%, vision defect in 19.8%, speech defect in 29.5%, hearing defect in 6.7% and learning disability in 25.4% children. Spastic CP is the most common type of CP and involvement four limbs is rapid. Children with CP have delay on independent sitting, standing, crawling and walking or can never achieve these abilities in their life span (Ozgun et al., 2012).

CHAPTER-VI: CONCLUSION AND RECOMMENDATIONS

6.1. Conclusion

Bangladesh is one of the populated countries in the world. Disability is a major social and economical phenomenon in the country. Cerebral palsy is one of the leading child disabilities in Bangladesh. It increases day by day. The variables which was explored was demographic factors for example birth history, birth asphyxia , birth attendance, preterm, post term delivery, pregnancy complications, cousin marriage and birth weight of cerebral palsy children. To find out the possible birth characteristics and clinical manifestations of the children after birth.

This study is conducted by 70 children with CP and their mothers. As the result of the study have demonstrated the birth and after birth characteristics of the child with CP. It shows that a great amount of mothers have had just primary education and they have limited knowledge on health education. So health education and promotion including health care facilities should be provided for all mothers. Most of the mothers have had home delivery by traditional midwife. Emergency care was also not available for those mother and children. So, hospital delivery should be encouraged and skill birth attendance should be ensuring in case of home delivery.

This study showed that among 70 participants there is 44% are from urban area and 56% are from rural area, 54.3% mothers had one child, 52.9% mothers faces prolonged labor, 52.9% mothers were attended by doctor and 28.6% were by midwife, 68.6% children are term baby, 54.3% children had birth asphyxia, 72.9% children had the history of seizure, 32.4% children communicated by crying, 22.9% children communicated by speaking word, 98.6% children have hearing ability, 62.9% children have both upper and lower limb involvement, 48.5% children have the hyper tone in the muscles, 38.6% have the alteration of tone in the muscle, 42.8% children had poor neck control and 45.7% had good neck control, 50% children had no pelvic control whether 34.3% had poor pelvic control and 15.7% had good pelvic control, 24.2% children can stand with support and

12.9% children can stand without support, 17.1% children can walk with support and 2.9% children can walk without support.

This study shows child with CP cannot achieve their normal milestone of development. So health care facilities should be provided to these children to maintain and improve their daily living function to enhance their ability. CRP is one of the well known rehabilitation centre in the Bangladesh where child with Cerebral palsy improve their functions by MDT approach of different health professionals and their mother can learn how to take care of them and how to ensure the list amount of independency of the child which they can achieve with their disability.

6.2. Recommendations

Like other countries, children with cerebral palsy are likely to be an upcoming burden for Bangladesh. For this reason, it is important to develop research based evidence of physiotherapy practice in this area. Physiotherapist's practice which is evidence based in all aspect of health care. There are few studies on the characteristics of children with cerebral palsy but they are from other countries. But in our country there should be more research on Child with cerebral palsy. So people can aware of this type of child disability and can take of the previous and after situation of this dilemma. So, it is recommended that the next generation of physiotherapy members continue study regarding this area, this may involve-use of large sample size and participants form different districts of Bangladesh. Conduct research on other childhood problemswhere physiotherapist can work. So it is very important to conduct such type of research in the pediatric conditions.

This study is performed in cross sectional design. It can also perform in cohort design and may be case control design. The researcher can use the different study design and which can be conducted by vast population of Bangladesh then the result will be more significant from this study.

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Appendix - 1

মৌখিকঅনুমতিপত্র

(অংশগ্রহনকারীকেপড়ে শোনাতেহবে)

আসসালামুআলাইকুম,

আমারনামফারহানামতি, আমি এই গবেষণাপ্রকল্পটিবাংলাদেশ হেলথ প্রফেশনসইনস্টিটিউট(বিআইচপিআই)- এ পরিচালনাকরছিযাআমার ৪র্থ বর্ষ বি এসসি ইন ফিজিওথেরাপি কোর্সের অধিভূক্ত। আমারগবেষনারশিরোনামহল**"সি.আর.পি-তে চিকিৎসাপ্রাপ্তমস্তিষ্ক সমন্ধনীয়পক্ষাঘাত গ্রস্থ বাচ্চাদের বৈশিষ্ঠসমুহ"**। আমিআপনাকেকিছু ব্যক্তিগত এবংগর্ভকালিনসমস্যাজনিত আনুষঙ্গিক সম্পর্কে প্রশ্নকরতেচাই। এতে আনুমানিক ২০-৩০মিনিটসময়লাগবে।আমিআপনাকেঅবগতিকরছি যে, এটাআমারঅধ্যয়নের অংশ এবংঅন্যকোনউদ্দেশ্যে ব্যবহৃতহবেনা। এই গবেষনাআপনারবর্তমান ও ভবিষ্যৎচিকিৎসায় কোনপ্রকারপ্রভাব ফেলবেনা। আপনি যে সব তথ্য প্রধানকরবেনতার গোপনীয়তাবজায় থাকবেএবংআপনারপ্রতিবেদনের ঘটনাপ্রবাহেএটানিশ্চিতকরাহবে যে এই তথ্যের উৎসঅপ্রকাশিত থাকবে।এই অধ্যয়নেআপনারঅংশগ্রহন সেচ্ছাপ্রনোদীতএবংআপনি যে কোনসময় এই অধ্যয়ন থেকে কোন নেতিবাচকফলাফলছাড়াইনিজেকেপ্রত্যাহারকরতেপারবেন। এছাড়াও কোননির্দিষ্ট প্রশ্নঅপছন্দ হলেউত্তরনা দেয়ারএবংসাক্ষাৎকারেরসময় কোনউত্তরনাদিতেচাওয়ারঅধিকারওআপনারআছে।এই অধ্যয়নেঅংশগ্রহনকারীহিসেবেযদি আপনার কোনপ্রশ্ন থাকেতাহলেআপনিফারহানামতিঅথবা / এবংএহসানুররহমান, প্রভাষকএবংএইগবেষনারপর্যবেক্ষকফিজিওথেরাপীবিভাগ, বি. এইচ.পি. আই.সাভার,ঢাকা-১৩৪৩-তে যোগাযোগকরতেপারেন।

আমিআপনারঅনুমতিনিয়ে এই সাক্ষাৎকারশুরুকরতেযাচ্ছি।

হ্যাঁ ☐

না ☐

অংশগ্রহণকারীর স্বাক্ষর: তারিখ:

সাক্ষীর স্বাক্ষর: তারিখ:

গবেষকের স্বাক্ষর : তারিখ:

“ সি.আর.পি-তে চিকিৎসাপ্রাপ্তমস্তিষ্ক সমন্ধনীয়পক্ষাঘাত গ্রস্থ বাচ্চাদের বৈশিষ্ঠসমুহ”

সনাক্তকারী সংখ্যা :	সাক্ষাৎকারগ্রহণেরতারিখ:
মোবাইল নম্বর:	

ঠিকানা:

প্রশ্নাবলী

বিভাগ ০১ : জীবনবৃত্তান্ত

নং	প্রশ্নপত্র	প্রত্যুত্তর
০১.	শিশুরবয়স ঃ	|বছর|__|
০২.	লিঙ্গ ঃ	১=মেয়ে ২=ছেলে
০৩.	মায়েরশিক্ষাগত যোগ্যতা ঃ	১=স্কুলে যায়নি ২=প্রাথমিক থেকে কম ৩=প্রাথমিক সম্পন্ন ৪=এস.এস.সি সম্পন্ন ৫=এইচ.এস.সি সম্পন্ন ৬=স্নাতক সম্পন্ন ৭=স্নাতকোত্তর সম্পন্ন ৮=অন্যান্য
০৪.	ব্যসস্থান ঃ	১=গ্রাম ২=শহর
০৫.	পারিবারিক গড় মাসিকআয় ঃ	..... (টাকা)

বিভাগ ০২ : মাতৃ সম্পর্কীয়ইতিহাস

নং	প্রশ্নপত্র	প্রত্যুত্তর
০৬.	আত্মীয়ের সাথে বিয়ে	১=হ্যাঁ ২=না
০৭.	শিশুরসংখ্যা	১=এক ২=দুই ৩=দুই এ অধিক
০৮.	গর্ভবস্থায় কোনশারীরিকনির্যাতনবা দুর্ঘটনা	১=হ্যাঁ ২=না
০৯.	যদি হ্যাঁহয়তাহলেকিধরনের	১=কোথাওপড়েগিয়ে

		২=মারধোর খেয়ে ৩=যানবাহনের দুর্ঘটনা ৪=অন্যান্য

১০.	গর্ভাবস্থায় অসুস্থতা	১=উচ্চ রক্তচাপ ২=রক্তশূন্যতা ৩=ডায়বেটিকস ৪=সংক্রামক রোগ ৫=অগ্রীমপানি ভেঙ্গে যাওয়া ৬=অন্যান্য অসুস্থতা ৭=কোন অসুস্থতানয়
১১.	শিশুজন্মদানেসমস্যা	১=দীর্ঘ প্রসব বেদনা ২=ক্ষীণপ্রসব বেদনা ৩=হঠাৎজন্মদান
১২.	কারমাধ্যমে পরিচার্জিতহয়েছে	১=ডাক্তার ২=নার্স ৩=ধাত্রী ৪=অন্যান্য
১৩.	জন্মেরসময়আঘাত	১=হ্যাঁ ২=না

বিভাগ ০৩ : শিশুরইতিহাস

নং	প্রশ্নপত্র	প্রত্যুত্তর
১৪.	জন্মেরইতিহাস	১=অকালজন ২=সঠিকসময়ে ৩=সঠিকসময়ের পর
১৫.	জন্মেরসময় কত ওজন	১=হ্যাঁ ২=না
১৬.	জন্মেরসময়শ্বাস রোধহয়েযাওয়া	১=হ্যাঁ

		২=না
১৭.	জন্মের পর পান্ডুরোগ	১=হ্যাঁ ২=না
১৮.	পানিস্বল্পতা	১=হ্যাঁ ২=না
১৯.	শিঁচুনী	১=আছে ২=নাই
২০.	ফুসফুসেরসমস্যা	১=আছে ২=নাই
২১.	লালাপড়ে	১=হ্যাঁ ২=না
২২.	গিলতেকষ্টহয়	১=হ্যাঁ ২=না
২৩.	শিশুর যোগাযোগেরপ্রক্রিয়া	১=কান্নাকরে ২=মুখভঙ্গি ৩=ইশারাকরে ৪=ধ্বনিকরে ৫=শব্দবলে ৬=বাক্য বলে ৭=অন্যান্য
২৪.	দৃষ্টি শক্তি	১=স্বাভাবিক ২=ট্যারা ৩=চশমাপড়ে
২৫.	শ্রবন শক্তি	১=আছে ২=নাই
২৬.	অঙ্গ জনিতসমস্যা	১=শরীরেরঅর্ধেক অংশ ২=দু পায়ে ৩=চারহাতপায়ে ৪=অন্যান্য
২৭.	মাংসপেশিরটান	১=অধিক শক্ত বাটানটান

		২=কম শক্ত বাটানটান ৩=পরিবর্তনশীল ৪=স্বাভাবিক
২৮.	ঘাড়নিয়ন্ত্রণকরতেপারে	১=অল্প ২=ভালো ৩=পারেনা
২৯.	পিঠধরেরাখতেপারে	১=অল্প ২=ভালো ৩=পারেনা
৩০.	কোমরনিয়ন্ত্রণকরতেপারে	১=অল্প ২=ভালো ৩=পারেনা
৩১.	দাঁড়াতেপারে	১= সাহায্য নিয়ে ২=সাহায্য ছাড়া ৩=প্রযোজ্য নয়
৩২.	হাঁটতেপারে	১=সাহায্য নিয়ে ২=সাহায্য ছাড়া ৩=প্রযোজ্য নয়

Appendix - :2

VERBAL CONSENT STATEMENT

(Please read out to the participant)

Assalamualaikum, my name is *FarhanaMati,*I am conducting a research project (dissertation) study which included in our course curriculum of Bangladesh health professions institute (BHPI). The title of the study is "Characteristics Cerebral Palsy attended at Centre for the Rehabilitation of the Paralysed". I would like to know about some personal and problem during pregnancy related questions. This will take approximately 20-30 minutes.I would like to inform you that this is purely academic study and will not be used any other purpose. The researcher is not directly related with this area, so your participation in the research will have no impact on your present or future treatment. All information provided by you will be treated as confidential and in the event of any report or publication. It will be insured that the sources of information remains anonymous.Your participation in this study is voluntary and you may withdraw yourself at any time during this study without any consequence. You also have a right not to answer a particular question that you do not like or do not want to answer during interview.

If you have any query about the study or your right as a participant you may contact with FarhanaMati and or EhsanurRahman, lecturer and supervisor of this study of Physiotherapy Department (BHPI, Savar,1343).

Do you have any question before you start?

Yes …….

No …….

Sign of the participant ….……..… Date-

Sign of the witness ……..… Date-

Sign of the researcher ……... Date-

CHARACTERISTICS OF CEREBRAL PALSY ATTENDED AT CENTRE FOR THE REHABILITATION OF THE PARALYSED

- **Identification number:……**
- **Date of Interview:…….**
- **Contact number:……...**
- **Address:……**
  ……
  ……...

Questionnaire

Section 1: Demographic Questions

QN	Questions and filters	Responses
01.	Age of the child :	|__|__|
02.	Sex of the child:	1= Female 2= Male
03.	Educational status of mother:	1=No formal schooling 2=Less than Primary 3=Primary completed 4=S.S.C completed 5=H.S.C completed 6=Bachelor completed 7=Masters completed 8=Others
04.	Residential area	1= Rural 2= Urban
05.	Average monthly family income	……...(Taka)

Section 2: Maternal history

QN	Questions and filters	Responses
06	First cousin marriage	1=Yes 2=No
07	Number of child	1=One 2=Two

		3=More than two
08	Any physical assault occur during pregnancy	1=Yes 2=No
09	If yes then which type of	1=Fallen down 2=Get beaten 3=Any vehicle injury 4=Other
10	Illness during pregnancy	1=High BP 2=Anemia 3=Diabetes 4=Infectious disease 5=Early discharge of Amniotic fluid 6=Other illness 7=No illness
11	Problem during birth	1=Prolonged labor 2=Short labor 3=Sudden birth
12	Attended by	1=Doctor 2=Nurse 3=Midwife 4=Any other means
13	Birth Injury	1=Yes 2=No

Section 3: Child history

14	Birth history	1=Premature 2=Term 3=Post mature
15	Low Birth weight	1=Yes 2=No
16	Birth asphyxia	1=Yes 2=No
17	Neonatal jaundice	1=Yes 2=No
18	Dehydration	1=Yes 2=No
19	Seizure	1=Present 2=Absent
20	Respiratory problem	1=Present 2=Absent
21	Drooling of saliva	1=Present 2=Absent
22	Swallowing difficulty	1=Present 2=Absent
23	Communicating way of child	1=Crying 2=Facial expression 3=Making gestures

		4=Making sounds 5=Speaking words 6=Speaking sentences 7=Any other means
24	Vision	1=Normal 2=Squint 3=Glasses
25	Hearing ability	1=Present 2=Absent
26	Involvement of limb	1=One side of body part 2=Both lower limb 3=Four limb 4=Other
27	Muscle tone	1=Hyper tone 2=Hypo tone 3=Athetoid 4=Normal
28	Neck control	1=Poor 2=Good 3=Absent
29	Trunk control	1=Poor 2=Good 3=Absent
30	Pelvic control present	1=Poor

		2=Good 3=Absent
31	Standing	1=With support 2=Without support 3=Not applicable
32	Walking	1=With support 2=Without support 3=Not applicable

Appendix-3

Permission Letter

To

The Head of the Department,

Physiotherapy Department,

Center for the Rehabilitation of the Paralysed (CRP)

Savar, Dhaka-1343

Subject: Permission to collect data to conduct a research study.

Sir,

I respectfully to state that I am a student of 4th year B.Sc in physiotherapy at Bangladesh Health Professions Institute (B.H.P.I). In 4th year we have to do a research project and I have chosen a title that is "Characteristics of children with Cerebral Palsy Attended at Center for the Rehabilitation of the Paralysed" and my supervisor is Ehsanur Rahman, lecturer in department of Physiotherapy. I would like to collect data at physiotherapy department of CRP in Savar and Mirpur. Data will be collected within 8.00 a.m. to 5.00 p.m.

I therefore pray and hope that you would be kind enough to give me permission to do this study successfully in your department.

Yours faithfully

Farhana Mati

Farhana Mati

Bachelor of Science in Physiotherapy (B.Sc PT)

Session: 2007-08

CRP, Savar,Dhaka

Date: 30.03.13

Accepted, Pwd. Mirpur.

Md. Sohrab Hossain
Associate Professor Physiotherapy, (BHPI), CRP
Head, Dept. of Physiotherapy,
CRP, Savar, Dhaka-1343