Parental socio-economic status and it's associated factors of cp children in rural areas of Bangladesh

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Parental socio-economic status and it's associated factors of cp children in rural areas of Bangladesh

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DECLARATION

This work has not previously been accepted in substance for any degree and is not concurrently submitted in candidature for any degree. This dissertation is being submitted in partial fulfillment of the requirements for the degree of B.Sc. in Physiotherapy.

I confirm that if anything identified in my work that I have done plagiarism or any form of cheating that will directly awarded me fail and I am subject to disciplinary actions of authority. I confirm that the electronic copy is identical to the bound copy of the Thesis.

In case of dissemination the finding of this project for future publication, research supervisor will highly concern, it will be duly acknowledged as graduate thesis.

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ACRONYMS

SCMST: SAIC College of Medical Science and Technology

CP: Cerebral Palsy

IVH: Intra-ventricular Hemorrhage

CNS: Central Nervous System

PVL: Periventricular Leukomalacia

SES: Socio-economic status

LMICs: Low- or Middle-Income Countries

BCPR: Board Certification in Physical Rehabilitation

SD: Standard Deviation

BMI: Body mass index

SPSS: Statistical package for social science

ERB: Ethical Review Board

BMRC: Bangladesh Medical Research Council

WHO: World Health Organization

N : Frequency

% : Percentage

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ABSTRACT

Purpose: The purpose of this study to determine the types of cerebral palsy among the children and socio-economic status of their parents in rural areas of Bangladesh.

Objectives: To explore the birth history of the children with cerebral palsy in different rural areas of Bangladesh in respect to gestational period type and place of delivery. To inquire about the history of crying of the baby after birth, diagnosis of the condition and treatment of cerebral palsy. To assess the level of socio-demographic and economical status of the parents of the children with cerebral palsy in rural areas of Bangladesh.

Methodology: Cross sectional type of descriptive study design was selected. Total 116 Cerebral Palsy children and their parents were participate by purposive sampling from different rural area of Bangladesh. Data was collected by the self-developed and Structured Questionnaire. Descriptive statistics using SPSS software version-25 were used for data analysis and the results were showed in pie chart, bar chart and table.

Results: The study revealed that 44.8% children were spastic CP, 38.8% children were athetoid CP, 8.6% children were flaccid CP and 7.8% children were mixed CP. The present study showed that 21% children were hemiplegic CP, 38% children were paraplegic CP, 1.7% children were monoplegic CP and 39.7% children were quadriplegic CP. The present study revealed that, 1% parents were in upper middle class (Grade – II), 29% parents were in middle class (Grade – III), 62% parents belonged to lower middle class (Grade – IV), 8% parents were lower class (Grade – V).

Conclusion: One of the most common forms of developmental impairment, cerebral palsy, affects an estimated 50 million people globally. In this study showed that, Most affected gender was female (61) more than male (55). Most Affected CP were Spastic CP . Socioeconomic status is one of the key variables affecting a country's health. In this study revealed that most of the cerebral palsy guardian were lower middle Class (Grade – IV), (72).

Key Words: *Cerebral Palsy, Socio-economic Status, Rural Area.*

Chapter- I INTRODUCTION

1.1 Background:

The most prevalent juvenile disability that impairs motor function is cerebral palsy. It results from damage to the developing brain. Since William John Little first used the term in 1843 and indicated that spasticity results from injury to the brain during infancy, preterm birth, or birth asphyxia, it is also known as Little's illness. This was followed by significant contributions from Osler, Sach, and Peterson, Sigmund Frued, Mac Keith, and Polani, among many others, up until 2006, when an expert executive panel defined CP as a collection of long-term disorders of movement and posture that limit activity and are thought to be caused by non-progressive disturbances in the developing fetal or infant brain (Paul et al., 2022).

The clinical classification of cerebral palsy is based on the primary motor condition, which includes spastic hemiplegia, spastic diplegia, spastic quadriplegia, and extrapyramidal or dyskinetic. CP is characterized by aberrant tone, posture, and movement. 2-3 cases of CP occur for every 1,000 live births. However, numerous other factors, such as maternal illnesses and repeated gestations, have also been linked to an increased risk for CP. Prematurity and low birth weight are key risk factors for CP. The primary pathologic features in preterm children who develop CP include intra cerebral hemorrhage and periventricular leukomalacia. In the majority of cases, the initial injury to the brain occurs during early fetal development (Patel et al., 2020).

With various clinical kinds, comorbidities, brain imaging patterns, etiology, and, as of recently, heterogeneous underlying genetic variants, cerebral palsy is heterogeneous. Few birth defects are exclusively caused by severe hypoxia or ischemia. This widespread misconception has impeded causation research. Due to needlessly high cesarean birth rates and the ensuing maternal morbidity and mortality, the cost of litigation has a severe impact on maternity services. Despite a 6-fold rise in cesarean births, CP rates have stayed constant after 50 years (Maclennan et al., 2015).

The criteria and categorization of cerebral palsy (CP), as well as the strategy for rehabilitation, have changed during the past 25 years. In addition to affecting sensation, perception, cognition, communication, and behavior, CP is a condition of movement and posture development that results in activity limits. It is thought that

non progressive abnormalities of the fetal or infant brain are to blame (Rchard and Malouin., 2013).

The only regularly published source of data on cerebral palsy in England and Wales comes from the Office for National Statistics, and it is based primarily on certificates for infant fatalities that occur after 28 days of life. This is due to the likelihood that cerebral palsy won't be discovered until beyond the newborn period. Mortality statistics are generally helpful for tracking the health of the general public, but they must be interpreted carefully for two primary reasons (Moudsleg et al., 1999).

A series of movement and postural abnormalities brought on by a non-progressive interference with the growing brain are collectively referred to as cerebral palsy . Pregnancy, the perinatal period, the first year of life, and up to 2 years of age are all times when CP risk factors are present. Genetic variations, congenital abnormalities, preterm birth, kernicterus, intrauterine growth restriction, infection, hypoxic ischaemia, cerebrovascular insults during pregnancy and infancy, as well as accidental and unintentional brain injury are all known risk factors and conditions that can combine to create causal pathways to CP (Mclntyre et al., 2022).

In international epidemiological research, the prevalence of CP has been determined to remain steady, however the care of preterm birth difficulties is still a contributory role in increasing the incidence of this condition. (Stavsky et al., 2017).

The burden of CP is significant for individuals, their families, and the healthcare system. Both mortality and the high incidence of impairments and consequences are to blame for this burden. Most of the time, parents of children with CP are the ones who care for their physically challenged children, and moms rather than fathers play the main part in this. This has an impact on the caregiver's physical, psychological, and social elements in addition to the financial cost and time commitment (Mohammed et al., 2016).

Preterm delivery, low birth weight, and intrauterine growth restriction are outcomes substantially related with CP that have been linked to social inequity in risk. However, results regarding parental socioeconomic status (SES) and CP risk in the kid have been contradictory. The majority of research, but not all, have found that the risk of CP rises as SES falls. Although CP subtypes may have various etiologies, SES has rarely been examined in relation to subtypes in prior research (Forthun et al., 2018).

Children with CP see a gradual decline in activities and possibilities for therapeutic movement and rehabilitation, such as physical therapy. Within healthcare systems, community resources and accessibility vary and are frequently constrained. Priorities change for children with CP as they get older and are given more responsibilities in school as well as a greater emphasis on relationships and socializing. Individuals with CP are given opportunity to explore movement in settings that can address associated limitations through dance lessons and moving to music. A creative and expressive art form, dance typically entails performing movement to music. Traditional hurdles in therapy that differently focus on impairments and restrictions can be overcome by using dance as an art form into recovery (López-Ortiz et al., 2019).

Socioeconomic status is one of the key variables affecting a country's health. It is a gauge of one's or a family's social standing and has a significant impact on one's or a family's health, educational attainment, food, lifestyle, etc. (Wani, 2019).

According to certain studies, children with poor socioeconomic level have developmental impairments. They contend that a child's low socioeconomic status (SES) may make them more biologically vulnerable, which could have detrimental developmental effects. The population that builds up risk factors that could delay development is, regrettably, nearly usually the most poor, increasing the likelihood of developmental delay. The level of education of the caregiver and the family's income are fundamental factors in determining the health of the kid since they are indications of the resources that are accessible as well as of knowledge and behavior related to children's health and wellbeing (Madeira et al., 2013).

1.2 Justification of this study:

Now a days, Cerebral palsy is a common condition in rural area of Bangladesh. Day by day there is increasing the number of cerebral palsy patient. As Bangladesh is a developing country and trying to developing country and trying to develop health care system. So it is important to know cerebral palsy aware the people about which is essential to strengthen their parents. Among the few studies that were found locally not sufficient to present the real picture of this situation. Due to shortage of information and study were conducted couple of year back which does not represent the present situation.

Socioeconomic status is one of the prime factors influencing the status of a nation. I want to know that how many CP children parents know their child disease through my research. Also I want to highlighted the quality of life of CP patients in rural area who does not receive regularly physiotherapy treatment for their economic status after knowing their child disease. I can find out how many parents of CP child know about physiotherapy. Also I can know that there any facilities for providing physiotherapy treatment in rural area.

As the physiotherapy profession is newly introduced in Bangladesh, many people are not aware of its purpose. But it is an important part of health care to prevent diseases as well as to improve or maximize independence in people with disabilities.

The title is physiotherapy based which is suitable for me to study and this thesis project helps to earn huge knowledge that helps the competence for higher study.

The purpose of this study is conduct to identify the Socio-economic Status of Parents with Cerebral palsy Children in Rural areas of Bangladesh. Having not any previous research in this topic in Bangladesh. For, all of this reason I want doing this study.

In future someone want to doing this topic related research, this research will help for better information.

1.3 Research Question:

- What is the socio-economic status of the parents of the children with cerebral palsy in rural areas of Bangladesh?
- What are the common types of Cerebral Palsy among the children in rural areas of Bangladesh?

1.4 Objectives of this Study:

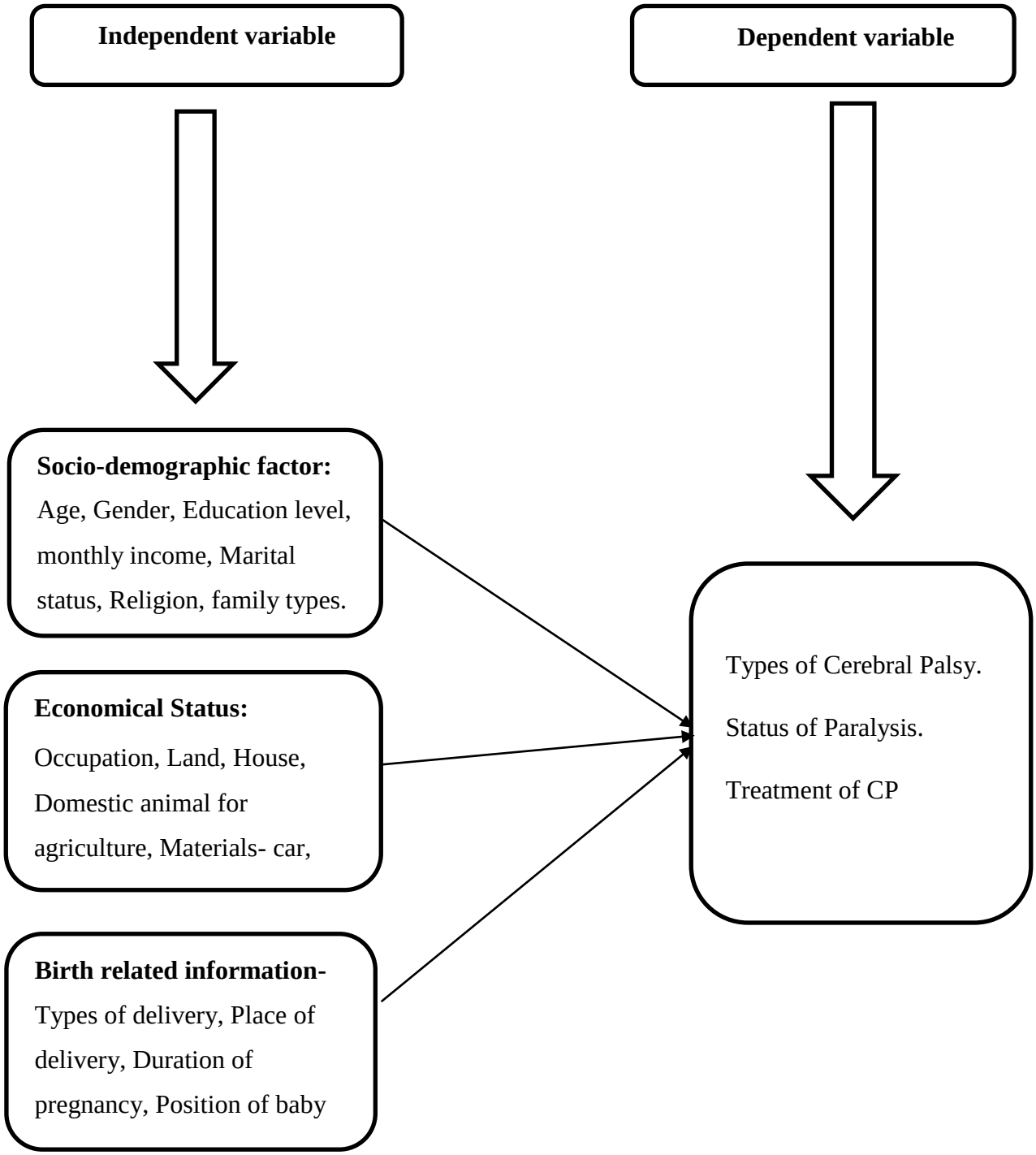
1.4.1 General objective:

- To determine the types of cerebral palsy among the children and socio-economic status of their parents in rural areas of Bangladesh.

1.4.2 Specific objectives:

- To explore the birth history of the children with cerebral palsy in different rural areas of Bangladesh in respect to gestational period type and place of delivery.
- To inquire about the history of crying of the baby after birth, diagnosis of the condition and treatment of cerebral palsy.
- To assess the level of socio-demographic and economical status of the parents of the children with cerebral palsy in rural areas of Bangladesh.
- To examine the association between gender of the children and types of cerebral palsy and status of paralysis of the children.

1.5 Conceptual frame work:



1.6 Operational Definition:

Cerebral Palsy: According to non-progressive problems that happened in the developing foetus or infant brain, CP is a group of long-term diseases of mobility and posture that result in activity limits.

Socio-economic status: Socio-economic means a person or group social standing or class, education, income and occupation are frequently used to calculate it.

Socio-demographic: It refers that the social status, age, sex, education, race of population.

Physiotherapy: Physiotherapy is a form of medical care that aims to improve a patient's mobility, function, and overall health. Through physical rehabilitation, injury prevention, and health and fitness, physiotherapy is beneficial.

Rural Area: Rural areas are those that are sparsely populated, where people cultivate land or depend on natural resources these areas may also include large settlements that rely on migrant labor, remittances, and government social assistance for survival and they may also have a traditional land tenure system.

Udai Pareek socio-economic status scale: It attempts to examine the socio-economic status for rural population. This scale has nine factors which assess the socio-economic status of the individual.

Socio - economic Score- (Based on Udai –pareek scale):

Grade I (Upper Class) : If Socio economic Score was > 43.

Grade- II (Upper middle class) : If Socio economic Score was 33- 42.

Grade- III (Middle class) : If Socio economic Score was 24- 32.

Grade- IV (Lower middle class) : If Socio economic Score was 13- 23.

Grade –V (Lower Class) : If Socio economic Score was <13 .

Chapter- II LITERATURE REVIEW

One of the most common causes of motor impairment in children is cerebral palsy (CP). The most recent description of CP states that it is a set of long-term abnormalities of movement and posture development that result in activity restrictions and are caused by non-progressive problems in the developing foetus or infant brain (Sadowska., et al 2020). One of the most common forms of developmental impairment, cerebral palsy, affects an estimated 50 million people globally (HK, 2016). According to estimates, low- and middle-income nations account for 80% of childhood disabilities (LMICs) (WHO, 2011).

The SCPE reiterated its agreement to accept any definition of CP provided that it contains these five essential components: First and foremost, CP is a collective term for a number of disorders; second, the condition is permanent but not immutable; third, it involves a disorder of movement and/or posture and of motor function; fourth, it results from a non-progressive interference/lesion/abnormality; and fifth, it develops in the developing or immature brain. The decision tree did not change (sheedy et al., 2014).

Non-progressive motor abnormalities brought on by damage to the developing brain are known clinically as CP. According to estimates, LMICs suffer from significantly more cases of CP than high-income nations. To improve function, prevent secondary problems, and increase autonomy, children with CP need the assistance of a multidisciplinary team of medical and rehabilitation specialists, including physiotherapists, occupational therapists, and speech and language therapists. However, especially in LMICs, such services are not always accessible to kids with CP. In the BCPR, 2852 children with CP were reported between January 2015 and December 2019. The population-based prevalence of CP in Bangladesh was calculated to be 3.4 (95% CI 3.2-3.7) per 1000 children, or roughly 234,000 children with CP in a nation of 166 million people (Imam et al., 2021). Cerebral palsy was present in 2.95 (95% CI 2.03-3.88) out of 1000 children surveyed overall. The combined prevalence was found to be 1.83 (95% CI 0.41-3.25), 2.29 (95% CI 1.43-3.16), and 4.37 (95% CI 2.24-6.51) for the study populations in rural, urban, and mixed rural-urban areas, respectively (Chauhan et al., 2019).

Cerebral palsy (CP) is now one of the leading causes of childhood impairment in India following the eradication of polio. A well-known neurodevelopmental condition that starts in early childhood and lasts the entirety of a person's life is cerebral palsy. The term cerebral palsy refers to a collection of movement and postural abnormalities that limit activities and are caused by non-progressive disruptions of the developing fetal or infant brain (Bax et al., 2005).

cerebral palsy, which is a movement disease brought on by a non-progressive (static) insult to the developing brain, is a clinical manifestation of a wide range of cerebral cortical or sub-cortical injuries that take place during the first year of life. Infants born preterm have the highest risk of acquiring CP. Intraventricular hemorrhage (IVH) and periventricular leukomalacia are two well-known CNS consequences of preterm that cause damage to the susceptible brain during a crucial phase of development (PVL). Multiple issues and potential disabilities that affect children with CP necessitate the provision of family-centered programs that improve the lives of these kids and their families (Jan, 2006).

Seizure disorders, sensory, cognitive, communication, perceptual, and/or behavioral abnormalities are frequently present alongside the motor disorders of CP. Untreated CP has a steady decline as its normal course (Sharan, 2005). The majority of cerebral palsy patients require rehabilitation treatments for years or many months. To enable the child to reach its full functional potential, the services of a developmental pediatrician, a pediatric orthopedic surgeon, a neurologist or neurosurgeon, physiotherapy, occupation therapy, speech therapy, orthotics, and special education are required (Sharma and Sinha., 2022).

Brain injury to movement-controlling regions of the brain or abnormal brain growth are the two main causes of cerebral palsy. Before, during, or soon after birth, this harm may take place. Most children with cerebral palsy are congenitally affected; this means that they were born with it; nevertheless, it may take months or years for a diagnosis to be made. Cerebral palsy is a condition that develops after birth and affects a tiny percentage of kids. A few reasons of acquired cerebral palsy include damage to the brain during the first few months or years of life, infections of the brain, such as bacterial meningitis or viral encephalitis, issues with blood flow to the brain, or head injuries from car accidents, falls, or child abuse (Cerebral palsy., 2013).

One of Punjab's wealthiest districts is Jalandhar. Jalandhar District has 3,401 square kilometers, and its total population of 19,53,508 people—10,26,535 men and

9,26,973 women—is split 47.2% rurally and 52.93 percent urbanly. The literacy rates for men and women are 86.15 and 78.48, respectively. 10.32% of the population is made up of infants and young children. In Punjab, Jalandhar likely has the biggest concentration of medical facilities, including nursing homes. However, there isn't a facility that offers all the rehabilitation services for children with cerebral palsy under one roof (Sharma and Sinha., 2022).

In eastern Nepal, there were 110 children with CP who were admitted to a single tertiary hospital. The majority of them (74.54%) were men. Children who participated in the study ranged in age from 6 months to 15 years, with a median age of 3 years. Most kids (76.36%) were under the age of five. The average age at when the issue was discovered was 3.0 1.23 years. A total of 76 (69.09%) children showed CP-related early indicators and tone abnormalities, compared to 26 (23.63%) who had more static and recognizable CP and 8 (7.27%) who were at risk (Chaudary et al., 2022). Prevalence of cerebral palsy in Padua and Rovigo, two provinces in northeastern Italy (overall population 1030000).The study included 610 CP-diagnosed children (330 male, 280 female), born between 1965 and 1989. From the 1960s through the middle of the 1980s, the prevalence of CP steadily rose, then from 1985 to 1989, it fell (Bottos., 2016). In Europe, Australia, and the United States, there were 1.8 to 2.3 instances of CP per 1000 children, whereas in Uganda and Egypt, the frequency was 2.9 and 3.6 cases per 1000 children, respectively (Kakooza et al., 2017). Between 2002 and 2008, 1.9 to 2.8 and 1.1 to 1.4 per 1000 children, respectively, were the yearly prevalence rates for total and severe CP. Compared to urban or suburban regions, rural areas have a higher frequency of CP. Within the 7-year trial period, the mortality rate for severe CP ranged from 12.2 to 22.7 per 1000 children (Tseng et al., 2018).

A series of movement and postural abnormalities brought on by a non-progressive interference with the growing brain are collectively referred to as cerebral palsy (CP). Prenatal, during pregnancy, during the postnatal period, and up to two years of age are all times when CP risk factors are present. Genetic variations, congenital anomalies, preterm birth, kernicterus, intrauterine growth restriction and infection, hypoxic ischaemia and cerebrovascular insults during pregnancy and infancy, accidental and non-accidental brain injury, and intrauterine growth restriction and infection are known risk factors and conditions that can combine to create causal pathways to CP (McIntyre, 2011). Recent research from low- and middle-income

countries (LMICs) indicates that CP is more common, is more severe, and is accompanied by more impairments (khandaker et al., 2019).

In order to increase enjoyment, motivation, and involvement in therapy for kids with CP, developing dance programs offer adjuncts to physical and occupational therapy. The possible effects of dance on proprioception, balance, sensorimotor function, posture, motor timing, procedural and working memory, rehearsing, copying, mirroring, and artistic expression and appreciation are demonstrated by the evidence. Dancers' discrete postures and gestures are the most basic building blocks of a movement vocabulary that they can employ to create sequences of purposeful movement. These movement patterns could be applied to everyday functional mobility, which could be helpful for rehabilitation. Dance may serve people with CP in several therapeutic fields, health and education disciplines, as well as personal artistic growth, within a variety of venues for involvement; each provides a new perspective and terminologies (López-Ortiz et al., 2019).

Children who have cerebral palsy (CP) are at an increased risk of malnutrition, according to research, which makes CP one of the most common physical disabilities in children. Physiological variables include dysregulation of growth hormone secretion and muscle stiffness are some of the causes of this (Polack et al., 2018).

Feeding issues, such as oral-motor dysfunctions that affect chewing, food consumption, and self-feeding, are frequent and frequently severe. These challenges might have a detrimental effect on how responsive caregiver feeding techniques are, further lowering nutrient intake (Sullivan et al., 2000).

Malnutrition can further worsen the physical and cognitive functional deficits that are already present in children with CP because it affects the immune system, cerebral development, and other aspects of general health (Kerac et al., 2014). The right to food is protected by a number of human rights charters; nevertheless, the dietary requirements of children with impairments are infrequently taken into account (Groce et al., 2013).

Additional difficulties related to the limited availability of food and nutrition services are likely to be prevalent in rural, low resource settings. However, there is a dearth of empirical data on the nutritional status, feeding practices, and risk factors for malnutrition among kids with CP in different environments, including Ghana. This information is crucial for informing programs, legislation, and evidence-based advocacy for families of children with CP (Polack et al., 2018).

A range of permanent but not always unchanging mobility and/or postural problems are collectively referred to as CP. These illnesses are clinically and aetiologically diverse. Although the causes of CP vary, there are a number of prenatal and perinatal risk factors that are well known, such as preterm birth, multiple births, infection, intrauterine growth restriction, signs of intra partum impairment, newborn encephalopathy, and congenital malformations (Galea et al., 2018).

The clinical classification of cerebral palsy (CP) is based on the primary motor condition, which includes spastic hemiplegia, spastic diplegia, spastic quadriplegia, and extrapyramidal or dyskinetic. CP is characterized by aberrant tone, posture, and movement. However, numerous other factors, such as maternal illnesses and repeated gestations, have also been linked to an increased risk for CP. Prematurity and low birthweight are key risk factors for CP. The predominant pathologic features in preterm children who develop CP are intracerebral hemorrhage and periventricular leukomalacia. The initial injury to the brain occurs in the majority of cases of CP during early fetal brain development (Patel et al., 2020).In all live births, the prevalence of cerebral palsy varies across high- and low-income countries, as well as by geographic region, and ranges from 1.5 to 3 per 1,000 live births (Colver et al., 2014).

The reported prevalence of CP tends to be higher during infancy because aberrant neuromotor findings in many newborns and children tend to disappear within the first few years of life, especially during the first 2–5 years (Patel et al., 2020).

In most nations, cerebral palsy, which affects 1 in 500 newborns and has an estimated incidence of 17 million people worldwide, is the most prevalent cause of childhood-onset, permanent physical disability. Truncal hypotonia and spasticity of the extremities are typically noticed, along with hypotonia, whether or not it is accompanied by any of these. Clinical observations are used to categorize CP into one of three categories: mixed, spastic, or dyskinetic. The most prevalent clinical manifestation of CP, spastic diplegia, is present in 35% of children with CP. The immature oligodendroglia between 20 and 34 weeks of gestation are the cause of spastic diplegia. On neuroimaging, periventricular leukomalacia is the most typical neuropathologic finding. Both the motor corticospinal and the thalamocortical pathways are compromised in spastic diplegia (Graham et al., 2016).

According to another study, the prevalence of CP in Australian children has decreased from 2.1 to 1.4 since 1995; aside from these, various studies show that due

to the financial burden of developing countries, children cannot get the best service for prevention and management of CP, which has led to its increased severity; these population trends indicate that changes in preventive and management studies are successful; however, more research is required in these areas (paul et al., 2022)

The most prevalent movement condition, spasticity, affects 80% of kids with cerebral palsy. Cerebral palsy movement abnormalities can lead to further issues such hip pain or dislocation, balance issues, hand dysfunction, and equinus deformity. Cerebral palsy is generally diagnosed clinically, but magnetic resonance imaging (MRI) might be useful to confirm brain injury if the patient's symptoms are unclear (Vitrikas et al., 2020).

The burden of CP is significant for individuals, their families, and the healthcare system. Both mortality and the high incidence of impairments and consequences are to blame for this burden. Children's CP Quality of Life is influenced by a variety of factors, including those that are specific to the child (such as age, gender, and the severity of the disease, as well as comorbidities and complications), those that are specific to the family (such as socioeconomic status, ties to others, coping mechanisms, parenting style, and knowledge of the disease), those that are environmental (such as the availability of management and rehabilitation services), and others (Mohammed et al., 2016).

With a mean (SD) age of 5.7 (2.3) years, the study population consisted of kids between the ages of 3 and 12. There were 46 (53.5%) girls among them. The most frequent limb anomaly discovered was diplegia, which was detected in 52, 60% of cases. Hemiplegia (24, 28.2%), quadriplegia (6, 7.1%), and triplegia (4, 4.7%) were next in frequency. Ninety-one kids (94.2%) out of the total choose physiotherapy to get symptom relief. In some capacity, 52 youngsters (60,5%) were enrolled in school. 4.3 (1.4) years on average (SD) were spent in formal education. The Anganwadies (the outreach centers of the integrated child development system in India, provided one per 1000 inhabitants) were being used by one-third of them (27, 31.4%) to start their formal education (Anish et al., 2013).

With prevalence estimates ranging from 2.0 to 3.5 patients per 1000 live births, CP is one of the most prevalent causes of childhood physical disability globally. The majority of the burden of CP is disproportionately carried by low- and middle-income countries; in fact, it is estimated that low-income countries account for 80% of the world's prevalence of childhood disability (Lebrun et al., 2019).

In order to respond to the study's first research question about how Nepali children with untreated CP initially present, 206 children with CP were enrolled in the original cohort. Of Nepal's 75 total districts, the children hailed from 60 (or 80%) of them. Children's median ages ranged from 0.25 to 17 years, and around two-thirds of the entire cohort were boys. The second research question of the study concerned functional differences between Nepali and high-income children with spastic CP. Of the original 206 children, 102 were discovered to have spastic CP and were included in the comparison sample (Lebrun et al., 2019).

According to mounting scientific evidence, CP is typically linked to long-standing intrauterine pathology like genetic mutations and possible environmental triggers like bacterial and viral intrauterine infection, intrauterine growth restriction (IUGR), antepartum hemorrhage, tight nuchal cord, and threatened miscarriage (Maclennan., 2015). A significant neurological disease known as cerebral palsy (CP) is said to impact 1 in 500 children. The underlying causes and aetiology of this specific ailment are still unknown (Badawi., 2013). According to estimates, intra-partum hypoxia ischaemia accounts for up to 10% of instances of CP. Hypoxic ischaemic damage has been linked to the development of CP (kapanova et al., 2021).

Health, nutritional status, mortality, and morbidity of a population are all significantly influenced by the SES. The acceptability, accessibility, affordability, and actual on-the-ground use of the various health facilities that are available are also influenced by SES (Aggarwal et al., 2005). Socioeconomic status (SES) is a crucial indicator of a person's wellbeing. The socioeconomic situation is frequently determined by the person's physiological well-being and health-related quality of life. Maintaining one's health, health-seeking behavior, social class, and involvement in sociopolitical and sociocultural groups all depend on the SES. SES has been significant in establishing links between SES and other connected phenomena in the academic fields of social science and humanities. A sustainable livelihood is closely tied to one's income, education, quality of life, and other relevant factors (Majumder, 2021). One of the key variables affecting health status is socioeconomic status, which refers to a person's place within a hierarchical social system. Examining socioeconomic scales in primary care settings frequently reveals unequal access to healthcare. Additionally, it identifies a pattern in the health issues that affect a certain population in relation to their socioeconomic status (Wani., 2019).

Chapter-III METHODOLOGY

3.1 Study design:

It was a cross sectional type of descriptive study.

3.2 Study area:

The Study area was different parts of rural areas of Bangladesh.

(Sherpur, Jamalpur, Naoakhali, Manikgonj, Narayanganj, Narshingdi, Barishal, etc).

3.3 Study Period:

The duration of the study was 12 month from 1st July 2022 to 30th June 2023

3.4. Study population:

The children with cerebral palsy and their parents constituted the study population of the present study.

3.5 Sample size:

Sample size of this study are calculated by this following equation-

We know that;

$n = \frac{z^2 p(1-p)}{d^2}$

Here,

n= Required sample size.

z =confidence level at 95% (Standard value of 1.96).

P = P is the prevalence taken as 85.7% or 0.857 (Khandaker, et al., 2019).

d = margin of error at 5% (Standard value of 0.05).

$$n = \frac{z^2 p(1-p)}{d^2}$$

$$n = \frac{(1.96)^2 \times 0.857(1-0.857)}{(0.05)^2}$$

$$= \frac{3.84 \times 0.857 \times 0.143}{0.0025}$$

$$= \frac{0.4705}{0.0025}$$

$$= 188$$

So, sample size 188.

So, the researcher aim to focus his study by 188 sample following the calculation above initially.

3.6 Sampling technique:

Convenience sampling technique was applied to collect data.

3.7 Method of data collection:

Data was collected from the parents of the children with Cerebral Palsy by face to face formal interview.

3.8 Instruments of data collection-

- A pre-tested structured questionnaire was used as an instrument of data collection for the present study.
- To obtain socio-economic information of the parents by Udai-Pareek scale Socioeconomic Status Scale for rural area.
- Both open and close ended question were included in the questionnaire.

3.9 Tools of data collection:

For collecting data some other materials were also used-

- Weighing machine (Bathroom scale) and
- Measuring tape.

3.10 Inclusion Criteria:

- Cerebral palsy children parents were included in this study.
- Parents who are able to communicate and had no hearing problems were selected for the study. Clear communication is required to provide answer during the interview session.
- Who are willingly Participate.
- Who had receive at list once physiotherapy session.
- Both male, and female children were include in this study.

3.11 Exclusion Criteria:

- Undiagnosed disease.
- Children with severe complication.

3.12 Procedure of data collection:

At first, researcher took permission from the parents of children with cerebral Palsy. Before collecting data, the objectives of this study and purpose were explained to all participants. All the participants were given consent form for taking permission from them to participate in this study and they were given opportunity to ask any types of study related questions. The participants who could not read the consent form, researcher himself read the consent form in front of the participants. After obtaining written consent, researcher started to collect data. At first, the researcher collected general information using by a self-developed socio-demographic questionnaire and also collected information about Birth of the child by self-developed questionnaire. Structured questionnaire named socio economic scale was used in this study to determine the socio-economic status of parents of the children with cerebral palsy. The interview was conducted in Bengali as though they can understand the questions easily. Face to face interview was conducted because this may provide higher response than other data collection methods. Every interview lasted 10-15 minutes. Each data was collected carefully and confidentiality was maintained. After successfully collecting data, researcher leaves the participants by giving thanks to all participants to be a part of study willingly.

3.13 Data Management:

After collection of the questionnaire from the participants, those were checked for any error and inconsistency in the responses. Necessary correction were done accordingly. The responses were coded for the entry into the computer program.

3.14 Data analysis:

Data was analyzed by according to objectives and variable of this study by Microsoft excel and using SPSS (Statistical package for social science) (25 version), And use some statistical test (eg: Chi-Square test).

3.15 Presentation of Results:

The findings of the study have been presented by frequency tabulation of the characteristics. The results were also presented by various graphs, charts, and description of the variable.

3.16 Ethical consideration:

- The Research proposal was submitted to the Ethical Review Board (ERB) of SCMST and approval was obtained from the Board.
- The investigator obtained written permission from ethical review board (SCMST).
- Bangladesh Medical Research Council (BMRC) and World Health Organization (WHO) guideline also were followed to conduct the study.
- Ethical review board informed by written document about aims and objectives of the study and that the Participate of the study will not harmed.
- The clients name, address and personal information were kept confidential by the investigator mentally and the dates would be shared with others.

3.17 Limitation of this study:

Every study has its own set of limitations. There were some situational limitation while considering the Study. These are as follows:

- Due to the short study period, an adequate number of samples could not be gathered for the study.
- The calculated sample size was 188. But data were collected from 116 participants due to time limitation.
- It was found that some guardians of children with cerebral palsy were not comfortable during interview due some questions.

Chapter- IV RESULTS

This was a cross sectional study. The chief objective of the study was to determine the types of cerebral palsy among the children and socioeconomic status of their parents in some selected rural areas of Bangladesh. Data were collected from a sample size of 116 children and their parents. Data were numerically coded and captured in Microsoft Excel and calculated as percentage and presented by using bar chart, pie chart and table and using an SPSS 25.0 version software program.

Sociodemographic Profile

4.1 Age group in years in children:

Table no 1: Frequency distribution of the children by age

Age Group in Years	Frequency	
	N	%
<4	66	56.9
4.1 - 9	46	39.7
>9.1	4	3.4
Total	116	100.0

Mean = 4.494 years

Standard Deviation = 2.3503

Regarding frequency distribution of children with cerebral palsy by age, it was found that out of 116, 66 (56.9%) children were below 4 years of age. It was also found that 46 (39.7%) children were in the age group of 4.1 – 9 years. It was also showed that, 4 (3.4%) children were above 9.1 years. The mean age was 4.494 years and SD was 2.3503 (Table no.1).

4.2 Age groups in years by guardian:

Table-2: Frequency distribution of the guardian by age

Age Group in years	Frequency	
	N	**%**
18 - 22	19	16.4
23 - 27	53	45.7
28 - 32	19	16.4
33 - 37	16	13.8
38 - 42	6	5.2
43 - 47	1	0.9
48 - 52	2	1.7
Total	116	100.0

Mean = 27.70

Standard Deviation = 6.304

The number of guardians was 116. The mean age of the guardians was 27.70 years and SD was 6.304. The study showed that 53 (45.7%) guardians belonged to the age group of 23 – 27 years. It was also found that 19 (16.4%) guardians were in the age group of 18 – 22 years. About 19% guardians were in the age group of 28 – 32 years (Table no. 2).

4.3 Gender of the children:

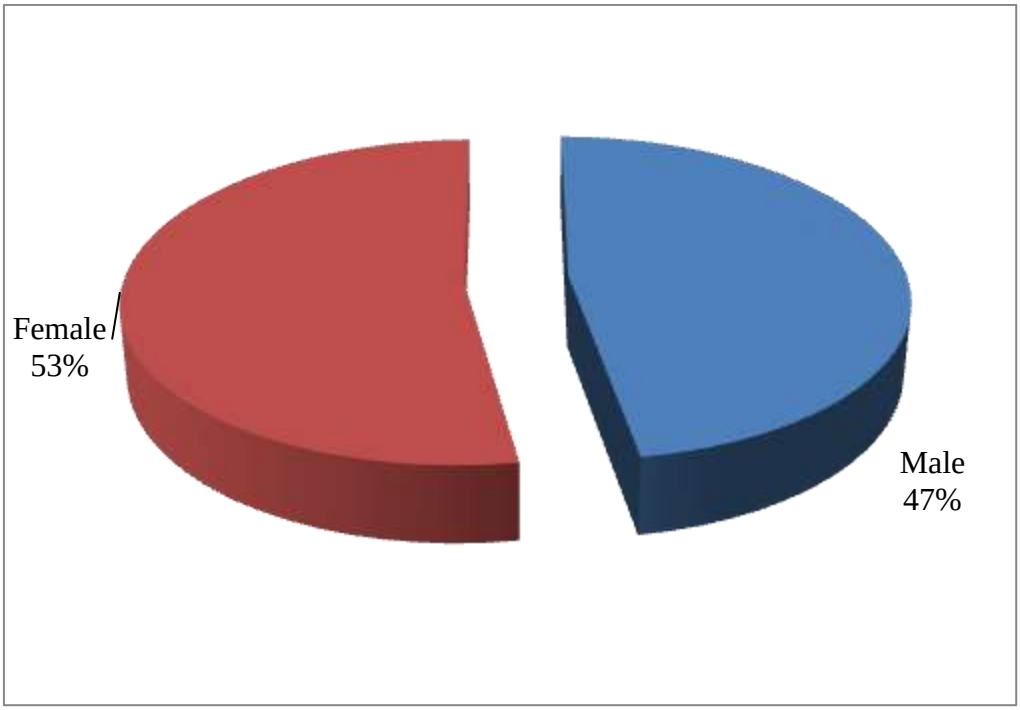


Figure no-1: Gender of the children.

This study was conducted on 116 children. Among them 55 (47.4%) were male and 61 (52.6%) were female (Figure no.1).

4.4 BMI group in children:

Table no 3: Frequency distribution of the children by BMI.

BMI Group in children	Frequency	
	N	**%**
Underweight (13 – 17.9)	25	21.6
Healthy Weight (18 – 26.5)	76	65.5
Overweight (26.6 – 31.9)	13	11.2
Obese (>32)	2	1.7
Total	116	100.0

Mean = 21.635

Standard Deviation = 4.1273

It was revealed that 76 (65.5%) children had normal weight. It was also found that 25 (21.6%) children were underweight. The number of overweight children was 13 (11.2%) and 1.7% children were obese. The mean BMI of the children was 21.63 and SD 4.1273 (Table.no 3).

4.5 Education of the care guardian:

Table no 4: Frequency distribution of the care guardians by education

Education of the care guardian	Frequency	
	N	%
No formal education	2	1.7
passed primary level	25	21.6
High school level	49	42.2
Higher Secondary level	19	16.4
Graduation	21	18.1
Total	116	100.0

About educational level of the care guardian, 49 (42.2%) guardians completed their high school level. It was also found that 25 (21.6%) guardian passed primary level. The study showed that 21 (18.1%) guardians were graduates. It was also showed that, 19 (16.4%) guardians passed higher secondary level (Tabel.no 4).

4.6 Employment of the Care guardians:

Table no 5: Frequency distribution of the Care guardians by employment

Employment of the Care guardians	Frequency	
	N	%
Service holder	4	3.4
Farmer	2	1.7
Teacher	2	1.7
Garments worker	2	1.7
House wife	102	87.9
Others	4	3.4
Total	116	100.0

The study revealed that 102 (87.9%) guardians were housewife. It was also showed that, 4 (3.4%) guardians were service holder (Table.no 5).

4.7 Family type of the Children:

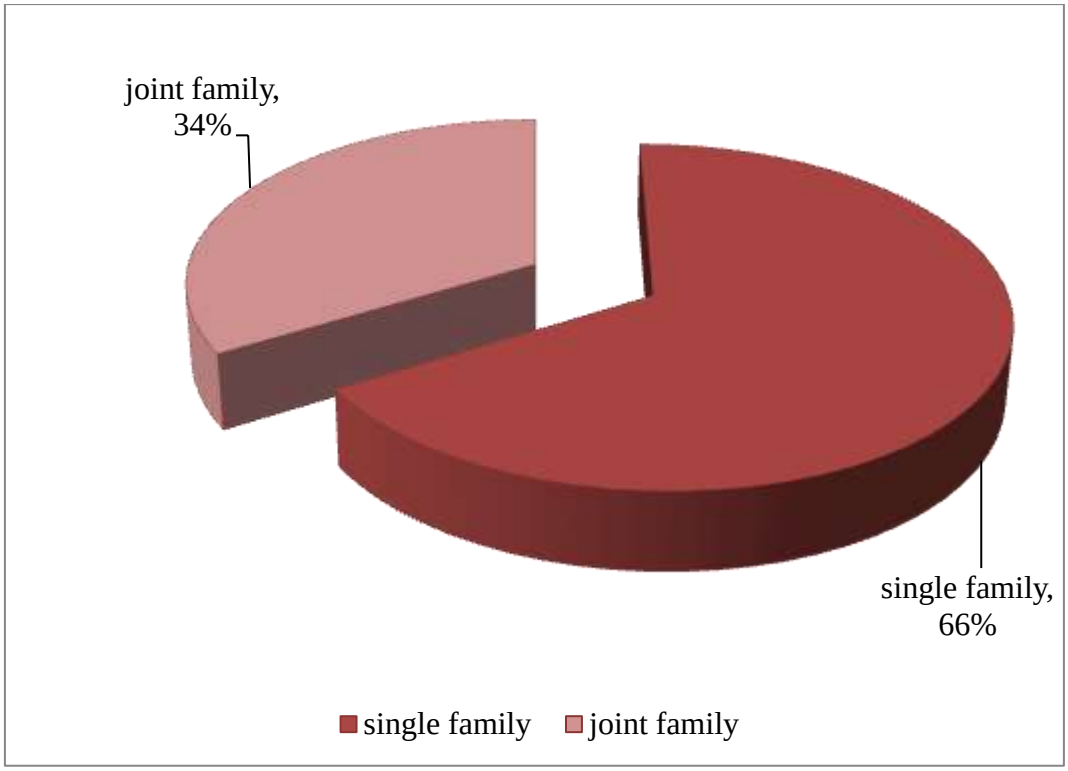


Figure no 2: Family type of the children.

This study was conducted on 116 cerebral palsy Children. Among them 77 (66.4 %) were living with single family and 39 (33.6%) were living with joint family (Figure. no 2).

Birth related information

4.8 Mode of the baby delivery:

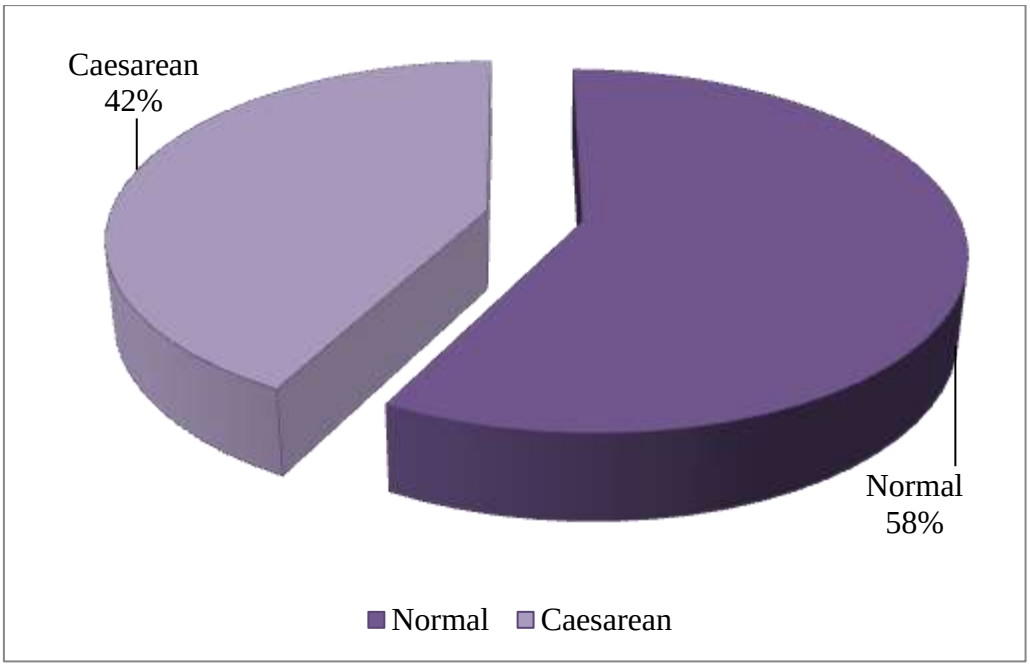


Figure no-3: Mode of delivery of the baby

This study revealed that, 67 (57.8%) children were born Normal and it was also found that 49 (42.2%) children were born in Caesarean (Figure.no 3).

4.9 Delivery Place in the children:

Table no 6: Frequency distribution of the Children by place of delivery.

Delivery Place	Frequency	
	N	%
House	67	57.8
Clinic	5	4.3
Hospital	44	35.4
Total	116	100.0

Regarding place of delivery of the baby, it was found that out of 116 children with cerebral palsy 67 (57.8%) children were born at house and it was also found that 44 (35.4%) children were born in hospital. Only 4.3% children was born in Clinic (Table.no 6).

4.10 Month of baby born:

Table no 7: Frequency distribution of the children by month of baby born

Month of baby born	Frequency	
	N	%
After 9 Month	72	62
Before 9 month.	44	38
Total	116	100.0

It was found that 72 (62.1%) children were born after 9 months of pregnancy and 38% (44) Children were born before 9 months (Table.no 7).

4.11 Baby position during pregnancy:

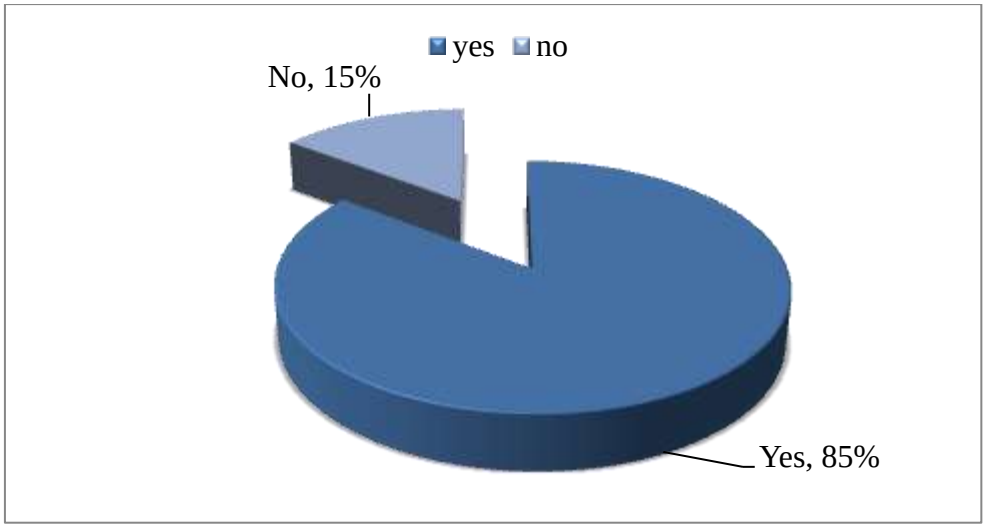


Figure no-4: Position during pregnancy

This study showed that 99 (85.3%) Children were in correct position during pregnancy and it was also found that 17 (14.7%) children's position were not correct during pregnancy (Figure, no 4).

4.12 Cry after Birth:

Table no 8: Frequency distribution of the children by crying after birth

Cry after Birth	Frequency	
	N	%
Yes	36	31
No	80	69
Total	116	100.0

This study was conducted on 116 children with cerebral palsy. Among them 36 (31.0%) children cried after birth and 80 (69.0%) children did not cry after birth (Table.no 8).

4.13 Identify of the children Condition:

Table no 9: Frequency distribution of the children by identifying person.

Identify of the children condition	Frequency	
	N	%
Village doctor	8	6.9
Tradition healer	1	0.9
Registered physician	18	15.5
Child specialist	83	71.6
Physiotherapist	4	3.4
Other	2	1.7
Total	116	100.0

About persons identified the children's condition at first, it was found that 83 (71.6%) children's condition were identified by child specialist. It was also found that, 18 (15.5%) children's condition was identified by registered physician (Table.no 9).

4.14 Type of cerebral palsy:

Table no 10: Frequency distribution of the children by type of cerebral palsy

Type of Cerebral Palsy	Frequency	
	N	%
Spastic CP	52	44.8
Athetoid CP	45	38.8
Flaccid CP	10	8.6
Mixed CP	9	7.8
Total	116	100.0

The study revealed that 52 (44.8%) children had spastic cerebral palsy (cp), it was also showed that 45 (38.8%) children had athetoid cp. It was found that 10 (8.6%) children had flaccid cp and 9 (7.8%) children had in mixed cp (Table.no 10).

4.15 Types of paralysis :

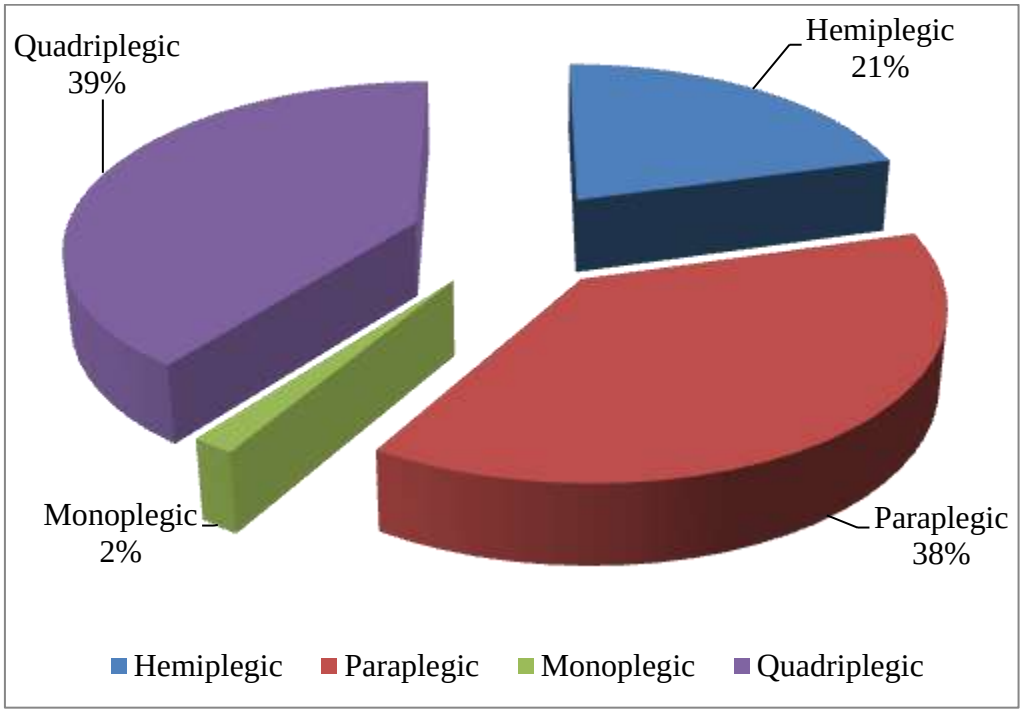


Figure no -5: Pattern of cerebral palsy

This study revealed that 46 (39.7%) children were quadriplegic cp. It was also found that 44 (38%) children were paraplegic cp. It was revealed that, 24 (21%) children were hemiplegic cp and 1.7% children were monoplegic cp (figure.no 5).

Socio economic status by Udai pareek Scale

4.16 CAST of the children guardian:

Table no 11: Frequency distribution of the guardian by CAST

CAST of the children guardian	Frequency	
	N	%
Lower caste	25	21
Artisan caste	34	29
Agriculture caste	16	14
Prestige Caste	38	33
Dominant Caste	3	3
Total	116	100.0

This study was conducted on 116 guardians with cerebral palsy children. It showed that 38 (33%) guardians belonged to prestige caste. It was also found that 34 (29%) guardians were artisan, 25 (21%) guardians were lower caste (Table.no 11).

4.17 Occupation of the children guardians:

Table no 12: Frequency distribution of the guardians by occupation.

Occupation of the guardians	Frequency	
	N	%
None	5	4
Laborer	18	16
Caste occupation	25	22
Business	31	27
Independent profession	19	16
Cultivation	10	12
Other service	3	4
Total	116	100.0

The study revealed that 31 (27%) guardians were doing business, 25 (22%) guardians doing their caste occupation, 19 (16%) guardians were doing their independent profession, and it was also expressed that, 18 (16%) guardians were laborer (Table.no 12).

4.18 Land owned by the children guardian:

Table no 13: Frequency distribution of the guardians by land.

Land owned by the guardian	Frequency	
	N	**%**
No land	4	3.4
<1 acre	47	40.5
1-5 acre	51	44
5-10 acre	13	11.2
10- 15 acre	1	0.9
Total	116	100.0

The study showed that 51 (44%) guardians had 1 – 5 acre land. It was also found that 47 (40.5%) guardians had < 1 acre, 13 (11.2%) guardians had 5 -10 acres, 4 (3.4%) people had no land and 0.9% people had 10 – 15 acres of land (Table.no 13).

4.19 Social Participation of the guardians:

Table no 14: Frequency distribution of guardians by social participation

Social Participation of the guardians	Frequency	
	N	%
No social participation	65	56
One organization	38	33
> 1 organization	11	09
Wider public leader	1	1
Office holder in an organization	1	0.9
Total	116	100.0

The study showed that 65 (56%) guardians had no social participation. It was also found that 33% (38) guardians were members of one organization, 11 (09%) guardians were members of multiple organizations (Table.no 14).

4.20 House of the guardian:

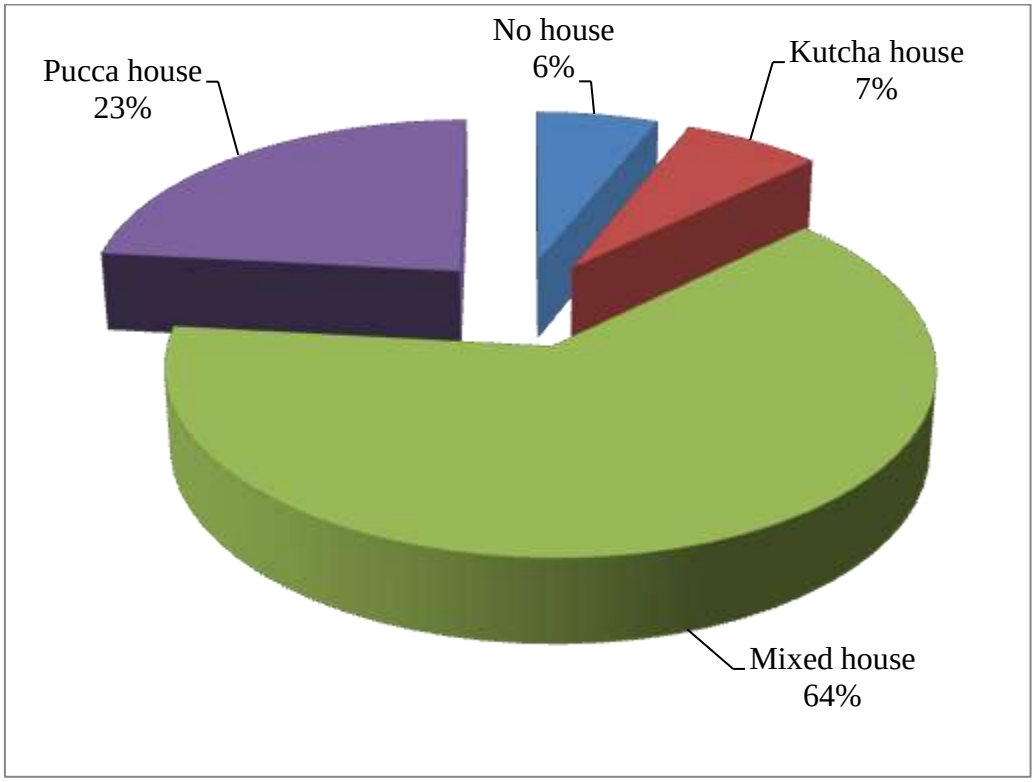


Figure no-6: Type of house of the guardians

The study revealed that 74 (64%) guardians had mixed house. It was showed that 27 (23%) guardians had Pucca house, 8 (7%) guardian has Kutcha house and 7 (6%) guardians had no personal house (Figure.no 6).

4.21 Farm power of the Guardian:

Table no 15: Frequency distribution of the guardians by farm power

Farm power of the Guardian	Frequency	
	N	**%**
No drought animal	65	56
1-2 drought animal	38	33
3-4 drought animal	11	09
5 drought animal	1	1
Total	116	100.0

About farm power, it was revealed that 36 (31%) guardians had 1-2 draught animals. It was also found that 11 (9.5%) guardians had 3 - 4 drought animals and 2 (1.7%) guardians had 5 drought animals (Table.no 15).

4.22 Pareek scale scoring for socio economic Class:

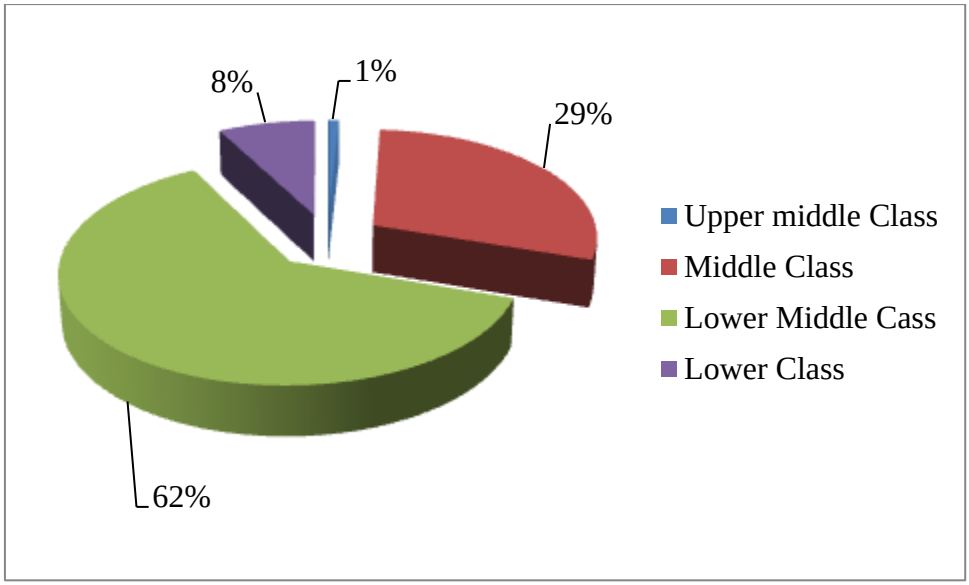


Figure no-7: Socio-economic Score of the participate

Regarding socio-economic status of the guardians according to Pareek scale, it was revealed that 72 (62%) guardians belonged to lower middle Class (Grade – IV). It was also found that, 34 (29%) guardians were in middle Class (Grade – III), 9 (8%) guardians were lower Class (Grade – V) and 1% guardians belonged to upper middle Class (Grade – II) (Figure.no 7).

4.23 Association between the children by gender and type of cerebral palsy:

Table no. 16: Frequency distribution of the children by gender and type of cerebral palsy.

Gender of the children	Type of cerebral palsy				Total	Pearson Chi-Square	P Value
	Spastic	Athetoid	Flaccid	Mixed			
Male	26	20	6	3	55	1.650	0.648
Female	26	25	4	6	61		
Total	52	45	10	9	116		

Out of 116 children with cerebral palsy, it was 55 children were male. Among them 26 (47.27%) children had spastic cp, 20 (36.36%) children had athetoid cp, 10.9% children had flaccid cp and 5.45% children had mixed cp. In case of female, 26 (42.62%) children had spastic type of cp, 25 (40.98%) children had athetoid cp, 6.55% children had flaccid type of cp, 9.83% children had mixed type of cp. There was no significant association between gender and type of cerebral palsy of the children ($\chi^2 = 1.650$, $p = 0.648$) [Table.no 16].

4.24 Association between the children by Gender and types of paralysis :

Table no.17 : Frequency distribution of the children by Gender and types of paralysis

Gender of the Child	Type of paralysis				Total	Pearson Chi-Square	P Value
	Hemiplegic	Paraplegic	Monoplegic	Quadreplegic			
Male	14	20	2	19	55	4.122	0.249
Female	10	24	0	27	61		
Total	24	44	2	46	116		

Out of 116 children with cerebral palsy, the male children were 55. Among them 14 (25.45%) children had hemiplegic cp, 20 (36.36%) children had paraplegic cp, 3.63% children had monoplegic cp and 19 (34.54) % children had quadreplegic cp. In case of female, 10 (16.39%) children had hemiplegic type of cp, 24 (39.34%) children had paraplegic cp, o% children had monoplegic type of cp, 27 (44.26%) children had quadriplegic type of cp. There was no significant association between gender and type of cerebral palsy of the children ($\chi^2 = 4.122$, $p = 0.249$) {Table.no 17}.

Chapter– V DISCUSSION

The aim of the study was to determine the types of cerebral palsy among the children and socio-economic status of their parents in rural areas of Bangladesh. A cross sectional type of descriptive study was conducted. One hundred sixteen children with cerebral palsy and their parents were recruited in this study. Convenience sampling method was applied to select study participants. The data were collected by using a self-developed structured questionnaire form.

The study revealed that the mean age of the children was 4.494 years and standard deviation was 2.3503 years. In a study conduct in India, the mean age was 2.35 years (Pattnaik, M. and Mishra, S., 2022). The present study showed that there were 47.4% male and 52.6% Female. A study by Davis et al, showed that the mean age of the children was 8 years 4 months (SD: ±2.51) and there was 54.9% male and 45.1% female in total population in Australia (Davis et al., 2009). In a study conducted in America, the mean age was 4.5 (± 0.8) years (Allah et al., 2012).

The present study showed that the mean age of the guardian was 27.70 years and standard deviation was 6.304 and also showed that 1.7% had no formal education, 21.6% passed primary level, 42.2% had completed High school level, 16.4% completed Higher Secondary level, 18.1% completed their graduation. In Australia, a research indicated that 1.5% of mothers had completed primary school, 37.2% had completed high school, 22.1% had obtained a trade certification, and 29% had graduated from university. Father's education included 0.5% in basic school, 39.2% in high school, 29.4% in trade school, and 23% in university (Davis et al., 2009).

The study revealed that 3.4% guardian of children with cerebral palsy were service holder, 1.7% was farmer, 1.7% was Teacher, 1.7% was Garments worker, 87.9% was House wife, and 3.4% was doing other job. A study showed that majority parents were farmers (48%), 12% labourers, 9% shop keepers and doing other jobs (Pattnaik, M. and Mishra, S., 2022). The present study revealed that, 66.4% children live in single family and 33.6% children live in joint family.

The present study showed that 57.8% children were born normal and 42.2% were born by caesarean section, 57.8% child was born in House, 4.3% child was born in Clinic and 35.4% child was born in Hospital. It was found that 62.1% children was born after 9 month and 38% children was born before 9 month. About 85% children

was in correct position during pregnancy. The study showed that 31.0% children cried after birth and 69.0% Children did not cry after birth.

A study showed that, prenatal, perinatal, and postnatal causes of cerebral palsy were determined in 26% children, 18.5% and 5.9%, respectively. In 90 kids, 44 of whom were preterm births and 46 who were full-term, no clear-cut cause of CP was discovered. 47 of the 90 were born into healthy pregnancies, healthy deliveries, and healthy neonatal periods (Serdaroglu, et al., 2006).

The present study showed that 6.9% children were diagnosed by village doctors, 15.5% children were identified by the registered physician, 71.6% children were diagnosed by child specialists, 3.4% children were by physiotherapist.

About type of cerebral palsy it was revealed that 44.8% children had spastic CP, 38.8% children were athetoid CP, 8.6% children were flaccid CP and 7.8% children were mixed CP.

In a study in addition to the primary motor type, a secondary motor type was observed in 8.3% of people with spastic CP, 29.6% of children with ataxic CP, and 27.1% of children with dyskinetic CP (Reid, et al., 2011).

The present study showed that 21% children were hemiplegic CP, 38% children were paraplegic CP, 1.7% children were monoplegic CP and 39.7% children were quadriplegic CP. A study showed that, Diplegic CP was the most prevalent subtype in their data set. This subtype was present in 74 (39.8%) of the 53 preterm children with CP overall. Hemiplegic (28%), tetraplegic (19.9%), ataxic (5.9%), and dyskinetic (6.4%) were the other categories (Serdaroglu, et al., 2006).

A different study revealed that 57% of babies with CP were male. The two most common kinds of CP were spastic tetraplegia (36.61%) and spastic hemiplegia (30.51%) (Kulak, et al., 2010).

Another study showed that the most frequent limb anomaly discovered was diplegia, which was detected in 60% of cases. hemiplegia 28.2%, quadriplegia 7.1%, and triplegia 4.7% were next in frequency (Anish, et al., 2013).

The present study revealed that, 1% parents were in upper middle class (Grade – II), 29% parents were in middle class (Grade – III), 62% parents belonged to lower middle class (Grade – IV), 8% parents were lower class (Grade – V).

Present study revealed that most guardian were lower middle class (Grade – IV), 62%.

In a study it was found that, 11.3% live in cities, 88.70% do so in rural areas. 81% participants were SES4 (upper lower) and 19% are SES 3 (lower middle) (Pattnaik, M. and Mishra, S., 2022).

The association between gender and type of cerebral palsy of the children was found not statistically significant ($\chi 2 = 1.650$, $p = 0.648$) and the association between gender and type of paralysis are not statistically significant ($\chi 2 = 4.122$, $p = 0.249$).

In this study researcher found that, Most affected CP was Spastic CP (52). Most affected Cerebral Palsy condition was Quadriplegic CP (46). Most affected gender was female (61) more than male (55).

Chapter – VI CONCLUSION AND RECOMMENDATION

6.1 Conclusion:

In Bangladesh, cerebral palsy is a common disease. However, the majority of individuals in this country are ignorant of cerebral palsy.

In affluent nations, physiotherapy is seen as a crucial component of care for children with cerebral palsy. The aim of the study was to determine the types of cerebral palsy among the children and socio-economic status of their parents in rural areas of Bangladesh. A cross sectional type of descriptive study was carried out in different villages of Bangladesh. Data were collected from a sample of one hundred sixteen children with cerebral palsy and their parents by a pre-tested structured questionnaire. The study showed that 52 children had spastic CP. Athetoid CP were 45, Flaccid CP were 10, Mixed CP are 9. About types of paralysis, it was revealed by the study that, their condition was Hemiplegic CP were 24. Paraplegic CP were 44. Monoplegic CP were 46. Quadriplegic CP were 46. Most affected gender was female (61) more than male (55).

Socioeconomic status is one of the key variables affecting a country's health. Regarding socioeconomic status of the parents, it was found that one hundred sixteen cerebral palsy guardian, their socio economic status was , 1% parents were in upper middle class (Grade – II), 29% parents belong to the middle Class (Grade – III), 62% parents came from lower middle Class (Grade – IV), 8% parents were in the lower Class (Grade – V).

The result indicated that, most of the guardians (62%) belonged to lower middle Class (Grade – IV).

6.2 Recommendation:

The aim of the study was to determine the types of cerebral palsy among the children and socio-economic status of their parents in rural areas of Bangladesh.

The following recommendations are made on the basis of the findings of the present study:

1. Cerebral palsy is now very common problem in our country. Pregnant mothers should go for regular antenatal check-up. It will help the health care providers to detect any abnormality during pregnancy.
2. Pregnant women should be motivated to go health center for delivery of the baby. Skilled health personnel are efficient in management of delivery.
3. Awareness programs related to pregnancy, antenatal care, child birth etc. should be organized for the rural people on regular basis by the concerned authority.
4. It was found that most of the parents (62%) of the present study were poor economically. It is quite difficult for the poor to live with children with cerebral palsy. Income generating activities should be initiated by the government and NGOs to improve the economical condition of the rural people in the country.
5. The random sampling technique rather than the convenient should be chosen in future in order to enabling the power of generalization of the result.
6. The duration of the study was short, so in future ample time should be given for conducting the study.
7. To measure the socio-economic status of the people different measurement tools might be used for accuracy.
8. In Bangladesh there is little research had been conducted on cerebral palsy and socioeconomic status. So, it is needed to conduct more studies in this field.
9. The findings of the present study would be helpful for the future researcher.

CHAPTER – VII REFERENCE

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Appendix - A

Institutional Review Board (IRB) Permission Letter

SAIC COLLEGE OF MEDICAL SCIENCE AND TECHNOLOGY
Approved by Ministry of Health and Family Welfare
Affiliated with Dhaka University

Ref : *Date :* .....

Ref.No: *SCMST/PT/ERB-2017-18/1-2023/50*

3rd January'2023

To
Md. Zahidul Islam
4th Professional B.Sc. in Physiotherapy
Saic College of Medical Science and Technology (SCMST)
Mirpur-14, Dhaka-1216.

Sub: Permission to collect data

Dear Islam,

Ethical review board (ERB) of SCMST pleased to inform you that your proposal has been reviewed by ERB of SCMST and we are giving you the permission to conduct study entitled "Identifying the socioeconomic status to receive physiotherapy treatment among the Cerebral palsy patients in rural area of Bangladesh" and for successful completion of this study you can start data collection from now.

Wishing you all the best.

Thanking You,

11/1/23
Head of ERB
Ethical Review Board
Saic College of Medical Science and Technology

11. 01. 23
Principal
Saic College of Medical Science and Technology
Mirpur-14, Dhaka-1216

Address: Saic Tower, M-1/6, Mirpur-14, Dhaka-1216.Mobile:01936005804
E-mail: simt140@gmail.com, Web:www.saicmedical.edu.bd

Appendix - B

Permission letter for data collection

BANGLADESH COUNCIL FOR CHILD WELFARE-BCCW
বাংলাদেশ শিশু কল্যাণ পরিষদ-বাশিকপ
Registered with Department of Social Services, # 201(1962)/ Foreign Donation Registration # 499
22/1 Topkhana Road, Dhaka-1000, Phone : 02223384257, 02223389760
E-mail: shishukallyanparishad@gmail.com, Website : www.bccw-bd.org

ফা-ভি-০৮/বাশিকপ২০০৬(প্রশাসন)-অংশ-২-প-৫৮ তারিখ : ০৬-০২-২০২৩

বরাবর
অধ্যক্ষ
সাইক কলেজ অব মেডিকেল সায়েন্স এন্ড টেকনোলজি
সাইক টাওয়ার, এম-১/৬, মিরপুর # ১৪
ঢাকা-১২১৬।

বিষয় : ডাটা কালেকশনের অনুমতি প্রসঙ্গে।
সূত্র : SCMST/ PT/ ERB/2017-18/1-2023/50, Date : 01-02-2023

উপর্যুক্ত বিষয়ে সূত্রোল্লিখিত পত্রের বর্ণনা মতে আপনার প্রতিষ্ঠানের শিক্ষার্থী **মোঃ জাহিদুল ইসলাম**কে বাংলাদেশ শিশু কল্যাণ পরিষদ পরিচালিত ফিরোজা বারি প্রতিবন্ধী শিশু হাসপাতালে "Identifying the socioeconomic status to receive Physiotherapy treatment among the Cerebral Palsy patients in rural area of Bangladesh" উপর ডাটা কালেকশনের জন্য সম্মতি জ্ঞাপন করা হলো। এক্ষেত্রে প্রতিষ্ঠানের পক্ষ থেকে কোনরূপ ভাতা বা সম্মানী প্রদান করা হবে না এবং প্রতিষ্ঠান কর্তৃক নির্ধারিত সময় ও নিয়ম নীতি অবশ্যই মেনে চলতে হবে। এতদসংশ্লিষ্ট যাবতীয় বিষয়ে পরবর্তী ব্যবস্থাদি সম্পাদনের জন্য মিসেস ইয়াসমিন আরা ডলি, পরিচালক, বাশিকপ-এর সাথে (**02223384257**-Ex-107) যোগাযোগ করার অনুরোধ জানানো হলো।

ধন্যবাদান্তে

মোহাম্মদ মনিরুল আলম
সাধারণ সম্পাদক, বাশিকপ

অনুলিপি
১. মিসেস ইয়াসমিন আরা ডলি, পরিচালক, বাশিকপ এবং চিফ ফিজিওথেরাপিস্ট ও ট্রেনিং কো-অর্ডিনেটর, ফিরোজা বারি প্রতিবন্ধী শিশু হাসপাতাল
২. অফিস কপি

Appendix - C

সম্মতিপত্র

প্রিয় অংশগ্রহণকারী,

আমি মোঃ জাহিদুল ইসলাম, ঢাকা বিশ্বদ্যিালয় দ্বারা অনুমোদিত "সাইক কলেজ অফ মেডিকেল সায়েন্স এন্ড টেকনোলজি" (এস সি এম এস টি) ফিজিওথেরাপি বিভাগে ব্যাচেলর অফ ফিজিওথেরাপি প্রোগ্রামের ছাত্র।

আমার ব্যাচেলর ডিগ্রীর আংশিক পূর্ণতার জন্য একটি গবেষণা করছি। গবেষণার শিরোনামটি হলো-

" বাংলাদেশের গ্রামাঞ্চলে সেরিব্রাল শিশুদের বাবা-মায়ের আর্থ-সামাজিক অবস্থা।"

এখানে সামাজিক জনসংখ্যা সংক্রান্ত তথ্য, স্বাস্থ্যগত আচরণ এবং আর্থ সামাজিক অবস্থা অন্তর্ভূক্ত করে এমন প্রশ্নের একটি তালিকা রয়েছে যা আপনাকে পূরণ করতে হবে। এটি প্রায় ১৮-২৫ মিনিট সময় নেবে সম্পূর্ণ তথ্য সংগ্রহ করার জন্য আমাকে একবার আপনার সাথে সাক্ষাৎ করতে হবে। আমি আপনাকে জানাতে চাই যে, এটি সম্পূর্ণ একটি একাডেমিক অধ্যয়ন এবং প্রাপ্ত তথ্য অন্য কোন উদ্দেশ্যে ব্যবহার করা হবে না। আপনার দ্বারা প্রাপ্ত সমস্ত তথ্য গোপন রাখা হবে এবং তথ্যের উৎসও বেনামী থাকবে, এই গবেষণায় আপনার অংশগ্রহণ স্বেচ্ছায় এবং সেই সাথে সাক্ষাৎকারের সময় আপনি পছন্দ করেন না বা উত্তর দিতে চান না এমন প্রশ্নের উত্তর না দেওয়ার অধিকার আপনার রয়েছে।

আমি শুরু করার আগে আপনার কোন প্রশ্ন আছে ?

তাহলে, সাক্ষাৎকার নিয়ে এগিয়ে যেতে আমি কি আপনার সম্মতি পেতে পারি ?

- হ্যা
- না

অভিভাবকের স্বাক্ষর: তারিখ:

গবেষকের স্বাক্ষর: তারিখ:

ঠিকানা: মোবাইল:

স্বাক্ষীর স্বাক্ষর:

CONSENT FORM

Dear participate,

I am Md. Zahidul Islam, Student of Bachelor of Physiotherapy program in the Department of Physiotherapy, Saic College Of Medical Science and Technology (SCMST) affiliated by "UNIVERSITY OF DHAKA". As a part of my thesis work for the partial fulfillment of Bachelor degree .Conducting the study entitled-

Children with Cerebral Palsy and Socio-economic Status of Parents in Rural Areas of Bangladesh.

There is a list of Question you need to fill up which is include socio-demographic information, health seeking behave and socioeconomic status. This will take approximately 8-10 minutes. I need to meet you just once to collect entire information. I would like to inform you that this is a purely academic study and obtain information will not be used for any other purpose. All information provided by you will be kept confidential and also source of information will remain anonymous, your participation in this study voluntarily and also the right not to answer a particular question that you don't like or do not want to answer during interview.

Do you have any question before I start?

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

Yes ☐ ☐ No

Signature of the Guardian ……. Date……

Mobile no……..

Address……

Signature of the Researcher……. Date……

Witness signature…….

Appendix - D

Questionnaire (English)

Children with Cerebral Palsy and Socio-economic Status of Parents in Rural Areas of Bangladesh.

Date: ……..

Code No: | | | |

Participate children Name: ……

Permanent Address:…….

Mobile No: ……..

Section-1: Socio-demographic information (kindly tick √ question)

Q.N	Question	Answer	Code no
1	Age of children	(..……)Day/Month/ Year	
2	Gender of Children	1. Male 2. Female 3. Other	
3	BMI-		
	Height of the children (feet)	……	
	Weight of the children (kg)	……	
4	Age of Care guardian……..	(……) year	
5	Care guardian Education…….	1. No formal education 2. Primary level 3. High school level 4. High-secondary level 5. Graduation/ Post graduation	

6	Care guardian Employment …….	1. Service holder 2. Farmer 3. Teacher 4. Garments worker 5. Tailor 6. Shopkeeper 7. Rickshaw puller 8. Driver 9. Housewife 10. Others	
7	Family type	1. Single family 2. Joint family	

Section -2: Birth Related Information (kindly tick √ question)

Q.N	Question	Answer	Code No
1	How was your baby's delivery?	1.Normal 2.Caesarean	
2	Where is your delivery?	1. House 2. Clinic 3. Hospital	
3	What month is your baby born?	1. Before 9 month 2. After 9 month	
4	Was your baby's position correct during pregnancy?	1.Yes 2. No	
5	Did your baby cry after birth?	1.Yes 2. No	
6	Did you know about your child diagnosis?	1. Yes 2. No	

7	Who diagnosed the condition?	1. Village doctor 2. Tradition healer 3. Registered physician 4. Child specialist 5. Physiotherapist 6. Other	
8	What was the type of CP?	1.Spastic 2 Athetoid 3.Flaccid 4.Mixed	
9	If cerebral palsy then which type of paralysis?	1.Hemiplegic 2.Paraplegic 3.Monoplegic 4.Quadriplegic	
10	Where initially did you go for treatment after diagnosis of CP?	1.Non medical professional 2.Village doctor/local pharmacy 3.Community clinic/Thana health 4.Complex District health complex 5.Public hospital 6.Private hospital 7.Special child care center 8.Did not go anywhere	

Section- 3: Socio-economic related information (Rural area)

- Pareek scale for rural area –

Component of scale	Score
A. Caste	
Scheduled Caste	1
Lower Caste	2
Artisan Caste	3
Agriculture Caste	4
Prestige Caste	5
Dominant Caste	6
B. Occupation	
None	0
Laborer	1
Caste occupation	2
Business	3
Independent profession	4
Cultivation	5
Service	6
C. Education	
Illiterate	0
Can just read	1
Can read and write	2
Primary	3
Middle	4
High school	5
Graduate and above	6
D. Land	
No land	0
< 1 acre	1
1-5 acre	2
5-10 acre	3

10-15 acre	4
15-20 acre	5
>20 acre	6
E. Social Participation	
None	0
Member of one organization	1
Member of > 1 organization	2
Office holder in an organization	3
Wider public leader	6
F. No. of family members	
Up to 5	1
>5	2
G. House	
No house	1
Kutcha house	2
Mixed house	3
Pucca house	4
Mansion	6
H. Farm power	
No drought animal	1
1-2 drought animal	2
3-4 drought animal	3
5 drought animal	6
I. Material power	
Bullock cart	1
Cycle	1
Radio	1
Chairs	1
Improved agriculture equipment	2
None	0

- **Scoring for Pareek's Scale –**

Socioeconomic Class	
Total score	**Grade**
>43	I
33-42	II
24-32	III
13-23	IV
<13	V

প্রশ্নপত্র

বাংলাদেশের গ্রামাঞ্চলে সেরিব্রাল শিশুদের বাবা-মায়ের আর্থ-সামাজিক অবস্থা।

কোড নাম্বারঃ | | | |

তারিখঃ

অংশগ্রহণকারী শিশুর নাম.....

স্থায়ী ঠিকানা: .....

মোবাইল নাম্বার: .....

অধ্যায়-১ঃ সামাজিক জনসংখ্যা সংক্রান্ত তথ্য (দয়া করে প্রশ্নে √ টিক দিন)

প্রশ্ন নং	প্রশ্ন	উত্তর	কোড নং
১	শিশুর বয়স	(.....) দিন /মাস / বছর	
২	শিশুর লিঙ্গ	১. ছেলে ২. মেয়ে ৩. অন্যান্য	১ ২ ৩
৩	বিএমআই		
	শিশুর উচ্চতা (ফুট)	.....	
	শিশুর ওজন (কেজি)	.....	
৪	দায়িত্ববান অভিভাবকের বয়স / যত্নবান অভিভাবকের বয়স	..... বছর	
৫	দায়িত্ববান/যত্নবানরত অভিভাবকের শিক্ষা	১. কোন প্রাতিষ্ঠানিক শিক্ষা নেই ২. প্রাথমিক স্তর ৩. উচ্চ বিদ্যালয় স্তর ৪. উচ্চ মাধ্যমিক স্তর ৫. উচ্চ স্নাতক/স্নাতকোত্তর	১ ২ ৩ ৪ ৫
৬	দায়িত্ববান/যত্নবানরত অভিভাবকের কর্মসংস্থান	১. চাকুরিজীবি ২. কৃষক ৩. শিক্ষক ৪. গার্মেন্টস কর্মী ৫. দর্জি ৬. দোকানদার	১ ২ ৩ ৪ ৫ ৬

		৭. রিকশাচালক ৮. ড্রাইভার ৯. গৃহিনী ১০. অন্যান্য	৭ ৮ ৯ ১০
৭	পরিবারের ধরণ কী ?	১. অণু পরিবার ২. যৌথ পরিবার	১ ২

অধ্যায়-২ঃ জন্ম সংক্রান্ত তথ্য (দয়া করে প্রশ্নে √ টিক দিন)

প্রশ্ন নং	প্রশ্ন	উত্তর	কোড নং
১.	আপনার সন্তানের ডেলিভারি কিভাবে হয়েছিল ?	১. নরমাল ২. সিজারিয়ান	১ ২
২.	আপনার সন্তানের ডেলিভারি কোথায় হয়েছে ?	১. বাসায় ২. ক্লিনিক ৩. হাসপাতাল	১ ২ ৩
৩.	আপনার বাচ্চা কত মাসে জন্মগ্রহন করেছে?	১. ৯ মাসের পূর্বে ২. ৯ মাসের পর	১ ২
৪.	গর্ভাবস্তায় আপনার সন্তানের পজিশন কি সঠিক ছিল ?	১. হ্যা ২. না	১ ২
৫.	আপনার সন্তান কি জন্ম হওয়ার পরপরই কান্না করেছিল?	১. হ্যা ২. না	১ ২
৬.	কে রোগ নির্ণয় করেছে ?	১. গ্রামের ডাক্তার ২. কবিরাজ ৩. নিবন্ধিত চিকিৎসক ৪. শিশু বিশেষজ্ঞ ৫. ফিজিওথেরাপিষ্ট ৬. অন্যান্য	১ ২ ৩ ৪ ৫ ৬

৭.	রোগ নির্ণয়ের উপর ভিত্তি করে সেরিব্রাল পলসির ধরন?	১. স্পাস্টিক ২. এথোটয়েড ৩. ফ্ল্যাসিড ৪. মিক্সড	১ ২ ৩ ৪
৮.	সেরিব্রাল পলসি হলে কোন ধরনের পক্ষাঘাত?	১. হেমিপ্লেজিক ২. প্যারাপ্লেজিক ৩. মনোপ্লেজিক ৪. কোয়াড্রিপ্লেজিক	১ ২ ৩ ৪
৯.	সেরিব্রাল পলসি নির্ণয়ের পর আপনি প্রথম কোথায় চিকিৎসা নিতে গিয়েছিলেন ?	১. নন মেডিকেল পেশাদার ২. গ্রামের ডক্তার / স্বানীয় ফার্মেসী ৩. কমিউনিটি ক্লিনিক/থানা স্বাস্থ্য কমপ্লেক্স / জেলা স্বাস্থ্য কমপ্লেক্স ৪. সরকারি হাসপাতাল ৫. প্রাইভেট হাসপাতাল ৬. বিশেষ শিশু যত্ন কেন্দ্র ৭. কোথাও যাওয়া হয় নি	১ ২ ৩ ৪ ৫ ৬ ৭

অধ্যায়-৩ঃ সামাজিক অর্থনৈতিক তথ্য

(গ্রামীন এলাকা) (দয়া করে প্রশ্নে √ টিক দিন)

- **গ্রামীন এলাকার জন্য পারিক স্কেল -**

স্কেলের উপাদান	স্কোর
ক. জাতি	
তফসিলি/উপজাতি	১
নিম্নবিত্ত/জাতি	২
কারিগর জাতি	৩
কৃষি জাত	৪
প্রতিপত্তি জাতি	৫
প্রভাবশালী জাতি	৬
খ. পেশা	
কোনোটিই নয়	০
মজুর	১
জাতিগত পেশা	২
ব্যবসা	৩
স্বাধীন পেশা	৪
চাষাবাদ	৫
সেবা	৬
গ. শিক্ষা	
নিরক্ষর	০
শুধু পড়তে পারেন	১
পড়তে ও লিখতে পারেন	২
প্রাথমিক	৩
মধ্য	৪
উচ্চ বিদ্যালয়	৫
স্নাতক এবং তার অধিক	৬
ঘ. জমি	
জমি নেই	০
১ একরের কম	১

১ থেকে ৫ একর	২
৫ থেকে ১০ একর	৩
১০ থেকে ১৫ একর	৪
১৫ থেকে ২০ একর	৫
২০ একরের অধিক	৬
ঙ. সামাজিক অংশগ্রহন	
কোনোটিই নয়	০
একটি সংগঠনের সদস্য	১
১ এর অধিক সংগঠনের সদস্য	২
একটি প্রতিষ্ঠানে অফিস হোল্ডার	৩
ব্যাপক জননেতা	৬
চ. পরিবারের সদস্য সংখ্যা	
৫ পর্যন্ত	১
৫ এর অধিক	২
ছ. গৃহ	
বাড়ি নেই	১
কাচা বাড়ি	২
মিশ্র বাড়ি	৩
পাকা বাড়ি	৪
প্রাসাদ	৬
জ. কৃষি সক্ষমতা	
কোন গবাদি পশু নেই	১
১ থেকে ২ টি গবাদি পশু	২
৩ থেকে ৪ টি গবাদি পশু	৩
৫ থেকে ৬ টি গবাদি পশু	৬
ঝ .বস্তুগত সক্ষমতা	
গরুর গাড়ি	১
সাইকেল	১
রেডিও	১
চেয়ার	১
উন্নত কৃষি যন্ত্রপাতি	২
কোনটাই নাই	০

- **পারিক স্কেলের জন্য স্কোরিং -**

অর্থ-সামাজিক শ্রেনী	
সম্পূর্ণ ফলাফল	**শ্রেনী**
৪৩ এর অধিক	I
৩৩ থেকে ৪২	II
২৪ থেকে ৩২	III
১৩ থেকে ২৩	IV
১৩ এর কম	V

Appendix: E **Grant Chart**

Activities/ Month	July 22	Aug 22	Sep 22	Oct 22	Nov 22	Dec 22	Jan 23	Feb 23	Mar 23	Apr 23	May 23	Jun 23
Proposal Presentation												
Introduction												
Literature Review												
Methodology												
Data collection												
Data Analysis												
Result												
1st progress presentation												
Discussion												
Conclusion and Recommendation												
2nd progress presentation												
Communication with supervision												
Final Submission												