Faculty of medicine

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Anxiety and Depression Level of Mothers of Children with Cerebral Palsy

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

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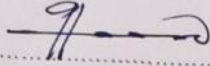Department of Physiotherapy

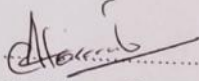CRP, Savar, Dhaka-1343

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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

Anxiety and Depression Level of Mothers of Children with Cerebral Palsy

Submitted by **Sumia Afrin**for the partial fulfillment of the requirement for the degree of Bachelor of Science in Physiotherapy (B.Sc. PT).
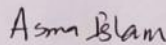
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I declare that the work presented here is my own. All sources used have been cited appropriately. Any mistakes or inaccuracies are my own. I also decline that same any publication, presentation or dissemination of information of the study. I would bind to take consent from the department of Physiotherapy of Bangladesh Health Profession Institute (BHPI).

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Contents

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Acronyms

BHPI: Bangladesh Health Profession's Institute

BMRC: Bangladesh Medical Research Council

CP: Cerebral palsy

CRP: Centre for the Rehabilitation of the Paralysed

GAD7:   Generalized anxiety disorder

IRB: Institutional Review Board

PHQ9:   Patient health questionnaire

SPSS: Statistical Package for the Social Sciences

WHO: World Health Organization

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ABSTRACT

Purpose: The purpose of the study was to find out Depression and Anxiety level in mothers of Cerebral palsy child attending at CRP. *Objective:* The objectives of this study were to determine the socio-demographics of mothers of Cerebral palsy child. To elicit anxiety and depression scores in mothers of cerebral palsy child and examine relationship among socio demographic variables, anxiety and depression scores. *Methodology:* The cross sectional study was chosen to carry out this study among 77 participants who were selected according to inclusion criteria. The "Patient health questionnaire" (PHQ9) and "Generalized anxiety disorder" (GAD7) these two standard structured questionnaires were used to assess the depression and anxiety among 77 participants. *Results:* this study found the level of depression and anxiety of mothers with children of cerebral palsy. The level of depression was 14.5%, mild 23.4%, minimal 27.3%, moderate 24.7%, moderately severe 10.4%, severe. level of anxiety of mothers was 13.3%, minimal 31.2%, mild 41.6%, moderate 14.3%, severe. Statistically significant had found in between depression and sociodemographic as mothers age, educational level and as well as association had found between sociodemographic and anxiety level as mothers age, educational level children's age etc. *Conclusion:* Cerebral palsy is a condition which has an influence on physical and

psychological health. As mothers often involves in take care and play main role in treatment and rehabilitation care of child with cerebral palsy. If mothers always feel depression or anxiety for a long period of time, it exerts reverse affect in rehabilitation process of their children. So early detection and proper management of this condition is essential during rehabilitation to prevent more complications and to improve their life quality.

Key words: Cerebral palsy, depression, anxiety.

CHAPTER-I	INTRODUCTION

1.1 Background

Cerebral palsy (CP) is one of the most frequent causes of motor disability in children. According to the up-to-date definition, CP is a group of permanent disorders of the development of movement and posture, causing activity limitations that are attributed to non-progressive disturbances that occurred in the developing fetal or infant brain. (Sadowska et al., 2020)

According to European data, the average frequency of CP is 2.08 per 1000 live births, but in the group of children born with a body weight below 1500 g, the frequency is 70 times higher when compared with the group of children with a body weight over 2500 g at birth. (Sadowska et al., 2020)

Findings from national cerebral palsy registries and population-based studies in Europe, Australia, and the United States show that the prevalence of cerebral palsy is approximately 1.8-2.3 cases per 1000 children. (Kakooza-Mwesige et al., 2017)

Of the 207 children with cerebral palsy (estimated prevalence of 3.4 per 1000 births), 185 (mean age 7.3 years; 36% of girls) had detailed information. Thirty-seven (20%) children had unilateral seizures, 113 (61%) had bilateral seizures, 22 (12%) had movement disorders, and 9 (5%) had ataxic CP. The subtype was not classified into 4 children. Of all children, 93 (51%) had epilepsy, 109 (59%) had intellectual disability, 42 (23%) had severe visual impairment, 10 (5%) had hearing impairment, 84 (45%) had severe speech disabilities. Fifty-two (28%) babies were born prematurely, and 46 (25%) had an Apgar score of less than 7 in 5 minutes. (Bufteac et al., 2018)

In Bangladesh, the observed prevalence was 3.4 per 1000 children. The majority (79.6%) had spastic CP. Overall, 79.6% of children with cerebral palsy had at least one related disorder (language 67.6%, intellectual 39.0%, epilepsy 23.7%, vision 10.2%, hearing 10.2%). In total, 78.2% have never been rehabilitated. (Khandaker et al., 2019)

Risk factors for cerebral palsy can be pre- conception, prenatal, perinatal can be neonatal and infant period. pre conception causes are: mother's systemic disease, drugs or stimulants used, malnutrition, poisonings, infections, immune system disorder preceding

the pregnancy, physical or chemical factors etc. prenatal causes: multiple pregnancy, abnormalities of the placenta, placental abruption, premature rupture of membrane, toxemia, vaginal bleeding etc. perinatal causes: premature birth, prolonged labor, asphyxia, assisted delivery, meconium aspiration etc. neonatal and infant period: respiratory distress syndrome, neonatal convulsion, hyperbilirubinemia etc. (Sadowska et al., 2020)

Classification of cerebral palsy: cerebral palsy is classified in different ways according to Balf and Ingram- diplegia, hemiplegia, bilateral hemiplegia, ataxia, dyskinesia, mixed type. According to SCPE classification: it has aim to proposed a simple classification of patient's Spastic type: It shows excess muscle tone, hyperreflexia and pathological reflexes; which is divide into unilateral spastic type and bilateral spastic type, without further division into diplegia, tri- or tetraplegia Dyskinetic type: In this type muscle tone is fluctuated and frequently become changes. Involuntary, uncontrolled, repetitive movement performed by patient. it has two different sub type: Dystonic CP. and Choreoathetotic CP.

Ataxic type: This kind of CP generally lowing the muscle tone, motor coordination may loss which cause ataxia. (Sadowska et al., 2020)

According to motor type: There is 85% spastic cerebral palsy.7% dyskinetic (where dystonia and choreoathetosis are the form of dyskinetic cerebral palsy), and 4% are ataxic. According to topographical classification: (i) unilateral (affects one side of the body) (ii) bilateral (affects both side of the body). In here Bilateral spastic CP includes: 10% to 36% diplegia which affects lower limbs more than upper limbs; 24% to 31% cases are quadriplegia which affects trunk and all four limbs. In topographical classification Dyskinetic, ataxic and hypotonic predominant motor types are not included. (TeVelde et al., 2019)

(Patel et al., 2020) published an article named Cerebral palsy in children: a clinical overview and here says: according to gross motor function classification system cerebral palsy classified into five different levels as following: classification of cerebral palsy according to GMFCS level:

Level I: Can Walks without limitations but have poor Speed, balance and co-ordination.

Level II: Perform Walks with limitations indoors or outdoors, climbs stairs holding on to a rail. But limitations on walking on unsmooth surfaces and go down, in congested or narrow spaces.

Level III: Walks by using a hand held mobility device also can climb stairs by holding railing. Can travel outdoors or on uneven surface by using self-propelled wheelchair

Level IV: Powered mobility device is needed for self-mobility due to great mobility limitations

Level V: Voluntary control of movements is restricted because of physical impairments and have no means of independent mobility. Transported in a manual wheel chair.

According to manual ability classification system cerebral palsy classified into five different levels as following: classification of cerebral palsy according to MACS level:

Level I: Can handles objects easily and successfully.

Level II: handles most objects but reduced speed/quality.

Level III: Handles objects with difficulty but help to prepare or modify activity

Level IV: Can handles limited number of objects in adapted setting

Level V: Cannot handle objects.

According to communication function classification System; cerebral palsy classified into five different levels as following: classification of cerebral palsy according to CFCS level:

Level I: Effective sender and receiver with both unfamiliar and familiar persons.

Level II: Effective but slow-paced sender and receiver with both unfamiliar and familiar persons.

Level III: Effective sender and receiver with familiar partners.

Level IV: Inconsistent sender and receiver with familiar partners.

Level V: Seldom effective sender and receiver with familiar partners.

According to eating and drinking ability classification system; cerebral palsy classified into five different levels as following: classification of cerebral palsy according to EDACS level:

Level I: Eats and drinks safely and efficiently.

Level II: Eats and drinks safely but with some limitations to efficiency.

Level III: Eats and drinks with some limitations to safely; there may also be limitations to efficiency.

Level IV: Eats and drinks with significant limitations to safety.

Level V: Unable to eat or drink safely; consider feeding tube.

The most prevalent cause of childhood motor impairments is cerebral palsy (CP). Approximately 2.1 per 1000 live births are affected. CP is generally thought of as a group of disturbances in the development of movement patterns, motor coordination, and posture. as a result of non-progressive and persistent disturbances in the embryonic brain's development. Despite the fact that various risk factors have been identified. such as placental abruption and childbirth suffocation, and neonatal medical issues CP is caused by a variety of factors frequently misunderstood. The clinical presentation of CP, which includes mobility patterns, is used to make the diagnosis. It considered as diagnostic criteria. For this case diagnosis not depends on the findings of laboratory tests as well as radiological results. Clinicians divide CP into four categories based on movement patterns: spastic, dyskinetic (dystonia or choreoathetosis), ataxic, and mixed. Spasticity is the primary movement pattern for spastic type of CP, and exclusive disability is present. Spastic CP is the most prevalent kind of overall CP, accounting for 70% to 80% of all cases. Children with spastic CP are classified as quadriplegic (bilateral spasticity with arm involvement equal to or greater than the leg), hemiplegic (unilateral spasticity, usually the arm more than the leg), or diplegic (bilateral spasticity with leg involvement greater than the arm) subtypes, those types are identified according to topographical classification. The characteristics of CP are motor impairment and long-term functional impairments. Cognitive, sensory, linguistic, and intellectual impairments, speech disorder, seizures, and dental and nutritional difficulties are all major medical comorbidities linked with CP. As a result, the management of children with CP necessitates a multidisciplinary, comprehensive, and coordinated strategy, with the child's independence and community engagement as the primary objectives. Caregivers experience stress as little more than others. This burden refers to a bad effect of the care situation for both the caregivers and the individual in need of assistance. In general, caring for a child with a debilitating condition can cause a lot of stress in the caregiver. Because of the common comorbidities and multidisciplinary management of CP, it has a significant impact on the lives of those who are affected, as well as their mothers, who are the major caretakers. The burden of carer who are mothers, on the other hand, has yet

to be thoroughly investigated. Despite the fact that topographical classification may be linked to the quality of life of children with Cerebral Palsy, there does not appear to be any published research on the topic. Furthermore, no research has looked into the relationship between the child's quality of life and the mother's stress as a carer. In Cerebral Palsy, determining the relationships between topographical classifications and the child's quality of life and the mother's burden could have significant consequences for the planning and execution of more effective interdisciplinary interventions (Ozkan, 2018)

CP diagnosis is a complex procedure it performed by an extensive interview, by analysis of the   information taken from the interview .child's mental and physical growth according to developmental milestone should be considered more over children's socio demographic data ,patients birth history ,mothers pregnancy history ,and post-delivery history ,patients past and present medical history is taken as a subjective assessment and visual observation some additional testes is done by therapist and the results are essential elements to identify the severity of CP   . It requires an objective assessment to ensure patient's condition and level, definitely it's a long clinical process. To diagnose cerebral palsy, it needs to individualize it from another motor disorders. Some neurodevelopmental disorders can have a similar clinical presentation like CP. Mental retardation, hearing impairment, ophthalmologic impairment speech and language disorders, nutrition and growth should be monitored for all children with cerebral palsy. (Sadowska et al., 2020)

This study is conducted to evaluate the level of depression and anxiety to explore the Depression, anxiety, this study will be an attempt to find out the association among depression anxiety and sociodemographic conditions of mothers of children with cerebral palsy.

1.2 Rational:

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

literature shows that, level of quality of life of parents of children with CP are worse than general population with normal healthy child. (Guillamon et al., 2013)

Different types of psychological and physical factors affect mother's mentality that can results depression, anxiety. Depression and anxiety have been found to have a major impact on health, it can be lowing the motivation for taking therapy and associated treatment, because of this, ensuring better quality of life can be hampered. The subsequent outcome may not anticipate, loosing motivation due to depression, anxiety of mothers of children with cerebral palsy is responsible for mothers uncertain, useless and troubled life. By this study Physiotherapist and other professionals will aware about the depression and anxiety level of mothers with children of cerebral palsy and it can play a role in resolving.

1.3 Research question:

What is the level of anxiety and depression of mothers with children of cerebral palsy?

1.4 Study objective:

1.4.1 General objective:

To find out Depression and Anxiety level in mothers of Cerebral palsy child attending at CRP.

1.4.2 Specific objective:

i)To find out the socio-demographic information of mothers of children with Cerebral palsy.

ii)To identify anxiety level in mothers of children with cerebral palsy.

iii)To find out the level of depression of mothers with cerebral palsy children.

iv) To examine relationship among socio demographic variables, anxiety and depression scores.

1.5 Conceptual framework:

Independent Variables

Dependent Variable

Socio-demographic

Variables. For example -

Age

Sex

Health condition during
pregnancy

Time of baby cried after
birth. etc.

Anxiety &

Depression

1.6 Operational definition:

Cerebral palsy: One of the most common causes of motor impairment in children is cerebral palsy (CP). According to the most recent definition, CP is a group of permanent mobility and postural impairments that cause activity restrictions and are caused by non-progressive problems in the developing fetus or infant brain.

Depression: Depression (major depressive disorder) is a frequent and major medical condition that has a negative impact on how you feel, think, and behave.

Anxiety: Anxiety is a state of mind, marked by tense feelings, concerned thoughts, and physical changes such as elevated blood pressure. Anxiety disorders are characterized by recurrent intrusive thoughts or concerns. They may avoid certain situations because they are concerned. Physical symptoms such as sweating, trembling, disorientation, or a rapid heartbeat may also be present.

Cerebral palsy is a collection of permanent, but not always stable, mobility, posture, and motor function problems caused by a non-progressive interference, lesion, or anomaly of the developing/ immature brain. Cerebral palsy is diagnosed mostly by motor function and postural abnormalities that begin in early childhood and last until death; they are non-progressive but change with age. Other dysfunctions, such as sensory, perceptual, cognitive, communication, and behavioral abnormalities, seizures, and secondary musculoskeletal illnesses, usually accompany motor function disorders, which are the fundamental symptoms of cerebral palsy. (Sadowska et al., 2020)

Referring to World Health Organization (WHO) definition depression is very frequent mental disorder that includes depressive mood, loss of interest or please, awake the felling of guiltiness, affects the appetite, dream and concentration (Mehmedinovic et al., 2012).

some studies from poor countries had a clear idea of a prenatal cause of CP. Some of these countries have the technology to diagnose. MRI, genetic analysis, virology etc. are the higher technology to use for diagnosis many prenatal causes. if there are symptoms of congenital illness or incompatibility in few cases, it was considered as prenatal cause and then in other studies, these children were not   count as CP. Research shows that countries with low–middle-income has13–20% of CP caused by Low birth weight (LBW). Very often it's not known the Gestational age at birth so it's not possible to record prematurity and intra-uterine growth retardation so it's often included according to LBW. For higher-income countries there have another picture, in that case LBW is the predisposing factor in 30–40% of CP. In low income countries many infants will die early so it's not possible for that case to identify the baby who is born prematurely was CP or not. (personal communication, N. van den Broke). in around 20–46% cases perinatal asphyxia was considered as a cause of CP (Gladstone, 2010).

Untreated neonatal sepsis, ABO and rhesus incompatibility, G6PD deficiency, late identification and later treatment of jaundice may be the most responsible cause of higher rates of jaundice, assepticaemia, bacterial meningitis, meningoencephalitis, measles and pertussis were highly found in this population,12%-25% had neonatal convulsions,10%-

21% had infections. this rates are higher than any industrialized countries.(Gladstone, 2010).

An article published on December 2017 shows different prevalence rate of CP among the several states of America here the average prevalence of CP and subtype was 3.6 cases per 1000. (total rate of multistate collaboration of USA) in Wisconsin 3.3 cases per 1000, Georgia 3.8 cases per 1000, Alabama 3.7 cases per1000. All the study's clam that the prevalence rate of CP is higher for boys than girls, it also shows that black and non-Hispanic children's are more affected than Hispanic. most interestingly the children's who has high income neighborhood has less prevalence of CP than opposites. Most common subtype was found spastic type of CP, 77% of all cases was spastic CP and from this spastic group 70% were bilateral spastic and in the epidemiological study of CP, added new information and findings. In 2017 a study was performed in Uganda to find out the prevalence of CP. It was a population based study. The prevalence was 1.8-2.3 cases per 1000 children, where found in rural children of Uganda more affected to CP and most of the children are younger than 8 years which is higher than older children and that is more than the children of any high income countries. The older children aged more than 8 years have severe mortality rate that is fatal, there found a small number of preterm child because most of the preterm child born in Uganda, died at early age of their life. In Uganda the post neonatal CP is five times higher than people lives in high income countries. Most of the time in non-industrialized countries the cause of cerebral palsy cannot be identified and its proved by an extensive analysis it's been assumed that most of the cause is prenatal (Kakooza-Mwesige et al.,2017).

Prevalence of Cerebral Palsy in Indian Children: An analysis of 2019 shows that prevalence of cerebral palsy per 1000 children was 2.95. Prevalence of Cerebral Palsy in Indian Children: Of the 862 publications searched, eight studies were qualified and included for quantitative analysis. The overall pooled prevalence of cerebral palsy per 1000 children surveyed was 2.95 (95% CI 2.03–3.88). Sub-group analysis for rural, urban and mixed rural-urban study population demonstrated the pooled prevalence as 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) respectively. Study shows among 270 participants Thirty percent of the mothers had depressive symptoms. Disability severity and child's functional status did not predict maternal

depression. Perceived social support moderated the relationship between the child's functional status and maternal depressive symptoms. (Chauhan et al., 2019).

In 2019 a study shows parents with children of CP has more depression and anxiety than another typically developing child. Perhaps the depression symptoms are also severe among the mothers of CP children then another's. Parents with the children of cerebral palsy specially mothers have a risk factors of mental illness according to the severity of cerebral palsy. Mothers who taken care her child for a long period of time, spent more time for child caring are more vulnerable for mental illness. a large number of parents with children of CP most frequently have depressive disorder (Barreto et al., 2020).

However, these figures are likely to be higher for caregivers of adolescents with CP. Approximately 3.4 per 1000children are estimated to have CP in Bangladesh and severity is notably higher than international norms; 79.6% of children will have spastic type, 68.2% will be unable to walk, 67.6% will have speech impairments, and 23.7% will have epilepsy. These children will typically live (lifelong) at home with their family and the dominant role of care giving will be held by Mothers or other female relatives (Khandaker et al., 2019).

The first observational study of caregiver mental health based on a population register of care-givers of adolescents with CP in Bangladesh, and one of only a few from low middle income countries. This study confirmed previous reports that care-givers of adolescents with CP have significantly higher risk of depression and stress than caregivers of adolescents without disability. Although no difference was found in anxiety between caregivers of adolescents with CP and caregivers of adolescents without disability, confirming some but not all previous reports (Power et al., 2019).

Here are some common types of symptoms that can affect a person with depression: continuous anxious and sad filling, being hopeless, feeling iniquity, ill tempered, loss of doing mobility, lack of interest to do sexual activity, exhaustion, loss the ability to hold concentration, always feeling indecision, excessive sleeping or sleeping disturbance, loss of appetite or overeating, think about suicide, crying, lack of bonding with the baby, poor interest about the baby, mood swing (Bembnowska & Josko-Ochojska, 2015)

The causes of depression depend upon many factors if a family member has depression immediately increases the risk of developing depression of the other member of the

family. The age ranges of 20 to 40 years considered as most vulnerable period for getting depressed. During total life time women's mostly feels depressed among the tendency and frequency of attempt a suicide is more for women. Frequently a woman tends to committee suicide. Mostly women's attempts suicide but fails. Men are diagnosed with depression at a lower rate than women, and male depression rates in Western countries are half that of females. Experts believe that men's depression rates are lower than women's because of men's reluctance to disclose concerns about their mental health and seek professional mental health care. Surprisingly, male suicide rates are three times greater than female suicide rates Stigma around mental illness, which can impair men's help-seeking and/or treatment compliance and limit their self-disclosure about depressed symptoms and/or suicidal thoughts, is implicated in the discordant link between men's low rates of diagnosed depression and high suicide rates. Loss of jobs, getting divorced, loss of close person moreover negative life experience increased depression. Research proves that people who are unemployed for six months or more in the last five years had a higher rate of depression it's about three times more than of the general population (Oliffe et al., 2016). Suicide rates are greater among men than women in most countries. China is an exception, having greater rates in females, particularly young women in rural areas. Rural women's suicide rates, on the other hand, have fallen dramatically in the recent decade. The responsible factor for most of the suicidal case was depression, stress oranxiety. (Vijayakumar, 2015)

Anxiety leaves a lot of negative impact, which has a direct effect on the physical and psychological development of the mothers as well as the baby (Yilmaz et al., 2013).

Anxiety is considered as a most common mental disorder that generally frequently occur, it is a trouble of emotional tone and temperament. It's get sprouted by mood, psychological concern. generalized anxiety disorder, specific phobia, social phobia, obsessive-compulsive disorder, acute stress disorder, and post-traumatic stress disorder. There are adjustment disorders with anxiety features, and disorders due to general medical conditions and substance-induced anxiety disorders is also assimilated. Diagnostic criteria for identifying anxiety is taking history at least for six months back from now that was there any kind if continuous worrying or difficulty to controlling the worrying, and at the same period of time was there any three or more symptoms

particularly. Those are including restlessness, fluctuated mental status, lack of concentration or failed to hold concentration, irritability, insomnia. Sometimes the symptoms of anxiety show more similarity with the symptom of panic disorder such as shortness of breath, excessive sweating etc. Anxiety disorder mostly common for those people who has goes through stressful life event, women's always have higher rate of anxiety than man but the ultimate cause behind this is totally unknown. It is assumed that gonadal steroids act for male which plays role to inhibits anxiety. Different research proved that female goes through a wider stressful life event than men, so it can be the possible factor for anxiety of women. (Adwas et al., 2019)

Usually, if there is a disabled child in a family, the responsibility of overall care is mostly on the mother as is the case in Bangladesh, Jordan and Indian families generally fathers play a role of earning here mothers are plays role as primary caregiver. (Gamel et al., 2010)

CHAPTER-III	METHODOLOGY

3.1 Study Design

Cross sectional study was selected by researcher to carry out the research. In this study a cross sectional study design used to find out the level of depression and anxiety among the mothers with cerebral palsy child. This study design was appropriate to find out the objectives. The data was collected all at the same time or within a short time frame. A cross-sectional design provides a snapshot of the variables included in the study, at one particular point in time.

3.2 Study Site

Data was collected from mothers with cerebral palsy child attending at Centre for the Rehabilitation of the Paralysed (CRP), Savar, Dhaka in pediatric Unit.

3.3 Study population and sample population

In this study the mothers who has children with cerebral palsy and who were receiving treatment and rehabilitation in CRP pediatric unit was selected to carry out the study. About 77 sample were selected for this study

3.4 Sampling Technique

Sample were selected through convenience sampling method for conducting this study. A convenience sample is a group of individuals who (conveniently) were available for study.

3.5 Sample Size

When the sample frame is finite The equation of finite population correction in case of cross sectional study is

$$n = \frac{Z^2 PQ}{d^2}$$

$$= \frac{1.96^2 \times 0.34 \times 0.66}{0.05^2}$$

$$= \frac{3.84 \times 0.34 \times 0.66}{0.0025}$$

$$= \frac{0.8616}{0.0025}$$

$$= 344$$

Here,

Z (confidence interval) = 1.96

P (prevalence) =0.34

And, q= (1-p)

= (1-0.34)

=0.966

The actual sample size was, n= 344.

3.6 Inclusion Criteria

Those mothers whose child take treatment in CRP.

Mother with children of CP who willingly participate in the study.

3.7 Exclusion Criteria

Avoid those who has problem to give information.

if there has any others disability in association with CP

3.8 Data Collection Tools

"Patient health questionnaire (PHQ9)" and "Generalized anxiety disorder (GAD7)" were selected to collect data. PHQ9 is a scale to measure depression and consist of 9 question asking- "Over the last 2 weeks, how often have you been bothered by any of the following problems?" on the other hand GAD7 consist of 7 question again asking like - "Over the last 2 weeks, how often have you been bothered by any of the following problems?" GAD7 is used to measuring anxiety level. other necessary materials like pen, pencil and white paper, clip board & note book are also needed.

3.9 Data Collection Procedure

For this study researcher was collected data from the participants by following the instructions given on the "PHQ9" and "GAD7". This data collection tools were permitted from the authors to use this study. Participants who had the reading ability they administered the questionnaire own-self. Before collecting data, the study aims and purpose explained to the participants. The participants (Mothers) read (if they can) the information sheet and consent form. Who were unable to read researcher was explained the information sheet and the consent form. All the participants had the opportunities to ask any study related questions and they could show interest to participate in the study they could sign in the consent form willingly. Since there were not many patients at the same time than had to take data over phone, for collecting data over phone researcher took participants consent and adequate time. Supervisors and pediatric department were allowed to take data over the phone and phone number was taken from the saved document on pediatric unit of CRP. The researcher was collected data by structured questionnaire, pen, pencil and paper.

3.10 Data Analysis

The researcher was analyzed data for evaluating the level of depression, to find out Depression and Anxiety level in mothers of Cerebral palsy child attending at CRP, also to examine relationship among socio demographic variables, anxiety and depression scores.

The data was collected and analyzed by using statistical package for social sciences (SPSS) 20.0 version. Researcher analyzed the data by using Frequency, Percentage (%), mean standard deviation and also shown the association between sociodemographic and anxiety, depression measurement scale.

3.10.1 Statistical Test: Determination of the nature of data

The variables were determined as nominal, ordinal, interval and ratio data and considered their parametric or non-parametric properties based on data type, normality test and standard procedure.

Table 1: for normality test

Variable	Description	Data type	Data distribution
Overall children's age		Scale	Parametric
Children's age category	1-11 month, 1-10 year	Ordinal	Nonparametric
Gender of children	Male, female	Nominal	Nonparametric
Overall Mother's age		Scale	Parametric
Mother's age category	Bellow 30, above 30	Ordinal	Nonparametric
Mothers educational level	Bellow SSC, S.S.C completed, H.S.C completed, Bachelor or above	Nominal	Nonparametric
Mothers occupation	Employed, unemployed	Nominal	Nonparametric
Did you marry with relatives?	Yes, no	Nominal	Nonparametric
Health condition during pregnancy period	Good, high blood pressure ,poly urea or others	Nominal	Nonparametric
Duration of labour pain	Long time, short time, sudden, on time	Nominal	Nonparametric
Type of delivery	Vaginal delivery, surgery or others	Nominal	Nonparametric

Minutes until baby cried	Cried with birth, latter	Nominal	Nonparametric
Oxygen requirement	Yes, no	Nominal	Nonparametric
Convulsions	Yes, no	Nominal	Nonparametric
Give child enough time	Yes, no	Nominal	Nonparametric
PHQ9 score		Scale	Parametric
PHQ9 category	1-4 Minimal depression 5-9 Mild depression 10-14Moderate depression 15-19 Moderately severe depression 20-27 Severe depression	Ordinal	Nonparametric
GAD7 score		interval	Parametric
GAD7 category	0-4Minimal anxiety 5-9Mild anxiety 10-14Moderate anxiety 15-21Severe anxiety	ordinal	Nonparametric

3.10.2 Determination of statistical test

The statistical has been performed as descriptive and inferential statistics based on parametric or non-parametric properties. The descriptive statics was performed as frequency and percentage in nominal or ordinal data. Mean and standard deviation has been calculated for interval or ratio data.

Table 2: The inferential statistics has been performed as follows

Purpose	Variables	Statistical test
Relationship	2 Categorical data (non-parametric)	Chi square test
	One categorical (non-parametric) and one parametric data	Independent t test (independent bivariate data)
		Chi-square test (independent multivariate data)
	2 parametric data	Pearson correlation test
Regression of relationship	Dependent variable as parametric/numerical data (bivariate)	linear logistic regression

3.11 Ethical Consideration

A research proposal was submitted to the BHPI physiotherapy department for approval, and the proposal was authorized by the faculty members, who obtained authorization from the research project supervisor and the course coordinator prior to conducting the study. The dissertation proposal, including methodology, was presented to the Bangladesh Health Professions Institute's (BHPI) Institutional Review Board (IRB) for an oral presentation defense. Some ethical considerations were kept by the researcher: The researcher followed the guidelines of the Bangladesh Medical Research Council (BMRC) and the World Health Organization (WHO). The essential information was then

authorized by the Institutional Review Board, and the research was allowed to proceed. After receiving authorization from the academic institute to conduct this study, the researcher began working on the pediatric unit of Savar, CRP has given the researcher permission to collect data. Participants would be notified prior to being invited to participate in the study.

To get each participant's permission to participate in the study, a written consent form was used. The researcher made certain that all participants were aware of their rights and obligations, as well as the study's goals and objectives. The researcher also assured that the investigation did not hinder the organization (CRP). Confidentiality is protected at all times. The researcher made a point of avoiding disclosing any sensitive information. The researcher was qualified to conduct the study after learning the academic and clinical guidelines for what should and should not be done. All rights of the participants were reserved and researcher was accountable to the participant to answer any type of study related question.

3.12 Informed Consent

Prior to the completion of the questionnaire, all participants were provided written consent. The investigator explains his or her position in the study to the participants. Every participant signed a formal consent form, which the investigator received. As a result, the participant stated that they were aware of the consent. The participants were made aware that their personal information will be kept private. The investigator informed the participants that they would not be harmed as a result of their participation in the study. It was emphasized that while the study may not provide immediate benefits to the participants, it may provide benefits in the future for circumstances similar to theirs. Participants might withdraw their consent and stop participating at any time, without affecting their current or future treatment at the community. To protect anonymity, data from this study was coded anonymously and was not personally identified in any publication incorporating the study's findings.

3.13 Accuracy of the study

The study was carried out in a meticulous manner. The research was carried out in a systematic and orderly manner. It was assured that participants were not impacted by their previous experiences throughout the data collecting. Whether they had a negative or good impression, the answer was accepted. There were no leading questions being asked. The supervisor double-checked the participant information to make sure there were no mistakes. The information was treated with complete discretion. The outcome was not altered in the result section by displaying any personal interpretation. The research supervisor double-checked and rechecked every element of the study.

CHAPTER-IV	RESULTS

4.1 Frequency and percentages, mean and standard deviation of all sociodemographic variables:

The first specific objective of this study was to find out the socio demographic information of mothers of children with cerebral palsy. In this continuity researcher was identify the sociodemographic information and was found the Frequency, percentage, mean, standard deviation of socio demographic variables. Those findings described below:

Age of children's: Overall age of all children's-As it was a ratio type of data so, it's been calculated the mean and standard deviation. The mean value of overall age was 3.49 and standard deviation was ± 2. 415.Children's age category-Among 77 participants, most of them was 1-10 years of aged n=69 (89.6%) and 1-9 months of aged were n=8 (10. 4%).when the age been categorized the data type was nominal type so there showed the frequency and percentages.

Age of Mothers: overall Mother's age-As mothers age was a scale data so rules wise that data was calculated for knowing about mean and standard deviation. The mean value of overall age was 26.049 and standard deviation was ± 4.967Mother's age category-Among 77 participants, most of them was below 30 years of aged (n=58) 75.3% and after 30 years of aged were (n=19) 24.7%

Gender of children's: Among 77 participants, most of them were male 71.4% (n=55) and Female were 28.6% (n=22).

Mothers educational level: Among 77 participants, it found four categorical variation of education level of mothers as-Bellow SSC (n= 40) 51.9%; S.S.C completed (n= 16) 20.8%; H.S.C completed(n=15)19.5%; Bachelor or above(n=6)7.8%

Mothers occupation: Among 77 participants, Employed (n=5)6.5%; unemployed (n=72)93.5%. Here most of mothers was unemployed.

Marry with relatives: Among 77 participants, the rate of relative marriage was(n=19) 24.7% and the rate of no marriage with relatives was(n=58)75.3%. So out of 77 participants the history of marriage with relatives was not more.

Health condition during pregnancy period: Maternal illness during pregnancy time considered as a risk factor for cerebral palsy, from that perspective the question was asked but out of 77 participants, the rate of good condition was (n=61) 79.2%, the rate of high blood pressure, poly urea or others was (n=16) 20.8%. That showed most of the mothers attended for that study was free from this risk factor particularly.

Duration of labour pain: Out of 77 participants, four types of labour pain time was measured for that study. Long time (n=38) 49.4%, short time (n=25) 32.5%, sudden (n=6) 7.8%, on time (n=8) 10.4%

Type of delivery: Among 77 participants, vaginal delivery rate (n=40) 51.9%, surgery or others (n=37) 48.1%. For that study most of the participants delivered their child by normal vaginal delivery process.

Minutes until baby cried: Among 77 participants, Cried with birth(n=18) 23.4%, latter (n=37) 48.1%. The question was asked because there was a relationship between babys crying time and getting oxygen to the brain late delivery of oxygen to the brain considered as a risk factor of cerebral palsy

Oxygen requirement: Among 77 participants, (n=50) 64.9% need oxygen support and (n=27) 35.1% no need of oxygen support. Most of the participants for the study needed oxygen support after delivery

Convulsions: Among 77 participants, (n=56) 72.7% had convulsion and (n=21) 27.3% had no convulsion ever

Give child enough time: Among 77 participants, (n=58) 75.3% can give enough time and (n=19) 24.7% can't give enough time

Table 3: All the variables of socio demographics (frequency and percentages, mean and standard deviation of all sociodemographic variable) shown in a table below:

variable	data type	value
Overall children's age	Ratio	3.49± 2.415
Children's age category 1-11 month 1-10 year	Ordinal	 8(10.4%) 69(89.6%)
Gender of children Male, female	Nominal	 55(71.4%) 22(28.6%)
overall Mother's age	Nominal	26.04±4.967
Mother's age category Bellow 30, above 30	Nominal	 58(75.3 %) 19(24.7%)
Mothers educational level Bellow SSC, S.S.C completed, H.S.C completed, Bachelor or above	Nominal	 40(51.9%) 16(20.8%) 15(19.5%) 6(7.8%)
Mothers occupation Employed, unemployed	Nominal	 5(6.5%) 72(93.5%)
married with relatives Yes, no	Nominal	 19(24.7%) 58(75.3%)
Health condition during pregnancy period Good, high blood pressure ,poly urea or others	Nominal	 61(79.2%) 16(20.8%)
Duration of labour pain Long time, short time, sudden, on time	Nominal	 38(49.4%) 25(32.5%) 6(7.8%) 8(10.4%)
Type of delivery Vaginal delivery, surgery or others	Nominal	 40(51.9%) 37(48.1%)

Minutes until baby cried Cried with birth, latter	Nominal	18(23.4%) 59(76.6%)
Oxygen requirement Yes, no	Nominal	50(64.9%) 27(35.1%)
Convulsions Yes, no	Ordinal	56(72.7%) 21(27.3%)
Give child enough time Yes, no	Nominal	58(75.3%) 19(24.7%)

4.2 Frequency, percentages, mean, standard deviation of depression:

Another specific objective of the study was to find out depression level of mothers of children with cerebral palsy. PHQ9 was the tools used to identify depression level, so the descriptions are given bellow:

PHQ9 score: Among 77 participants, the mean value of PHQ9 was 10.96 and standard deviation was ±7.131 as PHQ9 score was a scale data so mean value and standard deviation was calculated.

PHQ9 category: Among 77 participants, minimal depression was (n=18) 23.4%; mild depression (n=11) 14.3% moderate depression (n=21) 27.3%; moderately severe depression (n=19) 24.7%; severe depression (n=8) 10.4%PHQ9 Scale has been used to find out the level of depression. The possible range of scores in PHQ9 scale is 1-27 with the higher scores indicating the presence of more depression. In this study, 0-4 minimal depression, 5-9 mild depression, 10-14 moderate depression, 15-19 moderately severe depression, and 20-27 severe depression According to the PHQ-9 and health questionnaire the majority of the participants 27.3% had moderate depression24.7% moderately severe depression and; 14.3% had mild depression; 23.4% had minimal depression; and 10.4% had severe depression The severity was calculated based on the PHQ-9 scale score.

Table 4: frequency, percentages, mean, standard deviation of depression Shown in a table below:

Dependent variables	Data type	Values
PHQ9 score	ratio	10.96± 7.131
PHQ9 category 1-4 Minimal depression 5-9 Mild depression 10-14Moderate depression 15-19 Moderately severe depression 20-27 Severe depression	Ordinal	 18(23.4%) 11(14.3%) 21(27.3%) 19(24.7%) 8(10.4%)

4.3 frequency, percentages, mean, standard deviation of and anxiety:

Another specific objective of the study was to find out anxiety level of mothers of children with cerebral palsy. GAD7 was the tools used to identify depression level, so the descriptions are given bellow:

GAD7 score: The mean value of GAD7 was 9.21 and standard deviation was ± 4.835

GAD7 category: Out of 77 participants, Minimal anxiety (n=10) 13.3%; Mild anxiety (n=24) 31.2%; Moderate anxiety (n=32) 41.6%; Severe anxiety (n=11) 14.3%GAD7 Scale has been used to find out the level of anxiety. The possible range of scores in GAD7 scale is 0-21 with the higher scores indicating the presence of more anxiety. In this study, 0-4 minimal anxiety, 5-9 mild anxiety, 10-14 moderate anxiety, 15-21 severe anxiety. The majority of the participants 41.6% had moderate anxiety31.2% had mild anxiety and moderate anxiety; 14.3% had mild anxiety; 23.4% had minimal anxiety; and14.3% had severe anxiety and 13.3% had minimal anxiety.

Table 5: frequency, percentages, mean, standard deviation of anxiety shown in a table below:

Dependent variables	Data type	Values
GAD7 score	interval	9.21± 4.835
GAD7 category 0-4Minimal anxiety 5-9Mild anxiety 10-14Moderate anxiety 15-21Severe anxiety	Ordinal	 10(13.0%) 24(31.2%) 32(41.6%) 11(14.3%)

4.4 Association of independent variable with depression (PHQ9 score):

One of the objective of this study was to examine an association between socio demographic variables with depression scores. So in continuation of this, researcher have found out the p value (significant value) as well as test value by different type of test as: Pearson co relation test, Independent T test and Chi square. The tests are scheduled according to the data type.

Firstly, done an association in between PHQ9 scores and independent variable than another association in between PHQ9 categories and independent variable had done by researcher. After testing according to data type a significant value had been found there, significant value was found in between overall age of mothers and PHQ9 scores done by pearson co relation test (p value: .020) and the test value was (.266) that type of values mentioned it was significant because if the (p=<.05) it considered as significant.

Test value of overall children's age was (-.162), p value=.160. Test value of children's age category was (-.296). p value=.768. Test value of Gender of children was (.498), p value=.620. Mother's age category was (-1.717), p value=.090. Mothers educational level test value was (82.850), p value=.122. Mothers occupation test value (-1.025). p value=. 308. married with relative's test value (.396). p value=.693. Health condition during pregnancy period test value (.328). p value=.744. Duration of labour pain test value (57.934). p value=.826. Type of delivery test value (-1.267). p value=.209. Minutes until baby cried test value (.327). p value=.745. Oxygen requirement test value(-.939). p value=.351. Convulsions test value (.185). p value=.854. Give child enough time test value (.674). p value= .502.

Table 6: All the association been showed by a table below: Association with depression: PHQ 9 score

Dependent variable: Depression (PHQ 9)				
Independent variables	Data type	Test name	Test value	P value
Overall children's age	Ratio	Pearson correlation test	-.162	.160
Children's age category 1-11 month, 1-10 year	ordinal	Independent T test	-.296	.768
Gender of children Male, female	Nominal	Independent T test	.498	.620
Overall Mother's age	Ratio	Pearson correlation test	.266	**.020***
Mother's age category Bellow 30, above 30	Ordinal	Independent T test	-1.717	.090
Mothers educational level Bellow SSC, S.S.C completed, H.S.C completed, Bachelor or above	Nominal	Chi square	82.850	.122
Mothers occupation Employed, unemployed	Nominal	Independent T test	-1.025	.308
married with relatives Yes, no	Nominal	Independent T test	.396	.693
Health condition during pregnancy period Good, high blood pressure ,poly urea or others	Nominal	Independent T test	.328	.744
Duration of labour pain Long time, short time, sudden, on time	Nominal	Chi square	57.934	.826
Type of delivery Vaginal delivery, surgery or others	Nominal	Independent T test	-1.267	.209
Minutes until baby cried Cried with birth, latter	Nominal	Independent T test	.327	.745
Oxygen requirement Yes, no	Nominal	Independent T test	-.939	.351
Convulsions Yes, no	Nominal	Independent T test	.185	.854
Give child enough time Yes, no	Nominal	Independent T test	.674	.502

Alpha value *= <.05, ** = <.01, * = <.001**

4.4.1Association of independent variable with depression (PHQ9 category):

Another association in between PHQ9 categories and independent variable had been done by researcher and there the independent t test value of this association between overall mothers age and PHQ9 category was (2.119) & p value- (.041).Chi square value in between mothers educational level and PHQ9 category of this association was (50.697) and p value (.001). Children's oxygen requirement during or after delivery and PHQ9 category of this association was measured by chi square test the te4st value (10.691) and p value (.030)those association was significant. That type of values mentioned it was significant because if the (p=<.05) it considered as significant.

overall children's age was (2.119), p value=.921. Test value of children's age category was (2.557). p value=.635. Test value of Gender of children was (4.515), p value=.341.Mother's age category was (5.098), p value=.277.Mothers occupation test value (4.534). p value=. 338. married with relative's test value (4.136). p value=.388. Health condition during pregnancy period test value (.625). p value=.960. Duration of labour pain test value (7.525). p value=.821. Type of delivery test value (5.198). p value=.268. Minutes until baby cried test value (1.593). p value=.810.Convulsions test value (4.045). p value=.400. Give child enough time test value (3.215). p value= .523.

Table 7: All the association been showed by a table below: Association with depression: PHQ9 category

Dependent variable: Depression (PHQ 9)				
Independent variables	**Data type**	**Test name**	**Test value**	**P value**
Overall children's age	Ratio	Independent T test	2.119	.921
Children's age category 1-11 month, 1-10 year	ordinal	Chi square	2.557	.635
Gender of children Male, female	Nominal	Chi square	4.515	.341
overall Mother's age	Ratio	Independent T test	2.119	**.041***
Mother's age category Bellow 30, above 30	Ordinal	Chi square	5.098	.277
Mothers educational level Bellow SSC, S.S.C completed, H.S.C completed, Bachelor or above	Nominal	Chi square	46.783	**.001***
Mothers occupation Employed, unemployed	Nominal	Chi square	4.534	.338
Did you marry with relatives? Yes, no	Nominal	Chi square	4.136	.388
Health condition during pregnancy period Good, high blood pressure ,poly urea or others	Nominal	Chi square	.625	.960
Duration of labour pain Long time, short time, sudden, on time	Nominal	Chi square	7.525	.821
Type of delivery Vaginal delivery, surgery or others	Nominal	Chi square	5.198	.268
Minutes until baby cried Cried with birth, latter	Nominal	Chi square	1.593	.810
Oxygen requirement Yes, no	Nominal	Chi square	10.691	**.030***
Convulsions Yes, no	Nominal	Chi square	4.045	.400
Give child enough time Yes, no	Nominal	Chi square	3.215	.523

Alpha value *= <.05, ** = <.01, *** = <.001

4.5 Association of independent variable with anxiety (GAD7 score):

One of the objective of this study was to examine an association among socio demographic variables with Anxiety scores. So in continuation of this, researcher have found out the p value (significant value) as well as test value by different type of test as: Pearson correlation test, Independent T test and Chi square. The tests are scheduled according to the data type.

Firstly, done an association in between GAD7 scores and independent variable than another association in between GAD7 categories and independent variable had done by researcher. After testing according to data type some significant value had been found there, significant value was found in between Overall children's age and GAD7 score done by Pearson correlation test the test value is (-.231) and p value (.043) an association between overall Mother's age and GAD7 score done by pearson correlation test; teat value (.343) and (.002). Mother's age category and GAD7 score are associated by independent t test so the test value (-2.737) and p value (.008).Chi square value in between mothers educational level and GAD7 score of this association was (70.412) and p value (.019). Mothers give children enough time and GAD7 score was associated by independent T test and the test value (1.829) and p value (.071). All the values mentioned are significant.

children's age category test value was (-.978). p value=.331. Test value of Gender of children was (.081), p value=.935.Mothers occupation test value (-1.548). p value=. 126.marriedwith relative's test value (.987). p value=.327. Health condition during pregnancy period test value (.655). p value=.514. Duration of labour pain test value (33.294). p value=.947. Type of delivery test value (-.343). p value=.733. Minutes until baby cried test value (-.207). p value=.837. Oxygen requirement test value (-1.463). p value=.148. Convulsions test value (.440). p value=.661

Table 8:All the association been showed by a table below: Association with anxiety: GAD 7 score

Dependent variables: GAD 7				
Independent variables	**Data type**	**Test name**	**Test value**	**P value**
Overall children's age	Scale	Pearson correlation test	-.231	**.043***
Children's age category 1-11 month, 1-10 year	ordinal	Independent T test	-.978	.331
Gender of children Male, female	Nominal	Independent T test	.081	.935
overall Mother's age	Scale	Pearson correlation test	.343	**.002****
Mother's age category Bellow 30, above 30	Ordinal	Independent T test	-2.737	**.008****
Mothers educational level Bellow SSC, S.S.C completed, H.S.C completed, Bachelor or above	Nominal	Chi square	70.412	**.019***
Mothers occupation Employed, unemployed	Nominal	Independent T test	-1.548	.126
Did you marry with relatives?Yes, no	Nominal	Independent T test	.987	.327
Health condition during pregnancy period Good, high blood pressure ,poly urea or others	Nominal	Independent T test	.655	.514
Duration of labour pain Long time, short time, sudden, on time	Nominal	Chi square	33.294	.947
Type of delivery Vaginal delivery, surgery or others	Nominal	Independent T test	-.343	.733
Minutes until baby cried Cried with birth, latter	Nominal	Independent T test	-.207	.837
Oxygen requirement Yes, no	Nominal	Independent T test	-1.463	.148
Convulsions Yes, no	Nominal	Independent T test	.440	.661
Give child enough time Yes, no	Nominal	Independent T test	1.829	**.071***

Alpha value *= <.05, ** = <.01, * = <.001**

4.5.1 Association of independent variable with anxiety (GAD7 category):

Another association in between PHQ9 categories and independent variable had been done by researcher an association between Children's age category and GAD7 categories are tested by chi square and the test value (9.724) and p value (.021). Chi square is also done to find out an association between Mother's age category and GAD7 categories test value (9.724) and p value (.021).Mothers educational level and GAD7 categories are associated by chi square test the test value (23.505) and p value (.005). All the values mentioned are significant.

Test value of overall children's age was (-.548) and p value=. 587.Test value of gender of children was (.486) and p value=.922. Mothers occupation, test value (3.985). p value=.263. married with relative's test value (1.063). p value=.786. Health condition during pregnancy period test value (1.591). p value=.661. Duration of labour pain test value (6.208). p value=.719. Type of delivery test value (1.495). p value=.683. Minutes until baby cried test value (2.280). p value=.516. Oxygen requirement test value (1.780). p value=.619. Convulsions test value (6.844). p value=.077. Give child enough time test value (1.852). p value= .604.

Table 9: All the association been showed by a table below: Association with anxiety: GAD7 category

Dependent variables: GAD7 category				
Independent variables	**Data type**	**Test name**	**Test value**	**P value**
Overall children's age	Scale	Independent T test	-.548	.587
Children's age category 1-11 month, 1-10 year	ordinal	Chi square	9.724	**.021***
Gender of children Male, female	Nominal	Chi square	.486	.922
Overall Mother's age	Scale	Independent T test	.993	.328
Mother's age category Bellow 30, above 30	Ordinal	Chi square	9.724	**.021***
Mothers educational level Bellow SSC, S.S.C completed, H.S.C completed, Bachelor or above	Nominal	Chi square	23.505	**.005***
Mothers occupation Employed, unemployed	Nominal	Chi square	3.985	.263
Did you marry with relatives? Yes, no	Nominal	Chi square	1.063	.786
Health condition during pregnancy period Good, high blood pressure ,poly urea or others	Nominal	Chi square	1.591	.661
Duration of labour pain Long time, short time, sudden, on time	Nominal	Chi square	6.208	.719
Type of delivery Vaginal delivery, surgery or others	Nominal	Chi square	1.495	.683
Minutes until baby cried Cried with birth, latter	Nominal	Chi square	2.280	.516
Oxygen requirement Yes, no	Nominal	Chi square	1.780	.619
Convulsions Yes, no	Nominal	Chi square	6.844	.077
Give child enough time Yes, no	Nominal	Chi square	1.852	.604

Alpha value *= <.05, ** = <.01, * = <.001**

4.5 Linear logistic regression

4.5.1 Linear logistic regression with depression as the dependent variable with mothers of CP children's sociodemographic information's.

According to linear logistic regression findings, Mothers educational level, where predictor variable was, bellow bachelor level, (R-square=.067, coefficient value β=-.258, P=.023, 95% CI = -12.700, -.953) here the co efficient value is negative, it predicts that depression will not be present for all time for the mother's educational level bellow S.S.C.

Another predictor variables and their regression shown below as a table:

Table 10: The result of linear regression shown by a table below (PHQ9):

Predictor Variables	Dependent variables PHQ9 scores			
	R^2	β	P	95% CI
Children's age category 1-11 month, 1-10 year	.001	.034	.768	-4.544 ,6.131
Gender of children Male, female	.003	-.057	.620	-4.502,2.702
Mother's age category Bellow 30, above 30	.038	.194	.090	-.512,6.904
Mothers educational level Bellow SSC, S.S.C completed, H.S.C completed, Bachelor or above	.067	-.258	**.023***	-12.700,-.953
Mothers occupation Employed, unemployed	.014	.118	.308	-3.187,9.948

Did you marry with relatives? Yes, no	.002	-.046	.693	-4.527,3.026
Health condition during pregnancy period Good, high blood pressure ,poly urea or others	.001	-.038	.744	-4.675,3.353
Duration of labour pain Long time, short time, sudden, on time	.023	-.152	.187	-8.810,1.748
Type of delivery Vaginal delivery, surgery or others	.021	.145	1.267	-1.175,5.280
Minutes until baby cried Cried with birth, latter	.001	-.038	.745	-4.479,3.217
Oxygen requirement Yes, no	.012	.108	.351	-1.795,4.995
Convulsions Yes, no	.000	-.021	.854	-3.998,3.319
Give child enough time Yes, no	.006	-.078	.502	-5.045,2.493

4.5.2 Linear logistic regression with anxiety as the dependent variable with mothers of CP children's sociodemographic information's.

According to linear logistic regression findings, mothers age category, where predictor variable was above 30 years old mothers (R –square was=. 091, coefficient value β=.301, P=.008, 95% CI =.914, 5.801) here the co efficient value is positive, so it predicts that anxiety level is high for the mothers are above 30 years' age.

Another predictor variables and their regression shown below as a table:

Table 11:The result of linear regression shown by a table below (GAD7):

Predictor Variables	Dependent variable gad7 scores			
	R^2	β	P	95% CI
Children's age category 1-11 month, 1-10 year	.013	.112	.978	-1.832,5.365
Gender of children Male, female	.000	-.009	.935	-2.546, 2.346
Mother's age category Above 30,Bellow 30,	.091	.301	**.008****	.914,5.801
Mothers educational level Bellow SSC, S.S.C completed, H.S.C completed, Bachelor or above	.034	-.184	.109	-7.350,.754
Mothers occupation Employed, unemployed	.031	.176	.126	-.984,7.845
Did you marry with relatives? Yes, no	.013	-.113	.327	-3.808,1.285

Health condition during pregnancy period Good, high blood pressure ,poly urea or others	.006	-.075	.514	-3.609,1.822
Duration of labour pain Long time, short time, sudden, on time	.000	-.012	.919	-3.808,3.434
Type of delivery Vaginal delivery, surgery or others	.002	.040	.733	-1.829,2.590
Minutes until baby cried Cried with birth, latter	.001	.024	.837	-2.339,2.881
Oxygen requirement Yes, no	.028	.167	.148	-.607,3.960
Convulsions Yes, no	.003	-.051	.661	-3.025,1.930
Give child enough time Yes, no	.043	-.207	.071	-4.810,.205

a study about quality of life and level of depression and anxiety in care givers of children with cerebral palsy referred that children with cerebral palsy needs frequent assistant and as a result of this care givers of this kind of children goes through a stressful life, as the treatment process is lengthy for most of the time, so that its lead to aggravate anxiety and depression. It was a cross sectional and descriptive type of study used a questionnaire named Hospital Anxiety and Depression scale (HADS) According to result of this study anxiety was indicated 49% of caregivers and depression was indicated 31% of caregivers and most of them were female.95% confidence interval for anxiety was (38-60) and 95% confidence interval for depression was (22-42).

So many study proved that mothers carry more challenges to provide care for their children than father. Naturally mothers spend many time for caring their children .so, it's simple that mothers experience greater depression in their life than any others of her family. So, it's clear that mothers face more depression and worse physical value than others. So burden of depression is 50% higher for female than males. (Zanon & Btista, 2012)

"Frequency and severity of depression in mothers of cerebral palsy children "it's a study where frequency and severity of depression of mothers of children with CP was determined from a tertiary care hospital. Study was conducted by 81 mothers with children of CP .in this study there was 56.79% male children they were 46 in number and 43.21% where female was 35 in number. Children's mean age was 6.57, SD±19 and mothers 40.89, SD±5.31. Education status of mothers had three categories among them n=27or 33.33% had completed their primary education, n=43 or 53.09% completed secondary education and n=11 or 13.58% had completed higher secondary education (Kumar et al., 2016) In our study it included 77 mothers of children with cerebral palsy male were n=55(71.4%) and number of female were n=22(28.6%), it showed most of the children of our study was male. Among 77 participants, mother's education level was bellow SSC (n= 40) 51.9%; S.S.C completed (n= 16) 20.8%; H.S.C completed(n=15)19.5%; Bachelor or above(n=6)7.8%

(72.84%) n=59 of mothers was housewife in the meantime n=22(27.16%) were employed. In our study Among 77 participants, Employed (n=5)6.5%; unemployed (n=72)93.5%.

Out of 81 mothers in this study found that (50.62%)n=41 had no depression and n=40(49.38%) mothers had depression. Category of depression according to SSDS scale was mild, moderate and severe. among them n=12(30%)had mild depression, n=24(60%) had moderate depression and n=4(10%) had severe depression.(Kumar et al., 2016). In our study the term 'no depression' was absent because the scale used to measure depression named PHQ9 had no option for 'no depression' findings of our study was Among 77 participants, Minimal depression was (n=18) 23.4%; Mild depression (n=11) 14.3% Moderate depression (n=21) 27.3%; Moderately severe depression (n=19) 24.7%; Severe depression (n=8) 10.4% The possible range of scores in PHQ9 scale is 1-27 with the higher scores indicating the presence of more depression. In this study, 0-4 minimal depression, 5-9 mild depression, 10-14 moderate depression, 15-19 moderately severe depression, and 20-27 severe depression. In our study there was an association between PHQ9 and mothers age and mothers educational level was the association of depression and mothers age was tested by independent t test and the test value is 2.119 and the p value (.0.41) which was significant respectively the association of depression and mother's education level was tested by chi square test and the test value was 46.783 p value of this association was .001 which was highly significant. Another study reported that educational status had a significant association p value (0.43) and our study showed also an association between depression and mothers educational level. In (CPYK) this study according to BDI scale the level of minimal depression was 42.0% and n=60, mild depression was 30.8% and n=44, moderate depression was 11.2% and n=16, and severe depression was 16.0% and n=23.The same study reported about anxiety scores. Minimal anxiety was 28.7% and n=41 mild anxiety was 31.1% and n=53, moderate anxiety was 21.7% and n=31severe anxiety was 12.6% and n=18. That study measured anxiety by using a scale named BAI. (Basaran et al., 2013) In our study anxiety was measuring according to a scale named GAD7 and it also has four categories like BAI scale and our findings was minimal anxiety (n=10) 13.3%; mild anxiety (n=24) 31.2%; moderate anxiety (n=32) 41.6%; severe anxiety (n=11) 14.3%. In another study reported a result

by compare between two group one group composed with 116 mothers with children of cerebral palsy another group composed with 114 mothers with healthy children. That study found children male with cerebral palsy was more than girls. Male n=60, (51.7%) and female n=56, (46.6%). (Yilmaz et al.,2013)

In our study it also found that male children were more than female children. Male 71.4%, n=55 and female 28.6%, n=28, so it's clear that among 77 children's male children's were more. BAI scale for anxiety and BDI score for depression also used in that study so, respectively scores for BAI and BDI was, mean=20.13, SD±15.47; mean=17.97, SD±12.50. A study performed by (Altindag et al., 2007) also measuring depression and anxiety by using BDI scale and STAI 1-2 Scale. Mean and SD of BDI scale was 18.8±8.6. STAI-1 indicates anxiety as 71.9±5.7. STAI-2 indicates anxiety as 68.0±5.2. Here means age of mothers was 35.6±4.2. Number of children was 3.8±1.1. In our study mean value of mothers overall age was 20.049 and standard deviation was ±4.967.

Some study showed speech problem, presence of another disease with cerebral palsy, parents economical features etc., also included problems of children's and families but those criteria was not investigated in this study.(Zanon & Batista, 2012)

5.1 Limitations

There were some limitations in this study. First of all, it was conducted with small number of people. Sample size for this study seemed to be less than what it was because there was a shortage of time. Researcher was collected some data over phone from mothers. So there were some limitations to data collection. May be it would have been better if we could have taken all the data face to face. Researcher found significant association of level of depression with only four variables and found association of anxiety with only four variables. Two different scales what researcher used to this study was rarely used for the same field. That's why researcher did not get available literature to compare. Although some literature was found, but the study type was not same. So, the significant result was found in another research was not similar to this study. The above discussed topics were basically the limitation of this research.

CHAPTER-VI	CONCLUSION & RECOMMENDATION

6.1 Conclusion:

Cerebral palsy is an unexpected which has a lifelong effect on physical functioning and psychological wellbeing. Children with cerebral palsy needs more care than normal child to perform their daily activities. The total execution of normal daily activities, social and environmental, moreover any type of task done by mothers of cerebral palsy child. So, naturally it exerts a harmful effect on mother's physical and psychological system. The normal behavior of mothers can be affected. It was a study found that uneducated, aged more than 30 years old mothers were suffered from more depression. As mothers often involves in take care and play main role in treatment and rehabilitation care of child with cerebral palsy. If mothers always feel depression or anxiety for a long period of time, it exerts reverse affect in rehabilitation process of their children. So, it's very important to keep mother's mental health normal for all time, it must be considered by health professionals. Mothers mental treatment for prevention of depression and anxiety is highly recommended. Therefore, health professionals should contribute to support themselves mentally to prevent or reduce the risk of anxiety and depression.

6.2 Recommendation:

Anxiety and depression are very common for mothers of cerebral palsy children. To make a better measurement for anxiety and depression like all other research, its recommended to include more variables as speech problems, presence of another disease, family income, mother's marital status etc. Because it is necessary to know about mother's mental condition better and to facilitate successful rehabilitation of children with cerebral palsy and mothers.

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CONSENT FORM (English)

(Please read out to the participants)

Assalamualikum,

My name is Sumia Afrin; I am conducting this study for a B.Sc. in Physiotherapy project study dissertation titled "Anxiety and Depression Level of Mothers of Children with Cerebral Palsy" under Bangladesh Health Professions Institute (BHPI), University of Dhaka. I would like to know about some personal and other related information regarding CP. You have to answer some questions which are mention in the attached form. This will take approximately 10-15 minute. I would like to inform you that this is a purely academic study and will not be used for any other purpose. The researcher is not directly related with this Pediatric area, so your participation in the research will have no impact on your present or future treatment in the Pediatric unit. All information provided by you will be treated as confidential and in the event of any report or publication it will be ensured that the source of information remains anonymous and also all information will be destroyed after completion of the study. Your participations in this study is voluntary and you may withdraw yourself at any time during this study without any negative consequences. You also have the right not to answer a particular question that you don't 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 me or Professor Md. Obaidul Haque, Head of the Department of Physiotherapy and Vice Principal, BHPI, CRP, Savar, Dhaka.

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

Signature of the Participant

_____ Date_____

Signature of the Interviewer

_____ Date_____

সম্মতি

(অংশগ্রহণক   )

আসসালামু আলাইকুম, আমার নাম সুমাইয়া আফরিন। আমি বাংলাদেশ যে   প্র   ইস্টিটিউট এর ফিজিওথেরাপি বিভাগের একজন ছাত্রী। ত   সো   প   রো   মায়:ে   উপর একটি গবেষণা পরিচালনা করছি এবং আমার অধ্য   শিরোনাম- "সো   প   র্   নিয়:ে   মায়:ে   উদ্দে এবং বি   মাত্র   "

এক্ষে   আমি আপনার কাছ থে   আন্   কিছু ত   জানতে চাচ্ছি। এতে প্রায় ২০-৩০ মিনিট এর মত সময় লাগবে। এটি একটি শিক্ষ   গবেষণা যা অন   কে   উদ্দে   ব্য   করা হবেনা। গবেষক সরাসরি শি   সাথে সম্পৃ   নয়, তাই গবেষণায় আপনার অংশ   শি   আপনার স   ব্য   বা ভ   চিকিৎসায় কে   প্র   য়ে   না। গবেষক গবেষণার প্রতি   ধাপে গোপ   বজায় রাখবেন। আপনার ত   আপনার অনুমতি ছাড়া কোথ   ব্যাব   হবেনা। এই গবেষণায় আপনার অংশ   সম্পূ   ইচ্ছা   এবং অধ্য   যে   সময় নিজেকে প্রত্   করতে পারবেন।

একজন অংশগ্র   হিসেবে আপনার এই অধ্য   সম্পে   কে   প্রশ্ন শিক্ষক   (উপাধ্যক্ষ-র্   ,   ,   ,   ) এরসঙ্গে যোগাযোগ |

সাক্ষাতকার শুরু   চাচ্ছি? হ্যা/

অংশগ্রহন   স্বাক্ষর ···   ·········|

উপাত্ত সংগ্রহ   স্বাক্ষ ···   ············|

স্বাক্ষ ···.   ·········|

English Questionnaire

Title: "Anxiety and depression level of mothers with children of cerebral palsy."

Patient Identification	
Identification Number:	
Date of interview:	
Participant name:	
Address: Dist.:　　　　　P/S:　　　　　P/O:　　　　　Vill:	
Contact number:	
Consent taken:　　　　　　　Yes　　　　　　　　　　No	
Part-1: Socio-demographic in information	
1.1	Hospital Identification No:	
1.2	Age (in year)	………. Years
1.3	Sex (children)	1. Boy 2. Girl
1.4	Age (Mother)	………. Years
1.5	Mother's education level:	1. Illiterate 2. Class V 3. Class VIII 4. S.S.C completed 5. H.S.C completed 6. Bachelor or above 7. Other (Specify):
1.6	Mother's occupation	1. Service holder 2. Farmer 3. Businessman 4. Student 5. Day laborer 6. Teacher 6. Others

1.7	Monthly income	1. 30000-50000
		2. 50000-100000
		3. >1000000
		5. Others
1.8	Did your marriage with relatives?	1. Yes
		2. No
1.9	What is the actual relation with him	…………
1.10	Health condition during pregnancy period?	1. Good
		2. High blood pressure
		3. Low blood pressure
		4. Poly urea
		5. Sickness
		6. Others
1.11	Type of delivery	1. Vaginal delivery
		2. Surgery
		3. Vacum delivery
		4. Forcef delivary
1.12	Can you give proper time to your child?	1. Yes
		2. No

Part 2: PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

QN	Over the last 2 weeks, how often have you been bothered by any of the following problems?	Use (Tick mark)to indicate your answer			
		Not at all	Several days	More than half the days	Nearly everyday
1	Little interest or pleasure in doing things	0	1	2	3
2	Feeling down, depressed, or hopeless	0	1	2	3
3	Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4	Feeling tired or having little energy	0	1	2	3
5	Poor appetite or overeating	0	1	2	3
6	Feeling bad about yourself or that you are a failure or have let yourself or your family down	0	1	2	3
7	Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8	Moving or speaking so slowly that other people could have noticed. Or the opposite being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9	Thoughts that you would be better off dead, or of hurting yourself	0	1	2	3

Scoring PHQ9 Depression level

Total score	Depression level
1-4	Minimal depression

5-9	Mild depression
10-14	Moderate depression
15-19	Moderately severe depression
20-27	Severe depression

GAD-7 Anxiety

Over the last 2 weeks, how often have you been bothered by the following problems? (Use "✓" to indicate your answer"	Not at all	Several days	More than half the days	Nearly every day
1. Feeling nervous, anxious or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it is hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid as if something awful might happen	0	1	2	3

Column totals: ___ + ___ + ___ + ___

= Total Score _____

Total score	Anxiety level
00−04	Minimal anxiety
05−09	Mild anxiety
10−14	Moderate anxiety
15−21	Severe anxiety

Scoring GAD7 Anxiety level

বাংলা প্রশ্নপত্র

শিরোনাম: "সেরিব্রাল প্যালসির শিশুদের   উদ্বেগ   বিষন্নতার মাত্রা।"

রোগী সনাক্তকরণ		
নম্বর:		
সাং :		
অংশগ্রহণকারীর :		
:		
যোগাযোগের নাম্বার :		
সম্মতিনেওঃ ছে হ্যাঁনা		
পঃ -১: আর্থ-জনসংখ্যাঃ		
.	( )	.... /
.	লিঙ্গ(শিশু)	. ছেলে . মেয ে
.	( )	....
.	েরশিক্ষ্যাগঃ :	.নিরক্ষর .পঞ্চমশ্রেণী . অষ্টমশ্রেণী . S.S.C সঃ . H.S.C সঃ . স্নাতক ঃ . অন্যান্য (নিদিষ্ট)
.	েরপেশা	. . . ব্যবসায . ছাত্রী

		. অন্যা
.	আত্মীয়ের ...হয ...ছেকিনা?	. হ্যাঁ
		.
.	গর্ভাবস্থায় স্বাে অবস্থ?	.
		. উচ্চরক্তচাপ
		. নিম্নরক্তচাপ
		.
		.অন্যান্য
.	প্রসব বেদনার	. বেশিক্ষণ
		. অল্পক্ষণ
		. হঠাৎ
		.
.	ডেলিভারি র	. যোনিপ্রসব
		. অস্ত্রোপচার
		. অন্যান্য
.	বাচ্চাজন্মের কতক্ষণ কান্না	. জন্মের
		. দেরিতে
.	বাচ্চা জন্মেরপর কৃত্রিম শ্বাস-প্রশ্বাস ় প্রয়োজন	. হ্যাঁ
		.
.	বাচ্চার /	. হ্যাঁ
		.
.	সন্তানকে ?	. হ্যাঁ
		.

Patient Health Questionnaire-9 (বিষণ্নতা সম্পর্ক   প্রশ্ন)

সপ্তাহ   সমস্যাগুলোর :   ?

ক্রমিক	প্রশ্ন			অর্ধেকর	প্রায় প্রতিদিনই
		উত্তর			
		উত্তর চিহ্নিত জন্য টিক চিহ্ন			
				বেশী	
.	অল্প আগ্রহ অনন্দ				
.	, বিষন্ন				
.	বেশি				
.	ক্লান্ত অল্প এনার্জী				

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	শক্তি				
.	খেতে ইচ্ছ বেশী				
.	ছোট – ব্যর্থ মে ছোট				
.	কোন দেয়া সমস্যা – যেমন সংবাদপত্র টেলিভিশন দেখা				
.	আস্তে যে অন্যমানুষেরা সেটা				

	লক্ষ্যকরে?				
	উল্ট চঞ্চল যে চেয়ে বেশী				
.	যে গেলে				

মোট _____ _____ + ++ _____

মোট স্কোর=

মোট স্ক্রে	বিষণ্নতার মাত্রা
-	নূন্যতম বিষণ্ন
-	বিষণ্ন
-	বিষণ্ন
-	তুলনামূলক বেশি বিষণ্ন
-	বিষণ্ন

GAD-7 উদ্বেগের তীব্রতা

সপ্তাহে : নিম্নোক্ত সমস্যাগুলো _____ ?	কোনোদিন না		মোটদিনের অর্ধেকদিন	প্রায় প্রতিদিন
) ___, চিন্তিত, উত্তেজিত				
) দুশ্চিন্তা নিয়ন্ত্রন ___ বন্ধ ___ অক্ষম				
) বিভিন্ন ___ দুশ্চিন্তা				
) ___ সমস্যা				
) দুশ্চিন্তার জন্য স্থির ___ সমস্যা				
) ___ বিরক্ত				
) দুঘটনা ___ চিন্তিত				

মোট   +   +

+

_____ _____   _____   _____

মোট স্কোর=_____

স্কোরিং GAD-7 উদ্বেগেরতীব্রতা

মোট স্ব ___	উদ্বেগের তীব্রতা
-	খুব কম উদ্বীগ্ন
-	কম উদ্বীগ্ন
-	তুলনামুলক বেশি উদ্বীগ্ন
-	বেশি উদ্বীগ্ন

Ref:

CRP/BHPI/IRB/06/2021/482

Date:

17/06/2021

To
Sumia Afrin
B.Sc. in Physiotherapy
Session: 2015-16, Student ID: 112150302
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Subject: Approval of the thesis proposal "Anxiety and Depression level of mothers with children of Cerebral Palsy" by ethics committee.

Dear Sumia Afrin,
Congratulations.
The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application to conduct the above mentioned dissertation, with yourself, as the Principal investigator. The Following documents have been reviewed and approved:

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

The purpose of the study is to find out the Anxiety and Depression level of mothers with children of Cerebral Palsy in Bangladesh. The study involves use of a questionnaire to explore that may take 20 to 30 minutes. There is no likelihood of any harm to the participants. Data collectors will receive informed consents from all participants any data collected will be kept confidential. The members of the Ethics committee have approved the study to be conducted in the presented form at the meeting held at 8:30AM on 1" March, 2020 at BHPI (23rd IRB Meting).

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

Best regards,

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

CRP-Chapain, Savar, Dhaka-1343, Tel : 7745464-5, 7741404
E-mail : principal-bhpi@crp-bangladesh.org, Web: bhpi.edu.bd, www.crp-bangladesh.org

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Permission Latter

Date: 16 June 2021

Head

Department of Physiotherapy

Centre for the Rehabilitation of the Paralysed (CRP)

Chapain, Savar, Dhaka-1343

Through: Head, Department of Physiotherapy, BHPI.

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

Sir,

With due to respect and humble submission to state that I am Sumia Afrin, a student of 4th year B.Sc. in physiotherapy at Bangladesh Health Professions Institute (BHPI). The Ethical committee has approved my research project entitled: **"Anxiety and Depression level of mothers with with children of cerebral palsy"** under the supervision of Professor Md. Obaidul Haque, Vice-Principal, BHPI. I want to collect data for my research project from the Pediatric unit, Department of Physiotherapy at CRP. So, I need permission for data collection from the Pediatric unit of Physiotherapy Department at CRP-saver, Dhaka-1343. I would like to assure that anything of the study will not be harmful for the participants.

I, therefore pray and hope that you would be kind enough to grant my application and give me permission for data collection and oblige thereby.

Yours faithfully,

Sumia Afrin

Sumia Afrin

4th Year B.Sc. in Physiotherapy

Class Roll: 31, Session: 2015-16

BHPI,CRP-Chapain, Savar, Dhaka-1343.

Recommended & Forwarded

16.06.21

Prof. Md. Obaidul Haque
Vice-Principal
BHPI, CRP, Savar, Dhaka.

Recommended

Shofiq

16.06.2021

Md. Shofiqul Islam
Associate Professor & Head
Department of Physiotherapy
Bangladesh Health Professions Institute (BHPI)
CRP, Chapain, Savar, Dhaka-1343

She will collect data from this department please help her Thanks.

Approved

MOHAMMAD ANWAR HOSSAIN
Senior Consultant &
Head of Physiotherapy Dept
Associate Professor, BHPI
CRP, Savar, Dhaka-1343

Hosneara Pervin.
Head of Department
Department of Paediatric
CRP Savar Dhaka