

**FACTORS INFLUENCING THE MENTAL HEALTH OF  
CAREGIVERS OF CHILDREN WITH CEREBRAL PALSY  
AT UNIVERSITY OF BENIN TEACHING HOSPITAL,  
BENIN CITY EDO STATE.**

**BY**

**OYIBO, SHULLAMITE**

**BMS1806212**

**A PROJECT SUBMITTED TO THE DEPARTMENT OF  
PHYSIOTHERAPY, SCHOOL OF BASIC MEDICAL  
SCIENCE, COLLEGE OF MEDICAL SCIENCE,  
UNIVERSITY OF BENIN, IN PARTIAL FULFILMENT OF  
THE REQUIREMENT FOR THE AWARD OF BACHELOR  
OF PHYSIOTHERAPY (B.PT) DEGREE**

**OCTOBER, 2025.**

# CERTIFICATION

This dissertation by OYIBO, SHULLAMITE is accepted in its present form as satisfying the dissertation requirement of the degree of Bachelor of Physiotherapy of the School of Basic Medical Sciences, College of Medical Sciences of the University of Benin.

**SUPERVISOR**

**SIGNATURE AND DATE**

**Prof. Antoninus Obinna Ezeukwu**

.....

**EXTERNAL EXAMINER**

**PROF. U. C. A OKAFOR**

.....

**APPROVED**

.....

**DR. (MRS) CHIGOZIE. O. OBASEKI**

**HEAD**

**DEPARTMENT OF PHYSIOTHERAPY**

**COLLEGE OF MEDICAL SCIENCES**

**UNIVERSITY OF BENIN**

## **DEDICATION**

This project is dedicated, first and foremost, to Jehovah God, whose infinite wisdom, guidance, and grace have been my constant source of strength and inspiration throughout this academic journey.

# ABSTRACT

## Background / Purpose of the Study

Caring for a child with Cerebral Palsy (CP) imposes substantial emotional and physical strain on caregivers, often leading to mental health issues like chronic stress, anxiety, and depression. In resource-limited settings such as the South-South region of Nigeria, these vulnerabilities are exacerbated by inadequate social support and financial constraints. This descriptive cross-sectional study investigated the specific factors influencing the mental well-being of caregivers of children with CP receiving care at the University of Benin Teaching Hospital (UBTH), with a focus on assessing mental health status, caregiving burden, and coping mechanisms.

## Methods

A descriptive cross-sectional design was employed, involving a purposive non-probability sample of 30 caregivers of children with CP at the UBTH Physiotherapy pediatric clinic. Data was collected using a structured questionnaire that included the Zarit Burden Interview (ZBI), the Depression, Anxiety, and Stress Scale (DASS-42), and the Social Support Questionnaire for Caregivers of Children with Cerebral Palsy (SSQ-CP). Data analysis involved descriptive statistics, Pearson's correlation coefficient, and Multiple Regression Analysis to test the relationship between caregiving factors and mental health.

## Result

A total of 30 caregivers participated in the study, of whom 22 were women and mothers, and the sample showed a clear skew toward lower income groups. Findings revealed a moderate to strong positive correlation between caregiving burden measured by the Zarit Burden Interview (ZBI) and all indicators of psychological distress—depression, anxiety, and stress—with the overall relationship between ZBI and Mental Health Total being  $r = 0.712$ ,  $p = 0.000$ , indicating a statistically significant association. Perceived social support measured by the Social Support Questionnaire (SSQ) demonstrated a significant negative correlation with mental health symptoms ( $r = -0.456$ ,  $p = 0.011$ ), suggesting that higher support functions as a protective or mitigating factor against psychological distress. Furthermore, multiple regression analysis confirmed that caregiving-related variables collectively and significantly predicted variations in mental health outcomes ( $F = 5.605$ ,  $p = 0.001$ ; Adjusted  $R^2 = 0.588$ ). However, the severity of the child's condition, represented by mobility status, did not show a statistically significant effect on caregivers' mental health in this sample ( $F = 0.475$ ,  $p = 0.627$ ).

## Conclusion

The study concluded that caregiving burden and the availability of emotional/social support are significant factors influencing caregiver mental health. Interventions should prioritize reducing the caregiving burden, enhancing formal and informal support systems, and addressing socioeconomic barriers to improve the overall well-being of these vulnerable caregivers in low-resource settings.

**Keywords:** Caregivers, Cerebral Palsy, Mental Health, Caregiving Burden, Social Support

## **ACKNOWLEDGEMENTS**

I sincerely acknowledge and give all glory to Jehovah God for his infinite wisdom, grace, and guidance that made the successful completion of this project possible.

My profound gratitude goes to my supervisor, Prof. Antoninus Obinna Ezeukwu, for his invaluable guidance, patience, and constructive criticism throughout the course of this work. His mentorship and scholarly insight greatly enhanced the quality of this research.

I also extend my heartfelt appreciation to the Head of Department of Physiotherapy, Dr (Mrs) Chigozie O. Obaseki, for her leadership, encouragement, and continuous support.

Special thanks go to all the lecturers in the Department of Physiotherapy, namely Rev. Sr. (Dr) Henrietta O. Fawole, Dr Adebisi Hamed, Dr Nicholas Oghumu, Mr Okhuaesuyi Eguagie, Prof. J. O. Umunnah, Dr (Mrs) Susan Kubeyinje, and Dr Nelson Ekechukwu, for their dedication to academic excellence and for imparting in me the knowledge and skills that have shaped this work.

I am equally grateful to the Head of the Physiotherapy Department, University of Benin Teaching Hospital (UBTH), Dr Taiwo Oyewumi, for his support and cooperation during the course of this study. My appreciation also extends to the Deputy Directors, Assistant Deputy Directors, Chief Physiotherapists, and all other members of the Physiotherapy Department, UBTH, for their assistance and collaboration.

Furthermore, I wish to express my sincere gratitude to the Head of the Pediatrics Unit, UBTH, Dr Frank Igbinovia, for his valuable contributions and for granting access to the clinical facilities necessary for this research.

Finally, my heartfelt appreciation goes to my family especially my mother, Mrs. Obedience Akpobome for her prayers, encouragement, and unwavering support, as well

as to all the caregivers and participants who took part in this study. Your cooperation and contributions were invaluable to the success of this work.

# TABLE OF CONTENTS

Title page	i
Certification	ii
Dedication	iii
Abstract	iv
Acknowledgements	v
Table of Contents	vii
List of Table	xi
List of Figures	xii
<b>CHAPTER ONE: INTRODUCTION</b>	<b>1</b>
1.1 Background of Study	1
1.2 Statement of the Problem	3
1.3 Research Questions	4
1.4 Aims of the Study	4
1.4.1 Specific Objectives	5
1.5 Hypotheses	5
1.5.1 Main Hypothesis	5
1.5.2 Sub-Hypotheses	6
1.6 Significance of the Study	6
1.7 Scope of the Study	7
1.8 Limitations of Study	7
1.9 Definition of Terms	8
1.10 List of Abbreviation	8

<b>CHAPTER TWO: LITERATURE REVIEW</b>	<b>10</b>
2.1 Conceptual Review	10
2.1.1 Mental Health	10
2.1.2 Cerebral Palsy and Caregiving	11
2.2 Epidemiology of Cerebral Palsy and Mental Health	12
2.2.1 Cerebral Palsy	12
2.2.2 Mental Health	13
2.3.1 Classification of Cerebral Palsy	17
2.3.2 Complications of Cerebral Palsy	23
2.4 Factors Influencing Caregiver Mental Health	24
2.5 Theoretical Framework	33
2.6 Empirical Review	38
<b>CHAPTER THREE: METHOD AND MATERIALS</b>	<b>42</b>
3.1 Participants	42
3.1.1 Inclusion Criteria	42
3.1.2 Exclusions Criteria	42
3.2 Materials	42
3.2.1 Apparatus/Instruments	42
3.3 Methods	44
3.3.1 Research Design	44
3.3.2 Sample Size/ Sampling Technique Calculation	44
3.3.4 Procedure for Data Collection	45
3.3.5 Ethical Consideration	46

3.3.6	Data Analysis	47
<b>CHAPTER FOUR: RESULTS</b>		<b>48</b>
4.1	Results	48
4.1.1	Demographic Characteristics of Respondents	49
4.1.2	Caregiving Burden	53
4.1.3	Mental Health	58
4.1.4	Social Support — SSQ Item-Level Analysis	62
4.1.5	Relationships among Burden, Mental Health, and Social Support	65
4.1.6	Multiple Regression	67
4.2	Hypotheses Testing	69
4.2.1	Main Hypothesis	69
4.2.2	H01: Caregiving Burden and Caregivers' Mental Health	71
4.2.3	H03: Severity of the Child's Condition and Caregivers' Mental Health (Mobility Proxy)	73
4.2.4	H04 & H05: Coping Mechanisms (Emotional Support Proxy) and Mental Health	75
<b>CHAPTER FIVE: DISCUSSION, CONCLUSION, RECOMMENDATIONS AND IMPLICATIONS</b>		<b>77</b>
5.1	Discussion	77
5.2	Conclusion	79
5.3	Recommendations	81

5.4	Implications for Further Study	82
	<b>REFERENCES</b>	<b>83</b>
	<b>APPENDIX A</b>	<b>93</b>
	<b>APPENDIX B</b>	<b>96</b>
	<b>APPENDIX C</b>	<b>103</b>

## LIST OF TABLES

<b>TABLES</b>	<b>PAGES</b>
Table 4.1: Demographic Characteristics of Respondents	51
Table 4.2: ZBI Item-Level Statistics	55
Table 4.3.1: DASS — Depression Item-Level Statistics	59
Table 4.3.2: DASS — Anxiety Item-Level Statistics	60
Table 4.3.3: DASS — Stress Item-Level Statistics	61
Table 4.4: SSQ Item-Level Statistics	63
Table 4.5: Correlation matrix (Pearson r)	67
Table 4.6: Regression Coefficients Predicting Depression_Total	68
Table 4.7: Omnibus Test — Multiple Regression Predicting Mental Health_Total	70
Table 4.7: Omnibus Test — Multiple Regression Predicting Mental Health_Total	72
Table 4.9: One-Way ANOVA — MentalHealth_Total by Mobility Groups	74
Table 4.10: Pearson Correlation — SSQ_Total vs MentalHealth_Total	76

## LIST OF FIGURES

<b>FIGURES</b>	<b>PAGES</b>
Figure 1: The Model of Carer Stress and Burden (Sörensen et al., 2006)	34

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of Study

Cerebral palsy comprises a group of lasting, non-progressive neurological conditions that begin in early life and interfere with motor functions such as movement, muscle tone, and coordination (Rolenbaum et al., 2007). The severity and presentation differ among individuals, often affecting motor abilities, sensory input, and cognitive processes. Various risk factors that occur before conception, during pregnancy, childbirth, or shortly after birth can contribute to the onset of cerebral palsy (Sadowska et al., 2020). CP appears in several subtypes, including spastic, ataxic, hypotonic, athetoid, and mixed forms. It stands as the leading neurological disorder responsible for motor impairments in childhood (Shevell et al., 2013).

The World Health Organization (WHO) estimates that roughly 10% of children globally—amounting to approximately 200 million—live with disabilities such as developmental delays, intellectual impairments, or physical limitations. Significantly, over 75% of individuals with disabilities reside in low-income countries, many located in Africa. A comprehensive meta-analysis recently reported a pooled prevalence of cerebral palsy in African children at 3.3 per 1,000 live births (95% CI: 2.69–3.92). In Nigeria, prevalence rates were recorded at 2.30 (95% CI: 2.23–2.37) and 4.86 (95% CI: 4.20–5.52) per 1,000 live births (Biruk et al., 2024).

Children diagnosed with cerebral palsy require individualized and specialized care, regardless of the type or severity. The nature and intensity of caregiving depend on several factors, including the child's overall health status, level of functionality, severity of the disorder, and the family's economic capacity (Farajzadeh et al., 2020). Due to the chronic nature of the condition, families often face long-term caregiving responsibilities, which may disrupt family routines and place emotional and physical demands on caregivers (Murphy et al., 2007). Daily responsibilities such as mobility assistance, personal hygiene, feeding, and general well-being of the child largely rest on the caregiver. As the child's impairments intensify, caregivers frequently report increased physical fatigue, emotional distress, and psychological strain (Buhse et al., 2008). Caregivers may be family members, extended relatives, friends, or hired professionals, all of whom provide indispensable assistance that supports the daily functioning of children with disabilities (Riffin et al., 2019). Their contributions are vital for maintaining the physical and emotional well-being of these children.

In resource-limited environments such as Nigeria, caregivers are at heightened risk for mental health issues like chronic stress, depression, anxiety, and burnout, due to limited access to healthcare services, inadequate social support, and financial constraints. At the University of Benin Teaching Hospital (UBTH), where many caregivers bring their children for treatment, it becomes essential to understand the psychosocial factors affecting their mental health to ensure comprehensive care. While global studies have identified stressors such as economic hardship, limited support networks, severity of the child's disability, and sociocultural views on

disability, there is a scarcity of region-specific data. In particular, there is little research focused on the South-South region of Nigeria. This study aims to investigate the specific factors influencing the mental well-being of caregivers of children with cerebral palsy receiving care at UBTH.

## **1.2 Statement of the Problem**

Caring for a child with a neurodevelopmental condition such as cerebral palsy presents considerable challenges. The increased demands associated with caregiving can adversely affect the caregiver's well-being and hinder the child's developmental progress (Garner et al., 2011; Peer, 2011). Parents and caregivers of children with chronic health conditions often experience higher levels of stress and diminished quality of life in comparison to those caring for typically developing children (Brehaut et al., 2004; Raina et al., 2005). The mental health outcomes of caregivers are strongly associated with the intensity of caregiving responsibilities and other influencing factors.

Despite its importance, the psychological well-being of caregivers of children with cerebral palsy is frequently neglected, even though it significantly influences the quality of care the child receives. At the University of Benin Teaching Hospital (UBTH), caregivers often encounter complex challenges, such as financial strain, emotional burden, and societal discrimination. These stressors may contribute to the onset of mental health conditions, reduce overall life satisfaction, and increase the risk of caregiver burnout. Although the number of children diagnosed with cerebral palsy is on the rise, there remains a notable absence of localized research identifying the primary factors that contribute to psychological distress in

caregivers within this region. Gaining insight into these elements is essential for designing effective support systems and interventions that benefit both caregivers and their children (Olusanya et al., 2021). Addressing caregiver mental health should be recognized as a key public health priority, particularly within the context of disability care.

### **1.3 Research Questions**

1. What is the current level of mental health status among caregivers of children with cerebral palsy at UBTH?
2. What are the socio-demographic characteristics of caregivers of children with cerebral palsy?
3. How does the severity of the child's condition influence the caregiver's stress and mental health?
4. What is the relationship between caregiving burden and the mental health of caregivers?
5. What coping mechanisms such as avoidant coping, problem-oriented strategies, and emotional support are used by caregivers of children with cerebral palsy at UBTH?

### **1.4 Aims of the Study**

To explore the mental health status and coping mechanisms particularly avoidance of caregivers of children with cerebral palsy, and to increase awareness among healthcare providers at the University of Benin Teaching Hospital (UBTH).

### **1.4.1 Specific Objectives**

1. To assess the level of mental health status among caregivers of children with cerebral palsy.
2. To identify the social-demographic characteristics of caregivers of children with cerebral palsy.
3. To evaluate the influence of the severity of the child's condition on the mental health and stress levels of caregivers.
4. To examine the relationship between caregiving burden and the mental health of caregivers.
5. To explore the various coping mechanisms—specifically avoidant coping, problem-oriented coping, and emotional support—employed by caregivers of children with cerebral palsy at UBTH

## **1.5 Hypotheses**

### **1.5.1 Main Hypotheses**

- H<sub>1</sub>: There will be no significant relationship between caregiving factors (including caregiving burden, coping mechanisms, and severity of the child's condition) and the mental health status of caregivers of children with cerebral palsy.
- H<sub>2</sub>: There will be no significant relationship between caregiving factors (including caregiving burden, coping mechanisms, and severity of the child's condition) and the mental health status of caregivers of children with cerebral palsy.

### **1.5.2 Sub-Hypotheses**

- H0<sub>1</sub>: There will be no significant relationship between caregiving burden and caregivers' mental health.
- H0<sub>2</sub>: The severity of the child's condition has no significant effect on the mental health of caregivers.
- H0<sub>3</sub>: There will be no significant relationship between the type of coping mechanism used (avoidant, problem-oriented, emotional support) and caregivers' mental health.

### **1.6 Significance of the Study**

This study will provide valuable insights into the mental health needs of caregivers and guide the development of support systems, intervention within UBTH. It will also contribute to policy advocacy for caregiver welfare and mental health inclusion in paediatric care plans. This study is significant as it expands the knowledge on cerebral palsy by offering a University of Benin Teaching Hospital perspective on the mental distress experienced by caregivers and the coping mechanism, they employ. This will help identify the most effective coping mechanisms and assess their impact in alleviating the caregiving burden for children with cerebral palsy. Researchers, clinicians, and policymakers will benefit from the findings.

### **1.7 Scope of the Study**

The study will focus on caregivers of children diagnosed with cerebral palsy who are receiving treatment or attending follow-up at UBTH. It will explore factors such

as socio-demographics, caregiving responsibilities, social support, and child-related variables.

## **1.8 Limitations of Study**

1. Use of Self-Report Questionnaires
  - a. Affected Area: Accuracy of data on mental health status and coping mechanisms.
  - b. Explanation: Participants may not have fully disclosed their true feelings or mental health conditions due to social desirability bias or fear of judgment, which could affect the reliability of results related to mental health assessments and coping strategy usage.
2. Rescheduled Interview Dates and Flexible Locations
  - a. Affected Area: Consistency in data collection
  - b. Explanation: Interview sessions were frequently adjusted based on caregivers' availability and conducted in varied settings, potentially affecting the consistency and comparability of the data gathered.
3. Perceptual Bias Due to Subjective Responses
  - a. Area: Perception-based responses regarding caregiving burden and child severity.
  - b. Explanation: Since much of the data relies on caregivers' personal perceptions of burden and stress, responses may not reflect objective reality, thereby limiting the generalizability of findings related to the impact of caregiving and child condition severity.
4. Limited Scope of Sample Population.

- a. Affected Area: Generalizability of findings
- b. Explanation: The study is restricted to caregivers attending UBTH and may not reflect the experiences of caregivers in other regions or healthcare settings, which limits the broader applicability of the findings.

## **1.9 Definition of Terms**

**Caregiver:** A person who provides direct care to a child with cerebral palsy.

**Mental Health:** The emotional and psychological well-being of the caregiver.

**Cerebral Palsy:** A neurological disorder affecting movement and muscle tone.

**Social Support:** Emotional, informational, or practical assistance received from family, friends, or community

**Mental Distress:** As defined in this study, refers to a measurable and observable condition marked by physical, emotional, and cognitive symptoms such as anxiety, depression, irritability, and difficulties in daily functioning

## **1.10 List of Abbreviation**

CP - Cerebral palsy

LMICs - Low to middle income countries

GMFCS - Gross Motor Function Classification System.

MACS - Manual Ability Classification System

# **CHAPTER TWO**

## **LITERATURE REVIEW**

### **2.1 Conceptual Review**

#### **2.1.1 Mental Health**

Mental health is a fundamental aspect of overall well-being and cannot be viewed in isolation. According to the World Health Organization (2022), health is defined as a comprehensive state of physical, mental, and social well-being, not merely the absence of disease or infirmity. Mental well-being is central to this holistic concept of health, as it empowers individuals to handle everyday stress, achieve their potential, function productively, and actively contribute to their communities. Key signs of sound mental health include the capacity to build and sustain meaningful relationships, navigate social responsibilities, adjust to life changes, and cope with emotions such as loss or sadness. It also encompasses the ability to express positive thoughts and behaviors, promoting a sense of self-worth, autonomy, and awareness of one's internal and external environment.

As highlighted by Mental Health Europe (2021), emotional resilience, self-esteem, the capacity to experience joy, and the ability to form healthy social connections are all indicative of positive mental health. People's understanding of what it means to be healthy—whether they view it as being free from illness, functioning optimally, or maintaining equilibrium—is often shaped by how well their core needs are satisfied. These include access to nutritious food, safe shelter,

security, emotional support, and social inclusion, as well as protection from prolonged stress, harm, or exploitation (UNICEF, 2021).

### **2.1.2 Cerebral Palsy and Caregiving**

Cerebral palsy (CP) refers to a group of enduring neurodevelopmental disorders that interfere with the development of movement, posture, and muscle tone. These impairments result from atypical brain development or irreversible brain injuries that occur during the prenatal, perinatal, or early postnatal periods (Colver et al., 2014; Graham et al., 2016; Rosenbaum et al., 2007). Although the original brain injury does not progress over time, individuals with CP frequently develop secondary complications such as musculoskeletal abnormalities, contractures due to spasticity, chronic pain, and issues related to feeding or respiration. These complications can lead to a gradual decline in physical function (CDC, 2024; NICE, 2017). CP is commonly accompanied by other medical issues, including epilepsy, intellectual disabilities, sensory deficits, and behavioral disorders (Katangwe et al., 2020). While the exact etiology of cerebral palsy is not fully understood, known risk factors include genetic anomalies, in utero or perinatal brain injuries, and maternal infections during pregnancy.

Providing care for a child with CP is highly demanding and involves a range of physical, emotional, social, and logistical responsibilities. This caregiving role is most often assumed by parents—particularly mothers—who are deeply engaged in the child’s daily life. Their tasks typically include: assisting with essential daily activities such as feeding, dressing, bathing, toileting, mobility, and transportation (Novak et al., 2012); implementing and monitoring therapy routines recommended

by rehabilitation professionals such as physiotherapists, occupational therapists, and speech therapists (Parkes et al., 2010); managing medications, medical appointments, and associated health conditions like seizures, vision or hearing impairments (Rosenbaum et al., 2007); facilitating access to education through inclusive learning environments and tailored support plans (Raina et al., 2005); and offering emotional support to help create a stable and nurturing home atmosphere (Brehaut et al., 2004).

## **2.2 Epidemiology of Cerebral Palsy and Mental Health**

### **2.2.1 Cerebral Palsy**

Cerebral palsy (CP) remains the most common cause of motor disability among children in Nigeria. A population-based study in Cross River State reported a prevalence rate of 2.3 per 1,000 children aged between 4 and 15 years (Roseline et al., 2020). Hospital records from locations such as Kano and Sagamu identify birth asphyxia, kernicterus, and neonatal infections as primary risk factors for CP in the country. These conditions are frequently associated with premature birth and neonatal jaundice (Ogunlesi et al., 2008).

Globally, premature infants—particularly those born before 28 weeks of gestation or weighing under 1,500 grams—are at an increased risk of developing CP, a pattern that is also evident in Nigeria, where neonatal healthcare infrastructure remains underdeveloped. Across the African continent, the estimated prevalence of CP stands at 3.34 per 1,000 live births, surpassing that of many high-income countries. A notable report by the BBC revealed that untreated neonatal jaundice is a significant factor contributing to the incidence of CP in Nigeria.

Although jaundice affects over 60% of newborns, many do not receive timely medical intervention, placing Nigeria among the top five nations with the highest number of CP cases attributed to jaundice.

## **2.2.2 Mental Health**

### **Mental Health Prevalence in Nigeria**

Mental health conditions are becoming increasingly widespread in Nigeria, affecting nearly 20% of the population—equivalent to approximately 40 million individuals (Pleasure et al., 2020). This rising prevalence highlights the pressing need to strengthen mental health systems and raise public awareness nationwide.

### **Depression and Anxiety**

Depression and anxiety disorders are particularly prominent mental health concerns in Nigeria. Current estimates indicate that about 7 million Nigerians (3.9%) live with depressive disorders, while 4.9 million people (2.7%) experience anxiety-related conditions (Temitope et al., 2025). Worryingly, the national suicide rate—ranging from 6.9 to 9.5 per 100,000 people—is among the highest in Africa, pointing to the severe impact of untreated mental illnesses. In Lagos State, a household survey of 11,246 adults revealed a depression prevalence of 5.5%, generalized anxiety at 3.5%, and dual diagnosis of both conditions at 1.2% (Abiodun et al., 2018). Among medical students in Ekiti State, 25% exhibited symptoms of psychiatric distress, with 14.3% showing signs of both anxiety and depression (Joshua et al., 2020). These statistics reveal that mental health challenges are not limited to the general population but also affect specific groups, including students and healthcare professionals.

## **Mental Health in Vulnerable Populations**

Further emphasizing the scale of the issue, a community-based survey conducted in Abakaliki, Ebonyi State, showed that 70% of participants screened positive for depressive symptoms, 85.3% for anxiety, and over half (52.3%) for substance use disorders (Njaka et al., 2022). Psychiatric conditions are consistently reported in 20–25% of adolescents, students, and healthcare workers, reflecting the widespread nature of mental health disorders across different societal groups. The COVID-19 pandemic further intensified these problems, increasing rates of depression and anxiety as people dealt with social isolation, job losses, and heightened health risks.

## **Treatment Gap and Urgent Public Health Need**

One of the most critical challenges is the large treatment gap, with an estimated 80% of those affected by mental illness lacking access to appropriate care. This gap is driven by multiple factors, including inadequate mental health infrastructure, a limited number of trained professionals, and widespread societal stigma. Suicide remains a major, though often under-reported, public health issue, obscured by cultural stigma and insufficient data systems.

Tackling these challenges requires a coordinated approach involving government bodies, non-governmental organizations, and community leaders. There is an urgent need for initiatives that promote mental health awareness, improve access to mental health services, and reduce stigma. Ultimately, addressing Nigeria's mental health crisis demands comprehensive efforts to close treatment gaps and foster an environment of empathy, care, and support for those affected.

## **2.3 Aetiology of Cerebral Palsy**

Cerebral palsy (CP) results from a combination of factors that can disrupt the development of the brain before, during, or shortly after birth. Its etiology is complex and influenced by a range of prenatal, perinatal, and postnatal conditions that affect fetal and early infant brain maturation.

### **Prenatal Factors**

A substantial proportion of CP cases are traced back to the prenatal stage, where disturbances in fetal brain development play a major role. Some of the major prenatal contributors include:

- Congenital anomalies of the brain
- Maternal infections, such as rubella, cytomegalovirus, or toxoplasmosis
- Intrauterine growth restriction (IUGR)
- Placental dysfunction
- Prenatal exposure to harmful substances like alcohol, drugs, or environmental toxins
- Genetic mutations or chromosomal abnormalities (Becher et al., 2004; Ejeliogu et al., 2017; Duke et al., 2020)

According to Oskoui et al. (2013), more than 70% of CP cases worldwide are linked to prenatal causes.

### **Perinatal Factors**

Events occurring around the time of birth also significantly influence CP risk. Critical perinatal factors include:

- Oxygen deprivation at birth or hypoxic-ischemic encephalopathy (HIE)

- Preterm birth and very low birth weight (especially infants under 1500 grams or delivered before 32 weeks gestation)
- Birth complications or trauma during delivery
- Neonatal stroke
- Severe neonatal jaundice, or kernicterus

Prematurity, in particular, is a prominent risk factor for CP. Among preterm infants, periventricular leukomalacia is frequently observed and is associated with brain damage that leads to motor impairments (Volpe et al., 2008).

### **Postnatal Factors**

Though less frequent, some children acquire CP due to complications occurring after birth. These include:

- Neonatal infections such as meningitis or encephalitis
- Traumatic injuries to the head
- Unmanaged severe jaundice
- Postnatal stroke
- Certain metabolic conditions

These postnatal events can inflict hypoxic or inflammatory brain damage, particularly within the first year of life a period marked by rapid and vulnerable brain development (Nelson & Blair, 2015).

### **2.3.1 Classification of Cerebral Palsy**

Cerebral palsy (CP) is typically categorized across three principal domains, each of which plays a vital role in clinical assessment, intervention planning, and outcome prediction:

1. Type of Motor Dysfunction (Physiological Classification)
2. Anatomical Distribution of Motor Impairment (Topographical Classification)
3. Functional Capability (Severity Classification)

These classification systems help clinicians understand the diverse motor symptoms associated with CP, which can vary significantly depending on the location and extent of brain injury (Palisano et al., 1997; Bax et al., 2005; Rosenbaum et al., 2007; Hidecker et al., 2011; Paulson et al., 2017).

#### **Physiological (Motor Type) Classification**

This system classifies CP based on abnormalities in muscle tone and movement patterns:

#### **Spastic Cerebral Palsy**

The most prevalent subtype, accounting for roughly 70–80% of all cases, is characterized by muscle stiffness (hypertonia), exaggerated reflexes (hyperreflexia), and resistance to passive movement. These features arise from damage to the motor cortex or corticospinal tracts, typically involving upper motor neuron injury. Clinical signs include clonus, a positive Babinski reflex, and limb rigidity. Subtypes include:

- Spastic Hemiplegia: One side of the body (arm and leg) is affected.
- Spastic Diplegia: Primarily affects both legs more than the arms.

- Spastic Quadriplegia: All four limbs are significantly impaired.

### **Dyskinetic (Athetoid) Cerebral Palsy**

Comprising about 15% of cases, this type results from damage to the basal ganglia. It presents with involuntary, variable movements such as athetosis, chorea, or dystonia, often accompanied by fluctuating muscle tone and difficulty in maintaining posture.

### **Ataxic Cerebral Palsy**

A rarer form, affecting approximately 5–10% of individuals with CP, is primarily associated with cerebellar damage. It is marked by poor coordination, unstable gait, and tremor during voluntary movement (Straub et al., 2025).

### **Mixed Type Cerebral Palsy**

This classification involves features of more than one motor type most commonly spastic and dyskinetic forms due to injuries affecting multiple brain regions. Children with mixed CP may show signs of both muscle stiffness and involuntary movement, often along with tremors and poor motor coordination.

### **Topographical (Anatomical) Classification**

This system describes the parts of the body that are affected:

- Hemiplegia: Involves one side of the body (arm and leg on the same side).
- Diplegia: Primarily affects both lower limbs; the upper limbs may be mildly involved. It is commonly seen in children born prematurely.
- Quadriplegia (or Tetraplegia): All four limbs are extensively affected.
- Monoplegia: A rare form where only one limb is impaired.
- Triplegia: Involves three limbs, typically both legs and one arm.

This anatomical classification is especially relevant in cases of spastic CP, as it helps to describe the extent and pattern of limb involvement (Bax et al., 2005).

### **Functional Ability (Severity Classification)**

A functional classification system for cerebral palsy (CP) categorizes individuals based on their motor functions and daily living abilities. These systems assist healthcare professionals in assessing the severity of CP and understanding the specific challenges each person faces. A commonly used classification is the Gross Motor Function Classification System (GMFCS) and the Manual Ability Classification System (MACS), which rank individuals on a scale from I to V. Level I indicates minimal impairment, while Level V indicates significant limitations in movement. Such classification systems are essential for developing personalized treatment plans, tracking progress over time, and facilitating communication among caregivers and healthcare professionals.

### **Gross Motor Function Classification System (GMFCS)**

The GMFCS consists of five levels (I–V) that describe mobility, ranging from walking (Level I) to being wheelchair-bound (Level V). It includes age bands for children up to 18 years. This system is highly reliable, with an ICC greater than 0.90, making it a valid tool for classifying gross motor function in children with cerebral palsy (CP) (Palisano et al., 1997). It was developed to assess and describe the severity of movement limitations in children with CP.

## **GMFCS Levels**

### **Level I: Walks without Limitations**

Children at this level can walk both indoors and outdoors and can climb stairs without needing to hold the handrail.

Functional Skills: They can run and jump, though their speed, balance, and coordination may be less than typical.

Mobility Aids: No aids are required.

Participation: They are fully independent in movement across all settings. Children at Level I demonstrate the highest level of functional independence, although fine motor skills or endurance challenges may still be present (Palisano *et al.*, 2007).

### **Level II: Walks With Limitations**

Children can walk in most settings but may experience difficulties on uneven surfaces, inclines, or crowded environments.

Mobility Aids: They may need to hold a handrail when climbing stairs and might use a mobility device (e.g., walker) during early childhood, but typically do not require it in later years.

Functional Limits: Running and jumping abilities are reduced, and fatigue may limit how far they can walk.

### **Level III: Walks Using a Hand-Held Mobility Device**

Children can walk with assistive devices such as walkers, crutches, or canes.

Indoors: They are generally independent when using mobility aids.

Outdoors/Community: It is common for them to use a wheelchair for longer distances.

Functional Limits: They cannot run or jump, and their mobility is slower and more restricted.

#### **Level IV: Self-Mobility with Limitations; May Use Powered Mobility**

Mobility is significantly limited; children at this level may use powered mobility or require physical assistance. They may need to be transported in a manual wheelchair. They can sit with support and have limited self-mobility, such as scooting or crawling.

#### **Level V: Transported in a Manual Wheelchair**

Children at this level have severe limitations in head and trunk control. They are unable to sit, stand, or walk independently. They require full assistance for mobility and posture, including transportation.

### **Manual Ability Classification System (MACS)**

The MACS is a standardized tool used to describe how children with cerebral palsy (CP) use their hands to handle objects during daily life activities, such as eating, dressing, writing, and playing. It is designed for children aged 4 to 18 years. A simplified version called Mini-MACS is available for children aged 1 to 4 years. The Mini-MACS provides early assessment tools to guide early intervention for children under the age of 4 (Himmelman et al., 2014).

The MACS focuses on typical performance rather than best capacity and provides a 5-level ordinal scale, similar to the Gross Motor Function Classification System (GMFCS):

### **Level I: Handles Objects Easily and Successfully**

Children at this level can handle most objects with ease. They can perform tasks that require speed and accuracy (e.g., buttoning and drawing), and any limitations in hand function are minimal and do not restrict them.

### **Level II: Handles Most Objects but with Reduced Quality or Speed**

Children can manage objects but do so with less precision or at a slower pace. They may avoid complex tasks that require the use of both hands.

### **Level III: Handles Objects with Difficulty; Needs Help to Prepare or Modify Activities**

Children can perform tasks with adapted materials or assistance from others. They require help to set up tasks and may struggle with fine manipulation.

### **Level IV: Handles a Limited Selection of Easily Managed Objects in Adapted Situations**

Children can complete very basic tasks with significant adaptations. They generally rely on assistance for daily tasks and may use gross grasping or stabilization strategies.

### **Level V: Does Not Handle Objects and Has Severely Limited Ability to Perform Even Simple Actions**

At this level, children are completely dependent on others for all hand-related activities, unable to grasp or release objects intentionally.

### **2.3.2 Complications of Cerebral Palsy**

1. **Musculoskeletal Complications:** Children diagnosed with cerebral palsy (CP) frequently experience complications such as muscle contractures, joint abnormalities, scoliosis, and hip dislocations. These issues stem from atypical muscle tone and movement patterns (Novak et al., 2017).
2. **Epileptic Seizures:** Seizure disorders are prevalent in children with CP, affecting between 30% and 50% of cases. They are especially common in individuals with quadriplegia or underlying brain malformations (Aldinger et al., 2021).
3. **Cognitive Impairment:** Intellectual disabilities often co-occur with CP, particularly in children with more severe motor dysfunction (Odding et al., 2006).
4. **Speech and Language Disorders:** Many children face communication challenges due to motor speech impairments such as dysarthria or apraxia. As a result, some may rely on augmentative and alternative communication (AAC) tools to express themselves (Pennington et al., 2020).
5. **Feeding and Nutritional Challenges:** Swallowing difficulties caused by oropharyngeal dysfunction can lead to malnutrition, feeding inefficiencies, and a heightened risk of aspiration pneumonia (Benfer et al., 2019).
6. **Sensory Deficits:** Visual and auditory impairments are relatively common, particularly among children with brain injuries such as periventricular leukomalacia (Jacobson & Dutton, 2000).

7. Bladder and Bowel Dysfunction: Neurogenic bladder, constipation, and fecal incontinence are frequently observed, often resulting from impaired muscle coordination (Wright & Wright, 2017).
8. Respiratory Issues: Due to complications like scoliosis, dysphagia, and weakened respiratory muscles, children with CP are more susceptible to recurrent respiratory tract infections (Shevell et al., 2009).
9. Pain: Chronic pain, although often under-recognized, is common and may be caused by spasticity, orthopedic issues, or gastrointestinal discomfort (McKinnon et al., 2018).
10. Psychological and Emotional Concerns: Individuals with CP face an elevated risk of developing mental health conditions such as anxiety, depression, and social withdrawal, especially during adolescence and adulthood (Parkinson et al., 2013).

## **2.4 Factors Influencing Caregiver Mental Health**

Providing care for a child with cerebral palsy (CP) is an enduring responsibility that often imposes considerable emotional, physical, social, and financial strain on caregivers. These stressors have been widely associated with negative mental health outcomes, including heightened anxiety, depression, emotional fatigue, and a reduced quality of life. The psychological burden experienced by caregivers is influenced by several interconnected factors:

## **1. Psychological Distress**

Caregivers frequently endure elevated levels of psychological strain due to the constant and demanding nature of caring for a child with CP, particularly in the absence of adequate support systems. A systematic review by Oliveira et al. (2016) underscores that caregivers of children with CP routinely report a lower quality of life, with psychological and emotional well-being being particularly affected. Notably, increased caregiving demands are strongly linked to poorer mental health outcomes. Caregivers under greater strain often exhibit:

- Higher rates of anxiety and depression
- Greater emotional stress
- Lower life satisfaction

### **Impact of Sleep Disturbance**

Sleep deprivation is a critical contributor to caregiver mental health deterioration. Those who sleep fewer than six hours per night. Experience frequent nighttime interruptions due to the child's needs, suffer from chronic fatigue or exhaustion are more likely to exhibit symptoms of emotional burnout, irritability, and weakened physical health.

### **Limited Access to Respite and Support Services**

The absence of respite care temporary relief from caregiving responsibilities substantially increases the risk of mental health challenges among caregivers. Those without access to such services are more prone to Anxiety, depression, and emotional overwhelming, feelings of social isolation and neglect. Furthermore, a

lack of emotional and practical support from spouses, extended family, friends, or healthcare professionals can lead to:

- Poor coping mechanisms
- Worsening psychological conditions
- Persistent feelings of helplessness or despair

### **Child's Level of Functional Dependence**

The extent of the child's disability significantly influences caregiver stress. Parents of children with multiple impairments or total dependence for activities such as feeding, hygiene, and mobility often face:

- Greater physical and emotional demands
- Increased caregiving hours
- Reduced opportunities for employment or personal time

These challenges amplify caregiver burden, often resulting in adverse mental and physical health outcomes.

## **2. Financial Burden**

Caring for a child with cerebral palsy (CP) often restricts a caregiver's ability to maintain full-time employment, resulting in significant financial hardship. The costs associated with therapies, mobility aids, and transportation to healthcare facilities can be overwhelming. Olusanya (2021) provides a critical examination of the multifaceted challenges encountered by caregivers in economically constrained settings such as Nigeria, where public health systems are chronically underfunded and formalized social support mechanisms are scarce. The study emphasizes the lived realities of caregivers of children with neurodevelopmental conditions—

particularly CP—highlighting the complex interplay between poverty, limited access to healthcare, and deteriorating mental health. Key Observations:

### **Financial Burden as a Major Stressor**

Families from low-income backgrounds bear substantial out-of-pocket costs for services including:

- Medical consultations and hospital care
- Prescription medications
- Transportation to and from treatment centers
- Assistive devices such as orthotics and wheelchairs
- Alternative or traditional therapies

Due to the absence of comprehensive health insurance coverage, families are often forced to divert critical household resources ordinarily allocated for essentials like food, housing, and education towards their child's medical needs.

### **Emotional Toll and Psychological Distress**

Persistent financial insecurity contributes to a growing sense of despair, especially among caregivers who are unemployed or raising children alone. The lack of governmental or community-based support services further intensifies the risk of mental health issues such as depression, anxiety, and caregiver burnout.

### **Insufficient Resources Amplify the Burden**

In many rural and underdeveloped urban regions of Nigeria, access to essential rehabilitation and support services is either extremely limited or completely absent. Caregivers often have to travel long distances for specialized care, resulting in increased transportation expenses and loss of productive time. As a result, many are

compelled to forgo employment to provide constant care, worsening their financial instability. In resource-limited environments like Nigeria, where poverty is widespread and healthcare systems are under-resourced, caregivers of children with CP endure a dual burden:

- The immediate, demanding responsibilities of caregiving
- The long-term systemic challenges of financial and emotional stress

These conditions significantly elevate their vulnerability to mental health problems, calling for urgent policy and intervention strategies to support caregiver well-being.

### **3. Social Isolation and Stigma**

Caregivers of children with cerebral palsy (CP) frequently experience diminished social engagement, disrupted family relationships, and stigmatization particularly in cultural contexts where disability is poorly understood or linked to spiritual beliefs. Numerous qualitative studies from Nigeria and neighboring West African countries consistently highlight that these caregivers endure emotional trauma, societal rejection, and isolation. Such findings provide compelling evidence of the multifaceted hardships caregivers face.

#### **Stigma, Misconceptions, and Social Discrimination**

Negative societal perceptions often subject caregivers to harmful stereotypes. In many communities, CP is incorrectly perceived as a result of curses, witchcraft, or supernatural punishment. This leads to social avoidance, gossip, and exclusion from community life (Margaret et al., 2013). For instance, a qualitative study in Ghana—sharing strong cultural similarities with Nigeria—illustrated caregivers' frustrations

and emotional burden due to the discrimination they experience in both public settings and healthcare environments (Habibat et al., 2022).

### **Social Isolation and Withdrawal**

Due to persistent societal judgment, many caregivers opt to retreat from social spaces. To avoid ridicule or pity, they may stop attending community events or visiting schools, further limiting their children's inclusion. Research from Northern Ghana, which parallels conditions in many Nigerian regions, reveals how misinformation such as the fear that CP is contagious contributes to caregivers and families isolating themselves. This withdrawal leads to deep emotional loneliness and a lack of support networks (Mavis et al., 2023).

### **Emotional Disempowerment and Systemic Neglect**

Caregivers frequently report feelings of helplessness and disillusionment, especially when institutional systems such as education, healthcare, and social services fail to meet their needs. This sense of abandonment is intensified by the lack of support from extended family and community structures. The persistent absence of formal assistance reinforces emotional strain and a profound sense of isolation throughout their caregiving journey.

### **Cultural and Psychosocial Influences**

In both Nigeria and Ghana, disability is often mischaracterized as a divine punishment or a cultural taboo. These beliefs contribute not only to public exclusion but also to caregivers internalizing shame, which further discourages them from seeking help or engaging with their communities. Additional stressors such as poverty, rigid religious interpretations, and the absence of health insurance

exacerbate their emotional burden and sense of despair (Ngozi et al., 2022). Findings from Nigerian and West African literature clearly illustrate that caregivers of children with CP are profoundly affected by cultural stigma, social withdrawal, and emotional exhaustion. These experiences seriously threaten their mental well-being and call for immediate public awareness, policy intervention, and culturally sensitive support systems.

#### **4. Socio-Demographic Variables**

Socio-demographic factors such as low income, limited education, single-parenthood, and being female are closely linked with elevated levels of caregiver burden and psychological distress.

##### **Economic Hardship and Poverty**

Caregivers from economically disadvantaged backgrounds, particularly in low- and middle-income countries (LMICs), face intense financial pressure. This is largely due to:

- The high cost of caregiving, often paid out-of-pocket
- Reduced or lost income resulting from caregiving responsibilities

Such financial constraints increase emotional strain as caregivers are often forced to choose between meeting caregiving needs and providing for basic household necessities. The inability to afford essential items such as medical care, assistive devices, adequate nutrition, and stable housing further amplifies stress and weakens caregivers' psychological resilience (Vadivelan et al., 2020).

## **Educational Disadvantages**

A lower level of education is frequently associated with poor understanding of health-related information, limited knowledge of effective caregiving practices, Inadequate ability to seek help or navigate complex healthcare and social support systems. These challenges can lead to a heightened sense of helplessness, reduced coping skills, and increased emotional and psychological strain among caregivers (Nurain et al., 2022).

## **Gender and Single Parenthood**

Women, particularly in LMICs tend to assume the majority of caregiving responsibilities, often while managing household duties. This dual role contributes to greater physical fatigue and emotional exhaustion. The strain is more pronounced in single-parent households, where women must manage caregiving alone. Studies conducted in Nigeria indicate that female caregivers, especially mothers or spouses, experience significantly higher levels of psychological distress, including symptoms of anxiety and depression.

Olusanya (2021) found that Nigerian mothers with low educational attainment were more likely to encounter emotional hardship. Their psychological burden was compounded by misconceptions surrounding conditions like cerebral palsy and limited access to support. According to the study, these mothers also reported:

- Heightened levels of stress, social exclusion, and emotional anxiety
- Strong feelings of guilt and stigma
- Reduced access to healthcare information and community-based support compared to better-educated counterparts

## **5. Child's Functional Severity**

The extent of a child's disability such as an inability to walk, eat without assistance, or communicate effectively has a strong link to increased caregiver stress. Research shows that caregivers looking after children with severe motor limitations, particularly those classified at Gross Motor Function Classification System (GMFCS) levels IV and V, experience significantly higher levels of fatigue and symptoms of depression (Parkes et al., 2010). These findings are supported by Maysa et al. (2014), who found that the psychological stress endured by caregivers rises notably when the child has more pronounced motor difficulties. Specifically, gross motor abilities—especially the capacity to walk—have been highlighted as critical indicators of parental stress, with lower motor function contributing to higher stress levels.

Additionally, caring for children who are non-ambulatory often involves demanding physical tasks such as lifting, feeding, and transferring. These responsibilities can increase caregivers' physical fatigue and emotional strain, often resulting in heightened anxiety regarding their long-term caregiving capacity (Eun-Young et al., 2021). Interestingly, although the child's motor impairment (e.g., GMFCS level) is a key factor, it is not solely responsible for caregiver fatigue. Rather, the cumulative demands of caregiving appear to be more influential. Fatigue among caregivers has been strongly associated with depressive symptoms and reduced quality of life. For instance, a study by Yesim Garip et al. (2017) revealed that mothers of children with cerebral palsy displayed significantly higher levels of both fatigue and depression compared to mothers of typically developing children.

## **Influence of Comorbid Conditions**

The presence of additional medical issues such as epilepsy presents further challenges for caregivers. A population-level study in Canada found that children with both CP and epilepsy tend to have more severe motor impairments, commonly scoring higher on the GMFCS, and they often require more frequent healthcare services, including emergency interventions (Parkinson et al., 2020). Further evidence from caregiving studies indicates that caregivers of children with complex medical needs—particularly when seizures are difficult to control—report greater levels of psychological distress. Extended caregiving durations and the intense vigilance required for managing nighttime seizures contribute significantly to caregiver fatigue, depression, and anxiety (Lv et al., 2009).

## **6. The Role of Coping Mechanisms and Social Support**

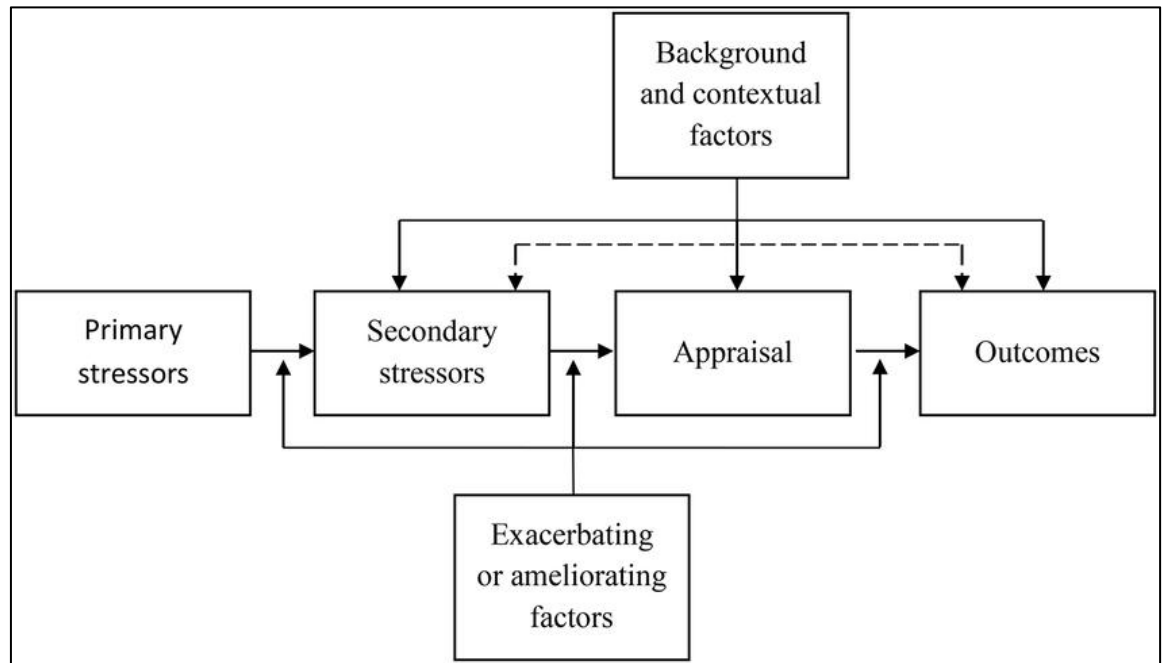
Effective coping strategies, such as problem-focused coping, along with access to social support systems, can significantly alleviate the negative effects of caregiver stress. Whittingham et al. (2013) emphasized that caregivers with strong family and community support networks tend to have better mental health outcomes. Programs that provide respite care, mental health counseling, and peer support groups have been shown to enhance psychological resilience among caregivers.

## **2.5 Theoretical Framework**

### **The Model of Carer Stress and Burden**

This comprehensive model outlines six fundamental elements that shape both the development and intensity of caregiver stress and associated mental health challenges. Through the analysis of these components, the model provides insight

into the intricate pathways through which caregiving contributes to emotional distress and psychological decline, while also revealing key areas where supportive interventions and resilience strategies may be effectively implemented.



**Figure 1:** *The Model of Carer Stress and Burden (Sörensen et al., 2006)*

- Primary stressors (e.g., caregiving tasks).
- Secondary stressors (e.g., role strain).
- Appraisal (e.g., coping strategies, social support).
- Outcomes (e.g., depression, anxiety).
- Exacerbating Factors (Worsening Mental Health)
- Mitigating Factors (Protecting Mental Health)

The initial component outlined in the model involves primary stressors, which stem directly from the day-to-day responsibilities and duties of caregiving. These include managing the complexity of the care recipient’s condition, supporting them

through physical or cognitive limitations, addressing behavioral challenges, and dedicating substantial time to caregiving tasks. These primary demands frequently give rise to secondary stressors, which represent the second layer of the model. These secondary stressors tend to affect the caregiver's broader personal life, influencing emotional well-being, interpersonal relationships, and professional responsibilities.

Secondary stressors refer to the indirect impacts or opportunity costs linked to caregiving. These may manifest as reduced time for leisure, financial strain, lower participation in health-enhancing behaviors like exercise and nutritious eating, tense family dynamics, and diminished availability for work or career progression. They often serve as intermediaries between primary stressors and how caregivers interpret their circumstances. For example, excessive time spent on caregiving may reduce opportunities for rest or recreation, which may then elevate emotional strain and harm mental health.

The model's third element is appraisal, which refers to how caregivers individually interpret or evaluate their caregiving situation. This subjective judgment is shaped by contextual and situational factors and hinges on how caregivers perceive the balance between demands and available resources. Consequently, even caregivers in similar circumstances may perceive stress differently, depending on their coping skills and ability to manage challenges. These appraisals directly inform the fourth component of the model: the outcome.

Outcomes reflect how caregivers judge the alignment—or lack thereof—between caregiving demands and their coping resources. When caregivers perceive

that their resources are inadequate to meet the demands, they are more prone to mental health difficulties, including emotional exhaustion, depression, anxiety, and psychological distress. These effects may also extend to physical symptoms like fatigue and behavioral responses such as irritability or substance misuse. Conversely, when caregivers believe they have sufficient resources to manage their responsibilities, the likelihood of experiencing distress and mental health issues is notably reduced. It is essential to recognize that these outcomes are not static; they can be shaped by a fifth group of factors known as moderating influences, which may either worsen or ease the caregiver's psychological burden.

These exacerbating and mitigating influences serve as critical modifiers in the caregiving process, affecting how stressors and appraisals translate into mental health outcomes. They alter the relationships between stress levels, perceptions, and emotional consequences. Protective or mitigating factors include access to support systems, adaptive coping mechanisms, resilient personality traits, and strong social networks. In contrast, exacerbating factors which elevate vulnerability to emotional strain may involve ineffective coping styles, dysfunctional family dynamics, social isolation, persistent pessimism, or personality traits like heightened neuroticism.

Finally, the sixth component involves high-risk subgroups, determined by background characteristics such as gender, socioeconomic position, cultural values, and ethnicity. These elements significantly influence how caregivers experience burden and their susceptibility to psychological distress. For instance, women are generally more likely to report depressive symptoms, partly because they often assume more caregiving responsibilities and are more open in expressing emotional

challenges (Tainara et al., 2020). Supporting this, a study by Vilaseca et al. (2014) found that mothers of children with cerebral palsy often exhibit poorer mental and physical health than fathers, emphasizing gender as a crucial variable in understanding caregiver vulnerability.

## 2.6 Empirical Review

<b>AUTHOR(s) / YEAR / COUNTRY</b>	<b>AIM OF STUDY</b>	<b>TYPE OF RESEARCH DESIGN</b>	<b>METHOD/ OUTCOME</b>	<b>SAMPLE SIZE AND TECHNIQUES</b>	<b>FINDINGS</b>	<b>STRENGTH/ LIMITATIONS</b>
Chukwu et al.2020/Nigeria	To examine psychological distress and caregiver burden among caregivers of CP	Cross-sectional study	Survey and structured interviews	S-114 Systematic random sampling	High psychological strain and emotional fatigue; lack of support worsened distress	Strength: Local relevance; Limitation: Lack of national scope
Fatudimu et al.2013/ Nigeria	To compare quality of life between caregivers of children with CP and others	Comparative cross-sectional	Questionnaire-based QOL assessment	S-100 Purposive sampling	CP caregivers had significantly poorer quality of life because Cultural beliefs and stigma related to caregiving for CP	Strength: Provided a direct comparison between caregivers of CP children and a control group. Highlighted the mental, emotional, and quality-of-life disparities faced by CP caregivers in a Nigerian context Limitations: Small sample size, which

						may limit the generalize ability of findings. Purposive sampling introduces selection bias
Nurain Akinjide.2022/Nigeria	To explore influence of socio-demographic variables on caregiver burden	Quantitative descriptive	Survey questionnaires	S-404 Systematic random sampling	Low education linked to limited coping and increased psychological distress	Strength: Large, statistically valid sample size. Demonstrated clear correlation between caregiver burden and low socio-demographic status. Limitation: Focused on caregivers of elderly diabetics, not directly on CP
Oguntade et al. 2022/Ghana	To explore social barriers faced by caregivers of children with cerebral palsy (CP).	Qualitative exploratory study	semi-structured interviews	S- 50 Purposive sampling	Stigma, discrimination, and barriers in caregiving, there by worsen caregiver experiences	Strength: Provides direct insights into systemic and cultural challenges in CP healthcare delivery. Findings are highly transferable to similar settings in Nigeria due to

						shared structural barriers (e.g., stigma, limited access to rehabilitation).
Oliveira et al .2016/ Brazil	To assess the quality of life in caregivers of children with CP	Systematic review	Literature synthesis	Database-based article selection,	Decline in caregivers' emotional and psychological well-being was consistent	Strength: Comprehensive synthesis of international evidence on caregiver mental health. Limitation: No primary data collection, relies on secondary sources.
Olusanya. 2021/ Nigeria	To discuss caregiving and emotional strain in resource-limited contexts	Descriptive commentary	Analytical narrative	Narrative synthesis and literature-based observations.	Low income and education heightened caregiver emotional burden	Strength: Policy relevance; Limitation: Lacks empirical data
Ribeiro et al. 2014/Brazil	To evaluate parental stress in mothers of children with CP	Cross-sectional study	Questionnaires	S-223 Convenience sampling	Stress levels aligned with the severity of motor limitations	Strength: Maternal focus; Limitation: Lack of sample diversity

Vadivelan et al. 2020/India	To explore how gender, poverty, and stigma affect caregiver burden	Intersectional qualitative	Interviews and thematic analysis	S-30 Purposive sampling	Poverty and stigma increased emotional and financial burden	Strength: Applied an intersectional framework, highlighting how multiple vulnerabilities (gender, poverty, stigma) overlap Limitation: Small sample size, which may limit transferability
Whittingham et al. 2013/ Australia	How parenting and family dynamics are impacted by cerebral palsy (CP), with a particular focus on the effectiveness of coping strategies and social support on caregiver well-being.	Systematic review	Systematic review	Article selection	Caregivers of children with CP consistently experience elevated levels of psychological distress, including depression, anxiety, and chronic stress—especially mothers.	Strength: Broad evidence synthesis offering global insights into caregiving and coping Limitation: Variability in study designs and populations limited direct meta-analysis

## **CHAPTER THREE**

### **METHOD AND MATERIALS**

#### **3.1 Participants**

The study population comprises caregivers of children with cerebral palsy at the University of Benin Teaching Hospital (UBTH), Benin City, Edo State.

##### **3.1.1 Inclusion Criteria**

Caregivers aged 18 years and above, who have been providing care for at least 6 months.

##### **3.1.2 Exclusion Criteria**

Caregivers with known severe cognitive impairments or psychiatric disorders that impair comprehension.

#### **3.2 Materials**

##### **3.2.2 Apparatus/Instruments**

- The Zarit Burden Interview (ZBI): Assessment among caregivers in multiple cultural settings and assesses physical, emotional, and social aspects of caregiving burden. Reliability:  $\alpha = 0.88$ , indicating high reliability across various caregiving contexts. Construct Validity: There is a strong correlation between depression, perceived burden, and the quality of life of caregivers. Criterion Validity: The measure effectively predicts mental health outcomes, such as depression scores and health decline. Cross-population Validity: It has been validated in multiple populations, including caregivers of children with cerebral palsy (CP) in low- and middle-income countries (LMICs).

- Depression, Anxiety, and Stress Scale (DASS-42): A 42;-item self-report questionnaire called the DASS-42 is used to gauge a person's emotional distress. The instrument has three subscales, each with seven items, measuring depression, anxiety, and stress. A 4-point Likert scale is used to rate the responses, with 0 denoting "did not apply to me at all" and 3 denoting "applied to me most of the time. "Reliability Overall scale:  $\alpha = 0.93-0.96$  Excellent reliability across domains, making it suitable for clinical and research settings globally. Construct Validity: Strong correlation with other measures like BDI. Discriminant Validity: Effectively differentiates between depression, anxiety, and stress. Cross-cultural Validity: Validated in multiple languages and countries.
- The Social Support Questionnaire for Caregivers of Children with Cerebral Palsy (SSQ-CP): The SSQ-CP is a valuable tool designed to assess the level of support that caregivers receive while caring for children with cerebral palsy. It has shown high reliability, with an internal consistency score of  $\alpha = 0.84$ , content validity: Based on validated tools (MSPSS & DSSI) and construct validity is positively correlate with well-being and negatively correlate with stress, anxiety, or depression. This questionnaire is based on an adapted Likert-scale instrument derived primarily from two established tools: the Multidimensional Scale of Perceived Social Support (MSPSS) and the Duke Social Support Index (DSSI). The MSPSS evaluates the emotional support that caregivers feel from their family, friends, and loved ones. It measures both perceived emotional and instrumental support from these social networks.

While the original MSPSS uses a 7-point Likert scale, this adaptation simplifies the format to a 5-point scale for greater clarity and ease of use for caregivers. The DSSI assesses social interactions along with both perceived and actual support. It is commonly used in health and community settings to evaluate how well individuals believe they are supported.

### **3.3 Methods**

#### **3.3.1 Research Design**

The study used a descriptive cross-sectional design to assess the mental health of caregivers and the associated factors at a single point in time.

#### **3.3.2 Sample Size/ Sampling Technique Calculation**

A total number of 30 participants registered in UBTH from April - June 2025 was used in this study base on the number record files gotten from Physiotherapy clinic. A purposive Non-probability sampling method was used to select caregivers attending the Physiotherapy pediatric clinics until the sample size is reached. The purposive sampling techniques was used to enable the researcher find a specifically targeted population that possesses the characteristics or experiences needed for the research. Participants selection was from Physiotherapy pediatric clinic. Eligible participants were selected from the record office and contact was collected.

### **3.3.4 Procedure for Data Collection**

A Letter of Introduction was submitted to the Physiotherapy pediatric clinic and acceptance before data collection. The total number of participants was given a consent forms.

A Demographic Questionnaire was used to collect data. It aids the collection of important information about the caregivers, such as gender, age, educational background, and other relevant attributes. The questionnaire also provided essential details about the children, including their age, gender, severity of cerebral palsy, and history of therapy services.

Several tools were available for assessing the severity of disability in children with cerebral palsy. Among these are the Manual Ability Classification System (MACS) developed by (Eliasson et al 2006), which evaluates hand function and manual dexterity, categorizing individuals into five levels based on their ability to handle objects and perform tasks using their hands.

Similarly, the Gross Motor Function Classification System (GMFCS) by (Palisano *et al.*,2006) assesses gross motor abilities and classifies children into five levels according to their mobility limitations. However, for the purpose of this study, a simplified two-item questionnaire developed by (Mung'ala-Odera et al., 2004) will be used. This tool integrates both gross motor function and manual dexterity. It has been validated and proven reliable for identifying children with moderate to severe motor impairments (Mung'ala-Odera et al., 2004;Geere *et al.*, 2013)..

Qualitative Interview Guide: In order to investigate the various factors influencing mental distress that caregivers encounter and when providing care for children with cerebral palsy, the researcher created a semi-structured interview guide. This guide was developed using insights from previously reviewed studies, which aided in the formulation of specific questions to fill in identified research gaps. Additionally, the researcher carefully adhered to the recommendations made by (Boyce and Neale 2016) for creating successful interview guides. The principal objective of this instrument was to collect comprehensive data regarding the personal experiences of caregivers, their methods for handling caregiving duties, and the kinds of assistance that are accessible to them during the caregiving process. A structured questionnaire will be used, containing:

Section A: Socio-demographic characteristics of caregivers

Section B: Zarit Burden Interview (ZBI)

Section C: DASS-42 to assess mental health

Section D: Social Support Scale (Likert-scale instrument)

### **3.3.5 Ethical Consideration**

Ethical approval was obtained from Health Research Ethics Committee of the University of Teaching Hospital. Request for permission was submitted to the Head of Physiotherapy Department, Head of Pediatrics Physiotherapy Unit, UBTH (ADM/E 22/A/VOL.VII/2025/156) Appendix C. Consent forms was given to participants who were willing agree for the study. All records obtain during this study were be only assessed by the researcher and supervisor.

### **3.3.6 Data Analysis**

The data collected for this study were analyzed using both descriptive and inferential statistical methods. Descriptive statistics, including frequency counts and simple percentages, were used to summarize respondents' socio-demographic characteristics and general response patterns. To examine the relationship between caregiving burden and caregivers' mental health status, Pearson's Correlation Coefficient was applied at the 0.05 level of significance. Multiple regression analysis was further employed to determine the combined and individual effects of caregiving burden, coping mechanisms, and the severity of the child's condition on mental health outcomes. In addition, independent sample t-tests were used to compare differences in mental health status across various socio-demographic groups and levels of caregiving burden. These analytical procedures provided a comprehensive basis for interpreting the study findings.

## **CHAPTER FOUR**

### **RESULTS**

#### **4.1 Results**

This chapter presents a comprehensive analysis of data collected from caregivers of children with cerebral palsy at the University of Benin Teaching Hospital (UBTH). Analyses include item-level summaries for every questionnaire item, reliability analyses, correlations, and regression models testing the study hypotheses.

### **4.1.1 Demographic Characteristics of Respondents**

Table 4.1 presents a thorough breakdown of the socio-demographic profile of the caregivers sampled for this study (N = 30). The caregivers ranged widely in age, demonstrating that responsibility for children with cerebral palsy at UBTH is shared across adult age groups rather than concentrated in a narrow band. The average caregiver age was 42.0 years (SD = 12.6), suggesting that the population providing care is mature and that a sizable part of its members are middle-aged.

Both men and women provide care, however women make up the majority, according to gender composition. This is consistent with research on child care, which frequently shows that women are more likely to be involved in child care roles.

The majority of caregivers are married, according to the marital status distribution, but there are also widowed and single caregivers, which may have an impact on the provision of social support.

Formal education ranges from zero to postsecondary education; differences in educational achievement can impact health literacy and care resource accessibility.

A range of caregivers' employment statuses including self-employed, employed, and unemployed have an impact on their time availability and ability to pay for caregiving.

The sample's monthly income categories show a skew toward lower income groups, indicating that caregivers may frequently face financial pressure.

Relationship to the child is dominated by mothers, followed by fathers and other relatives; primary caregiving responsibility therefore still rests mainly with parents.

Duration of caregiving shows that many caregivers have provided care for several years, which may lead to cumulative burden and chronic stress effects.

Mobility and feeding ability of the children indicate a substantive proportion of children require assistance for walking and feeding; this elevates daily caregiving demands and may contribute to higher burden.

Receipt of caregiving support is variable, some caregivers report receiving assistance while others do not; this heterogeneity is important because support availability may buffer burden and mental health outcomes.

**Table 4.1: Demographic Characteristics of Respondents (N=30)**

Variable	Category	Frequency(n)	Percentage (%)
Gender	Female	19	63.3
	Male	11	36.7
Marital Status	Married	18	60.0
	Widowed	6	20.0
	Single	4	13.3
	Divorced	2	6.7
Education	Primary	14	46.7
	Secondary	8	26.7
	No formal education	4	13.3
	Tertiary	4	13.3
Employment Status	Employed	17	56.7
	Self-employed	9	30.0
	Unemployed	4	13.3
Monthly Income	<del>₦</del> 50,000– <del>₦</del> 100,000	11	36.7
	< <del>₦</del> 50,000	11	36.7
	<del>₦</del> 100,001– <del>₦</del> 200,000	7	23.3
	> <del>₦</del> 200,000	1	3.3
Relationship to Child	Mother	15	50.0
	Father	9	30.0
	Other	4	13.3
	Grandparent	1	3.3
	Sibling	1	3.3
Receives Support	No	20	66.7
	Yes	10	33.3
	Walks independently	12	40.0
	Cannot walk at all	10	33.3
	Walks with support	8	26.7
Feeding	Requires some help	13	43.3

Completely dependent	10	33.3
Feeds independently	7	23.3

---

### 4.1.2 Caregiving Burden

Table 4.2 displays detailed item-level results for the 22-item Zarit Burden Interview (ZBI). Analyses include response distributions for each item (0 = Never to 4 = Nearly Always), item means, standard deviations, and item-total correlations. The ZBI total score had a mean of 73.5 (SD = 9.2); Cronbach's alpha = 0.780, indicating acceptable internal consistency.

Item-level inspection shows that certain worries particularly concerns about the financial cost of care, anxiety about the child's future, and the sense of being overwhelmed were commonly reported at moderate to high frequencies. These specific items had higher means compared to items that reflect social embarrassment or the caregiver's sense of personal failure, suggesting that resource-related and anticipatory concerns outweigh stigma in this sample.

Coherence in the burden concept was indicated by the moderate to strong item-total correlations; items with lesser correlations can represent particular features of the caregiving setting and call for additional qualitative investigation.

Responses are distributed across the response options, but for the highest-loading burden items, there is a concentration in the 'Sometimes' to 'Quite Frequently' categories, suggesting chronic strain as opposed to isolated incidents.

Practically speaking, the prevalence of worries about money and the future indicates that in addition to psychological interventions, economic support systems and planning tools should be included.

The importance of tangible support services is further underlined by the fact that unsupported caregivers had higher mean ZBI totals when comparing burden scores across subgroups (such as those receiving vs. not receiving help).

The item-level data thus not only documents the prevalence of burden but also highlights actionable domains—financial counseling, respite services, and future planning assistance for caregivers.

In policy terms, these findings support integrating caregiver support services into pediatric rehabilitation programs at UBTH, with emphasis on resource mobilization and caregiver education.

Overall, ZBI item-level findings emphasize the multi-dimensional nature of caregiver burden, where economic, emotional, and anticipatory facets are most salient.

**Table 4.2: ZBI Item-Level Statistics**

<b>Item</b>	<b>Mean</b>	<b>SD</b>	<b>Top response (n,%)</b>	<b>Item- Total r</b>
Do you feel that the child asks for more help than they need?	3.533	1.008	23 76.7	0.267
Do you feel that because of the time you spend with the child, you don't have enough time for yourself?	3.367	0.999	19 63.3	0.53
Do you feel stressed between caring for the child and trying to meet other responsibilities (e.g., work, family)?	3.033	1.217	16 53.3	0.648
Do you feel uncomfortable over the child's behavior?	3.2	1.064	16 53.3	0.22
Do you find yourself feeling frustrated or overwhelmed when you're with the child?	3.567	0.626	19 63.3	0.042
Do you find that the child's behavior is impacting your connections with family members or friends in a way that feels challenging or difficult?	3.167	1.085	17 56.7	0.56
Are you feeling anxious about what the future may hold for the child?	3.467	1.008	22 73.3	0.659
Do you feel the child is dependent on you?	3.467	0.937	20 66.7	0.359

Do you sometimes feel a bit overwhelmed when spending time with the child?	2.967	0.928	11	0.083	36.7
Have you noticed any impacts on your health due to your caregiving responsibilities?	3.267	1.015	18	0.52	60.0
Are you hesitant to invite friends over because of the child's needs or behavior?	3.367	0.928	19	0.259	63.3
Do you sense that the child expects you to be their primary source of support, almost as if you're their only lifeline?	3.2	1.031	16	0.556	53.3
Do you worry about whether you have enough financial resources to meet the child's needs?	3.567	0.817	22	0.438	73.3
Are you concerned about your ability to continue providing care for the child in the future?	3.267	1.015	17	0.476	56.7
Do you feel like your life has become unmanageable since the child's condition developed?	3.2	1.157	18	0.534	60.0
Have you ever wished you could hand over the caregiving responsibilities to someone else, even for a little while?	3.633	0.615	21	0.362	70.0
Are you questioning whether you should be doing more to help the child?	3.467	0.937	21	0.315	70.0
Do you sometimes feel like you could improve the way you care for the child?	3.167	1.341	19	0.647	63.3
Overall, how heavy does the responsibility of caring for the child feel for you?	3.433	0.817	19	0.382	63.3

Do you feel like your privacy has been compromised because of the child's needs?	3.567	0.858	23	0.653
			76.7	
Has your social life taken a hit due to the demands of caring for the child?	3.2	1.126	17	0.408
			56.7	

---

### **4.1.3 Mental Health**

Table 4.3 provides an item-by-item breakdown of Depression, Anxiety and Stress items. These item-level details reveal specific symptom patterns and inform which psychological domains are most affected among caregivers.

Depressive symptoms that scored higher included reduced positive feelings, low initiative, and feelings that life was meaningless for some caregivers—these symptoms point to a substantive affective burden.

Anxiety items highlighted physiological arousal (e.g., beating heart, breathlessness) and worry about panic; such symptoms may stem from chronic stress and acute caregiving demands.

In line with a population experiencing ongoing stress, stress elements highlighted difficulties unwinding, impatience, and an accumulation of nervous energy.

Although the DASS subscales' internal consistency (alphas between 0.60 and 0.71), which is sufficient for exploratory analysis in small samples, raises the possibility that some of the items may be loosely categorized.

Clinically significant is the co-occurrence of stress, anxiety, and depression symptoms; caregivers with high scores may benefit from integrated therapies that simultaneously address stress, anxiety, and mood.

Prioritizing screening items can be aided by item-level frequencies; the items with the greatest endorsement rate suggest early warning indicators to keep an eye on during regular clinic visits.

Lastly, DASS patterns are consistent with ZBI findings: cognitive symptoms and emotional weariness are prevalent and strongly associated with perceived burden.

**Table 4.3.1: DASS — Depression Item-Level Statistics**

Item	Mean	SD	Top response (n,%)
I couldn't seem to experience any positive feeling at all	2.2	0.847	13 43.3
I found it difficult to work up the initiative to do things	2.233	0.935	16 53.3
I felt that I had nothing to look forward to	1.967	1.098	14 46.7
I was unable to become enthusiastic about anything	1.933	0.944	10 33.3
I felt down-hearted and blue	2.067	0.98	14 46.7
I felt I wasn't worth much as a person	2.133	0.937	14 46.7
I felt that life was meaningless	1.933	1.048	13 43.3
Total	14.467	3.36	5 16.7

**Table 4.3.2: DASS — Anxiety Item-Level Statistics**

<b>Item</b>	<b>Mean</b>	<b>SD</b>	<b>Top response (n,%)</b>
I was aware of dryness of my mouth	2.333	0.922	18 60.0
I experienced breathing difficulty (e.g., rapid breathing, breathlessness in absence of physical exertion)	2.333	0.844	15 50.0
I experienced trembling (e.g., in hands)	2.0	1.05	13 43.3
I was worried about situations in which I might panic and make a fool of myself	2.0	0.871	11 36.7
I felt I was close to panic	2.367	0.765	15 50.0
I was aware of the beating of my heart in the absence of physical exertion	2.2	0.847	13 43.3
I felt scared without any good reason	2.233	0.971	16 53.3
Anxiety_Total	15.467	3.34	17 23.3

**Table 4.3.3: DASS — Stress Item-Level Statistics**

<b>Item</b>	<b>Mean</b>	<b>SD</b>	<b>Top response (n,%)</b>
I found it hard to wind down	2.0	1.017	13 43.3
I tended to over-react to situations	2.233	0.898	16 53.3
I felt that I was using a lot of nervous energy	2.133	0.937	13 43.3
I found myself getting agitated	1.733	0.98	13 43.3
I was intolerant of anything that kept me from getting on with what I was doing	1.667	1.028	13 43.3
I felt that I was rather touchy	2.133	0.681	16 53.3
Stress_Total	11.9	2.398	6 20.0

#### **4.1.4 Social Support — SSQ Item-Level Analysis**

Table 4.4 lists item-level responses for the 10-item Social Support Questionnaire (SSQ). The SSQ captures multiple facets of perceived support; item-level details reveal domains of strength and weakness.

The SSQ total score indicated moderate perceived support on average, but internal consistency was low ( $\alpha = 0.426$ ), suggesting heterogeneity across support domains.

Family emotional support and having someone to talk to were relative strengths, but items related to practical help and awareness of caregiver networks were weaker, indicating areas for service development.

Item-total correlations show that several interpersonal support items align strongly with the overall support construct, while institutional support items (e.g., 'health professionals provide helpful guidance') have lower correlations, pointing to differentiated support sources.

Because SSQ correlated negatively with depression and burden, enhancing social support—especially practical assistance and formal networks—may reduce distress among caregivers.

Programmatic responses could include caregiver peer-support groups, liaison services to connect families to community resources, and training for health professionals to offer more structured caregiver support.

**Table 4.4: SSQ Item-Level Statistics**

<b>Item</b>	<b>Mean</b>	<b>SD</b>	<b>Most common response (n,%)</b>	<b>Item-Total r</b>
I have family members I can rely on for emotional support.	2.567	1.251	8 26.7	0.474
I feel understood and supported by close friends	2.133	1.306	14 46.7	0.572
I receive practical help (e.g., with transport, meals, chores) when needed.	2.733	1.285	8 26.7	0.535
I am part of a religious or community group that supports me.	2.4	1.453	13 43.3	0.314
Health professionals (doctors, therapists) provide helpful guidance and support.	2.367	1.326	12 40.0	0.6
I have someone to talk to when I feel stressed or overwhelmed.	2.3	1.119	10 33.3	0.373
I feel isolated and alone in my caregiving role.	2.433	1.223	19 30.0	0.377

People around me appreciate and recognize my efforts as a caregiver.	2.4	1.163	10	0.028
			33.3	
I know where to find support groups or caregiver networks.	2.567	1.251	10	0.173
			33.3	
I feel comfortable asking for help when I need it	2.533	1.106	9	0.575
			30.0	

---

### **4.1.5 Relationships among Burden, Mental Health, and Social Support**

Table 4.5 provides Pearson correlation coefficients among the key totals: ZBI\_Total, Depression\_Total, Anxiety\_Total, Stress\_Total, and SSQ\_Total.

The matrix shows moderate to strong positive correlations among burden and the mental health totals, and negative correlations between SSQ\_Total and mental health symptoms, consistent with theoretical expectations.

**Table 4.5: Correlation matrix (Pearson r)**

	ZBI_Total	Depression_Total	Anxiety_Total	Stress_Total	SSQ_Total
ZBI_Total	1.0	0.558	0.549	0.688	-0.286
Depression_ Total	0.558	1.0	0.763	0.34	-0.33
Anxiety_ Total	0.549	0.763	1.0	0.368	-0.404
Stress_Total	0.688	0.34	0.368	1.0	-0.407
SSQ_Total	-0.286	-0.33	-0.404	-0.407	1.0

#### 4.1.6 Multiple Regression

A multiple linear regression model was estimated to examine how caregiving factors predict depression scores. Predictors included ZBI\_Total, SSQ\_Total, Duration\_of\_Caregiving, Income\_ord, and Support\_bin where available.

Model summary: R-squared = 0.385, Adjusted R-squared = 0.257, F = 3.004 (p = 0.030), Durbin-Watson = 1.491.

Key coefficients:

- const: B = 9.955, p = 0.208
- ZBI\_Total: B = 0.098, p = 0.299
- SSQ\_Total: B = -0.118, p = 0.313
- Duration\_of\_Caregiving: B = 0.165, p = 0.281
- Income\_ord: B = -0.277, p = 0.679
- Support\_bin: B = -1.925, p = 0.261

**Table 4.6: Regression Coefficients Predicting Depression\_Total**

---

<b>Variable</b>	<b>B (Unstandardized)</b>	<b>p-value</b>
Const	9.955	0.208
ZBI_Total	0.098	0.299
SSQ_Total	-0.118	0.313
Duration_of_Caregiving	0.165	0.281
Income_ord	-0.277	0.679
Support_bin	-1.925	0.261

---

## **4.2 Hypotheses Testing**

### **4.2.1 Main Hypothesis**

Multiple linear regression is used in this test, and the result is Mental Health\_Total, which is the sum of the totals for stress, anxiety, and depression.

The following factors are predictive: length of caregiving, household income (ordinal), perceived social support (SSQ\_Total), caregiving load (ZBI\_Total), and proxies for child severity (feeding and movement).

The omnibus F-test determines whether these factors collectively account for a sizable amount of the variation in mental health scores.

The alternative that caregiving aspects matter collectively is supported by a significant omnibus test ( $p < 0.05$ ), which shows that the null hypothesis (no association) is unlikely.

Regression coefficients and R-squared (variance explained), which indicate the strength and direction of each predictor's relationship to mental health after controlling for other variables, are the main focus of practical interpretation.

A substantial omnibus test would support providing priority to interventions that address several caregiving aspects at once, despite limitations such as limited power and possible multicollinearity among predictors.

The results of the omnibus regression test are shown below; if significant, the results at the coefficient level and the resulting policy implications are described next.

**Table 4.7: Omnibus Test — Multiple Regression Predicting Mental Health\_Total**

<b>Test</b>	<b>Observed Value</b>	<b>DF (model,resid)</b>	<b>Critical Value (<math>\alpha=0.05</math>)</b>	<b>p-value</b>	<b>Decision</b>
Multiple regression (overall F)	5.605	9,20	2.393	0.001	REJECT H0
R-squared (Adj)	0.716 (0.588)				

#### **4.2.2 H0<sub>1</sub>: Caregiving Burden and Caregivers' Mental Health**

This test evaluates the linear relationship between overall mental health (MentalHealth\_Total) and caregiving burden (ZBI\_Total).

The linear relationship's direction and intensity are assessed using Pearson correlation.

Higher burden is positively correlated with worse mental health symptoms; logically, a negative correlation would be surprising.

Effect size is determined by the magnitude of  $r$ :  $r = 0.1$  (little),  $\approx 0.3$  (mid), and  $\geq 0.5$  (big).

Degrees of freedom ( $n-2$ ) affect the critical  $t$  for hypothesis testing and represent the sample size supporting the estimate.

When interpreting, take into account any confounders that could explain or lessen the bivariate correlation, such as income and the availability of support.

Rejecting the null hypothesis that there is no association is supported by significance ( $p < 0.05$ ); non-significance with moderate  $r$  indicates low power.

Clinically, a strong correlation emphasizes the necessity of screening for load as part of the caregivers' mental health risk assessment.

Below the table shows observed  $r$ ,  $df$ , critical  $t$ ,  $p$ -value and decision.

**Table 4.8: Pearson Correlation — ZBI\_Total vs MentalHealth\_Total**

Statistic	Observed	DF	Critical t ( $\alpha=0.05$ )	p-value	Decision
Pearson r	0.712	28	2.048	0.000	REJECT H0

### **4.2.3 H<sub>03</sub>: Severity of the Child's Condition and Caregivers' Mental Health (Mobility Proxy)**

This hypothesis investigates whether the mobility status of the child—a proxy for severity—affects the mental health of caretakers.

The mean MentalHealth\_Total is compared among mobility categories (e.g., walks independently, walks with support, cannot walk) using a one-way ANOVA.

At least one group mean differs, as indicated by a significant F; subsequent pairwise comparisons show which groups differ.

ANOVA's validity is impacted by group sizes, homogeneity of variance, and normality assumptions; nonparametric alternatives should be employed when these assumptions are not met.

Higher mean mental health ratings among caregivers of children who are unable to walk indicate a higher psychological burden on caretakers linked to more severe motor impairment.

Possible confounding by length of caregiving and socioeconomic characteristics that may cluster with severity should be taken into consideration when interpreting the data.

**Table 4.9: One-Way ANOVA — MentalHealth\_Total by Mobility**

**Groups**

<b>Test</b>	<b>Observed F</b>	<b>DF (between, within)</b>	<b>Critical F (<math>\alpha=0.05</math>)</b>	<b>p- value</b>	<b>Decision</b>
One-way ANOVA (Mobility)	0.475	2,27	3.354	0.627	DO NOT REJECT H0
Group names (n)	Cannot walk at all(10), Walks independently(12), Walks with support(8)				

#### **4.2.4 H0<sub>4</sub> & H0<sub>5</sub>: Coping Mechanisms (Emotional Support Proxy) and Mental Health**

While H0<sub>5</sub> suggests a connection between coping strategy type and mental health, H0<sub>4</sub> suggests none.

In order to assess whether perceived support is related to mental health, SSQ\_Total is utilized as an emotional-support proxy because the dataset does not contain specific measures of avoidant or problem-focused coping.

A Pearson correlation evaluates whether fewer overall mental health symptoms are linked to better perceived support.

Due to measuring constraints, non-significant results should be regarded with caution. A substantial negative correlation confirms H0<sub>5</sub> (there is a relationship) and indicates that emotional-support coping is protective.

It would be advised to implement useful initiatives to fortify social support networks if support turns out to be a major predictor.

**Table 4.10: Pearson Correlation — SSQ\_Total vs MentalHealth\_Total**

Statistic	Observed	DF	Critical t ( $\alpha=0.05$ )	p-value	Decision
Pearson r	-0.456	28	2.048	0.011	REJECT H0

## CHAPTER FIVE

# DISCUSSION, CONCLUSION, RECOMMENDATIONS AND IMPLICATIONS

### 5.1 Discussion

The present study assessed how caregiving factors caregiving burden, social/emotional support (as coping mechanism), and severity of the child's condition influence the mental health of caregivers of children with cerebral palsy. Caregiving factors and caregiver mental health were found to be significantly correlated by multiple regression analysis, which explained a considerable amount of the variance in mental health symptoms ( $R^2 = 0.716$ ,  $p < 0.01$ ). This suggests that there are multiple factors influencing caregivers' mental health outcomes, including support, burden, socioeconomic level, and the state of the kid. Sheikh et al. (2021) showed that load and a lack of support were significant predictors of anxiety and depression in caregivers of children with neurodevelopmental problems. Additionally, Chen et al. (2020) discovered that low social resources and financial hardship were both present among parents of children with physical disabilities.

Hemming et al. 2019 revealed that in a European sample discovered that socioeconomic position had less of an impact on caregiver mental health than anticipated after adjusting for social support. Context may be the cause of the disparity; in low- and middle-income nations like Nigeria, socioeconomic

limitations are more severe, which amplifies the impact of income and assistance, as seen by our data.

Mental health symptoms show that lower psychological outcomes for caregivers are closely linked to higher burden. This is consistent with Williams et al. (2022), who found that among caregivers of children with chronic motor deficits, caregiving load was the most significant predictor of depressed symptoms. Similarly, Nguyen & Tran (2023) found that the association between caregiver anxiety and the severity of a child's handicap was mediated by the caregivers' perceived burden. But in a population where caregivers had strong formal support services, Lee and Lee (2018) found a more modest link; the lesser effect size in their setting implies that outside resources might lessen the effects of load. The research population's comparatively small formal support networks may be the reason for our larger effect.

It's interesting to note that the ANOVA test revealed no significant relationship between caregiver mental health and child mobility status ( $F \approx 0.475$ ,  $p > 0.05$ ). Consequently, similar mental health effects were reported by caregivers across various mobility categories. This implies that the main cause of distress could not be harshness in and of itself, at least as determined by mobility. This result is in line with that of Khowaja et al. (2020), who, after controlling for social support and resources, did not discover a significant correlation between parental depression and gross motor disability. However, Silva et al. (2019) discovered that physical disability had a minor impact on caregiver stress, which varies; maybe as a result of the study's more accurate measurement of physical disability

(using standardized measures) as opposed to proxy categories. Contextual elements including religious coping, cultural adaption, and familial expectations may also lessen the psychological effects of severity for caregivers who view disability within more tolerant frameworks.

Perceived social/emotional support and mental health had a strongly negative Pearson correlation ( $r = -0.456$ ,  $p < 0.05$ ). Mental health symptoms were lower among caregivers who felt more supported. This result is consistent with previous research by Mason et al. (2021) and Okafor et al. (2022), which discovered that social and emotional support considerably reduces caregiver anxiety and depression symptoms in families with disabled children. The type of support and its source matter, however, as a study by Garcia & Torres (2020) indicated that although social support reduced depressed symptoms, it had less of an impact on stress associated with ongoing caring responsibilities. Our results showed a moderate but significant negative correlation, indicating that while emotional support can be beneficial, it might not be sufficient to completely counteract all stressors.

## **5.2 Conclusion**

This study came to the conclusion that parents of children with cerebral palsy who are admitted to the University of Benin Teaching Hospital face significant caregiving responsibilities in addition to noticeable signs of stress, anxiety, and melancholy. While perceived social support shown a strong protective benefit by lowering psychological distress, caregiving strain was found to have a significant positive connection with poor mental health. The mental health of caregivers was not significantly impacted by the child's mobility limitation severity, suggesting that perceived load and support availability

have a greater influence on emotional strain than clinical severity alone. Overall, the results show that social support and the difficulty of caregiving are important factors that affect caregivers' mental health.

### **5.3 Recommendations**

Based on the findings and recent literature, the following recommendations are offered:

**Implement Structured Emotional/Social Support Programs:** e.g. peer-support groups, caregiver support networks, and regular check-ins by mental health professionals, drawing on models such as those described by Mason et al. (2021).

**Financial Assistance and Resource Provision:** Government subsidies, transport support, or vouchers for assistive devices could reduce burden; aligned with policies like the 2022 Nigeria Disability Act (if operationalized).

**Integrate Mental Health Screening into Regular Caregiver Care:** Physiotherapy and pediatric clinics should routinely screen for depression, anxiety, stress among caregivers using tools like DASS, and refer those in need.

**Training in Adaptive Coping Strategies:** Workshops or counseling focusing on coping skills (emotional regulation, problem-solving), inspired by interventions shown effective in Nguyen & Tran (2023) and Okafor et al. (2022).

**Strengthen Community and Faith-Based Support:** In contexts where extended family and religion are central, partnerships with religious institutions or community groups can provide emotional and instrumental assistance.

**Improve Measurement of Severity and Coping:** Funding and research should support standardized severity assessments (GMFCS etc.) and inclusion of coping style instruments beyond emotional support.

**Ensure Equitable Access to Services:** Efforts should focus on lower-income caregivers, unemployed caregivers, and those with limited formal support, who are most vulnerable according to these results.

#### **5.4 Implications for Further Study**

Future research should include validated measures of coping (avoidant, problem-focused, emotional) rather than relying solely on emotional support proxies.

Investigations should use standardized severity assessments (e.g. GMFCS, MACS) rather than proxies, to examine more precisely how child condition severity interacts with caregiver psychological outcomes.

Mixed-methods studies combining quantitative data with qualitative interviews will help capture contextual factors such as culture, belief systems and stigma that shape caregiver experiences.

## References

- Abate, B. B., Tegegne, K. M., Zemariam, A. B., Alamaw, A. W., Kassa, M. A., Kitaw, T. A., Abebe, G. K., & Bizuayehu, M. A. (2024). Magnitude and clinical characteristics of cerebral palsy among children in Africa: A systematic review and meta-analysis. *PLOS Global Public Health*, 4(6) <https://doi.org/10.1371/journal.pgph.0002895>
- Adewuya, A. O. (2018). Current prevalence, comorbidity and associated factors for symptoms of depression and generalised anxiety in the Lagos State Mental Health Survey (LSMHS), Nigeria. *Comprehensive Psychiatry*.
- Aldinger, K. A., Kogan, J., Kimonis, V., & Dobyns, W. B. (2021). Epilepsy in cerebral palsy: clinical aspects and management. *Developmental Medicine & Child Neurology*, 63(7), 728–734.
- Aliya Szpindel, K. A., Myers, P., Ng, M., Dorais, L., Koclas, L., Pigeon, N., Shevell, M., & Oskou, M (2021, August 22). Epilepsy in children with cerebral palsy: a data linkage study. *Developmental Medicine & Child Neurology*. <https://doi.org/10.1111/dmcn.15028>
- Author, 2025. Social Support Questionnaire for Caregivers of Children with Cerebral Palsy (SSQ-CP). Adapted from MSPSS and DSSI. Unpublished instrument.

- Barreto, T. M. (2020). Prevalence of depression, anxiety, and substance-related disorders in parents of children with cerebral palsy: a systematic review. *Developmental Medicine & Child Neurology*.
- Becher, J. C.(2004). Prenatal Factors in Cerebral Palsy. *Archives of Disease in Childhood. Fetal and Neonatal Edition*
- Benfer, K. A., Weir, K. A., Bell, K. L., Ware, R. S., Davies, P. S. W., Boyd, R. N., & Carey, H. F.(2019). Oropharyngeal dysphagia and gross motor skills in children with cerebral palsy. *Pediatrics*, 143(2), e20182963.
- Brehaut, J. C., Kohen, D. E., Raina, P., Walter, S. D., Russell, D. J., Swinton, M., & Rosenbaum, P.(2004). The health of primary caregivers of children with cerebral palsy: How does it compare with that of other Canadian caregivers? *Pediatrics*, 114(2), e182–e191. <https://doi.org/10.1542/peds.114.2.e182>
- Buhse, M. (2008). Assessment of caregiver burden in families of persons with multiple sclerosis. *Journal of Neuroscience Nursing*, 40(1), 25–31. <https://doi.org/10.1097/01376517-200802000-00005>
- Centers for Disease Control and Prevention (CDC) (2024). Data and statistics for cerebral palsy. Retrieved June 20, 2025, from <https://www.cdc.gov/ncbddd/cp/data.html>
- Chukwu, B. F., et al (2020). Caregiver burden and psychological distress in caregivers of children with cerebral palsy in Nigeria. *Nigerian Journal of Clinical Practice*, 23(4), 531–537.[https://doi.org/10.4103/njcp.njcp\\_196\\_19](https://doi.org/10.4103/njcp.njcp_196_19)

- Colver, A., Fairhurst, C., & Pharoah, P. O.(2014). Cerebral palsy. *The Lancet*, 383(9924),1240–1249.<https://doi.org/10.1016/S0140-6736%2813%2961835-8>
- Duke, S., et al.(2020). Genetic and environmental factors in cerebral palsy. *Seminars in Fetal & Neonatal Medicine* November 2020.
- Ejeliogu, E., et al (2017). Congenital malformations and their role in cerebral palsy. *Pediatric Neurology*
- Farajzadeh, A., Maroufizadeh, S., & Amini, M. (2020). Factors associated with quality of life among mothers of children with cerebral palsy. *International Journal of Nursing Practice*, 26(3), e12811.<https://doi.org/10.1111/ijn.12811>
- Fatudimu, M. B., Hamzat, T. K., & Akinyinka, O. O.(2013). Comparative quality of life of Nigerian caregivers of children with cerebral palsy. *\*International Journal of Therapy and Rehabilitation*, 20(3), 131–135. <https://doi.org/10.12968/ijtr.2013.20.3.131>
- Garner, R. E., Arim, R. G., Kohen, D. E., et al.(2011). Parenting children with neurodevelopmental disorders and/or behaviour problems. *Child: Care, Health and Development*, 39,412–421.
- Goldberg, D., & Williams, P.(1988). A user's guide to the General Health Questionnaire. NFER-Nelson.

- Graham, H. K., Rosenbaum, P., Paneth, N., Dan, B., Lin, J. P., Damiano, D. L., & Lieber, R. L. (2016). Cerebral palsy. *Nature Reviews Disease Primers*, 2,15082. <https://doi.org/10.1038/nrdp.2015.82>
- Hidecker, M. J., et al.(2011). Development of the Communication Function Classification System for individuals with cerebral palsy. *Developmental Medicine & Child Neurology*, 53(8), 704–710.
- Jacobson, L., & Dutton, G. N. (2000). Periventricular leukomalacia: An important cause of visual and cognitive impairment in children. *Survey of Ophthalmology*, 45(1), 1–13.
- Koenig, H.G., Westlund, R.E., George, L.K., Hughes, D.C., Blazer, D.G. and Hybels, C., 1993. Abbreviating the Duke Social Support Index for use in chronically ill elderly individuals. *Psychosomatics*, 34(1), pp.61–69.
- McKinnon, C. T., Meehan, E. M., Harvey, A. R., Antolovich, G. C., & Morgan, P. E.(2018). Prevalence and characteristics of pain in children and young adults with cerebral palsy: A systematic review. *Developmental Medicine & Child Neurology*, 61(3), 305–314.
- Mental Health Europe.(2021). Mental health and wellbeing: A human rights perspective.
- Mung’ala-Odera, V., Meehan, R., Njuguna, P., Mturi, N., Alcock, K., Carter, J. A., & Newton, C. R. J. C.(2004). Validity and reliability of the ‘Ten Questions’ questionnaire for detecting moderate to severe neurological

impairment in children aged 6–9 years in rural Kenya. *Neuroepidemiology*, 23(1–2), 67–72.

Murphy, N. A., Christian, B., Caplin, D. A., & Young, P. C.(2007). The health of caregivers for children with disabilities: Caregiver perspectives. *Child: Care, Health and Development*, 33(2), 180–187.  
<https://doi.org/10.1111/j.1365-2214.2006.00644.x>

National Institute for Health and Care Excellence (NICE).(2017). Cerebral palsy in under 25s: Assessment and management.  
<https://www.ncbi.nlm.nih.gov/books/NBK419326>

Nelson, K. B., & Blair, E. (2015). Prenatal factors in singletons with cerebral palsy born at or near term. *New England Journal of Medicine*, 373(10), 946–953.

Ngozi Chukwu, & Agwu, P.(2022). Challenges faced by informal caregivers of patients in a Nigerian hospital and implications for social work, 22(5).

Njaka, S., et al. (2022, July–August). Prevalence of mental disorders in Abakaliki, Ebonyi State, Southeastern Nigeria. *Journal of the American Psychiatric Nurses Association*

- Novak, I., McIntyre, S., Morgan, C., Campbell, L., Dark, L., Morton, N., ... Goldsmith, S.(2012). A systematic review of interventions for children with cerebral palsy: State of the evidence. *Developmental Medicine & Child Neurology*, 55(10), 885–910. <https://doi.org/10.1111/dmcn.12246>
- Novak, I., Morgan, C., Adde, L., Blackman, J., Boyd, R. N., Brunstrom-Hernandez, J., ... Badawi, N.(2017). Early, accurate diagnosis and early intervention in cerebral palsy: Advances in diagnosis and treatment. *JAMA Pediatrics*, 171(9), 897–907.
- Odetunde, N. A., Oyegbade, O. O., Odetunde, M. O., Bello, I. S., & Abioye-Kuteyi, E. A. The influence of socio-demographic characteristics on caregivers' burden and quality of life of elderly diabetics attending a Nigerian tertiary hospital.
- Ogbonna, P. N., et al. (2020, February). Prevalence of mental illness among adolescents (15–18 years) treated at Federal Neuropsychiatric Hospital, Enugu, Nigeria, from 2004 to 2013. *Archives of Psychiatric Nursing*.
- Oguntade, H. A., Nishath, T., Owusu, P. G., Papadimitriou, C., & Sakyi, K. S. (2023). Barriers to providing healthcare to children living with cerebral palsy in Ghana: A qualitative study of healthcare provider perspectives.
- Oliveira, C. C. D. C., Lima, M. C. D. P., & Costa, L. C. D. C.(2016). The impact of caring for children with cerebral palsy on the quality of life of caregivers: A systematic review. *Fisioterapia em Movimento*, 29(3), 615–624. <https://doi.org/10.1590/1980-5918.029.003.AO12>

- Olusanya, B. O. (2021). The burden of caregiving for children with developmental disabilities in Sub-Saharan Africa. *Pediatrics and International Child Health*, 41(2), 82–89. <https://doi.org/10.1080/20469047.2020.1810264>
- Olusanya, B. O.(2021). Addressing the burden of caregiving for children with developmental disabilities in sub-Saharan Africa. *The Lancet Child & Adolescent Health*, 5(10), 693–694.<https://doi.org/10.1016/S2352-4642%2821%2900216-1>
- Onozure Dania, et al. (2021, August 26). Nigeria’s suicide rate under-reported, says Dr. Tade. *Vanguard News*. Retrieved January 28, 2022.
- Oskoui, M., Coutinho, F., Dykeman, J., Jetté, N., & Pringsheim, T.(2013). An update on the prevalence of cerebral palsy: A systematic review and meta-analysis. *Developmental Medicine & Child Neurology*, 55(6), 509–519.
- Palaganas, E. C., Sanchez, M. C., Molintas, M. V. P., & Caricativo, R. D. (2017). Reflexivity in qualitative research: A journey of learning. *The Qualitative Report*, 22(2), 426–438.
- Palisano, R., Rosenbaum, P., Walter, S., Russell, D., Wood, E., & Galuppi, B.(1997). Development and reliability of a system to classify gross motor function in children with cerebral palsy. *Developmental Medicine & Child Neurology*, 39(4), 214–223.

- Parkinson, K. N., Dickinson, H. O., Arnaud, C., Lyons, A., & Colver, A. (2013).  
Mental health among children with cerebral palsy: A cross-sectional study.  
BMC Pediatrics, 13(1), 204.
- Parkinson, K. N., Dickinson, H. O., Arnaud, C., Lyons, A., Colver, A., & the  
SPARCLE Group.(2020). Children with cerebral palsy and epilepsy:  
Characteristics and healthcare use in a population-based cohort.  
Developmental Medicine & Child Neurology, 62(5), 577–584.  
<https://doi.org/10.1111/dmcn.14456>
- Pennington, L., Roelant, E., Thompson-Coon, J., Colquitt, J. L., & Sakai, H.(2020).  
Communication interventions for children with cerebral palsy. Cochrane  
Database of Systematic Reviews, (10)
- Raina, P., O'Donnell, M., Rosenbaum, P., et al.(2005). The health and well-being  
of caregivers of children with cerebral palsy. Pediatrics, 115,626–636.
- Raina, P., O'Donnell, M., Schweltnus, H., Rosenbaum, P., King, G., Brehaut, J., &  
Russell, D. (2005). Caregiving process and caregiver burden: Conceptual  
models to guide research and practice. BMC Pediatrics, 5,1.  
<https://doi.org/10.1186/1471-2431-5-1>
- Riffin, C., Van Ness, P. H., Wolff, J. L., & Fried, T.(2019). Multifactorial  
examination of caregiver burden in a national sample of family and unpaid  
caregivers. Journal of the American Geriatrics Society, 67(2), 277–  
283.<https://doi.org/10.1111/jgs.15664>

- Rosenbaum, P., Paneth, N., Damiano, D., Goldstein, M., Leviton, A., Bax, M., ... Jacobsson, B.(2007). A report: The definition and classification of cerebral palsy, April 2006. *Developmental Medicine & Child Neurology*. Supplement, 109, 8–14.
- Sadowska, M., Sarecka-Hujar, B., & Kopyta, I. (2020). Cerebral palsy: Current opinions on definition, epidemiology, risk factors, classification and treatment options. *Neuropsychiatric Disease and Treatment*, 16,1505–1518. <https://doi.org/10.2147/NDT.S235165>
- Sarason, I. G., Levine, H. M., Bashan, R. B., & Sarason, B. R.(1983). Assessing social support: The Social Support Questionnaire. *Journal of Personality and Social Psychology*, 44(1), 127–139.
- Shevell, M. I., Dagenais, L., & Hall, N. (2009). Comorbidities in cerebral palsy and their relationship to neurologic subtype and GMFCS level. *Neurology*, 72(24), 2090–2096.
- Shevell, M., Dagenais, L., & Oskoui, M. (2013). The epidemiology of cerebral palsy: New perspectives from a Canadian registry. *Seminars in Pediatric Neurology*, 20(2), 60–66.
- Szpindel, A., Myers, K. A., Ng, P., Dorais, M., Koclas, L., Pigeon, N., Shevell, M., & Oskou, M. (2021). Epilepsy in children with cerebral palsy: A data linkage study. *Developmental Medicine & Child Neurology*.

- Tainara, M. B., et al.(2020, February). \*Developmental Medicine & Child Neurology
- Volpe, J. J.(2008). Neurology of the Newborn\* (5th ed.). Philadelphia: Saunders Elsevier.
- Whittingham, K., Wee, D., & Boyd, R.(2013). Systematic review of the parenting and family impact of cerebral palsy. *Developmental Medicine & Child Neurology*, 55(11), 1017–1032. <https://doi.org/10.1111/dmcn.12207>
- WHO. (2022). Mental health: Strengthening our response. World Health Organization.
- Wright, C. M., & Wright, S. M. (2017). Bladder and bowel dysfunction in children with cerebral palsy. *Developmental Medicine & Child Neurology*, 59(9), 938.
- Zarit, S. H., Reever, K. E., & Bach-Peterson, J. (1980). Relatives of the impaired elderly: Correlates of feelings of burden. *The Gerontologist*, 20(6), 649–655. <https://doi.org/10.1093/geront/20.6.649>
- Zimet, G.D., Dahlem, N.W., Zimet, S.G. and Farley, G.K., 1988. The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*, 52(1), pp.30–41.

# **APPENDIX A**

## **CONSENT FORM**

Assessment of Factors Influencing the Mental Health of Caregivers of Children  
with Cerebral Palsy

**RESEARCHER:** OYIBO SHULLAMITE.

I am a final-year student of the Department of Physiotherapy, University of Benin, conducting a research study as part of the requirements for the completion of my undergraduate project.

**PURPOSE OF THE STUDY:**

The aim of this study is to assess the mental health status of caregivers of children living with cerebral palsy and to examine the factors influencing their psychological wellbeing. The study will focus on caregiver burden, social support, and levels of depression, anxiety, and stress.

**PROCEDURES:**

You will be asked to complete a structured questionnaire consisting of four sections:

Section A: Socio-demographic details

Section B: Zarit Burden Interview (to assess caregiver burden)

Section C: Depression, Anxiety, and Stress Scale (DASS-21)

Section D: Social Support Scale (SSQ)

The survey will take approximately 20–30 minutes to complete.

**VOLUNTARY PARTICIPATION:**

Participation in this study is completely voluntary. You may choose to withdraw at any point without any consequence or loss of benefits to which you are otherwise entitled.

**CONFIDENTIALITY:**

All information provided will be kept strictly confidential and used solely for academic research purposes. Your name or any personally identifiable information will not be included in any publication or report resulting from this study.

**POTENTIAL RISKS AND BENEFITS**

There are no known risks involved in participating in this study beyond the possibility of minor emotional discomfort while answering questions about your experiences.

Benefits include contributing to research that may influence health policy and support services for caregivers like you.

**COMPENSATION:**

There is no monetary compensation for participation. However, your contribution is greatly valued and will help improve support systems for caregivers of children with special needs.

**CONTACT FOR QUESTIONS:**

If you have any questions about this study or your rights as a participant, you may contact me with the following:

08150784207

shullamite.oyibo@lifesci.uniben.edu

**CONSENT STATEMENT**

I have read and understood the information provided above. I understand that my participation is voluntary and that I may withdraw at any time. I consent to take part in this study.

Participant's Name:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_ .

Researcher's Signature: \_\_\_\_\_ Date: \_\_\_\_\_ .

## APPENDIX B

### QUESTIONNAIRE

#### SECTION A: SOCIAL DEMOGRAPHICS INFORMATION OF THE CAREGIVER

Please tick (✓) or fill in the appropriate responses.

1. Age: \_\_\_\_\_years
2. Gender:  Male  Female  Other
3. Marital status:  Single  Married  Divorced  Widowed
4. Educational level:  No formal education  Primary  Secondary  Tertiary
5. Employment status:  Employed  Self-employed  Unemployed
6. Monthly income:  <N50,000  N50,000–N100,000  N100,001–N200,000  >N200,000
7. Relationship to the child:  Mother  Father  Sibling  Grandparent  
 Other:
8. Duration of caregiving: \_\_\_\_\_ years
9. Number of children being cared for: \_\_\_\_\_ .
10. Do you receive any caregiving support?  Yes  No
11. Mobility: Can your child walk independently, with assistance, or not at all?  
 Walks independently,  Walks with support (assistive device or person),  Cannot walk at all.

12. Feeding: Can your child feed themselves independently?  Feeds independently,  Requires some help,  Completely dependent on caregiver

**SECTION B: ZARIT BURDEN INTERVIEW (ZBI-22)**

Modified for Pediatric Cerebral Palsy Caregivers

Please indicate how often you feel the following way when caring for the child.

(0 = Never, 1 = Rarely, 2 = Sometimes, 3 = Quite Frequently, 4 = Nearly Always)

ITEMS	0	1	2	3	4
1. Do you feel that the child asks for more help than they need?					
2. Do you feel that because of the time you spend with the child, you don't have enough time for yourself?					
3. Do you feel stressed between caring for the child and trying to meet other responsibilities (e.g., work, family)?					
Do you feel uncomfortable over the child's behavior?					
Do you find yourself feeling frustrated or overwhelmed when you're with the child?					
Do you find that the child's behavior is impacting your connections with family members or friends in a way that feels challenging or difficult?					
Are you feeling anxious about what the future may hold for the child?					
Do you feel the child is dependent on you?					

Do you sometimes feel a bit overwhelmed when spending time with the child?					
Have you noticed any impacts on your health due to your caregiving responsibilities?					
Are you hesitant to invite friends over because of the child's needs or behavior?					
Do you sense that the child expects you to be their primary source of support, almost as if you're their only lifeline?					
Do you worry about whether you have enough financial resources to meet the child's needs?					
Are you concerned about your ability to continue providing care for the child in the future?					
Do you feel like your life has become unmanageable since the child's condition developed?					
Have you ever wished you could hand over the caregiving responsibilities to someone else, even for a little while?					
Are you questioning whether you should be doing more to help the child?					
Do you sometimes feel like you could improve the way you care for the child?					
Overall, how heavy does the responsibility of caring for the child feel for you?					

Do you feel like your privacy has been compromised because of the child's needs?					
Has your social life taken a hit due to the demands of caring for the child?					

**SECTION C: DEPRESSION, ANXIETY AND STRESS SCALE (DASS-42)**

**INSTRUCTIONS:**

Please read each statement and circle the number that indicates how much the statement applied to you over the past week. There are no right or wrong answers.

Do not spend too much time on any statement.

- 0 - Did not apply to me at all,
- 1 - Applied to me to some degree, or some of the time,
- 2 - Applied to me to a considerable degree, or a good part of the time,
- 3 - Applied to me very much, or most of the time.

<b>DEPRESSION</b>	<b>RANGES</b>			
I couldn't seem to experience any positive feeling at all				
I found it difficult to work up the initiative to do things				
I felt that I had nothing to look forward to				
I was unable to become enthusiastic about anything				
I felt down-hearted and blue				
I felt I wasn't worth much as a person				
I felt that life was meaningless				

<b>ANXIETY</b>	<b>RANGES</b>			
I was aware of dryness of my mouth				
I experienced breathing difficulty (e.g., rapid breathing, breathlessness in absence of physical exertion)				
I experienced trembling (e.g., in hands)				
I was worried about situations in which I might panic and make a fool of myself				
I felt I was close to panic				
I was aware of the beating of my heart in the absence of physical exertion				
I felt scared without any good reason				
<b>STRESS</b>	<b>RANGES</b>			
I found it hard to wind down				
I tended to over-react to situations				
I felt that I was using a lot of nervous energy				
I found myself getting agitated				
I was intolerant of anything that kept me from getting on with what I was doing				
I felt that I was rather touchy				
I found it difficult to relax				

**SECTION D: SOCIAL SUPPORT QUESTIONNAIRE(SSQ-CP)**

Please respond to the following statements based on your experiences about your current social support. Tick the box that best reflects your agreement.

STATEMENT	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Disagree (5)
I have family members I can rely on for emotional support.					
I feel understood and supported by close friends					
I receive practical help (e.g., with transport, meals, chores) when needed.					
I am part of a religious or community group that supports me.					
Health professionals (doctors, therapists) provide helpful guidance and support.					
I have someone to talk to when I feel stressed or overwhelmed.					

I feel isolated and alone in my caregiving role. (reversed scored)					
People around me appreciate and recognize my efforts as a caregiver.					
I know where to find support groups or caregiver networks.					
I feel comfortable asking for help when I need it					

Thank you for your participation. Your input is vital for understanding caregiver wellbeing and improving therapeutic and support services.

# APPENDIX C

## ETHICAL APPROVAL

**HEALTH RESEARCH ETHICS COMMITTEE (HREC)**

**UNIVERSITY OF BENIN TEACHING HOSPITAL**  
P.M.B. 1111 BENIN CITY NIGERIA Telephone: 052-600418 Website: ubth.org

**CHIEF MEDICAL DIRECTOR** Prof. Darlington E. Obaseki  
E-mail: darlobaseki@gmail.com

**DIRECTOR OF ADMINISTRATION** Jim Uwadie, Esq

**CHAIRMAN** Prof. (Mrs.) Antoinette N. Ofili

**HREC OFFICE:**  
Committee email: ubthresearchethics@gmail.com  
Registration Number: NHREC-UBTH-HREC/24/12/2022B

PROTOCOL NUMBER: ADM/E 22/A/VOL.VII/2025/156

PROPOSAL TITLE: "FACTORS INFLUENCING THE MENTAL HEALTH OF CAREGIVERS OF CHILDREN WITH CEREBRAL PALSY AT UNIVERSITY OF BENIN TEACHING HOSPITAL, BENIN CITY, EDO STATE"

PRINCIPAL INVESTIGATOR(S): OYIBO SHULLAMITE

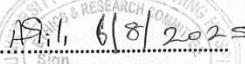
DEPARTMENT/INSTITUTION: DEPARTMENT OF PHYSIOTHERAPY, SCHOOL OF BASIC MEDICAL SCIENCES UNIVERSITY OF BENIN, BENIN CITY, EDO STATE

DATE CONSIDERED: AUGUST 6<sup>TH</sup>, 2025

DECISION OF THE COMMITTEE: APPROVED

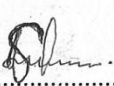
*THIS APPROVAL DATES 6/8/2025 TO 5/8/2026. IF THERE IS DELAY IN STARTING THE RESEARCH, PLEASE INFORM THE HREC SO THAT THE DATES OF APPROVAL CAN BE ADJUSTED ACCORDINGLY*


REMARK:

CHAIRMAN: PROF. (MRS) A.N. OFILI SIGNATURE & DATE:  6/8/2025

SUPERVISOR (S): PROF ANTHONINUS OBINNA EZEUKWU

DECLARATION BY INVESTIGATOR(S):  
PROTOCOL NUMBER (please quote in all enquiries)  
Note that no participant accrual or activity related to this research may be conducted outside of these dates. All informed consent forms used in this study must carry the HREC assigned number and duration of HREC approval of the study. In multiyear research, endeavor to submit your annual re-port to the HREC early in order to obtain renewal of your approval and avoid disruption of your research. No changes are permitted in the research without prior approval by the HREC except in circumstances outlined in the Code. The HREC reserves the right to conduct compliance visit your research site without previous notification

Signature & Date.....  6/8/2025

 ubthresearchethics@gmail.com Registration Number: NHREC/24/01/202