KNOWLEDGE AND ATTITUDES OF CAREGIVERS TOWARDS PHYSIOTHERAPY FOR CHILDREN WITH DELAYED DEVELOPMENTAL MILESTONES IN UNIVERSITY OF BENIN TEACHING HOSPITAL

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CERTIFICATION

This dissertation by Onwuzuike Ifeyinwa Favour is accepted in its presented form as satisfying the dissertation requirements of the degree of Bachelor of Physiotherapy, of the School of Basic Medical Sciences, College of Medical Sciences of the University of Benin.

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DEDICATION

This dissertation is dedicated to God Almighty, to the cherished memory of my late father Mwo Charles S. Onwuzuike, whose wisdom and love still guides me, to my mother Mrs Christiana Onwuzuike and my siblings for their unwavering support and inspiration.

ABSTRACT

Background: Developmental milestones mark a child's progress in physical,cognitive , language and social abilities, typically achieved within specific age ranges. Delayed developmental milestones (DDM), affecting 8 -12% of children aged 0-5 in Nigeria can stem from birth complications, genetic disorders, neurological conditions, poor nutrition and environmental factors. Physiotherapy is crucial for early intervention, improving motor functions and quality of life in children with DDM, such as cerebral palsy. Caregiver's knowledge and attitude significantly influence the success of physiotherapy, yet in Nigeria, cultural beliefs, limited information and financial constraints often hinder it's utilization.

Aim: This study was done to assess the level of knowledge and attitudes of caregivers towards physiotherapy for children with delayed developmental milestones in University of Benin Teaching Hospital.

Method: A descriptive cross sectional study was conducted, recruiting 94 caregivers of children with DDM at University of Benin Teaching Hospital. Participants were selected using a purposive sampling technique. Data were collected through a self administered questionnaire comprising socio-demographic questionnaire and a self developed questionnaire based on Knowledge, Attitudes and Practice (KAP) model assessing knowledge and attitudes towards physiotherapy. Analysis involved descriptive statistics and chi-square tests, with a significance level set at 0.05.

Results: Sixty one (64.9%) of caregivers had good knowledge of physiotherapy, though gaps existed in understanding the causes and goals. A total of ninety one (97.9%) displayed positive attitudes towards physiotherapy. Educational level was significantly associated with knowledge ($p < 0.001$). Major barriers to participation included financial limitations, transportation difficulties , lack of understanding and work schedule conflict.

Conclusion: Caregivers possess good knowledge and positive attitudes towards physiotherapy, with educational level influencing knowledge. However, financial and transportation difficulties hinder its utilization, suggesting the need for targeted education and support programs to enhance treatment outcomes.

Keyword: Delayed developmental milestones, physiotherapy, caregivers, knowledge and attitudes.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The word development is defined as the progress of a child in all areas of human functioning (Varghese et al., 2020).The initial five years of life represent a time of significant neuro-musculoskeletal growth, developmental milestones act as important markers of a child's physical, cognitive, language and social abilities that children typically acquire at a specific age range, reflecting on the overall growth and neurological functions(WHO, 2012).During this phase, gross and fine motor skills, including head control, sitting, crawling, standing, walking and early speech, develop in a predictable order. When a child is lacking and fails to achieve some of these milestones in the expected age range it is known as a "developmental delay". This delay can be due to various factors like birth complications, genetic disorders, neurological conditions, poor nutritional status and environmental factors(Kliegman et al., 2020).In Nigeria, hospital-based data suggests that 8–12% of children from 0-5 years of age may present with some form of developmental delay. Early detection and intervention of problems to lessen developmental delays, decrease the development of secondary impairments, and enhance family competency in caring for their children are the goals of these services, which are tailored to the requirements of the child and families. Studies confirmed that physiotherapy plays an important role in the early intervention of children with delayed developmental milestones, like cerebral palsy and hypotonia focusing on balance, muscle tone abnormalities, coordination and functional mobility(Novak et al., 2017).Some of the goals are to help with improving motor functions by supporting the achievement of age appropriate milestones through therapeutic interventions, enhance independence and improve overall quality of life.

Caregivers who can be the parents, guardians or family members are vital parts in the rehabilitation process of their children. The success of physiotherapy is not based on only the physiotherapist's skill but it is greatly influenced by the Caregiver's knowledge and attitude towards physiotherapy(Ketelaar et al., 2001).Studies have shown that caregivers with better understanding and positive attitudes towards physiotherapy are more likely to follow-up physiotherapy sessions, apply home program treatments and seek medical attention on time for their children (Lillo-Navarro et al., 2015; Almandil et al., 2017; Alzaabi et al., 2022). Poor knowledge or negative attitudes can lead to missed appointments, on-compliance or discontinuation, thereby compromising the child's developmental path.

In Nigeria, some factors like cultural beliefs, limited access to information, financial limitations may hinder caregivers from making use of physiotherapy services fully. Misinterpretations about developmental delays being caused by supernatural forces or the belief that children will outgrow it without any treatment can affect the need for physiotherapy negatively(Maruf et al., 2012). It is therefore important to assess the knowledge and attitude of caregivers towards physiotherapy for a better treatment outcome.

1.2 Statement of the problem

Although physiotherapy services for children with DDM are available at University of Benin Teaching Hospital, narratives from caregivers show that many arriving at the hospital are unaware of the specific role physiotherapy plays in neurodevelopment,the importance of regular home exercises and expected outcomes of physiotherapy.Some of them purposely miss treatment sessions, do not do the home based programs, and they express doubt about the benefit of physiotherapy making it more difficult to progress treatment further. Currently there is no data assessing caregiver's knowledge and attitudes towards physiotherapy in this setting. Without this information, it is challenging to create caregiver education programs and

implement a good follow-up. This study aims to address this issue by assessing caregivers knowledge and attitudes systematically to improve outcomes for children with DDM in University of Benin Teaching Hospital.

1.3 Research Questions

1. What is the level of knowledge among caregivers about physiotherapy for children with delayed developmental milestones in University of Benin Teaching Hospital ?

2. What are the attitudes of caregivers in University of Benin Teaching Hospital towards physiotherapy as a treatment option for developmental delays?

3. Is there a relationship between caregivers level of education and their knowledge of physiotherapy in University of Benin Teaching Hospital?

4. What are the common sources of information about physiotherapy for caregivers of children with developmental delays in University of Benin Teaching Hospital ?

5. Are there any misconceptions among caregivers in University of Benin teaching hospital regarding physiotherapy for children with developmental challenges ?

1.4 Aim of the Study

This study aims to determine the level of knowledge and attitudes of caregivers towards physiotherapy for children with delayed developmental milestones in University of Benin Teaching Hospital.

1.4.1 Specific Objectives

The specific objectives of this study are to;

i. To assess the level of knowledge of physiotherapy services among caregivers of children with DDM in University of Benin Teaching Hospital.

ii. To determine the attitude of caregivers towards physiotherapy as a treatment option for DDM in University of Benin Teaching Hospital.

iii. To determine the relationship between caregivers level of education and their knowledge of physiotherapy in University of Benin Teaching Hospital.

1.5 Main Hypothesis

There is no significant relationship between caregiver's knowledge and attitude towards physiotherapy and positive outcomes of children with DDM in University of Benin Teaching Hospital.

1.5.1 Sub Hypothesis

H_1: Socio-demographic and clinical factors (e.g., age, education level, occupation, income) are not significantly associated with caregiver's attitudes towards physiotherapy.

H_2: Caregivers do not demonstrate positive attitudes, including motivation and willingness, to participate in pediatric physiotherapy home programs.

H_3: Caregivers have no significant level of knowledge regarding the goals, methods, and expected outcomes of pediatric physiotherapy.

H_4: Interventions guided by caregiver's knowledge and attitude levels do not significantly improve engagement and support for pediatric physiotherapy.

1.6 Significance of the Study

The findings of this study will help in identifying specific misunderstandings that will help the physiotherapist put together educational materials which helps to improve treatment outcomes. These findings can be used by University of Benin Teaching Hospital administrators to input counseling and caregiver orientation after gauging their

knowledge/attitude levels. Enhanced caregiver's knowledge may increase children's functional dependence, reducing the burden on family and also the health care system. These findings will contribute to the existing knowledge and also support future studies.

1.7 Scope of the Study and Delimitation

This study focuses on caregivers of children from age 0-5 years old who have been diagnosed with at least one delayed developmental milestone and are receiving treatment in University of Benin Teaching Hospital, Edo state and does not include caregivers of children with other medical conditions not related to developmental delays. it focuses on the assessment of knowledge and attitudes regarding physiotherapy services and does not assess clinical outcomes of the children.

1.8 Definition of Terms

-Caregiver : This is a person or any individual primarily responsible for taking care of the child, it can be the parent, guardian or a relative

-Delayed developmental milestone: This refers to a situation where a child does not reach his or her expected milestone within a specific age range like sitting, standing and walking

-Neuro-musculoskeletal growth : This refers to the organized development of the nervous system(brain, spinal cord and nerves) and the musculoskeletal system(bones, muscles, joints and connective tissues). It enables proper movement and physical function during childhood (Kisner & Colby, 2012)

-Physiotherapy: The treatment of problems of the muscles, joints or nerves, using exercises, by moving the body part of by using manual techniques for treatment

-Knowledge: For this study, it is an understanding of physiotherapy goals, applications and expected benefit

- Attitude: It is a way of thinking or feeling about physiotherapy

1.9 List of Abbreviations

-DDM: Delayed developmental milestones

CHAPTER TWO

LITERATURE REVIEW

2.1 Developmental milestones

Developmental milestones are a set of functional skills or age-specific tasks that most children can do at a certain age range. These milestones are used by healthcare providers and caregivers to assess a child's growth and development across major domains, including motor (gross and fine), language, cognitive, and social-emotional skills (Centers for Disease Control and Prevention [CDC], 2022). Each milestone represents a critical stage in a child's neurological and physical development, serving as a foundation for more advanced skills. In the motor domain, infants are expected to lift their heads by 2 months, sit without support around 6 months, and walk independently by about 12 to 18 months (Scharf et al., 2016). Language development typically begins with cooing and babbling in infancy, progressing to single words by 12 months and short sentences by 2 to 3 years (Gerber et al., 2010). Cognitive milestones include following simple instructions, recognizing familiar people, and problem-solving. Social and emotional milestones reflect a child's ability to interact with others, show emotions, and begin to develop independence. While there is some variation in the timing of milestones, significant delays may indicate developmental disorders such as autism spectrum disorder, cerebral palsy, or intellectual disabilities. Early identification and intervention are crucial. Regular developmental screening during pediatric visits helps ensure any delays are recognized promptly and addressed with appropriate therapies (Zubler et al., 2022).

Parental awareness and involvement also play a critical role. Creating a nurturing and stimulating environment supports optimal development. When milestones are not met within

the expected timeframe, multidisciplinary evaluations and interventions, including speech therapy, physiotherapy, and occupational therapy, are often recommended.

2.1.1 Types of developmental milestones

Developmental milestones are typically categorized into five key domains, each representing different aspects of a child's growth and functioning. Understanding these types helps in monitoring progress and detecting any developmental delays early.

1. Gross Motor Milestones

Gross motor skills involve large muscle activities that enable movement and coordination. These include rolling over, sitting, crawling, standing, walking, running, and jumping. For example, most infants begin sitting without support by around 6 months and walk independently by 12 to 18 months (Zubler et al., 2022). Examples include:

- Rolling over (around 4–6 months).
- Sitting without support (around 6 months).
- Walking independently (around 12–18 months)

2. Fine Motor Milestones

Fine motor skills involve the use of smaller muscles, particularly in the hands and fingers. These skills include grasping objects, drawing, feeding oneself, and manipulating small toys. Children typically begin using a pincer grasp by 9 months and may be able to copy simple shapes like circles by age 3 to 4.

3. Language and Communication Milestones

This domain includes both receptive language (understanding) and expressive language (speaking). Early milestones include cooing and babbling, while more advanced milestones involve using words, forming sentences, and following directions. For instance, most children say their first word by 12 months and can form simple two-word phrases by 24 months (CDC, 2022).

4. Cognitive Milestones

Cognitive development involves thinking, learning, problem-solving, and understanding the environment. Early cognitive milestones include tracking objects, exploring through the senses, and understanding object permanence. Later stages involve more complex tasks like sorting shapes or counting.

5. Social and Emotional Milestones

These milestones relate to how children interact with others and express emotions. Early milestones include smiling in response to faces, while later skills involve taking turns, showing empathy, and forming friendships. Monitoring each of these types is crucial for ensuring a child is developing appropriately across all areas.

2.1.2 Delayed developmental milestones

Delayed developmental milestone refers to a condition in which a child does not achieve developmental skills at the expected age (Hannigan et al., 2023). These milestones include physical (motor), cognitive, communication, social, and emotional skills. While there is a range of normal development, significant delays in acquiring skills such as sitting, walking, talking, or social interaction can be indicative of underlying developmental issues (Giesbrecht

et al., 2023). Delayed developmental milestone is a critical paediatric concern that warrants timely recognition and intervention.

2.1.3 Conditions associated with developmental milestones

The attainment of developmental milestones can be influenced by various medical, genetic, environmental, and neurological conditions. These conditions may either delay or alter the typical trajectory of development in children. Understanding these associations is crucial for early identification and intervention.

1. Cerebral Palsy (CP)

Cerebral palsy is a group of disorders that affect movement, muscle tone, and posture due to non-progressive brain injury or abnormal development. Children with CP often experience delays in gross motor milestones such as sitting, crawling, or walking (Martinet et al., 2025).

2. Autism spectrum disorder (ASD)

Children with ASD may show delays or atypical patterns in communication, social interaction, and behavior. Language and social-emotional milestones are commonly affected, with signs including lack of eye contact, delayed speech, and limited social engagement (Lord et al., 2020).

3. Intellectual Disability (ID)

This condition is characterized by below-average intellectual functioning and adaptive behavior. Delays are typically observed across all developmental domains, including cognitive, language, and motor milestones (Schalock et al., 2021).

4. Down Syndrome

A genetic disorder caused by trisomy 21, Down syndrome is associated with global developmental delays. Children may achieve milestones like walking and speaking at a slower rate compared to peers (Bull, 2020).

5. Hearing and Vision Impairments

Undiagnosed sensory impairments can impact language, social, and cognitive development. For example, hearing loss may delay speech milestones, while vision problems may affect motor and cognitive skills.

6. Prematurity and Low Birth Weight

Infants born prematurely are at a higher risk for developmental delays due to immature organ systems and possible complications at birth. Adjusted developmental assessments are often used to evaluate their progress accurately (Romeo et al., 2021).

2.1.4 Outcome measurement of delayed developmental milestones

Evaluating outcomes in children with delayed developmental milestones is essential for monitoring advancement, assessing the success of interventions, and informing clinical choices. This process utilizes standardized tools and methods to measure improvements or variations across different developmental areas over time.

Developmental screening tools are short assessments designed to pinpoint children who may be at risk for developmental delays and might need further assessment (Zubler et al., 2022). Prominent examples include the Ages and Stages Questionnaires (ASQ), a parent-completed screening instrument that reviews communication, motor, problem-solving, and social skills, and the Denver Developmental Screening Test II (DDST-II) (Shahshahani et al., 2010),

which evaluates children from birth to six years across four areas: personal-social, fine motor-adaptive, language, and gross motor skills.

When developmental delays are suspected, more thorough developmental assessment tools are employed to ascertain the severity and extent of concerns. The Bayley Scales of Infant and Toddler Development (Bayley-4) is commonly used to evaluate cognitive, language, motor, social-emotional, and adaptive behaviours in children aged 1 to 42 months (Alfonso et al., 2022). The Griffiths Scales of Child Development offers an in-depth analysis of a child's strengths and weaknesses across various developmental domains. Likewise, the Vineland Adaptive Behaviour Scales (VANS) examines communication, daily living skills, and socialization, making it particularly beneficial for children with intellectual or developmental disabilities.

Beyond screening and assessment tools, functional outcome measures assess how developmental delays impact a child's ability to engage in daily activities. The Pediatric Evaluation of Disability Inventory (PEDI) evaluates self-care, mobility, and social function, providing important insights into practical capabilities (Rah et al., 2023). The Gross Motor Function Measure (GMFM) is specifically tailored for children with cerebral palsy, offering a dependable method for tracking improvements or changes in gross motor function over time. Together, these tools assist clinicians in planning, evaluating, and modifying intervention strategies to enhance developmental outcomes.

2.1.5 Diagnosis of delayed developmental milestones

The process of diagnosing delayed developmental milestones is thorough and involves several steps to determine the presence, severity, and potential causes of a child's developmental delay. Typically, this process encompasses developmental monitoring, screening, in-depth assessment, and specialist referrals when necessary.

1. Developmental Monitoring and Gathering History

The diagnosis starts with developmental monitoring, an ongoing method for observing a child's growth and progression during regular healthcare appointments. This involves discussing parental concerns, watching the child's actions, and evaluating their developmental progress against age-appropriate milestones. A comprehensive medical, prenatal, birth, and family history is also collected to identify risk factors, including prematurity, complications during birth, genetic issues, or a family history of developmental delays (Lipkin & Macias, 2020).

2. Developmental Screening

If concerns arise during monitoring, standardized tools are employed to quantitatively evaluate a child's abilities across various areas. Instruments like the Ages and Stages Questionnaire (ASQ) and Denver Developmental Screening Test II are frequently utilized to identify potential delays in motor skills, language, cognitive function, and social-emotional development (Rah et al, 2023). These tools aid in deciding if a child requires further assessment.

3. Specialist Assessment and Diagnostic Testing

Additional evaluations may include neurological assessments, genetic testing, auditory and visual examinations, and neuroimaging (such as MRI or CT scans) to exclude or confirm underlying issues like cerebral palsy, autism spectrum disorder, intellectual disabilities, or sensory impairments (Elia & Coghill, 2021).

Timely and precise diagnosis is essential as it allows for prompt intervention, significantly enhancing long-term outcomes for children experiencing developmental delays.

2.2 Overview of physiotherapy in pediatric care

Physiotherapy is crucial in pediatric healthcare as it fosters optimal physical growth, prevents issues, and enhances functional abilities in children facing health or developmental challenges. Pediatric physiotherapists focus on evaluating and treating conditions that impact movement, posture, coordination, and motor skills in infants, toddlers, and children. They collaborate with caregivers, educators, and multidisciplinary teams to develop customized treatment plans aimed at maximizing a child's physical capabilities and improving their quality of life (Sørvoll et al., 2022).

In pediatric care, physiotherapy is important not just for children with neurological or musculoskeletal disorders, but also for those experiencing developmental delays. It aids in reaching age-appropriate milestones like head control, sitting, crawling, standing, and walking. By utilizing age-specific exercises, manual therapy, play-based activities, and adaptive equipment, physiotherapists assist children in building strength, enhancing balance and coordination, and developing functional mobility. Early intervention through physiotherapy has been proven to promote motor development and decrease long-term disabilities, particularly when integrated into a child's daily activities and home surroundings (Sudhir et al., 2023).

2.2.1 Physiotherapy interventions for delayed milestones

Physiotherapy strategies for addressing delayed developmental milestones are customized based on the child's age, developmental stage, underlying conditions, and specific areas where delays occur. The main objective is to support the development of motor skills through structured therapeutic activities that enhance neurodevelopment and promote functional independence.

1. Neurodevelopmental Treatment (NDT): NDT is a hands-on strategy aimed at enhancing posture and movement by encouraging typical motor patterns while suppressing atypical ones. This method aids children in achieving crucial milestones such as head control, rolling over, sitting, and walking (Te-Velde et al., 2022).

2. Strengthening and Stretching Exercises: Specific exercises are designed to boost muscle tone, strength, and flexibility, particularly in children with hypotonia or spasticity. These activities improve motor control and joint stability needed for developmental tasks.

3. Play-Based Therapy: Integrating play into therapy promotes engagement and facilitates motor learning (Koukourikos et al., 2022). Activities such as ball games, crawling through tunnels, or climbing assist in enhancing gross motor coordination in a fun and motivating manner.

4. Sensory-Motor Integration: This approach is particularly beneficial for children with sensory processing difficulties, as it enhances body awareness, balance, and coordination, vital for developmental advancement.

5. Gait Training and Mobility Aids: For children who face challenges with walking, physiotherapists implement techniques like treadmill training or provide support devices such as walkers, orthotics, or standing frames to encourage upright mobility and balance.

6. Parent and Caregiver Education: Physiotherapists instruct parents on how to perform therapeutic activities at home, promoting consistency and accelerating developmental progress.

2.3 Knowledge and attitude of caregivers on physiotherapy for pediatric patients

Caregivers are vital in the treatment and rehabilitation of pediatric patients, particularly those facing developmental delays. Their understanding and perspective on physiotherapy significantly impact the consistency, efficacy, and results of therapeutic interventions. Active caregiver involvement leads to improved adherence to home-based programs and supports the child's functional development, while a lack of knowledge or negative perceptions can obstruct therapy success (Muke et al., 2023). Many caregivers have a fundamental grasp of physiotherapy as a solution for movement challenges. However, the extent of their understanding varies widely based on their educational level, availability of healthcare information, and prior encounters with physiotherapy services. Research indicates that although some caregivers recognize that physiotherapy can assist with mobility, posture, and motor skills, fewer appreciate its wider applications in sensory integration, neurodevelopmental techniques, and long-term rehabilitation (Abdullahi & Isah, 2020).

Caregivers' perspectives are shaped by cultural beliefs, past interactions with healthcare professionals, and their perceived importance of physiotherapy (Anwer et al., 2022). A constructive attitude, characterized by trust in the therapist, eagerness to learn, and dedication to the child’s development, enhances compliance with therapy. In contrast, negative attitudes may arise from misunderstandings, anxiety about pain during sessions, financial limitations, or doubts about therapy's effectiveness.

Strategies to enhance caregivers’ attitudes, such as providing guidance, including them in therapy sessions, and offering culturally relevant health education, have proven effective in increasing participation and improving outcomes (Shahin & Hussien, 2021). When caregivers are empowered as collaborators in therapy, they are more inclined to ensure regular attendance and actively engage in home-based care.

2.3.1 Factors that influence knowledge and attitude of caregivers on physiotherapy for pediatric patients

The knowledge and perceptions of caregivers regarding physiotherapy for pediatric patients are influenced by a blend of personal, socio-cultural, and systemic factors. These elements can either facilitate or obstruct their understanding and willingness to engage actively in the rehabilitation process. Identifying these factors is crucial for creating effective educational and support initiatives for caregivers.

1. Caregiver Education Level

A caregiver's educational background significantly impacts their grasp of physiotherapy principles and associated benefits. Individuals with higher educational qualifications tend to better understand medical recommendations, seek out information, and recognize the importance of early intervention. In contrast, caregivers with limited literacy are likely to have a poorer comprehension of medical terms and treatment expectations, which may decrease their involvement in physiotherapy (Kumar et al., 2024)

2. Economic Background

Families with lower incomes may encounter obstacles such as therapy costs, transportation difficulties, or insufficient access to specialized pediatric services. These challenges can adversely affect both caregivers' knowledge (due to a lack of exposure) and attitudes (due to stress and financial pressure) towards physiotherapy services (Almosallam et al., 2024).

3. Cultural Beliefs and Attitudes

Cultural and traditional beliefs can shape how caregivers perceive developmental delays and the importance of physiotherapy. In certain communities, disabilities might be seen as a spiritual or social concern rather than a medical one, resulting in a preference for alternative or traditional healing approaches rather than physiotherapy (Olaleye et al., 2015).

4. Access to Health Information

Obtaining health education through clinics, community outreach, media, or online platforms improves caregivers' awareness and comprehension. Caregivers who receive sufficient information from healthcare professionals are more inclined to develop a favorable attitude and follow therapy protocols (Nasurdeen & Vallipuram, 2022).

5. Prior Experience with Health Services

Caregivers who have positive experiences with physiotherapists or other healthcare providers generally demonstrate better cooperation and confidence in the effectiveness of physiotherapy. Negative past interactions, coupled with poor communication or feelings of disrespect, can foster mistrust and withdrawal.

6. Support from Healthcare Providers

The presence of compassionate, understanding, and communicative healthcare professionals notably affects caregivers' attitudes (Olaleye et al., 2015). When physiotherapists actively engage caregivers in treatment planning and decision-making, it enhances the likelihood of trust and adherence.

2.4 Empirical literature review on knowledge and attitude of caregivers on physiotherapy for pediatric patients

AUTHOR/ YEAR/COUNTRY	TITLE	SAMPLE SIZE	AIM OF STUDY	STUDY TYPE	OUTCOME/MEASURE	FINDINGS
Almosallam et al./2024/Saudi Arabia	Caregiver Knowledge, Attitude, and Behavior toward Care of Children with Cerebral Palsy: A Saudi Arabian Perspective	216 caregivers	To determine caregiver's knowledge, attitude and behaviour towards care of children with cerebral palsy	Cross sectional design study	Self-developed questionnaire used to assess KAP	Approximately 82.9% of the caregivers were mothers of children with cerebral palsy (CP), with half of them (50.5%) aged 36 years or younger. A majority (53.7%) had attained a high level of education, and most (89.2%) resided in urban areas. Additionally, more than half (57.7%) of the caregivers reported owning their homes. Among the children, spastic quadriplegia was the most prevalent type of CP, accounting for 46.3% of cases. Overall, caregivers demonstrated good scores across all components of knowledge, attitude, and behavior (KAB). Notably, the mean score

						for attitude was the highest at 2.67 ± 0.20, followed by behavior at 2.49 ± 0.36, and knowledge at 2.46 ± 0.25.
Khan et al./2022/Pakistan	A Cross-Sectional Survey on Knowledge, Attitude and Practice in Parents with Down syndrome Children	32 parents	To determine the Knowledge, Attitude and Practice in Parents with Down syndrome Children	Cross sectional design study	Cross sectional design study Data was collected on self-administered questionnaires based on parental knowledge, attitude and practice on Down syndrome distributed via email or WhatsApp group.	The findings indicated that most parents have shown a solid understanding, a positive outlook, and proactive approaches in dealing with children who have Down syndrome.

Kumar et al./2025/Pakistan	Knowledge, attitude, and practices of parents regarding the red flags of developmental milestones in children aged 0–5 years in Karachi, Pakistan: a cross-sectional study	390 parents	This study assessed parental knowledge, attitude, and practices regarding children's developmental milestones and associated "red flags".	Cross sectional design study	The questionnaire consisted of three components to assess parental knowledge, attitude, and practices.	59% and 54% of parents demonstrated insufficient knowledge regarding gross and fine motor milestones, respectively. In the social domain, 56% of participants showed a lack of adequate knowledge. Furthermore, 42% were unaware of language milestones. Interestingly, 29% of parents strongly agreed that their pediatricians offered sufficient information on the warning signs of developmental milestones. A majority, 60% of parents, strongly expressed that any delays in their child's development would be concerning to them. Regarding developmental delays, 55% indicated they would seek advice from a general pediatrician, whereas 11% preferred

						consulting a pediatric neurologist, 21% chose a developmental pediatrician, and 13% would turn to a family physician.
Olaleye et al./2015/Nigeria	Perceived quality of physiotherapy services among informal caregivers of children with cerebral palsy in Ibadan, Nigeria	53 informal caregivers	To determine caregivers perceived ability	Cross sectional design study	This cross-sectional survey assessed the perceived quality of physiotherapy (QoP) services among informal caregivers of children with cerebral palsy (CP) using the SERVQUAL instrument. The study was conducted across two distinct healthcare facilities, allowing for comparative	The study revealed that caregivers of children with cerebral palsy (CP) perceived the quality of physiotherapy services provided to their children as poor. This negative perception was predominantly associated with the tangible dimension of care, which includes factors such as the availability and condition of physical facilities, equipment, and the appearance of healthcare providers.

					insights into service delivery and caregiver satisfaction.	

CHAPTER THREE

MATERIALS AND METHODS

3.1 Population

Population for this study are caregivers of children diagnosed with delayed developmental milestones who are attending the pediatric physiotherapy clinic in University of Benin Teaching Hospital. The caregivers will vary in age, sex and level of education.

3.1.1 Inclusion Criteria

1. Caregivers (parents or guardians) of children diagnosed with DDM.

2. Caregivers within the age range of 18 - 60 years.

3. Caregivers who give consent to participate.

3.1.2 Exclusion Criteria

1. Caregivers of children with other primary diagnoses not related to DDM.

2. Caregivers who did not give consent to participate.

3. Individuals who were not directly involved in the care of the child.

3.2 MATERIALS

3.2.1 Instrument

This study use a structured questionnaire based on

i- Knowledge, Attitudes and Practice (KAP) model: Which was proposed by American Everett M. Rogers in the late 1950s and early 1960s.It is a widely used framework in public health research, it is used to understand the relationship between what individuals know about a health issue(knowledge),how they feel about it (attitude) and how they respond through

behavior(practice) (Launiala, 2009).

This instrument consists of three sections:

-Knowledge Section: This part includes factual, multi-choice and true/false questions to evaluate participants' understanding and awareness of the subject matter. Questions are based on existing literature and related public health guidelines (Hossain et al., 2020).

-Attitude Section: This section make use of Likert-scale items (ranging from “strongly disagree to strongly agree”) to measure participants beliefs, feelings, and emotional responses towards the study

-Practice Section: This section focuses on the behavior and self-reported practices, using both yes/no and frequency items to capture the extent to which participants apply these actions

ii-Sociodemographic form: This form will be used to collect basic demographic information such as age,tribe,educational level, occupation. The educational level will be grouped into no formal education, primary education and tertiary education. Occupational status was divided into five categories: civil servants, self employed, trader, student and unemployed (housewife).

iii-Self-designed questionnaire: This research questionnaire will be developed through the KAP model. It will contain both close ended and Likert-scale questions, divided into 3 sessions: Demographics, Knowledge and Attitudes. The questionnaire will be pre-tested with a small sample (n = 5) to ensure clarity, validity, and reliability. Feedback from the pilot study is going to be used to refine question wording and structure.

3.3 Methods

3.3.1 Sampling Techniques

The sampling technique that was used to recruit the participants is purposive sampling technique and it is a form of non-probability sampling in which researchers rely on their own judgement when choosing members of a population to participate in their survey.

3.3.2 Sample Size

The study was conducted among Caregivers of children with DDM in University of Benin Teaching Hospital, Edo state, Nigeria. The sample size for this study was calculated using Slovin's formula as cited in (Yamane, 1967).

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = Required sample size

N = Estimated population size (Total number of caregivers of children with DDM attending pediatric clinic at UBTH) is 125

e= Margin of error (set at 0.05)

Using Slovin's formula with N = 125 participants and assuming a typical 5% margin of error (e = 0.05):

$n = 125 / (1 + 125 \times 0.05^2)$

$n = 125 / (1 + 125 \times 0.0025)$

$n = 125 / (1 + 0.3125)$

$n = 125 / 1.3125$

$n \approx 95.2$, approximately 95 participants.

3.3.3 Research Design

This research design is a cross-sectional survey.

3.3.4 Procedures for Data Collection

The procedure for data collection was in two stages of participants recruitment; pilot study and main data collection. A pilot study was conducted to determine how effective the proposed questionnaire will be used in determining the outcome of the research. The pilot study was done in physiotherapy pediatric clinic and 5 caregivers were recruited to complete the given questionnaire. After obtaining informed consent, questionnaires were used to obtain information from the participants either through self completion or interviewer assistance for those with low literacy levels.

3.3.5 Ethical Consideration

Ethical approval for this study was obtained from the Ethics and Research Committee of the University of Benin Teaching Hospital (ADM/E 22/A/VOL.VII/2025/157). Informed consent and permission was taken from the participants using informed consent form and also letting them know that the data collected is confidential and based on anonymity.

3.3.6 Data Analysis

Data was analyzed using the Statistical Package for Social Sciences (SPSS) version 25.0 with significance level set at <0.05. Results of analysis was presented using descriptive statistics

of frequency tables, percentages, mean and standard deviation.

CHAPTER FOUR

RESULTS

4.1 Sociodemographic characteristics of the respondents

Table 1 shows that most respondents were female (73.4%). Half of the caregivers had attained tertiary education (50.0%), while 38.3% had secondary education. The most common occupations were self-employment (37.2%) and trading (29.8%). The vast majority were Christians (97.9%). In terms of ethnicity, 29.8% were Benin, while 34.0% belonged to other ethnic groups. Nearly half of the respondents were mothers (48.9%), followed by fathers (20.2%) and other relatives such as aunties (8.5%) and grandmothers (6.4%).

Table 1: Sociodemographic characteristics of the participants

Variable	Category	Frequency	Percentage
Gender	Female	69	73.4
	Male	25	26.6
Education	No formal education	2	2.1
	Primary education	9	9.6
	Secondary education	36	38.3
	Tertiary education	47	50.0
Occupation	Civil servant	17	18.1
	Self employed	35	37.2
	Student	1	1.1
	Trader	28	29.8
	Uemployed	13	13.8
Religion	Christianity	92	97.9
	Islam	2	2.1
Tribe	Benin	28	29.8
	Esan	10	10.6
	Etsako	8	8.5
	Yoruba	7	7.4
	Igbo	9	9.6
	Others	32	34
Relationship to Child	Aunty	8	8.5
	Father	19	20.2
	Mother	46	48.9
	Grand mother	6	6.4
	Uncle	3	3.2
	Others	12	12.8

4.1.2 Caregivers' knowledge of physiotherapy for children with delayed developmental milestones.

Table 2 presents caregivers' knowledge of physiotherapy for children with delayed developmental milestones. Overall, 61 respondents (64.9%) demonstrated good knowledge, while 33 (35.1%) had poor knowledge. Almost all respondents correctly recognized that physiotherapy can help improve movement (100%), identified developmental milestones accurately (100%), and agreed that physiotherapy should be consistent for effective results (98.9%). A majority also acknowledged the importance of early physiotherapy (97.9%) and its role in improving motor skills (88.3%). However, knowledge gaps were evident in certain areas. Less than half (42.6%) correctly identified the causes of delayed developmental milestones, while 57.4% provided incorrect responses. Similarly, 35.1% of respondents reported not understanding the goals of physiotherapy, and 25.5% incorrectly believed physiotherapy cannot help with brain development.

Table 2: Caregivers' knowledge of physiotherapy for children with delayed developmental milestones.

Knowledge Question	Category	N (%)
Physiotherapy can help improve movement in children with delayed milestones?	True	94 (100)
	False	0 (0)
Which of the following are developmental milestones? (Sitting unsupported, Speaking in sentences, Rolling over)	Right	94 (100)
	Wrong	0 (0)
At what age should a child typically start walking? (12 months)	Right	87 (92.6)
	Wrong	7 (7.4%)
Delayed developmental milestones can be caused by?	Right	40 (42.6)
	Wrong	54 (57.4)
Physiotherapy cannot help with brain development in children?	Yes	24 (25.5)
	No	70 (74.5)
Do you understand the goals of physiotherapy for children with delayed milestones?	Yes	61 (64.9)
	No	33 (35.1)
Physiotherapy can help children improve motor skills?	Yes	83 (88.3)
	No	11 (11.7)
Physiotherapy involves exercise and play-based activities?	Yes	66 (70.2)
	No	28 (29.8)
Do you believe that the earlier a child begins physiotherapy, the better the outcome?	Yes	92 (97.9)
	No	2 (2.1)
Physiotherapy sessions should be consistent for effective result?	Yes	93 (98.9)
	No	1 (1.1)
Regular home exercises prescribed by physiotherapists are essential for progress?	Yes	74 (78.7)
	No	20 (21.3)
Good knowledge = 61 (64.9%)		
Poor knowledge = 33 (35.1%)		

4.1.3Attitude towards physiotherapy for children with delayed developmental milestones

Table 3 indicates that the majority of respondents expressed a positive attitude towards physiotherapy for children with delayed developmental milestones. 97.9% of respondents demonstrated good attitudes overall, while only 2.1% displayed poor attitudes. Most caregivers agreed or strongly agreed that physiotherapy is effective (97.9%), felt hopeful about its benefits (97.9%), and were willing to learn and perform home-based exercises (95.7%). Negative attitudes, such as perceiving physiotherapy as harmful or believing traditional medicine is more effective, were relatively uncommon.

Table 3: Attitude towards physiotherapy for children with delayed developmental milestones

Statement	1 Strongly Disagree N(%)	2 Disagree N(%)	3 Neither Agree nor Disagree N(%)	4 Agree N(%)	5 Strongly Agree N(%)
1. I believe physiotherapy is effective for children with developmental delays.	0 (0)	0(0)	2 (2.1)	55 (58.5)	37 (39.4)
2. I am confident in bringing my child for physiotherapy regularly.	0 (0)	0(0)	18 (19.1)	60 (63.8)	16 (17.0)
3. I understand the role of a physiotherapist in managing my child's condition.	0(0)	1 (1.1)	26 (27.7)	57 (60.6)	10 (10.6)
4. I am worried physiotherapy may harm my child.	0 (0)	0(0)	5 (5.3)	51 (54.3)	38 (40.4)
5. I feel hopeful that physiotherapy can improve my child's development.	0 (0)	0(0)	0(0)	70 (74.5)	22 (23.4)
6. I believe my child's condition is spiritual and does not need therapy.	0 (0)	1 (1.1)	29 (30.9)	40 (42.6)	24 (25.5)
7. I feel therapy sessions interfere with my daily routine, it takes too much time and effort.	3 (3.2)	51 (54.3)	28 (29.8)	12 (12.8)	0 (0)
8. I trust the physiotherapist advice and recommendations	0 (0)	0(0)	3 (3.2)	67 (71.3)	24 (35.5)
9. I think traditional medicine is more effective than physiotherapy	0(0)	3 (3.2)	18 (19.1)	57 (60.6)	16 (17.0)
10. I am motivated to actively participate and follow up regularly with physiotherapy session.	0 (0)	0(0)	15 (16.0)	62 (66.0)	14 (14.9)
11. I am willing to learn and do home-based physiotherapy exercises.	0 (0)	0(0)	4 (4.3)	71 (75.5)	19 (20.2)

Poor Attitude = 2 (2.1)

Good Attitude = 92 (97.9)

4.1.4 Association between Educational level, Sex and knowledge of physiotherapy for children with delayed developmental milestone

Table 4 shows a significant association between respondents' educational level and their knowledge of physiotherapy for children with delayed developmental milestones ($\chi^2 = 19.016$, $p < 0.001$). Caregivers with tertiary education demonstrated the highest level of good knowledge (39), followed by those with secondary education (20). There was no significant association between sex and knowledge of physiotherapy ($\chi^2 = 0.321$, $p = 0.571$), indicating that both male and female caregivers had comparable levels of knowledge. Similarly, there was no statistically significant relationship between occupation and knowledge ($\chi^2 = 8.275$, $p = 0.082$)

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Table 4: Association between Sociodemographic and knowledge of physiotherapy for children with delayed developmental milestone

Variable	Category	Knowledge		χ^2, p
		Poor	Good	
Level of education	No education	2	0	19.016, <0.001
	Primary education	7	2	
	Secondary education	16	20	
	Tertiary education	8	39	
Sex	Male	11	14	0.321, 0.571
	Female	22	47	
Occupation	Civil servant	3	14	8.275, 0.082
	Self employed	12	23	
	Student	0	1	
	Teacher	11	17	
	Unemployed	7	6	

4.1.5 Association between Sociodemographic and knowledge of physiotherapy for children with delayed developmental milestone

Table 5 shows the association between respondents' sociodemographic characteristics and their attitude toward physiotherapy for children with delayed developmental milestones.

There was no statistically significant association between educational level and respondents' attitude ($\chi^2 = 3.417$, $p = 0.331$). Similarly, there was no significant relationship between sex and attitude ($\chi^2 = 0.086$, $p = 0.769$), suggesting that both male and female caregivers generally held positive views toward physiotherapy for children with delayed developmental milestones. Additionally, occupation was not significantly associated with attitude ($\chi^2 = 1.552$, $p = 0.818$), although caregivers who were self-employed (34) and teachers (27) exhibited relatively higher frequencies of positive attitudes compared to other groups.

Table 5: Association between Sociodemographic and knowledge of physiotherapy for children with delayed developmental milestone

Variable	Category	Attitude		χ^2, p
		Negative	Positive	
Level of education	No education	1	1	3.417, 0.331
	Primary education	0	9	
	Secondary education	0	36	
	Tertiary education	1	46	
Sex	Male	1	24	0.086, 0.769
	Female	1	68	
Occupation	Civil servant	0	17	1.552, 0.818
	Self employed	1	34	
	Student	0	1	
	Teacher	1	27	
	Unemployed	0	13	

4.6: Factors Influencing Participation in Physiotherapy among Caregivers of Children with Delayed Developmental Milestones

Table 6 presents factors influencing caregivers' attitudes and participation in physiotherapy for children with delayed developmental milestones.

The most commonly reported challenge preventing regular attendance at physiotherapy sessions was financial limitation (43.6%), followed by transportation issues (26.6%), lack of understanding of the importance of physiotherapy (19.1%), and work schedule conflicts (10.6%).

A majority of the caregivers (77.7%) reported that cultural or traditional beliefs did not influence their views on physiotherapy, 94.7%) reported having support from family or friends in caring for their children, while only 5.3% had no such support. In addition, a substantial proportion (74.5%) indicated willingness to attend caregiver education sessions if made available. Regarding beliefs in alternative treatment, the majority (79.8%) did not believe that traditional or alternative healing methods were more effective than physiotherapy.

Table 6: Factors Influencing Participation in Physiotherapy among Caregivers of Children with Delayed Developmental Milestones

Item	Response Options	Frequency (n)	Percentage (%)
1. Challenges preventing regular attendance of physiotherapy sessions	Financial limitations	41	43.6
	Transportation issues	25	26.6
	Lack of understanding of the importance of physiotherapy	18	19.1
	Work schedule	10	10.6
2. Do cultural or traditional beliefs influence how you view your child's need for physiotherapy?	Yes	5	5.3
	No	73	77.7
	Not sure	16	17.1
3. Do you have support from family or friends in caring for your child?	Yes	89	94.7
	No	5	5.3
4. Would you attend caregiver education sessions if they are available?	Yes	70	74.5
	No	24	25.5
5. Do you believe traditional or alternative healing methods are more effective than physiotherapy for your child's condition?	Yes	1	1.1
	No	75	79.8
	Not sure	18	19.1

4.2 Hypothesis testing

1. Hypothesis 1

There would be no significant association between caregivers' educational level and their knowledge of physiotherapy for children with delayed developmental milestones.

Test: Chi-square test

Observed p-value: < 0.001

Judgement: The observed p-value was less than 0.05; hence, the null hypothesis was REJECTED.

2. Hypothesis 2

There would be no significant association between caregivers' sex and their knowledge of physiotherapy for children with delayed developmental milestones.

Test: Chi-square test

Observed p-value: 0.571

Judgement: The observed p-value was greater than 0.05; hence, the null hypothesis was NOT REJECTED.

3, Hypothesis 3

There would be no significant association between caregivers' occupation and their knowledge of physiotherapy for children with delayed developmental milestones.

Test: Chi-square test

Observed p-value: 0.082

Judgement: The observed p-value was greater than 0.05; hence, the null hypothesis was NOT REJECTED.

4. Hypothesis 4

There would be no significant association between caregivers' educational level and their attitude toward physiotherapy for children with delayed developmental milestones.

Test: Chi-square test

Observed p-value: 0.331

Judgement: The observed p-value was greater than 0.05; hence, the null hypothesis was NOT REJECTED.

5. Hypothesis 5

There would be no significant association between caregivers' sex and their attitude toward physiotherapy for children with delayed developmental milestones.

Test: Chi-square test

Observed p-value: 0.769

Judgement: The observed p-value was greater than 0.05; hence, the null hypothesis was NOT REJECTED.

6. Hypothesis 6

There would be no significant association between caregivers' occupation and their attitude toward physiotherapy for children with delayed developmental milestones.

Test: Chi-square test

Observed p-value: 0.818

Judgement: The observed p-value was greater than 0.05; hence, the null hypothesis was NOT REJECTED.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Discussion

The aim of the study was to assess caregivers' knowledge and attitudes toward physiotherapy for children with delayed developmental milestones. The findings revealed that most caregivers possessed good knowledge (64.9%) and positive attitudes (97.9%) toward physiotherapy. This indicates a generally high level of awareness of physiotherapy's role in managing developmental delays among children, which may reflect growing community exposure to rehabilitation services and increased public education efforts by physiotherapists in recent years (Zeng et al., 2025).

The high proportion of caregivers with good knowledge in this study aligns with the findings of (Bailes et al., 2018 and Anwer et al., 2022). Who also reported high level of awareness and knowledge among caregivers about the role of physiotherapy in promoting motor development in children with disabilities. However, some knowledge gaps were evident in this study, particularly regarding the causes of delayed developmental milestones and the goals of physiotherapy. Similar misconceptions have been documented in studies by (Ajayi et al., 2022). Suggesting that while caregivers may recognize the benefits of physiotherapy, deeper understanding of its mechanisms and long-term objectives remains limited. Furthermore, (Ajayi et al., 2022). Study showed that educational program focused on information about physiotherapy for delayed developmental milestone among cerebral palsy increased knowledge about cerebral palsy among caregivers.

The finding of this study further revealed that majority of the respondents (97.9%) had a positive attitude toward physiotherapy for managing delayed developmental delay among

children. This finding is consistent with (Lucas et al., 2016 and Omole et al., 2018). Who reported that caregivers generally perceive physiotherapy as an effective and beneficial intervention for children with neurodevelopmental conditions. The widespread positive attitude in this study may be attributed to caregivers' direct observation of functional improvements in their children, as well as positive interactions with physiotherapists. Furthermore, a supportive family and cultural environment as reported by most respondents could have strengthened these favorable attitudes. However, this positive attitude may not reflect how they perceive the quality of physiotherapy services for their children. For instance, (Olaleye et al., 2015). Revealed majority of the informal caregiver perceived their children receive poor quality of care during physiotherapy services despite having positive attitude towards the physiotherapy care for children with delayed development milestone.

Furthermore, the findings of the study examined the association between selected sociodemographic characteristics and knowledge. The result revealed a statistically significant relationship between educational level and knowledge of physiotherapy. Caregivers with tertiary education demonstrated the highest levels of good knowledge, followed by those with secondary education. This supports the findings of (Perrins et al., 2017 and Clouston et al., 2017). Who observed that higher educational attainment is a predictor of better health literacy and greater awareness of physiotherapy services. Educated caregivers are more likely to access health information, engage with healthcare providers, and appreciate the importance of rehabilitation in child development (Gentles et al., 2010). However, there was no significant association between sex and knowledge, suggesting that both male and female caregivers had comparable understanding of physiotherapy. Similarly, occupation was not significantly associated with knowledge. Although caregivers in formal employment (civil servants) exhibited relatively higher knowledge, the variation was not significant. This may be explained by the widespread availability of physiotherapy

information through community outreach and hospital education programs, which make awareness less dependent on socioeconomic status or occupational background.

Regarding attitudes, this study found no significant relationship between attitude and any of the sociodemographic variables examined, including education, sex, and occupation. This is consistent with findings from (Anwer et al., 2022). Who also reported uniformly positive attitudes toward physiotherapy irrespective of demographic differences. This suggests that caregivers' attitudes may be more strongly influenced by personal experiences with treatment outcomes rather than by social or educational factors.

The findings of the study further revealed several important factors influencing caregivers' attitudes and participation in physiotherapy sessions for children with delayed developmental milestones. The most common barriers identified were financial limitations (43.6%) and transportation difficulties (26.6%), followed by lack of understanding of the importance of physiotherapy (19.1%) and work schedule conflicts (10.6%). These findings highlight that while caregivers generally hold positive attitudes toward physiotherapy, various socioeconomic and logistical factors continue to hinder consistent participation and treatment adherence. The findings of this result align with previous studies by (Sinha and Sharma, 2017 and Tonmukayakul et al, 2018). Who reported that economic and financial situation could affect utilization of physiotherapy service among children with delayed developmental milestone. In Nigeria, (Abdullahi and Isah, 2020). Qualitative study among caregivers reported a significant theme about financial constraints as one of the most important barriers to the use of physiotherapy services despite having good knowledge and positive attitude towards physiotherapy care. In contexts where healthcare costs are largely out-of-pocket, families often struggle to sustain prolonged rehabilitation, particularly when therapy requires multiple sessions per week. The findings of this study therefore underscore the urgent need

for financial support mechanisms, such as subsidized rehabilitation services or government-backed insurance coverage for paediatric physiotherapy.

5.2 Conclusion

This study examined caregivers' knowledge and attitudes toward physiotherapy for children with delayed developmental milestones, as well as the influence of sociodemographic characteristics such as education, sex, and occupation. The findings revealed that most caregivers possessed good knowledge and overwhelmingly positive attitudes toward physiotherapy. Educational level was the only variable significantly associated with knowledge, suggesting that higher education enhances understanding of physiotherapy's role in managing developmental delays while financial limitations and transportation difficulties were the major factors that affect utilization of physiotherapy services.

5.3 Recommendations

i. Enhanced Caregiver Education: Physiotherapists should prioritize structured caregiver education programs focused on the causes of delayed developmental milestones, the importance of early intervention, and home-based exercise adherence.

ii. Improving Accessibility: Government and healthcare organizations should establish community physiotherapy centers and provide subsidized or free services for low-income families to overcome financial and transportation barriers.

iii. Integration of Caregiver Support: Healthcare systems should include caregiver support groups to enhance motivation, encourage shared experiences, and strengthen adherence to therapy recommendations.

5.4 Implication for further studies

i. Future studies should employ longitudinal designs to evaluate the long-term effects of caregiver knowledge and attitudes on treatment outcomes. In addition, qualitative studies could provide deeper insight into caregivers' perceptions, challenges, and lived experiences with physiotherapy.

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APPENDIX I

INFORMED CONSENT FORM

My name is ONWUZUIKE IFEYINWA FAVOUR. I am a final year student of the department of physiotherapy ,school of basic medical sciences, University of Benin. I am conducting a study on "KNOWLEDGE AND ATTITUDES OF CAREGIVERS TOWARDS PHYSIOTHERAPY FOR CHILDREN WITH DELAYED DEVELOPMENTAL MILESTONES IN UNIVERSITY OF BENIN TEACHING HOSPITAL" This research is a way to expand the knowledge and create awareness on this topic. This research aims to assess the knowledge and attitudes of caregivers regarding physiotherapy for children with DDM .

Your participation and responses will be appreciated and kept confidential. Your sincere responses to this questionnaire will be most helpful.

My email is _____ and my phone number is _____.

Please note that your participation in this study is voluntary, and participants have the right to withdraw from this study at any time.

Consent: Now that this study has been explained to me in details and I understand the nature purpose and benefits of the study. I consent to be a participant in this study.

_____

Signature of the Participant/Date

_____

Signature of Researcher/Date

APPENDIX II

QUESTIONNAIRE

Knowledge and Attitudes of Caregivers Towards Physiotherapy for Children with Delayed Developmental Milestones University of Benin Teaching Hospital

Section A: Sociodemographic Data

(Please tick [✓] or fill in the blanks as appropriate)

1. Age: _____

2. Sex :Male [ ] Female [ ]

3. Tribe: _____

4. Educational Level: No Formal Education [ ] Primary Education [ ] Secondary Education [ ] Tertiary Education [ ]

5. Occupation:
   Civil Servant [ ] Self-Employed [ ] Trader [ ] Student [ ] Unemployed [ ]

6. Relationship to the Child:
   Mother [ ] Father [ ] Guardian [ ] Others (Please specify): _____

7. Religion : Christianity [ ] Islam [ ] Traditional [ ] Others:

Section B: Knowledge about Physiotherapy and Developmental Milestones

1. Physiotherapy can help improve movement in children with delayed milestones? True [ ] False [ ]

2. Which of the following are developmental milestones? Sitting unsupported [ ] Speaking in sentences [ ] Eye blinking [ ] Rolling over [ ]

3. At what age should a child typically start walking? 6 months [ ] 12 months [ ] 24 months [ ] Not sure [ ]

4. Delayed developmental milestones can be caused by? Genetic conditions [ ] Infections [ ] Poor nutrition [ ]

   All of the above [ ]

5. Physiotherapy cannot help with brain development in children? Yes [ ] No [ ] Not sure [ ]

6. Do you understand the goals of physiotherapy for children with delayed milestones?

Yes [ ] No [ ] Not sure [ ]

7. Physiotherapy can help children improve motor skills? Yes [ ] No [ ] Not sure [ ]

8. Physiotherapy involves exercise and play-based activities? Yes [ ] No [ ] Not sure [ ]

9. Do you believe that the earlier a child begins physiotherapy,the better the outcome? Yes [ ] No [ ] Not sure [ ]

10. Physiotherapy sessions should be consistent for effective result? Yes [ ] No [ ] Not sure [ ]

11. Regular home exercises prescribed by physiotherapists are essential for progress?

Yes [ ] No [ ] Not sure [ ]

12. What sources help you learn about your child's condition

Health workers [ ] Social media [ ] TV/Radio [ ] Other caregivers [ ]

Section C: Attitudes Towards Physiotherapy

Please indicate how strongly you agree or disagree with the following statements using this rating :

Strongly Disagree	Disagree	Neither Agree nor Disagree
Agree	Strongly Agree	

Statement	1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree
1. I believe physiotherapy is effective for children with developmental delays.					
2. I am confident in bringing my child for physiotherapy regularly.					
3. I understand the role of a physiotherapist in managing my child's condition.					
4. I am worried physiotherapy may harm my child.					
5. I feel hopeful that physiotherapy can improve my child's development.					
6. I believe my child's condition is spiritual and does not need therapy.					
7. I feel therapy sessions interfere with my daily routine, it takes too much time and effort.					
8. I trust the physiotherapist advice and recommendations					
9. I think traditional medicine is more effective than physiotherapy					
10. I am motivated to actively participate and follow up regularly with physiotherapy sessions.					

11. I am willing to learn and do home-based physiotherapy exercises.					

Section D: Factors Influencing Attitudes and participation

1- What challenges prevent regular attendance of physiotherapy sessions ?

Financial limitations [ ] Transportation issues [ ] Lack of understanding of the importance of physiotherapy [ ] Work schedule [ ]

2. Do cultural or traditional beliefs influence how you view your child's or the need for physiotherapy ? Yes [ ] No [ ] Not sure [ ]

3. Do you have support from family or friends in caring for your child ? Yes [ ] No [ ]

4. Would you attend caregiver education sessions if they are available ? Yes [ ] No [ ]

5. Do you believe traditional or alternative healing methods are more effective than physiotherapy for your child's condition ? Yes [ ] No [ ] Not sure [ ]

APPENDIX III

HEALTH RESEARCH ETHICS COMMITTEE (HREC)
UNIVERSITY OF BENIN TEACHING HOSPITAL
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HREC OFFICE:
Committee email: ubthresearchethics@gmail.com
Registration Number:
NHREC-UBTH-HREC/24/12/2022B

PROTOCOL NUMBER: ADM/E 22/A/VOL.VII/2025/157

PROPOSAL TITLE: "KNOWLEDGE AND ATTITUDE OF CAREGIVERS TOWARDS PHYSIOTHERAPY FOR CHILDREN WITH DELAYED DEVELOPMENTAL MILESTONES IN UNIVERSITY OF BENIN TEACHING HOSPITAL"

PRINCIPAL INVESTIGATOR(S): ONWUZUIKE IFEYINWA FAVOUR

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

DATE CONSIDERED: AUGUST 6TH, 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.....