

**SCHOOL OF PUBLIC HEALTH
COLLEGE OF HEALTH SCIENCE
UNIVERSITY OF GHANA**



**FACTORS ASSOCIATED WITH ADHERENCE TO PHYSIOTHERAPY AMONG
CHILDREN LIVING WITH PHYSICAL DISABILITIES**

**BY
ADWOA ADOWAA ADU
(10273074)**

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LEGON IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD
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DECLARATION

I, Adwoa Adowaa Adu, do hereby declare that except for references which have been duly acknowledged, this dissertation is the result of my own research carried out under the supervision of Dr Agnes M. Kotoh, School of Public Health, and that it has not been presented anywhere in whole or in part for the award of any degree in this university and other universities elsewhere.

.....
Adwoa Adowaa Adu

(Principal Investigator/ Student)

.....
Date

.....
Dr. Agnes M Kotoh

(Academic Supervisor)

.....
Date



DEDICATION

This dissertation is dedicated to my husband, Dr Smith Afrane, and my mother, Mrs Patricia Frimpomaa Adu Agyapong, for their love, support, encouragement, patience and understanding. I also dedicate this study to my siblings for their love.

God bless you all



ACKNOWLEDGEMENT

My first and foremost gratitude goes to Almighty God for the wisdom, courage and strength given me throughout this program. To him be all the glory.

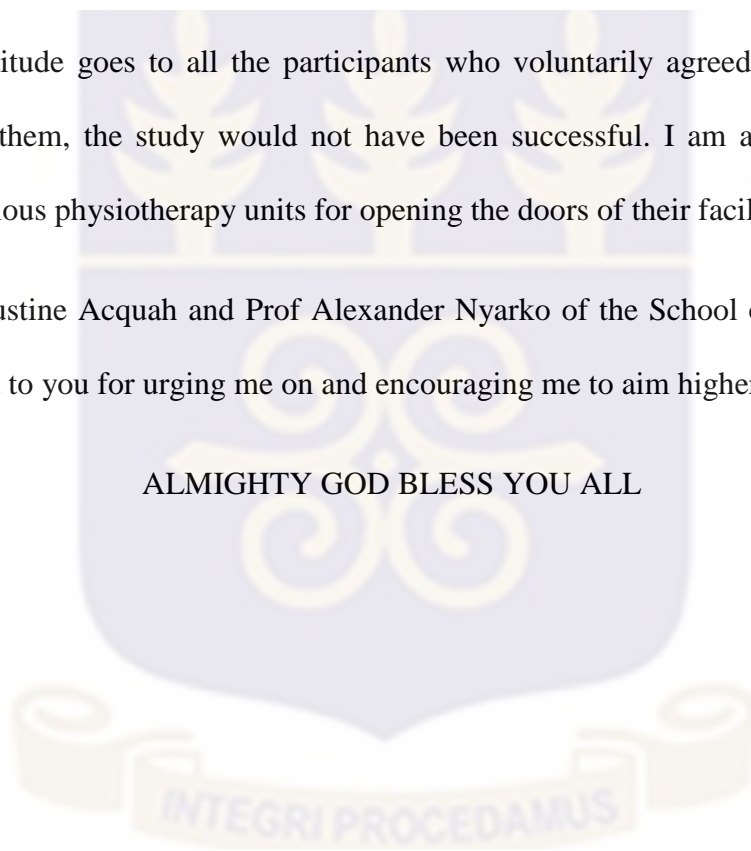
I am grateful to my supervisor, Dr Agnes M. Kotoh for her inputs and contributions.

Special thanks go to the department of Population, Family and Reproductive Health for their tremendous advice, support, guidance and tutelage throughout my studies and especially with this study.

My sincere gratitude goes to all the participants who voluntarily agreed to be part of this study. Without them, the study would not have been successful. I am also grateful to the heads of the various physiotherapy units for opening the doors of their facilities to me.

To friends Augustine Acquah and Prof Alexander Nyarko of the School of Pharmacy, I am forever indebted to you for urging me on and encouraging me to aim higher.

ALMIGHTY GOD BLESS YOU ALL



LIST OF ABBREVIATIONS

WCPT- World Confederation of Physical Therapy

PWD - Persons with Disability

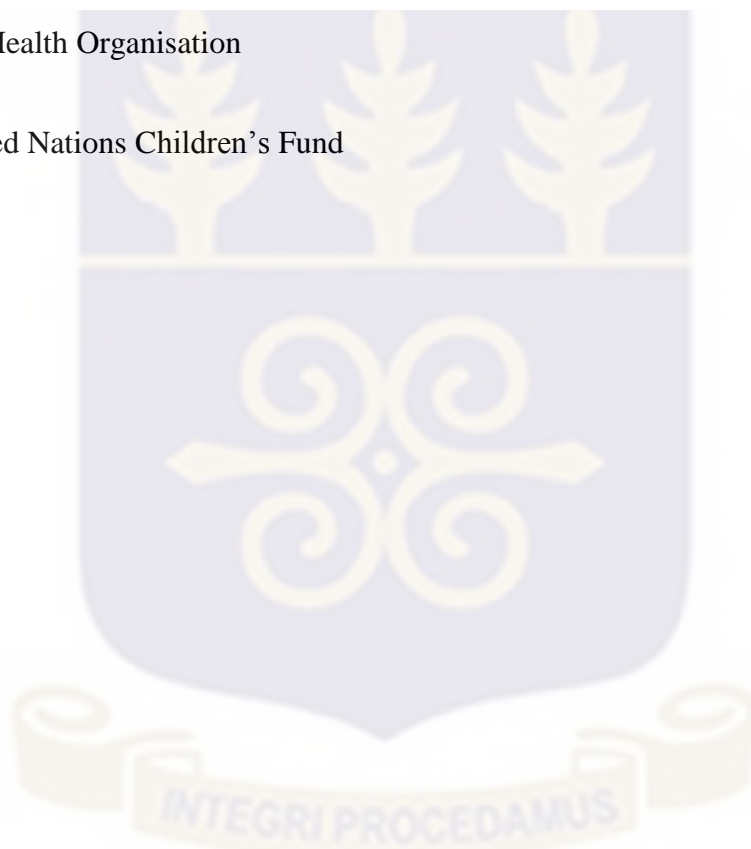
CLWPD - Children Living with Physical Disabilities

TGH - Tema General Hospital

PML - Princess Marie Louise

WHO - World Health Organisation

UNICEF - United Nations Children's Fund



ABSTRACT

INTRODUCTION: Physiotherapy has proven to be very beneficial in improving function and quality of life among children with physical disabilities. Nonetheless, adherence to treatment is an important factor which can influence the outcome of treatment. Children with disability are regrettably at increased risk of non-adherence because they have to rely on caregivers to access physiotherapy and perform their home exercises. This study sought to determine factors associated with adherence to physiotherapy among children living with physical disabilities within four health facilities in the Greater Accra Region.

METHODOLOGY: This study was a facility based cross-sectional study involving eighty five caregivers of children with physical disabilities. Following informed consent, questionnaires and structured interview guides were used to obtain information on socio-demographics, knowledge on physiotherapy and factors associated with adherence to keeping therapy appointments and home exercise program. Data was analysed using STATA version 14 and Nvivo 11. Associations and strengths of association were determined using chi-square and logistic regressions respectively. Significance level was set at $p < 0.05$ and 95% confidence interval (CI).

RESULTS: A little over 95 per cent of the caregivers had adequate knowledge on physiotherapy. Adherence to keeping therapy appointment was 81.2 per cent while adherence to home exercise program was 58.8 per cent. Caregivers' seeking of other forms of treatment (OR=0.24, CI 95%, 0.07- 0.79), perception of difficulty of their children's exercise regimen (OR=9.59, CI 95%, 1.64-56.09), number of children (OR=3.40, CI 95%, 0.76-15.11)(OR=1.25, CI 95%, 0.43-3.66), perception of disease severity (OR=1) and clashing of home exercises with other responsibilities (OR=9.23, CI95%, 3.19-26.69) were associated with adherence to keeping physiotherapy appointments and home exercises.

CONCLUSION: Generally, caregivers adhered very well to therapy with their health seeking behaviour, clashing of home exercise regimen with other pertinent responsibilities, number of children, perceived difficulty of therapy and perceived severity of child's medical condition being predictors of good adherence.



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CHAPTER ONE

1.0 Introduction

According to United Nations Children's Fund (UNICEF), 93 million children worldwide live with moderate disability while 13 million children live with severe disabilities (UNICEF, 2013). A national survey of musculoskeletal impairment in Rwanda also concluded that 2.6 per cent of their children had physical impairment with about 80,000 of them requiring physical therapy and 10,000 of them needing assistive devices (Atijosan, Simms, Kuper, Rischewski & Lavy, 2009). The 2010 Population and Housing Census in Ghana reported that persons with physical disability make up 25.4 per cent of the population (Ghana Statistical Service, 2012).

Physiotherapy has proven to be very beneficial to children living with physical disability because it improves their mobility and functional abilities as well as optimising their potentials (Başaran, Karadavut, Üneri, Balbaloglu & Atasoy, 2014). It is a healthcare profession that involves the use of therapeutic techniques in identifying, promoting, preventing deterioration and treatment of health conditions. Physiotherapists assess cases, plan clinic and home treatment and recommend assistive devices and orthoses (Günel, 2011). They prescribe exercises which facilitates learning and helps children with physical disability use their remaining potentials to carry out movements that would have otherwise not been performed (Başaran et al., 2014).

Paediatric physiotherapy as a sub-speciality, aims at improving function and maximizing the potentials of children with developmental disability by inspiring

confidence in them and their families as well as promoting their quality of life (WHO, 2011; Gannotti, Christy, Heathcock & Kolobe, 2013).

Collaboration between physiotherapists and their clients, other healthcare professionals, families and care givers is imperative. It greatly influences the outcomes of therapy (Parkes, Hill, Dolk & Donnelly, 2004; World Confederation for Physical Therapy, 2011). Physiotherapists prescribe home exercises to augment therapy given at the clinic. Therefore, the participation of caregivers in the home exercises is of utmost importance for the realization of treatment goals. Clients are assessed on the home exercises during follow-up visits to ensure that they are done correctly (Başaran et al., 2014).

Adherence to treatment is a significant element that can influence the outcome of treatment (Bassett, 2003; Hayden et al., 2005). In physiotherapy practice, the concept of adherence has several dimensions (Kolt, Brewer, Pizzari, Schoo & Garrett, 2007) and is linked to turnout for appointments, clients taking advice or performing prescribed exercises correctly and overdoing exercises or underdoing them (Jack, McLean, Moffett & Gardiner, 2010).

Poor adherence to treatment has been identified as a problem across a number of healthcare disciplines including physiotherapy (McLean, Burton, Bradley & Littlewood, 2010). Factors such as opinions and perception about therapy, therapist-client relationship, social support, experiences during therapy, clients' personal preferences regarding therapy have been identified to influence the levels of adherence to physiotherapy. Pain threshold, clinic set-up and privacy, scheduling of appointment, child resistance, respect and trust from therapist, inclusiveness of therapy, distance from place of residence to clinic, income, socio-demographic

characteristics, transportation issues, intensity of exercises, wearing of orthotics, time consuming nature of physiotherapy, monotonicity of exercises, level of knowledge on physiotherapy as well as seeking of indigenous health services and complementary alternative medicines influence adherence (De Geest & Sabaté, 2003; Redmond & Parrish, 2008; Bassett, 2012; Santer et al., 2014; Lillo-Navarro et al., 2015)

Vasey (1990) reported about 14 per cent no-show rates for follow-up outpatient appointments by physiotherapy clients in a study that sought to investigate why patients failed to begin or complete a course of physiotherapy treatment .

Another study conducted in the United States (US) reported that no-show rates for outpatient physiotherapy, paediatric physiotherapy clinics ranked second with odds ratio of $12.86\% \pm 9.50$; $p = 0.049$ compared to private clinics which had odds ratio of $7.81\% \pm 5.92$ (Bokinskie, Johnson & Mahoney, 2015).

1.1 Problem Statement

Poor adherence to treatment has been identified across many healthcare disciplines including physiotherapy (Vasey, 1990; Campbell et al., 2001; Bassett, 2003; Lillo-Navarro et al., 2015; Santer, Ring, Yardley, Geraghty, & Wyke, 2014) as contributing to poor treatment outcomes (WHO, 2003).

In Ghana, studies on adherence are mostly focused on medication (Laryea, 2013; Ahmed, 2006). Laryea (2013) reported a 53.3 per cent non-adherence to antihypertensive medication among hypertensive patients receiving treatment at Korle-Bu Teaching Hospital while Ahmed (2006) reported a 34.16 per cent non-adherence to antihypertensive medication among patients who visited GAPOHA hospital in Takoradi. Nketia-kyere (2015) explored barriers associated with adherence among stroke patients at the Tema General Hospital and concluded that clients who

did not adhere to their physiotherapy treatment had 21 times the risk of defaulting therapy.

Poor adherence to treatment presents physiotherapists with challenging situations where clients fail to improve or recover. Therapists tend to assume that the treatment regimen might not be addressing the physical needs of clients. They therefore make several repetitions, alterations and modifications to the planned treatment regimen thereby disrupting the progress and continuity of care (Bassett, 2003; Vasey, 1990). Furthermore, missed appointments often lead to prolonged recovery period and poor quality of life among clients and disruption of clinic workflow, stimulation of negative clinician attitudes, hindering quality of care and reduction in clinic revenue (Mbada et al., 2013).

According to Lillo-Navarro et al. (2015) and Santer, Ring, Yardley, Geraghty, & Wyke (2014) children living with physical disabilities are at risk of low level of adherence because they have to depend mostly on care-givers who may be faced with various challenges that make it difficult for them to keep therapy appointments.

This study aims to identify factors associated with adherence to keeping physiotherapy appointments and performing home exercise especially with childhood disabilities. This will help clinicians to identify patients at risk of non-adherence and suggest methods to curtail it. Identification of these factors will also influence the effectiveness of therapy and cut down on underutilization of already limited treatment resources.

1.2 Justification of Study

Traditionally, public health focuses on emerging health needs of populations. Based on statistics on disabilities, Lollar (2002) emphasized the need for increased attention

to be placed on the health needs of persons with disability by public health professionals (Lollar, 2002).

Adherence to treatment is an essential element which can impact the effects of treatment (Hayden, van Tulder, & Tomlinson, 2005). Like other healthcare professions, physiotherapy is susceptible to the problem of poor adherence to treatment. The degree to which patients adhere to the clinic- and home-based treatment requirements is considered to be responsible in some part for the success of physiotherapy programmes. Adherence is also linked to the way clients' judge personal need for services (Bassett, 2003).

In Ghana, studies on adherence are mostly focussed on medication (Laryea, 2013; Ahmed, 2006). The few studies on adherence to physiotherapy focused on adults (Nketia-kyere, 2015). There is therefore paucity of information on adherence to physiotherapy in literature.

This research seeks to bridge this gap by exploring adherence to physiotherapy treatment among children living with disability in Ghana and identify factors associated with adherence. The results of this study will contribute to literature, inform policy and challenge therapists to explore various avenues and opportunities that would improve the quality of services and interventions that will help increase adherence to physiotherapy among children and ultimately reduce adverse outcomes.

1.3 Research Question

What are the factors that are associated with adherence of children living with physical disabilities to physiotherapy?

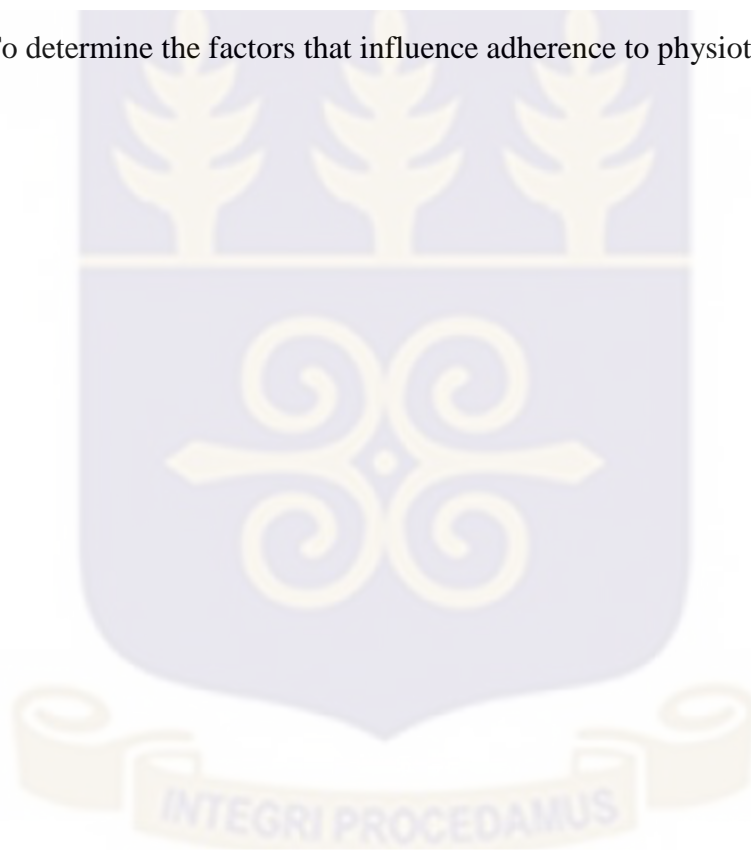
1.4 Study Objective

1.4.1 General Objective

To determine factors associated with adherence of children living with physical disabilities to physiotherapy in Accra.

1.4.2 Specific Objectives

- To determine caregivers' reported knowledge of physiotherapy
- To assess caregivers' reported adherence to physiotherapy
- To determine the factors that influence adherence to physiotherapy



1.5 Conceptual Framework

The conceptual framework presented in Figure 1.1 has been adapted from the WHO report on adherence to long term therapies. It shows the relationship between factors associated with adherence to physiotherapy among children living with physical disabilities.

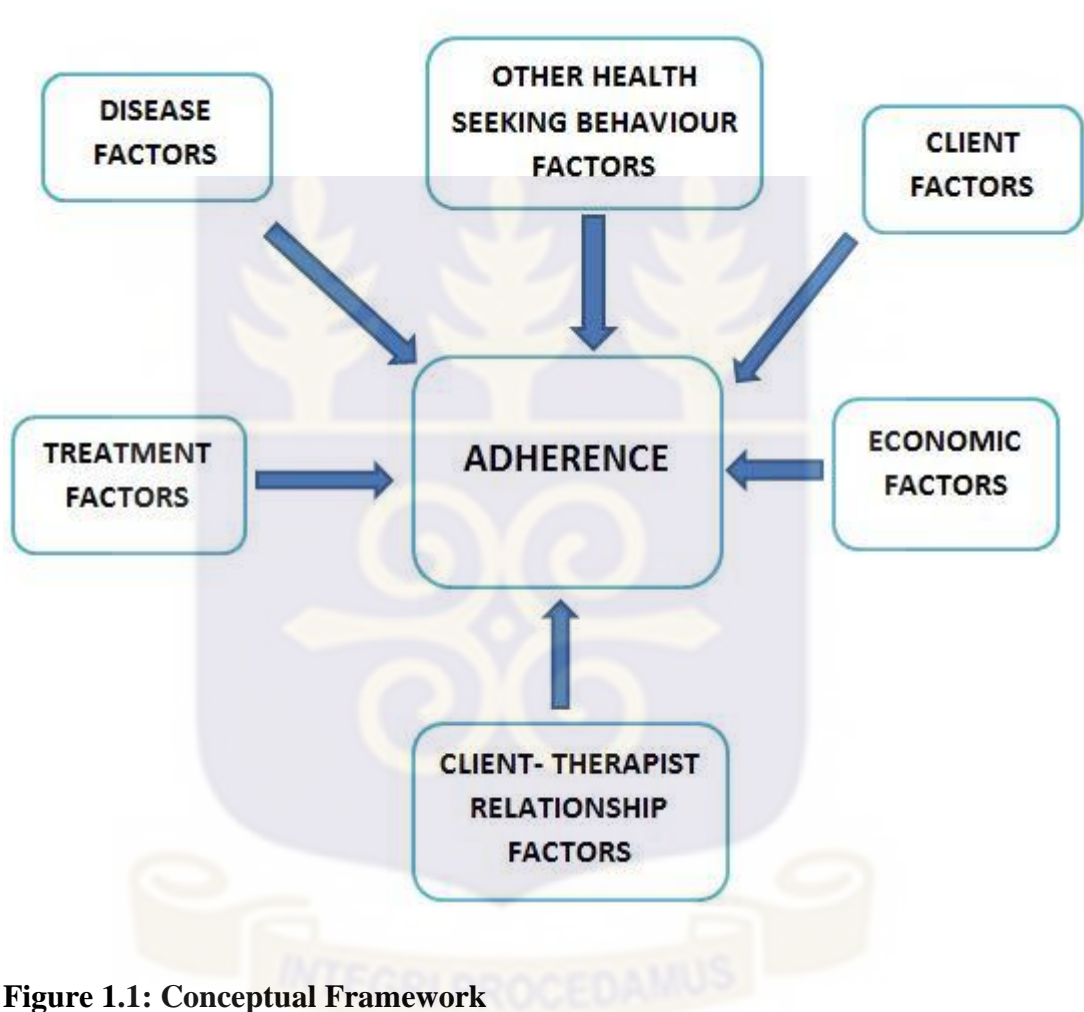


Figure 1.1: Conceptual Framework

Source: WHO (2003), with modification

1.6 Narration of Conceptual Framework

Studies show that certain factors may directly influence adherence to physiotherapy.

The framework presented in Figure 1.1 illustrates the various variables that independently influence adherence to physiotherapy attendance and performance of home exercises. These variables have been grouped under five broad headings which include client factors, disease factors, treatment factors, economic factors and client-therapist relationship factors.

Disease factors such as perception of chronicity of disease and symptoms, type of condition and pain threshold directly influence adherence to physiotherapy (Bassett, 2005). Client factors which include socio-demographic parameters such as age, sex, educational status as well as level of knowledge on physiotherapy, forgetfulness, time, social support, seeking other treatment and level of confidence directly influence adherence to physiotherapy (Bassett, 2005; Bokinskie, Johnson, & Mahoney, 2015; Lillo-Navarro et al., 2015).

Also, treatment factors such as clinic set-up, energy expenditure, waiting time, scheduling of appointment, components of treatment, opinions about treatment and tailoring of treatment to suit child's needs have all been identified to have direct influence on adherence to treatment both in the clinic and at home (Bassett, 2012; Duda et al., 1989; Murphy et al., 2006; Redmond & Parrish, 2008; Sluijs, Kok et al., 1993; Pizzari et al., 2002; Vasey, 1990)

Furthermore, the relationship between therapists and clients has been observed to directly influence adherence to physiotherapy with the level of communication, trust, provision of adequate information concerning treatment and orthotic devices, treating client with respect and dignity playing key roles (Campbell, Evans, Tucker & Quilty,

2001; Purtilo & Haddad, 1996; Pizzari et al., 2002; Sluijs, 1991; Sluijs, Kok, & van der Zee, 1993).

Further, seeking other forms of treatment has been thought to directly influence adherence to physiotherapy as seeking other forms of care can clash with therapy appointments (Maruf, Ekediegwu, Akinpelu, and Nwankwo, 2012).

Lastly economic factors such as income of parents, cost of treatment, cost of transportation, family size and occupation of parents directly influence adherence to treatment (WHO, 2003).



CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction.

This chapter reviews literature on physiotherapy, adherence and the various factors that influence adherence. It describes the theoretical framework of the study and relevant data reviewed. The possible factors that are capable of interfering with caregiver's adherence to physiotherapy will be explained.

2.1 Physiotherapy

Physiotherapy is a healthcare profession targeted towards providing services aimed at maintaining, restoring and developing movement and functional independence throughout the life-time of an individual. Physiotherapists usually work in health institutions, private facilities, special schools, industries and sports settings (Maruf, Ekediegwu, Akinpelu, & Nwankwo, 2012). Before the commencement of any physiotherapy program, the therapist initially performs an assessment through taking of medical history, performing physical examination and special tests as well as functional assessment which is followed by treatment planning and implementation. Periodic evaluation is often carried out to assess the effectiveness of the programme (Odebiyi, Omotunde, Aiyejusunle, & Olalekan, 2008).

There are several sub-specialities in physiotherapy which include geriatrics, neurology, orthopaedics, cardiopulmonary, sports and paediatrics (Maruf, Ekediegwu, Akinpelu, & Nwankwo, 2012). Paediatric physiotherapy services help promote motor development and independent function in children whiles mitigating the effects of long-term disabilities (Gannotti, Christy, Heathcock & Kolobe, 2013).

2.1.1 Knowledge on Physiotherapy

One of the most significant challenges facing the profession is low awareness on its roles within the healthcare sector among the general population and even among other health professionals leading to development of misconceptions (Odebiyi et al., 2008; Webster, Holdsworth, McFadyen, & Little, 2008; Maruf, Ekediegwu, Akinpelu, & Nwankwo, 2012; Dissanayaka & Banneheka, 2014).

Maruf et al. (2012) reported that in Nigeria majority of cases seen in the physiotherapy department are referred from the doctor and pointed out that most of the people who need physiotherapy do not get guidance to seek treatment. In that study, they recorded a 66% familiarity to physiotherapy among respondents, with 49.7% of them being aware of the roles of physiotherapist. Majority of the respondents knew where physiotherapists practiced. However, in a study by Dissanayaka & Banneheka (2014), more than half of the respondents who were high school students were unaware about physiotherapy and its role in patient management. Another study by Igwesi-Chidobe (2012) revealed that more than four-fifths of the respondents who lived in a rural community in south-eastern Nigeria had never heard about physiotherapy because there was no physiotherapy department in that locality.

In assessing knowledge and awareness on physiotherapy, most of the studies looked at the prior knowledge about physiotherapy, functions of physiotherapist, where they work, the equipment and modalities they work with, how respondents heard about physiotherapy, source of information, types of injury physiotherapist treat, qualifications required to be a physiotherapist, number of years of training required,

and the benefits of physiotherapy (Odebiyi et al., 2008; Maruf et al., 2012; Dissanayaka & Banneheka, 2014).

In a study by Odebiyi et al. (2008), majority of the respondents were aware that a degree in physiotherapy was required before anyone can practice and required four years of training. About 49 per cent of them agreed that a doctor's referral was needed before commencement of therapy. Maruf et al. (2012) also reported that majority of the respondents in their study knew that they could access physiotherapy through doctors referral.

2.1.2 Assessment of knowledge

In physiotherapy, there is no standardized instrument that has been developed to assess knowledge of the profession. Most studies that seek to assess knowledge have to modify questions from similar research work and come up with a scoring system.

In a study conducted by Chiwaridzo and Msiska (2014), knowledge of physiotherapy was dichotomized into two categories: adequate and inadequate. In all 41 questions were answered by the respondents who were sports coaches. A score between 0 and 20 was classified as inadequate whereas a score between 21 and 41 was classified as adequate. The questions asked in that study ranged from questions on place of work of physiotherapist, sex of physiotherapists, conditions likely to be seen by physiotherapists to possible roles of physiotherapists.

In another study conducted by Odebiyi, Omotunde, Aiyejusunle and Olalekan (2008), the instrument used to assess knowledge was adapted from a similar work done in 1998. A correct response was scored one and an incorrect one 0 with a total of 35 marks obtainable. However, the researchers did not categorize total knowledge score. It was rather represented as a mean.

2.2 Definition of Adherence

Meichenbaum & Turk (1987) define adherence in relation to physiotherapy treatment as the extent to which clients show up for their physiotherapy appointments, and their willingness to follow advice from therapist as well as performing all clinic and home-based treatment programmes as recommended.

The use of the term adherence has been associated with a lot of success in therapy according to Tilson (2004). It has contributed to the inclusion of clients in decision making regarding their care. Medical professionals have now assumed the role of an informer, educator, and enabler to assist with developing the framework within which the client can make their own choices (Tilson, 2004).

This kind of partnership between healthcare providers and clients allows the provider to learn the patient's unique characteristics and needs, and is therefore better able to tailor therapy to suit those needs. The client tends to understand their medical condition and treatments better as well as the drawbacks of not sticking to their end of the agreement (Tilson, 2004).

Adherence can be improved by empowering clients through education. If no discernible improvement in quality of life is evident then adherence to physiotherapy is unlikely to continue, irrespective of advice (Ireland, 2003).

2.2.1 Measurement of Adherence

Currently, there is no gold standard for measuring adherence. It can be measured subjectively through questions and objectively through specific changes and through quality of exercise demonstration. Among these three techniques, objective measures of exercise adherence remain underutilized (Babatunde, Macdermid, & Macintyre, 2017).

Adherence is objectively measured through the use of attendance records, accurate exercise recall or exercise diaries and provision of stickers to patients for their calendars (Babatunde, Macdermid, & Macintyre, 2017).

Al-Eisa (2010) conducted a study that sought to identify the indicators of adherence to physiotherapy attendance among Saudi female patients with mechanical low back pain. In that study, adherence was measured through attendance at the scheduled physiotherapy sessions. Clients who attended all scheduled appointments were classified as adherent while those who missed two consecutive appointments were classified as non-adherent.

According to Bassett (2003), adherence to home exercises is commonly measured through patient diaries and self-report questionnaires and least frequently through electronic devices.

2.3 Factors associated with adherence

Irrespective of improvements in functional capabilities of children living with physical disabilities, many studies have revealed that they are at risk of low level adherence to therapy (S. Bassett, 2012; De Geest & Sabaté, 2003; Lillo-Navarro et al., 2015; Santer, Ring, Yardley, Geraghty, & Wyke, 2014). Certain factors have been identified to influence adherence to rehabilitation regimen some of which include opinions and perception about therapy, therapist-client relationship, social support, experiences during therapy, clients' personal preferences regarding therapy among others (Redmond & Parrish, 2008; Bassett, 2005).

These factors can be categorized into socio-economic factors, patient-therapist interaction and client-related factors, disease and treatment related treatments (De Geest & Sabaté, 2003; Bassett, 2003).

2.3.1 Client related factors

A variety of individual traits have been linked to adherence to physical rehabilitation especially socio-demographic characteristics, social support, knowledge on physiotherapy and its benefits, confidence in their ability to perform exercises, forgetfulness and lack of time (Bassett, 2005; Bokinskie, Johnson, & Mahoney, 2015; Lillo-Navarro et al., 2015) .

According to Sluijs et al. (1993), highly educated people are less likely to adhere to physical rehabilitation. However according to Martin, Williams, Haskard & Dimatteo (2005), high non-adherence levels have been reported among individuals with low literacy levels. Increasing non adherence levels have been linked to increasing age (Bucks et al., 2009). When age, sex and educational status were combined, educated middle-aged women (>45) were least likely to adhere to treatment compared to less educated women within the same age group (Sluijs et al., 1993). Another study by Brewer et al. (2003) stated that elderly people who were well motivated and with good social support were more likely to adhere to treatment. In that study, the age range was between 14 and 47 so the participants were relatively not too old.

Social support factors linked with inability to find child care according to Chen et al. (1998) and transport to and from treatment, minimal support from other spouse and immediate relatives (Bokinskie, Johnson, & Mahoney, 2015; Vasey, 1990) have been found to be reasons why some clients do not show up for treatment. For persons living with physical disabilities access to transportation can be very challenging because of lack of awareness and ignorance on the needs of persons with disability. Drivers, conductors and other passengers make access to transportation very difficult for persons with disability when they pass certain demeaning and patronising comments

and when they use inappropriate means to offer help which affects the self-esteem of such persons (Venter, Bogopane, & Rickert, 2002).

Some parents do not take their children through the prescribed exercises because they doubt whether they are doing the right thing. According to them, when therapist encourage them it boosts their confidence therefore increasing adherence to treatment (Lillo-Navarro et al., 2015).

A study by Bokinskie et al. (2015) revealed that the most cited explanation for no-show by respondents was forgetting scheduled appointment and recommended the institution of reminder system in most physiotherapy centres. Lillo-Navarro et al. (2015) also reported that forgetfulness contributed to low adherence to home exercises programs prescribed for children living with physical disabilities. Lacy & Reuter (2004) also recounted that some clients do not show up for appointments because of negative emotions associated with visiting the hospital. To them this feeling outweighed the perceived benefits of keeping to the appointment. Bokinskie et al. (2015) identified illnesses, scheduling conflicts and weather as other factors that were reported as reasons for no-show at out-patient physiotherapy departments in America.

According Martin, Williams, Haskard & Dimatteo (2005), it is essential for clients to understand what they are supposed to do before they can follow medical recommendations (Martin, Williams, Haskard, & Dimatteo, 2005).

2.3.2 Disease Factors

The manner in which certain patients perceive their symptoms and chronicity of their condition have been noticed to have an effect on adherence (Bassett, 2005). There still persists a debate over the effect of patients' pain threshold on their adherence to

physiotherapy. Injured people with high pain tolerance are significantly more likely adhere to therapy requirements as opposed to those with a poor pain tolerance (Brewer, Van Raalte, Cornelius et al., 2000). Another study conducted by Sluijs et al. (1993) was unable to show a significant difference between the pain experiences of adherent and non-adherent physiotherapy patients. Santer et al. (2014) found that pain experienced during treatment was a major reason for children resisting physiotherapy treatments. However, pain levels usually fluctuate during certain stages of exercise program (Pizzari, McBurney, Taylor, & Feller, 2002). Some clients show high levels of commitment to therapy when they perceive their injury as serious. For children with muscular dystrophy, levels of adherence to therapy had no significant associations with the level of severity of their condition (Bassett, 2005).

2.3.3 Treatment factors

Scheduling of treatment appointments, components of treatment regimen, attitude towards treatment and clinic set-up have been listed as contributors to adherence in most physiotherapy centres. According to Redmond & Parrish, (2008), poor adherence is associated with lack of privacy during treatment sessions. When appointments are scheduled at a convenient time, adherence to treatment is very high (Vasey, 1990). A relaxing and comfortable set-up at the physiotherapy and privacy of the treatment area plays an important role in high adherence levels (Redmond & Parrish, 2008; Bassett, 2012)

Certain myths and misconceptions about benefits of exercises are associated with low adherence levels (Sluijs, Kok et al., 1993; Pizzari et al., 2002). Clients' opinions about their treatment and their ability to perform tasks effectively have all been linked with adherence. The amount of energy patients put into their rehabilitation activities is associated positively with adherence (Duda et al., 1989; Murphy et al., 2006).

Redmond & Parrish, (2008) reported that the more difficult or strenuous therapy is the less likely it is that clients will keep their next appointment.

Also integration of fun activities, ability of therapist to combine clients' needs and preferences to the treatment program, offering a variety of treatment options, and therapists being flexible in number and duration of sessions offered have been identified to influence adherence (Redmond & Parrish, 2008)

2.3.4 Patient-therapist interaction

The key to developing a good relationship between a therapist and client is effective communication (Purtilo & Haddad, 1996; Pizzari et al., 2002). It is important that therapists educate clients on the various conditions they report with and provide them enough information on available approaches to treating these conditions. Nonetheless, it must be taken into consideration that providing too much information is detrimental to the progress of rehabilitation and contributes to poor adherence levels especially when the information provided is not specific to their needs (Sluijs, 1991). Knowledge on presenting conditions by clients has been identified to affect levels of adherence to physiotherapy (Bucks et al., 2009)

Support from physiotherapist and nurturing of the patient–therapist relationship as well as positive feedback from the physiotherapist influence adherence positively (Sluijs, Kok, & van der Zee, 1993; Campbell, Evans, Tucker & Quilty, 2001). Clients are more inclined to keep their appointments and complete their rehabilitation activities when they have a positive and reliable relationship with therapists (Pizzari et al., 2002; Redmond & Parrish, 2008). High adherence levels to exercise regimen has been linked to physiotherapists giving positive feedback, following up on progress and treatment and motivating clients to perform their home exercises (Sluijs, Kok et

al., 1993). It must however be noted that this relationship should not be one-sided. Clients need to communicate back to their therapists and should be truthful in reporting adherence to home exercise activities (Sluijs et al., 1998). In another study by Redmond & Parrish (2008), the respondents who were young adults with cerebral palsy stated that trust, respect and empathy from therapist influenced their adherence to treatment. They also stated that their inclusion in the development of treatment programs taking into consideration other areas of their life that do not directly relate to therapy influences how often they would want to keep their appointments.

A meta-analysis by Dimatteo and Zolnierek (2009), showed that an increased communication between patients and physicians was related to high adherence rates and that there is a 19 per cent higher risk of non-adherence among patients whose physician communicates poorly than among patients whose physicians communicates well (Dimatteo & Zolnierek, 2009).

2.3.5 Economic factors

Socioeconomic status has not consistently been found to be an independent predictor of adherence. In developing countries low socioeconomic status puts people in the dilemma of competing priorities. These include demands to use the limited resources available to cater for their children or needs of other family members they take care of (WHO, 2003). The association between adherence and socio-economic factors appears to be inconsistent among many studies (WHO, 2003).

2.3.6 Health seeking behaviour factors

According to Inche, Sutan and Shamsuddin (2014) health seeking behaviour has been vaguely defined with no common definition agreed upon by sociologists in any literature. However, Poortaghi et al. (2015) defined health seeking behaviour as an

individual's deeds directed towards promoting maximum well-being, recovery and rehabilitation. It is influenced by the individual self, diseases, and the availability and accessibility of health services.

Globally, the use of unconventional treatment is gradually gaining considerable recognition and notoriety. Its use might however cause severe adverse reaction leading to significant morbidity and mortality (Abidin et al., 2014).

In Ghana, healthcare delivery is varied consisting of traditional and modern medicine (Anyinam 1989; Hevi 1989). An individual's interaction with other sectors of health care depends on how the health problem is perceived or sanctioned by the sick person, and most importantly, by relatives and close friends. Depending on prevalent symptoms of illness, a person may choose to disregard an illness or health problem, use treatment modalities known to the individual, friends or family, or make a decision to use conventional medicine (Anyinam 1989; Hevi 1989).

In a study conducted Igwesi-Chidobe (2012), about 27.0 per cent of the respondents visited a traditional health facility of which the majority 54.7 per cent received herbs as treatment followed by 26.4 per cent who received traditional bone setting. A significant number of the respondents eventually visited traditional health facility for their movement/functional problems with majority either receiving herbs or traditional bone setting as treatment.

In another study by Maruf, Ekediegwu, Akinpelu, and Nwankwo (2012), a large proportion of the participants accessed Indigenous Health Services (IHS) in the treatment of some conditions that required physiotherapy. According to them, IHS is sought probably because it is inexpensive or out of ignorance and not necessarily for

effectiveness. They however indicated that its use causes more harm than good most of the time.



CHAPTER THREE

METHODOLOGY

3.0. Introduction

This chapter explains the methodology used for this study. The chapter is organised into thirteen sections: study design, study area, study duration, study population, study variables, sample size, sampling method, data collection methods, data collection techniques, data processing, data analysis, quality control and ethical consideration.

3.1 Study Design

This study was facility-based and cross-sectional in design. This design was adopted because it allows for all the measurements on each participant to be made at one point in time and is relatively quick and cheap to carry out (Mann, 2003). The study employed quantitative and qualitative approaches in identifying factors associated with adherence to physiotherapy treatment by children living with physical disabilities.

While reported adherence was determined using a structured questionnaire, the factors associated with adherence and reported knowledge of physiotherapy were determined using both quantitative and qualitative approaches. Some researchers have defined mixed methods research as an approach to knowledge (theory and practice) that attempts to consider multiple viewpoints, perspectives, positions, and standpoints using qualitative and quantitative methods (Johnson, Onwuegbuzie, & Turner, 2007). Mixed methods approach was applied in this study to ensure that, the deficiencies in one method are rectified by the other. A concurrent mixed method approach where both quantitative and qualitative data were collected simultaneously was used. The

qualitative data was therefore used to complement and further explain the quantitative results.

3.2 Study Area

This study was conducted in the Greater Accra Region which is one of the ten regions in Ghana. The region shares borders with the Central Region to the west, Volta Region to the east, Eastern Region to the north, and the Gulf of Guinea to the south. It is the smallest of the 10 regions and occupies an area of 3,245 square kilometres making up 1.4 per cent of the total land area of Ghana. Greater Accra has a coast line of approximately 225 kilometres, stretching from Kokrobite in the west to Ada in the east.

It is the second most populous region in the country with a population of 4,010,054 due to in-migration and a high population growth rate. The population of individuals aged 0-19 years is 1,640,112 making up 40.9 per cent of the region's population. Females within the 0-19 age group make up 40.7 per cent of that population. In all there are 10 districts in this region. 92.2 per cent of the region's population are employed while 7.8 per cent are unemployed. The proportion of employed males (92.6%) is slightly higher than employed females (91.8%). Almost two-fifths (39.1%) of the population in Greater Accra are married and almost half (46.3%) have never been married.

Even though there are a number of ethnic groups in the region, the Ga-Dangme is the indigenous ethnic group of the region. The religious affiliations of the people of the Greater Accra region are Christianity, Muslim, traditional and other religions.

The region has the highest number of persons with disability totalling 103,939 with 24,215 of them living with physical disabilities (Ghana Statistical Service, 2012). The figure below shows the map of the region.

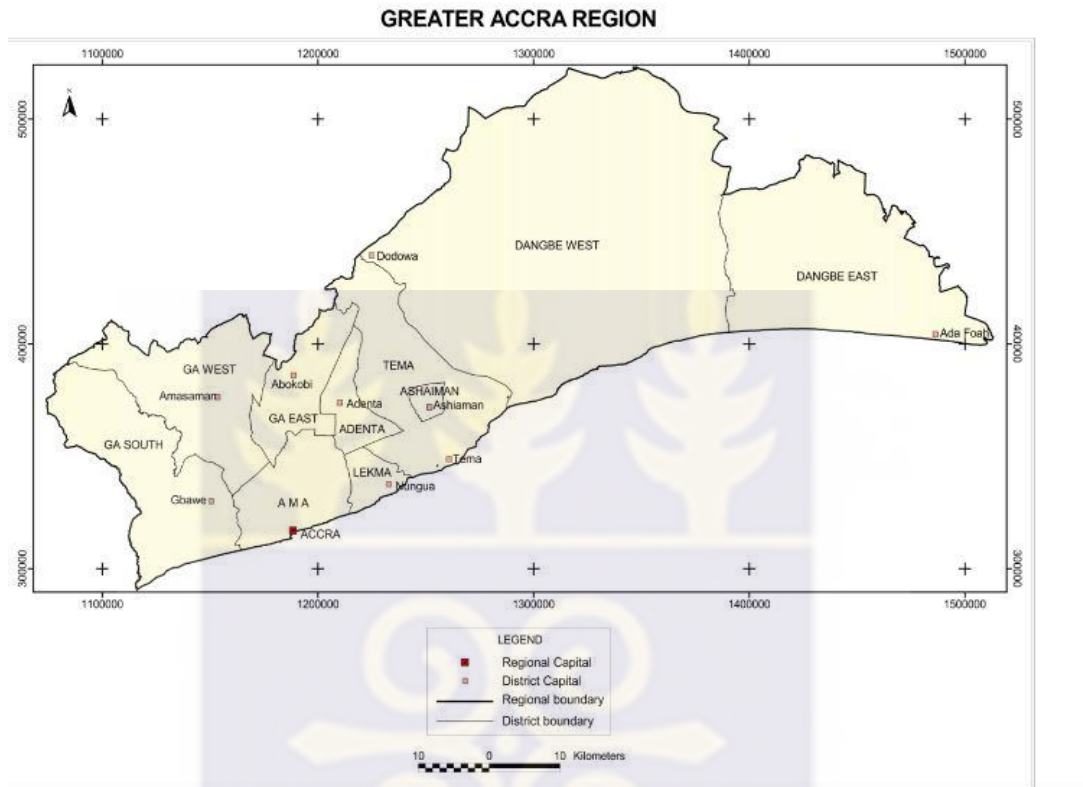


Fig 2.1: Map of Greater Accra Region

The four facilities where this study was conducted are the 37 Military Hospital, Princess Marie Louise Children's Hospital, Tema General Hospital and Sharecare Ghana all located within the Greater Accra Region and were selected purposively. All the selected facilities have specialised paediatric physiotherapy units where children with physical disabilities and impairments come to receive therapy.

3. 2.1 37 Military Hospital

It is a UN Level 4 facility that provides medical care and specialist treatment in all fields of surgery and medicine. It is a 400-bed facility about 4km away from the

Accra Kotoka International Airport and located within the Accra Metropolis. The hospital has several departments including a physiotherapy department. The physiotherapy department attends to both in-patients and out-patients. There are about seven sub-units within the physiotherapy department. The paediatric physiotherapy unit is one of such units and is located inside the paediatric emergency ward. Averagely the paediatric physiotherapy unit attends to about 30 cases every week.

3.2.2 Princess Marie Louise Hospital

Also known as the Children Hospital is located within the Accra Metropolis. The physiotherapy department in the hospital is solely dedicated to providing physiotherapy services to children who need physical rehabilitation. The department attends to about fifteen to twenty cases every day.

3.2.3 Share Care - Ghana

A non-governmental organization set up in 2006 for people with rare neurological conditions and other auto-immune diseases. In 2011, the organization set up a rehabilitation facility in Osu, a suburb within the Accra metropolis after compiling a register that revealed that a high number of children living with physical disabilities were located in that suburb. The centre attends to an average of between 20- 25 cases a week.

3.2.4 Tema General Hospital

The Tema General Hospital is a 300 bed capacity health facility located within the Tema metropolis. Established in the year 1954 and handed over to the government of Ghana in 1965. It comprises of several departments which includes physiotherapy department. In the year 2015, the department set up a paediatric physiotherapy unit

with sole responsibility of providing physical rehabilitative services for children. On the average the unit attends to between 20-25 cases weekly .

3.3 Study Population

The population of interest in this study were care-givers of children living with physical disabilities living within Greater Accra Region who have accessed physiotherapy services within the 37 Military Hospital, Tema General Hospital, Princess Marie Louis Hospital (Children's Hospital) and Share care Ghana.

3.3.1 Inclusion Criteria

Primary care-givers of children living with physical disabilities who have accessed physiotherapy services from any of the study locations for a period of three months or more were included in this study.

3.3.2 Exclusion Criteria

Primary care-givers of children living with physical disabilities who have accessed physiotherapy services from any of the study locations for a period of three months or more but were unable to speak and understand English, Twi and Ga were excluded from this study.

3.4 Study Variables

The dependent variable for this study was adherence to physiotherapy while the independent variables were the factors associated with adherence to physiotherapy. These factors were classified into client factors, treatment factors, disease factors, economic factors, health seeking behaviour factors and therapist-client relationship factors.

3.4.1 Dependent Variable

The dependent variable, adherence to keeping physiotherapy appointments, was measured by counting the number of sessions the respondents attend relative to the prescribed sessions by the therapist and how often home exercise programs were performed.

Table 3.1 Dependent variable

Outcome variable	Description
Binary Outcome (poor and good adherence)	
Keeping physiotherapy appointment	Adherence to physiotherapy attendance was measured by referring to the attendance register kept at the various physiotherapy centres. A child who missed three or more sessions relative to the twelve sessions required for the three month duration was classified as having poor adherence and was coded '0' whereas those who missed less than three sessions were classified as having good adherence and was coded '1'
Performance of home exercise program	A child whose care-giver selected the options "Strongly agree", "Agree" and "Unsure" on the questionnaire was assigned a score of "0". A score of "1" was assigned to children whose care-givers choose the options "Strongly disagree" and "Disagree". A score "0" denotes poor adherence and a score of "1" denotes good adherence.

3.4.2 Independent Variables

The major independent variables used in this study were reported knowledge on physiotherapy, disease factors, client factors, client-therapist relationship factors, treatment factors, economic factors and health seeking behaviour factors. Table 3.2 illustrates the operational definitions of variables and their scales of measurements.

Table 3.2 Independent variables

Independent Variable	Operational Definition and scale of measurement
<u>Knowledge</u>	<p>Five questions were used to assess knowledge with their accompanying sets of responses. The responses were then recoded with all the correct responses coded as ‘1’ and all the wrong responses coded as ‘0’. The recoded responses were summed with the score ranging from 0 to 5.</p> <p><u>Adequate Knowledge</u> When a respondent is able to answer correctly 3 out of the five questions used to assess knowledge</p> <p><u>Inadequate Knowledge</u> When a respondent is able to answer less than three questions out of the five used to assess knowledge</p>
Who is a physiotherapist	<p><u>Able to identify</u> When respondent selects ‘none’ among options provided</p> <p><u>Unable to identify</u> When respondent selects medical doctor, nurse, chiropractor and masseur as answers</p>
Least similar to physiotherapist	<p><u>Able to identify</u> When respondents select police officer as the answer</p> <p><u>Unable to identify</u> When respondents selects doctor, masseur and medical laboratory scientists as answers</p>
Physiotherapist’s place of work	<p><u>Able to identify</u> When respondents select hospital and private clinic as the answer</p> <p><u>Unable to identify</u> When respondents select massage parlour as the answer</p>
Role of physiotherapist	<p><u>Able to identify</u> When respondents select teach exercises, teach people how to use artificial limbs, teach people how to walk and gives massages as answers</p> <p><u>Unable to identify</u> When respondents select does the same work as a traditional bone setter as the answer</p>
Condition requiring physiotherapy	<p><u>Able to identify</u> When respondents select low back pain, stiff shoulder, amputation of a limb, cerebral palsy, fracture, stroke, polio and poor neck control in a baby as answers</p> <p><u>Unable to identify</u> When respondents select diarrhoea and fever as answers</p>
<u>Disease Factors</u>	
Disease state	<p>Perception on chronicity of disease</p> <p>Perception on severity of disease</p>
Type of condition	Type of physical condition children present with

<u>Client Factors</u>	
Age	Age of participant as at last birthday
Sex	Male or female
Family Size	Number of children caregiver has
Educational status	No formal education Basic school education Secondary school education Tertiary education
Social support	<u>High</u> When respondents receive support from spouse, family and friends When respondents is not solely responsible for supervising exercises at home <u>Low</u> When no support is received from spouse, family and friends When respondent is solely responsible for supervising exercises at home
Lack of time	Appointment schedule clashing with other pertinent responsibilities
Confidence in ability to perform exercises	Ease with which exercises are performed
Distance	Distance travelled from home to physiotherapy clinic
Attitude towards	Ability to perform exercises which is measured by the presence of negative reactions such as crying, complaining, refusal to cooperate.
<u>Health seeking behaviour factor</u>	
	Caregivers seeking other treatments for child List other treatment options sought by respondents for their children Interruption of therapy by seeking other forms of treatment
<u>Treatment Factors</u>	
Clinic set-up	Child friendliness of the facility Availability of enough equipment at the clinic

Waiting time	Care-givers waiting before being attended to by therapist
Scheduling appointment	Consulting caregivers before scheduling appointment
Components of treatment	Variability in exercises performed during therapy (YES/NO)
Helpfulness of treatment	Benefits of exercise regimen
Tailors therapy to suit child's needs	Treatment addressing specific needs of the child
<u>Client-therapist relationship factors</u>	
Social skills of therapist	Friendliness of therapist
Good counselling skills	Provision of advice, medical information, encouragement and assurances by therapist
Client Involvement	Involvement of respondents in planning of treatment
Provides other beneficial information on treatments and orthotic devices	Prescribing appropriate orthotics and information on where to acquire them and provision of adequate instructions for home exercises
Treats clients with respect and dignity	Accords respondents and children with respect during therapy
Believes therapist will keep information confidential	Assured of confidentiality of medical records
Ease of communication	Caregiver is able to ask therapist questions concerning treatment and condition of child
<u>Economic Factors</u>	
Economic challenge	Major economic challenges faced by caregiver
Income	How much both parents earn at the end of the month
Cost of treatment	How do care-givers pay for therapy
Affordability of treatment	Are care-givers able to afford cost of treatment

3.5 Sample Size

Singh and Masuku (2014) discussed several methods that can be used to determine sample size in their paper however, in this study the sample size (N_0) was calculated using the Yamane's Formula.

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

Where

N = population sample size

e = desired level of precision (5%)

Where the population sample size N is 100

The population sample size N , was obtained from the attendance records at the various facilities where data was collected. An average estimate of the number of cases attended to within the various paediatric physiotherapy units on a weekly basis over a period of 6 months was used to arrive at a total population size of 100

Table 3.3 Study sites and their respective population per week

Name of Facility	Population (N)
Share care Ghana	30
37 Military hospital	30
Tema General Hospital	20
Children's Hospital	20
Total	100

Thus,

$$n = \frac{100}{1+100(0.05^2)}$$

$$n = 80$$

Taking into consideration an assumed 10% non-response rate, the final sample size for this study is 88.

A total of 85 caregivers were interviewed while the remaining 3 participants unable to complete the questionnaire.

3.6 Sampling Method

Proportionate stratification approach was employed in assigning sample size to the respective health facilities. The mathematical equation used is

$$n_o = \frac{N}{110} \times n \text{ for each facility}$$

Table 3.4 Study sites and assigned sample sizes

Name of Facility	Expected number	Actual number
Share care Ghana	24	6
37 Military hospital	24	23
Tema General Hospital	16	11
Princess Marie Louise Hospital	16	45

Consecutive sampling approach was employed in recruiting the study participants because of the one month period allotted for data collection per the academic calendar of the School of Public Health. Participants who met the inclusion criteria were approached and recruited for the study after informed consent had been given. Ideally, respondents should have been sampled from each facility based on the assigned sample sizes as shown in Table 3.4. However, some of the study sites like Sharecare Ghana and Tema General Hospital recorded very low attendance. Therefore, the principal investigator had to revisit Princess Marie Louise Hospital where the attendance was high in order to meet the minimum sample size.

3.7 Study tools

A structured questionnaire was developed based on literature review including Maruf, Ekediegwu, Akinpelu, & Nwankwo (2012), Odebiyi, Omotunde, Aiyejusunle, & Olalekan (2008), Dissanayaka & Banneheka (2014), April, Higgins, & Feldman (2016). One question pertinent to the current study was adapted from the parent adherence report questionnaire (PARQ) (April et al., 2016). The questionnaire comprised of seven sections with about 95 per cent of the questions being close ended.

In addition, a semi-structured interview guide covering knowledge of physiotherapy, perception of care-givers of the relevance of physiotherapy, barriers to adherence to physiotherapy, barriers to performing home exercises and availability and use of other forms of treatment was used to collect data.

3.8 Data Collection Methods

The interviewer-administered questionnaire method was employed to gather quantitative data from the caregivers while in-depth interview technique was used in collecting qualitative data for the study.

3.8.1. Quantitative Data Collection and Strategy

Quantitative research stems out of a strong academic practice that places substantial trust in numbers to represent opinions or concepts (Amaratunga, Baldry, & Sarshar, 2002). This approach was applied because it allows for easy generalisation of study findings.

It involved the administration of a structured questionnaire with open and close-ended format for the 85 respondents. The questionnaire was divided into seven sections and was interviewer-administered. The first section of the questionnaire covered the

socio-demographic characteristics while the second section covered type of physical disability and source of referral to physiotherapy.

The third and fourth sections had evaluated level of adherence to physiotherapy attendance and knowledge of physiotherapy respectively. The fifth section sought to identify factors associated with adherence to physiotherapy attendance. The sixth section inquired about the health seeking behaviour of the respondents. The seventh section sought to determine factors associated with adherence to prescribed home exercises.

The questionnaire was administered by the research assistants at a convenient location within the hospital premises other than the physiotherapy department. This was to eliminate any form of intimidation of the participants by the presence of the therapist while answering the questions. A research assistant was stationed at each of the health facility for 2 weeks and recruited participants as they reported for treatment.

The purpose of the study was explained to participants and they were assured of confidentiality. An informed consent form was fully explained to the participants before they were signed.

3.8.2. Qualitative Data Collection and Strategy

Qualitative research has been explained to mean the use of words and observations to express reality and describes people in natural situations (Amaratunga et al., 2002). In this study, a qualitative method was employed to obtain the real life experiences of the participants. Face to face in-depth interview has the advantage of providing insights and feelings about the social conditions surrounding those experiences (Crouch & McKenzie, 2006). In this study, in-depth interviews allowed participants to

express their points of view and opinions concerning the subject being discussed without hesitation and intimidation.

Eight purposively drawn caregivers from Princess Marie Louise hospital, Tema General Hospital, 37 Military Hospital and Share care Ghana were engaged in an in-Depth Interview (IDIs). The caregivers were selected with guidance from physiotherapists working in these facilities. The caregivers were selected with guidance from physiotherapists working in these facilities. Two caregivers each were interviewed from the four study sites. They were selected such that there were dynamics in age, level of education, parity and income of the care-givers. Thus efforts were made to ensure care-givers between 18-40 years and 41 years and above, educated and uneducated, employed and unemployed and those who earned below GHC 200 and above GHC200, were high and low adherence were fairly represented. This helped to ensure a fair representation of care-givers and capture their multiple realities.

The interviews focused on factors associated with adherence to physiotherapy and performing home exercise program and were held at the homes of the selected care-givers with one research assistant serving as a note taker. Saturation was achieved when participants started repeating what had been expressed in previous data such that no new information was being obtained. The interviews lasted for about thirty minutes. The discussions were audio taped to ensure that all information was captured.

3.9 Data Processing and Analysis

The data analysis was in two parts: analysis of quantitative and qualitative data.

3.9.1 Quantitative Data Analysis

The questionnaire was checked for completeness, the data coded and entered into Microsoft Excel and was cleaned to ensure all errors were corrected. The dataset were then exported into STATA version 14 for analysis.

Descriptive statistics was employed in the analysis to determine means, proportions percentages and frequencies of demographic characteristics of respondents and other independent variables. Statistical associations were tested between dependent and independent variables using Chi-square and Fishers' Exact test and logistic regression model to examine the relationship between dependent variable (adherence to physiotherapy) and independent variables and the strengths of the associations. Fisher's exact test was used in instances where the cells contained less than five items.

3.9.2. Qualitative Data Analysis

The IDIs were transcribed verbatim using Microsoft text format.

Field notes were transformed into word documents each day of the interview. Notes and transcriptions were identified with codes and not names of the interviewees. Interviews conducted in the local language were translated into English by two independent translators and later compared to ensure consistency. All transcripts were reviewed by the primary investigator several times. After that the two translators, research assistants and the primary investigator discussed and rectified the inconsistencies identified. The inconsistencies were addressed during the review by listening to the various recorded voices and compared them with the transcripts. The translated data was entered into Nvivo 11. Double coding were done for each transcript and compared to help identify specific themes that would answer the

research question. Codes were given to participants whenever they are quoted. For instance, CG001 – CG008, means care givers.

3.10 Quality Control

The following quality control measures were employed to ensure validity and reliability of data.

3.10.1 Quantitative

An intensive two-day training program was organized for the five research assistants who helped with data collection. They were provided with an outline of all the necessary field protocols. Data collection technique, ethical issues and the questions discussed. Questionnaires were pretested at a district health facility with a paediatric physiotherapy unit and the necessary modifications done before actual data collection begun.

The researcher supervised and monitored the activities of the research assistants to ensure that all ethical guidelines were adhered to during data collection. All completed questionnaires were scrutinized on the field and checked by the principal investigator for completeness and accuracy on a daily basis. On-the-spot feedback and follow-ups were carried out where the need arose.

All questionnaires that were not properly filled to generate the requisite data for the variables under study were discarded and exempted during data analysis. Every completed questionnaire was coded with unique ID number to ensure easy traceability. All completed questionnaires were signed by research assistants and safely transferred to the researcher for data entry.

The researcher verified how data was coded and entered into the computer. Data entry screen with built in checks to ensure accuracy were designed with Microsoft Excel and imported into STATA version 14 for analysis. Data was stored under lock and key after collection and was accessed by the principal investigator and her supervisor only. Data will be stored for a period of two years and will be burnt after the period of storage.

3.10.2 Qualitative

The researcher was the main interviewer for the in-depth interview. The note taker was oriented on the focus of the study and how to accurately and effectively document all vital information. All recordings made by the researcher during the interview was safely kept under lock and key and was only accessed by the researcher during and after the study until a period of two years where the tape will be burnt.

3.11 Ethical Consideration

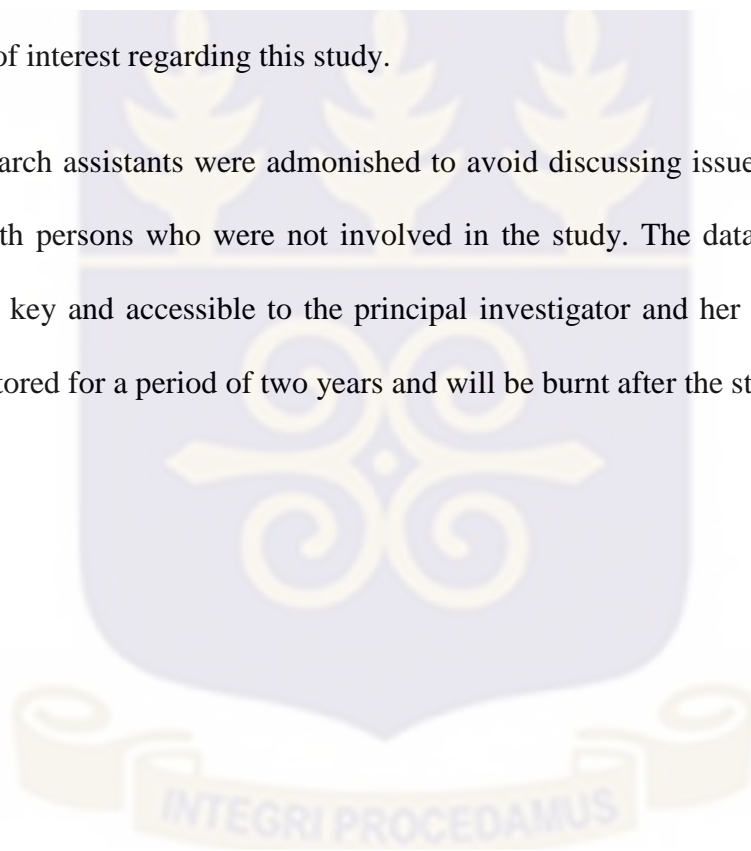
Ethical clearance was obtained from the Ghana Health Service Ethical Review Board and the Ethical Review Committee of 37 Military Hospital before the study commenced.

Permission to collect data was granted by the Medical Directors and the heads of physiotherapy departments of the aforementioned health facilities. Care-givers were used because most of these children rely on their care-givers in order to access treatment.

This study posed no harm or danger to participants in any way but rather seeks to inform physiotherapists about levels of adherence being recorded and challenge them to come up interventions to improve the situation. However, consent to participate in this study was provided by participants who were all above 18 years of age. A brief

verbal summary of its content was given to the participants. They were told that participation in the study was voluntary and they were free to drop out at any time without suffering any adverse consequences. They were assured that the information they provided would be kept strictly confidential and anonymity maintained. Caregivers were allowed to take a copy home and read before signing or thumb printing. Participants were assured that the data collected will be used for academic purposes only with the hope of publishing findings in an academic journal. Those who participated in the IDIs were compensated with airtime vouchers. There was no conflict of interest regarding this study.

The research assistants were admonished to avoid discussing issues pertaining to the study with persons who were not involved in the study. The data was stored under lock and key and accessible to the principal investigator and her supervisor only. It will be stored for a period of two years and will be burnt after the storage period.



CHAPTER FOUR

RESULTS

4.0 Introduction

This chapter presents the findings of the study. The chapter is organised into four sections: background characteristics of caregivers, caregiver's knowledge on physiotherapy, level of adherence to physiotherapy, and factors that influence adherence to physiotherapy.

4.1 Background characteristics of caregivers

The background characteristics of the study participants are presented in Tables 4.1a and 4.1b. Of the 85 participants who completed the study, majority (64.71%) were 30 years and above. The average age of caregivers was 35 years with a standard deviation of ± 9.2 years. The youngest was 23 years old and the oldest was 71 years. Also, 97.6 per cent of the respondents were females, 82.6 per cent were married. 49.4 per cent had basic education and 5.9 per cent had no formal education. Christians constituted 87 per cent of the respondents with the majority receiving care at Princess Marie Louise's Hospital (Table 4.1).

The most common diagnosis that led to physical disability among the children was cerebral palsy (54.1%) and Erb's palsy (28.2%). The least common conditions were Genu Valgum, Klumpke's palsy and Injection palsy. 77.7 per cent of the children were referred for physiotherapy by a health professional. Privately employed caregivers constituted 68.2 per cent of the respondents and 52.9 per cent of the children received physiotherapy at Princess Marie Louise Hospital.

Table 4.1a: Background characteristics of Quantitative respondents

Characteristic	Frequency (N=85)	%
Average age (SD)	35.11± (9.18)	
Age Range	(23-71)	
Age		
≤30	30	35.3
≥30	55	64.7
Sex		
Male	2	2.4
Female	83	97.6
Educational status		
No formal education	5	5.9
Basic education	42	49.4
Secondary and above	38	44.7
Marital status		
Married	65	76.5
Not married	20	23.5
Religion		
Christianity	76	89.4
Islam	9	10.6
Physical disability of child		
Cerebral palsy	46	54.1
Erb's palsy	24	28.2
Developmental delay	12	14.1
Injection Palsy	1	1.2
Klumpke's palsy	1	1.2
Genu Valgum	1	1.2
Source of referral		
Health professional	66	77.7
Non-health prof	19	22.4
Employment		
Unemployed	20	23.5
Private	58	68.2
Public	7	8.2
Health facilities		
37 Military Hospital	23	27.1
Tema General Hospital	11	12.9
Princess Marie Louise Hospital	45	52.9
Share care Ghana	6	7.1

The characteristics of caregivers who participated in the IDIs are as follows. The mean age of all the eight female participants engaged in the in-depth interview was 35.5 years. Four out of the eight participants were married and one of them was a

widow. Most of the participants had attained formal education with the majority (5) having secondary education and above. One of them had no formal education. Regarding occupation, five out of the eight participants were employed with the remaining three unemployed.

Table 4.1b: Background characteristics of qualitative respondents

	Frequency(N=8)	%
Average age	35.5	
Age range	24-68	
Marital status		
Single	4	50.0
Married	4	50.0
Educational status		
No education	1	12.5
Basic education	0	0.0
JHS	3	37.5
Secondary and above	4	50.0
Employment status		
Unemployed	3	37.5
Private employment	4	50.0
Public employment	1	12.5

4.2 Caregiver's knowledge of physiotherapy

The quantitative study results showed that 95.3 per cent of the participants had adequate knowledge of physiotherapy. However, majority (92.9%) could not identify who a physiotherapist is but 94.1 per cent were able to identify the profession least similar to physiotherapy. Those who were able to identify the place of work of physiotherapist constituted 83.5 per cent (Table 4.3). Also, majority (88.2%) of the participants were unable to identify the role of a physiotherapist. A medical condition that required physiotherapy was identified by 96.5 per cent of the participants.

Table 4.2: Caregiver’s knowledge on physiotherapy

Variable	Frequency N (%)
Who is a Physiotherapist	
Able to Identify	6(7.1)
Unable to identify	79(92.9)
Which is least similar to a Physiotherapist	
Able to Identify	80(94.1)
Unable to identify	5(5.9)
Physiotherapist place of work	
Able to Identify	71(83.5)
Unable to Identify	14(16.5)
Knowledge on role of physiotherapist	
Able to identify	75(88.2)
Unable to identify	10(11.8)
Conditions requiring physiotherapy	
Able to Identify	82(96.5)
Unable to identify	3(3.5)
Level of Knowledge	
Adequate	81(95.3)
Inadequate	4(4.7)

The qualitative data unearthed the theme, knowledge on physiotherapy. The subthemes were: understanding of physiotherapy, place of work of a physiotherapist, conditions requiring physiotherapy and role of a physiotherapist.

Understanding of physiotherapy

The caregivers reported that physiotherapy was mainly about prescribing exercises in the treatment of disease conditions and admitted that it was beneficial to their children.

‘The physio is very good and helpful to us because they have been training my son. His joints were very stiff so he could not straighten them up at all but with the help of physio he can straighten his limbs’ (35 year old woman)

As for the physio, it is all about exercising people who are sick (25 year old woman)

Place of work of a physiotherapist

All the caregivers identified hospitals as the place of work of physiotherapists. One of them indicated that she had a physiotherapist who comes to her home to see her child in addition to the therapy received in the clinic.

Physiotherapists work in hospitals like where we go for treatment (33 year old woman)

Physiotherapists work in hospitals (39 year old woman)

Physiotherapists work in hospitals but we have arranged with one of them to come home to see him as well (68 year old woman)

Conditions that require physiotherapy

According to the participants physiotherapy is needed when an individual is sick or suffers an impairment that results in loss of mobility or function.

When a child who is supposed to crawl or walk and isn't doing so and when a child cannot talk. Also when a child cannot lift or hold objects, they will need physio too (25 year old woman)

When a person suffers a stroke or accident and fractures a limb he or she will need physio(33 year old woman)

Role of physiotherapist

The caregivers were able to identify roles played by physiotherapist that includes teaching people exercises and performing massages.

Physiotherapists take people through exercises and help them to walk. They also attend to children as well (39 year old woman)

As I said earlier they exercise children and do massage as well. (68 year old woman)

4.3 Caregiver's adherence to physiotherapy

Generally adherence to physiotherapy rates is high. Majority (81.2%) of the children adhered better to their physiotherapy appointment schedules. Regarding the home exercise regimen, less than half (41.2%) of the study respondents adhered poorly (Table 4.4).

Table 4.3: Caregiver's level of adherence to keeping physiotherapy appointment schedules and home exercises regimen

Variable	Poor adherence N (%)	Good Adherence N (%)
Physiotherapy appointment schedules	16(18.8)	69(81.2)
Home exercise Program	35(41.2)	50(58.8)

Another theme that emerged from the analysis of the qualitative data is characteristics of home exercises. The following subthemes were identified: frequency of performance, motivation to perform exercises and needed modifications.

Frequency of performance

Some of the participants reported that they performed the exercises on a daily basis because they believed the exercises were very important and necessary.

Yes I do the home exercises every day. I do them because they will help my daughter get better faster (32 year old woman)

Yes I do the home exercises because they are very helpful. At first my daughter's joints were very stiff but through the persistent performance of the home exercises they are free now (33 year old woman)

On the other hand, some caregivers did not perform the exercises they have been prescribed because of certain challenges and circumstances.

I am not able to do the home exercises with my grandson all the time. This is because sometimes I feel so weak because he has become very heavy now that he is growing. I therefore ask the driver to help (68 year old woman)

No, I don't take him through the home exercises all the time because he has started walking independently (33 year old woman)

I don't do the home exercises all the time because I get so occupied with work and other responsibilities. I can only do them over the weekend when I'm free (39 year old woman)

Motivation to perform exercises

The caregivers gave a number of reasons that motivate them to continue with the home exercise regimen. Some of them are the improvements they have noticed and their desire for their children to recover very fast.

The home exercise supplements what is done in the clinic because we don't go there every day of the week. It helps make the recovery fast as well (25 year old woman)

The results we're seeing at the moment encourages me to continue with the exercises (32 year old woman)

Needed modifications to therapy

Whilst some caregivers were satisfied with their home exercises, others reported several modifications that will make home exercises much easier to perform

I don't have anything in mind. Everything is okay (24 year old woman)

If I am able to acquire some of the equipment at home, it will make the home exercises easier to incorporate. Also getting some orthoses such as the back slab will help (68 year old woman)

If I could get someone to help at home sometimes, it'll be easier for me to do the home exercises especially when I have to take care of him and his other siblings who are all boys. Getting more toys will also help make the home exercises easier (35 year old woman)

4.4 Association between selected factors and adherence to physiotherapy

The final objective of this study is to determine the factors associated with adherence to physiotherapy. Bivariate analysis (Table 4.4-Table 4.9) and logistic regression analysis were carried out to examine the relationship and the strength of association between the factors associated with adherence to physiotherapy (Table 4.10-Table 4.11).

4.4.1 Client factors that influence adherence to physiotherapy

The study compared client factors with adherence to therapy appointments and home exercises. The analysis found a significant association between the number of children a caregiver takes care of and adherence to therapy appointments and home exercises as well as perceived level of difficulty of child's exercises by caregivers ($p \leq 0.05$). There was also no significant association between sex, educational status, knowledge on physiotherapy, marital status, employment status, person responsible for child attending therapy, clash of therapy obligations with other responsibilities, support from family and friends, negative reactions from child during therapy and distance from caregivers' house to the clinic and adherence to therapy appointments and home exercises ($p \geq 0.05$).

Table 4.4: Association between client factors and adherence to keeping physiotherapy appointments and home exercise schedules

Factor	Adherence to physiotherapy appointment (N=85)			Adherence to home exercise program (N=85)		
	Good adherence N (%)	Poor adherence N (%)	Fisher's exact	Good adherence N=85 (%)	Poor adherence	Fisher's exact
Sex						
Male	1(50.0)	1(50.0)	p=0.343	0(0.0)	0(0.0)	p=0.167
Female	68(81.9)	15(18.1)		50(60.2)	33(39.8)	
Age						
≤30	24(80.0)	6(20.0)	p=0.838	17(56.7)	13(43.3)	p=0.765
≥30	45(81.8)	10(18.2)		33(60.0)	22(40.0)	
No of children						
1	20(76.9)	6(23.1)	p= 0.050	17(65.4)	9(34.6)	$\chi^2=9.087$
2	15(68.2)	7(31.8)		7(31.8)	15(68.2)	
≥3	34(81.2)	8(18.8)		26(70.3)	11(29.7)	
Educational status						
No formal education	2(40.0)	3(60.0)	p=0.067	2(40.0)	3(60.0)	p=0.686
Basic	36(85.7)	6(14.3)		26(61.9)	16(38.1)	

education	31(81.6)	7(18.4)		22(57.9)	16(42.1)	
Secondary +						
Marital status						
Married	54(83.1)	11(16.9)	$\chi^2=0.653$	40(61.5)	25(38.5)	$\chi^2=0.840$
Not married	15(75.0)	5(25.0)	0	10(50)	10(50.0)	7(0.359)*
			p=0.419			
Employment						
Unemployed	16(80)	4(20.0)	p=1	12(60.0)	8(40.0)	p=1
Private	47(81.0)	11(19.0)		34(58.6)	24(41.4)	
Public	6(85.7)	1(14.3)		4(57.1)	3(42.9)	
Knowledge about physiotherapy						
Adequate	15(93.8)	1(6.2)	p=0.573	-	-	-
Inadequate	1 (6.2)	15(93.8)		-	-	
Person responsible for child attending clinic						
Father	5(100.0)	0(0.0)	p=0.172	2(40.0)	3(60.0)	p=0.596
Mother	55(82.1)	12(17.9)		38(56.7)	29(43.3)	
Child	0(0.0)	0(0.0)		1(100.0)	0(0.0)	
Mother and father	8(80.0)	2(20.0)		7(70.0)	3(30.0)	
Mother and someone else	1(50.0)	1(50.0)		2(100.0)	0(0.0)	
Clash with other responsibilities						
Agree						
Disagree	28(84.9)	5(15.1)	p=0.640	18(54.5)	15(45.5)	p=0.648
Unsure	38(79.2)	10(20.8)		30(62.5)	18(37.5)	
	3(75.0)	1(25.0)		2(50.0)	2(50.0)	
Available family and friends assistance						
Agree	20(80)	5(20.0)	$\chi^2=0.032$	36(60.0)	24(40.0)	$\chi^2=0.116$
Disagree	49(81.7)	11(18.3)	1,	14(56.0)	11(44.0)	6(0.733)*
			p=0.858			
Negative reactions from child						
Agree	40(81.6)	9.0(18.4)	p=0.512	31(63.3)	18(36.7)	p=0.312
Disagree	28(82.4)	6(17.6)		17(50.0)	17(50.0)	
Unsure	1(50.0)	1(50.0)		2(100.0)	0(0.0)	
Level of difficulty of child exercises						
Easy	5(55.6)	4(44.4)	p=0.015	7(77.8)	2(22.2)	p=0.318
Neither easy	28(75.7)	9(24.3)		23(62.2)	14(37.8)	

nor difficult						
Difficult	36(92.3)	3(7.7)		20(51.3)	19(48.7)	
Clinic too far						
Agree	51(86.4)	8(13.6)		37(62.7)	22(37.3)	
Disagree	17(70.8)	7(29.2)	p=0.091	11(45.8)	13(54.2)	p=0.221
Unsure	1(50.0)	1(50.0)		2(100.0)	0(0.0)	

*= chi-square test; - = variable does not apply

4.4.2 Disease factors that influence adherence to physiotherapy

The following variables were used to measure disease factors and their association with adherence to therapy appointments and home exercises; severity of disease, chronicity of disease and non-severity of disease. Regarding the severity of child's condition, there was a significant association with adherence to keeping therapy appointments ($p \leq 0.05$). However, there was no significant association with adherence to home exercise regimen ($p \geq 0.05$). There was also no significant association between chronicity of child condition and non-severity of disease and adherence to therapy appointments and home exercises ($p \geq 0.05$).

Table 4.5: Association between disease factors and adherence to keeping physiotherapy appointments and home exercise

Factor	Adherence to Physiotherapy Appointment Schedule			Adherence to Home Exercise Program		
	Good adherence N (%)	Poor adherence N (%)	Fisher's exact	Good adherence N (%)	Poor adherence N (%)	Fisher's exact
Disease condition not severe						
Agree	5(83.3)	1(16.7)	p=1	-	-	-
Disagree	64(81.0)	15(19.0)		-	-	
Severe disease condition						
Agree	63(82.9)	13(17.1)	p=0.005	43(56.6)	33(43.4)	p=0.417
Disagree	6(100.0)	0(0.0)		4(66.7)	2(33.3)	
Unsure	0(0.0)	0(0.0)		3(100.0)	0(0.0)	
Chronic disease condition						
Agree	67(81.7)	15(18.3)	p=0.470	3(60.0)	2(40.0)	p= 1.00

Disagree	2(66.7)	1(33.3)	47(58.8)	33(41.2)
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- = variable does not apply

4.4.3 Client-therapist relationship factors that influence adherence to physiotherapy

Majority (59%) of the participants indicated that they were not involved in their children's treatment planning which had no association with adherence to home exercises ($p \geq 0.05$). Similarly, no association existed between therapists treating caregivers with respect, unfriendliness of physiotherapist, prescription of orthotic devices for child and clients' records being kept confidential and adherence to keeping therapy appointments ($p \geq 0.05$). Lack of encouragement, advice from therapist and ability to ask therapist questions about child's condition and care were also not significantly associated with adherence to therapy appointments and home exercises ($p \geq 0.05$).

Table 4.6 Association between client-therapist factors and adherence to keeping physiotherapy appointments and home exercises

Factor	Adherence to physiotherapy appointment schedule (N=85)			Adherence to home exercise program (N=85)		
	Good adherence N (%)	Poor adherence N (%)	Fisher's exact	Good adherence N (%)	Poor adherence N (%)	Fisher's exact
Unfriendliness of physiotherapist						
Agree	6(100.0)	0(0.0)	p=0.589	-	-	-
Disagree	63(79.7)	16(20.3)		-	-	
Lack of encouragement, advice from therapist						
Agree	3(100.0)	0(0.0)	p=0.396	45(56.3)	35(43.7)	p=0.214
Disagree	66(80.5)	16(19.5)		2(100.0)	0(0.0)	
Unsure	0(0.0)	0(0.0)		3(100.0)	0(0.0)	

Non-involvement of caregivers in treatment planning						
Agree	21(80.8)	5(19.2)	$\chi^2=0.004$	46(59.0)	32(41.0)	p=1.00
Disagree	48(81.4)	11(18.6)	1(0.949)	2(50.0)	2(50.0)	
Unsure	0(0.0)	0(0.0)	*	2(66.7)	1(33.3)	
Prescription of orthotic device for child						
Agree	60(83.3)	12(16.7)	p=0.375	-	-	-
Disagree	8(66.7)	4(33.3)		-	-	
Unsure	1(100.0)	0(0.0)		-	-	
Therapist Respects clients						
Agree	67(80.7)	16(19.3)	p=1.00	-	-	-
Disagree	1(100.0)	0(0.0)		-	-	
Unsure	1(100.0)	0(0.0)		-	-	
Clients records kept confidential						
Agree	63(82.9)	13(17.1)	p=0.304	-	-	-
Disagree	1(50.0)	1(50.0)		-	-	
Unsure	5(71.4)	2(28.6)		-	-	
Ability to ask physiotherapist questions						
Agree	66(81.2)	15(18.8)	p=0.573	46(57.5)	34(42.5)	p=0.787
Disagree	2(100.0)	0(0.0)		2(100.0)	0(0.0)	
Unsure	1(50.0)	1(50.0)		2(66.7)	1(33.3)	

*=chi-square test; - = variable does not apply

4.4.4 Treatment factors that influence adherence to physiotherapy

The following variables were used to measure the influence of treatment factors on adherence: long waiting time, availability of equipment, facility being child friendly, therapist consulting client before scheduling appointment, treatment addressing child's condition, no variability in exercise regimen, helpfulness of therapy and no need for home exercise because of clinic attendance. There was no significant association between long waiting time, child friendliness of facility and therapist consulting client before scheduling next appointment and adherence to keeping therapy appointment ($p \geq 0.05$). With regards to no need for home exercises because

client attends clinic, there was also no significant association with adherence to home exercise ($p \geq 0.05$). Availability of equipment, treatment addressing child's condition, no variability in exercises and helpfulness of therapy were all not significantly associated with adherence to keeping therapy appointment and home exercise ($p \geq 0.05$).

Table 4.7 Association between treatment factors and adherence to keeping physiotherapy appointments and home exercises

Factor	Adherence to physiotherapy appointment schedule			Adherence to home exercise program		
	Good adherence N (%)	Poor adherence N (%)	Fisher's exact	Good adherence N (%)	Poor adherence N (%)	Fisher's exact
Long waiting time						
Agree	26(83.9)	5(16.1)	p=0.261	-	-	-
Disagree	43(81.1)	10(18.9)		-	-	
Unsure	0(0.0)	0(0.0)		-	-	
Availability of equipment						
Agree	50(83.3)	10(16.7)	p=0.401	29(50.9)	28(49.1)	p=0.072
Disagree	16(72.7)	6(27.3)		18(78.3)	5(21.7)	
Unsure	3(100.0)	0(0.0)		3(60.0)	2(40.0)	
Child friendly facility						
Agree	64(84.2)	12(15.8)	p=0.062	-	-	-
Disagree	3(50.0)	3(50.0)		-	-	
Unsure	2(66.7)	1(33.3)		-	-	
Consults clients before scheduling appointment						
Agree	60(82.2)	13(17.8)	p=0.472	-	-	-
Disagree	8(80.0)	2(20.0)		-	-	
Unsure	1(50.0)	1(50.0)		-	-	
Treatment/home exercise addresses child condition						
Agree	66(81.5)	15(18.5)	p=0.573	48(59.3)	33(40.7)	p=1.00
Disagree	2(100.0)	0(0.0)		2(50.0)	2(50.0)	
Unsure	1(50.0)	1(50.0)		0(0.0)	0(0.0)	

Therapy/home exercise is not variable						
Agree	18(94.7)	1(5.3)	p=0.179	9(69.2)	4(30.8)	p=0.777
Disagree	49(77.7)	14(22.3)		40(57.1)	30(42.9)	
Unsure	2(66.7)	1(33.3)		1(50.0)	1(50.0)	
Helpfulness of therapy						
Helpful	63(79.8)	16(20.2)	p=1.00	47(60.3)	31(39.7)	p=0.439
Averagely helpful	3(100)	0(0.0)		3(42.9)	4(57.1)	
Not helpful	3(100)	0(0.0)		0(0.0)	0(0.0)	
No need for home exercise						
Agree	-	-	-	2(25.0)	6(75.0)	p=0.069
Disagree	-	-	-	48(62.3)	29(37.7)	
Unsure	-	-	-	0(0.00)	0(0.0)	

- = variable does not apply

4.4.5 Economic factors that influence adherence to physiotherapy

The findings from this study showed that there was no significant association between the economic barriers faced by caregivers, level of income of caregivers' mode of payment for physiotherapy services and affordability of treatment and adherence to keeping therapy appointments ($p \geq 0.05$).

Table 4.8 Association between economic factors and adherence to keeping physiotherapy appointments

Factor	Adherence to keeping therapy appointments (N=85)		
	Good Adherence N (%)	Poor adherence N (%)	Fisher's exact
Main economic barrier			
Affordability of therapy	1(50.0)	1(50.0)	p=0.595
Affordability of transport	17(73.9)	6(26.1)	
Unemployed	4(80.0)	1(20.0)	
Hiring a caregiver	1(100.0)	0(0.0)	
Others	19(86.4)	3(13.6)	
None	27(84.4)	5(15.6)	
Level of income (GHc)	0(0.0)	0(0.0)	

<200	12(85.7)	2(14.3)	p=1.00
200-600	23(82.1)	5(17.9)	
600-1000	3(100.0)	0(0.0)	
>1000	5(83.3)	1(16.7)	
Mode of payment for physiotherapy services			
NHIS	54(83.1)	11(16.9)	p=0.275
NGO care	4(66.7)	2(33.3)	
Self	9(81.8)	2(18.2)	
Spouse	2(100.0)	0(0.0)	
Friends & Family	0(0.0)	1(100.0)	
Affordability of treatment			
Yes	66(82.50)	14(17.5)	p=0.236
No	3(60.0)	2(40.0)	

4.4.6 Health seeking behaviours of caregivers that influence adherence to physiotherapy

The following other treatment variables were measured against adherence; accessing other forms of treatment, forms of treatment accessed and interruption of therapy because of other forms of treatment. There was a significant association between accessing other forms of treatment and adherence to therapy appointments ($p \leq 0.05$). However, it was not significantly associated with adherence to home exercises ($p \geq 0.05$). Forms of treatment accessed and interruption of therapy by other treatment sought had no significant association with adherence to keeping therapy appointments and home exercises ($p \geq 0.05$). None of the caregivers indicated that seeking other forms of treatment interrupted their therapy commitments.

Table 4.9 Association between health seeking behaviours factors and adherence to keeping physiotherapy appointments

Factor	Adherence to keeping physiotherapy appointment (N=85)			Adherence to home exercise program(N=85)		
	Good adherence (N %)	Poor adherence (N %)	Fisher's exact	Good adherence N (%)	Poor adherence (N %)	Fisher's exact
Access other forms of treatment						

No						
Yes	58(84.1)	9(56.3)	$\chi^2=6.017($	39(58.2)	28(41.8)	$\chi^2=0.0493$
	11(15.9)	7(43.7)	0.014)*	11(61.1)	7(38.9)	(0.824)*
Forms of treatment accessed						
Occupational therapy	1(33.3)	2(66.7)		2(66.7)	1(33.3)	
Speech therapy						p=0.357
Herbal treatment	1(100.0)	0(0.0)	p= 0.086	1(100.0)	0(0.0)	
Massage therapy	7(77.8)	2(22.2)		6(66.7)	3(33.3)	
NGO care	1(100.0)	0(0.0)		1(100.0)	0(0.0)	
Spiritual care	1(100.0)	0(0.0)		1(100.0)	0(0.0)	
N/A	1(33.3)	2(66.7)		0(0.0)	3(100.0)	
	57(82.6)	10(17.4)		39(58.2)	28(41.8)	
Seeking other treatment prevents keeping appointment						
Yes	0(0.0)	0(0.0)		0(0.0)	0(0.0)	-
No	69(81.2)	16(18.8)	-	50(58.8)	35(41.2)	

*= chi-square test; - = variable does not apply

With the qualitative aspect of this study, the last theme identified was factors influencing adherence. Within this theme, five subthemes were identified: client factors, disease factors, client-therapist factors, treatment factors and health seeking behaviour factors.

Client factors

The caregivers described a variety of challenges they encountered while accessing physiotherapy ranging between challenges with transportation, finances and unemployment.

I face a lot of challenges while bringing my son for physio. Sometimes when I think about what I will go through in public transport, it discourages me from going. Some people just stare at my son throughout the journey while some do not want to have any form of physical contact with him. Others get off the

bus and pick a new one if they realize they're going sit beside me. Also, the cost of transportation becomes a challenge for me sometimes so I'm unable to make it for physio (35 year old woman)

'The distance from my house to the clinic is quite far. This also affects the cost of transportation as well as having to pay for the physio services since we are not on the national health insurance scheme. These challenges does not deter me from bringing her for physio because I have committed myself to help her so I will do whatever it takes' (32 year old woman)

Other caregivers reported that their children cried during therapy. However, the cries did not deter them from accessing care because they believed that therapy was important.

He cries a lot when we go for physio and I believe it is the exercises that make him cry. That has however not prevented me from taking him to the clinic. If we don't go for physio it's because I don't have money for transportation or because of poor weather (24 year old woman)

Some of the participants also stated that they had some family members helping them bring the children for therapy when they couldn't with others receiving no help from any one.

It's just me and my mother. His father left us when he was still a baby. My mother helps a lot. She brings him for therapy so that I can go and work (39 year old woman)

I am currently single and do not have relatives in Accra so I'm the only one who takes care of her. When I initially gave birth to her my family was

supportive but when they realized that she wasn't developing like other children, they started maltreating us. I was even asked to abandon her but I didn't mind them. (33 year old woman)

Disease Factors

This subtheme looks at caregivers perceptions about their children's condition. Some of them believed that it would take a long time for the children to move independently while others believed that it would only take a little time.

No I don't think that she will need physio for a long time. I believe that since we're doing something about her condition she will definitely get better and so she wouldn't need to do physio for a very long time (32 year old woman)

Since we started physio I've seen a lot of improvement and it hasn't even been a year. I know that it will take some time but I believe that it won't last forever, it can be discouraging sometimes but you have to be patient. It takes time but you have to be patient (33 year old woman)

Client-therapist factors

Several participants reported that they had a good relationship with the physiotherapists that attended to their children. According to them the physiotherapists were nice to them, communicated with them nicely and treated them with respect.

The relationship between us is very fine and cordial. I can easily share my concerns with them and they are always willing to help. They communicate very well with us and do not use harsh words and encourage me a lot to continue with the home exercises (39 year old woman)

One caregiver however had a negative experience to share regarding the relationship she had with some of the therapists who attended to her son. According to her:

Some of the physiotherapists are nice but others are rude so it's not all of them that you have a good relationship with. It depends on the individuals. Physiotherapists should be very cautious with their utterances and how they treat us so that they don't end up adding unto our problems (33 year old woman)

The participants also alluded to the fact that the therapist involved them in the therapy. One had this to say:

The physiotherapist involves me in my son's care. I sit with them whiles they are attending to him on the mat and participate in the exercises (24 year old woman)

When therapists engage the children through play, it makes the session more interesting and bearable for the kids. A caregiver reported that:

The physiotherapists do make the exercises fun. They play with her and sing to her sometimes (32 year old woman)

Treatment factors

The participants discussed many treatment factors that they individually felt influenced their adherence. Such examples included waiting time and child-friendliness of the facility. With regards to waiting time, a caregiver had this to say:

The waiting time depends, if you come late you will have to wait for a long time but if you come early you will be attended to early (35 year old woman)

Some of the caregivers were comfortable with the setup of the facility whiles others felt it needed more work. Some highlighted:

The therapists have enough space to sit and work and we the parents have enough room to watch what is being done. To me it is okay (33 year old woman)

The facility is not so child friendly. I don't feel very comfortable when I go there. In my opinion the facility needs more furnishing (32 year old woman)

According to the caregivers, the exercises the children were taken through were tolerable and appropriate for the child's condition. A caregiver said:

There's nothing I would add or take away from the exercises they take her through. They are very good for her. I think they are doing a good job (39 year old woman)

One caregiver however had a different opinion on the subject.

I believe that if surgery is done for my son it will really help with the stiff joints. The last time they applied the POP he developed a sore after it was removed. This has really delayed his progress because we had to dress the wound till it healed. I would like it if they took the POP out. (25 year old woman)

Health seeking behaviour factors

Most of the caregivers were aware of other forms of treatment which they felt would benefit their children while others were unaware. These treatments ranged from use of orthodox medicine prescribed by doctors to seeking spiritual care. A few expressed:

I am aware that herbal treatment as well as spiritual care will help with my child's illness (33 year old woman)

No, I am not aware of any other form of treatment that will help with her condition (32 year old woman)

The caregivers who accessed other forms of treatment reported that seeking these forms of treatment did not interfere with their therapy sessions. One said:

No, going there did not clash with my therapy appointment. I go on days that I am not supposed to go for physio (25 year old woman)

Others also reported:

All the forms of treatment I sought for helped. The speech for example helped with his talking (33 year old woman)

I go to church on Wednesdays for prayers and I must say that the prayers have really helped (24 year old woman)

4.4.7 Association between significant factors and adherence to physiotherapy appointment

Results from the logistic regression showed that the level of difficulty of child, number of children of caregiver, severity of disease condition and accessing other form of treatment were measured statistically significant with adherence to physiotherapy appointment sessions. Also, participants who accessed other forms of treatment were 24 per cent less likely to adhere to their child's physiotherapy appointment schedules compared to those who did not seek other forms of treatment (OR =0.24, 95% CI 0.07-0.79). The unadjusted odds of perceived difficulty of child's exercise regimen by caregiver and that caregiver adhering to therapy was 9.59 times compared to those who perceived the exercises to be easy (95% CI 1.64-56.09), and caregivers who perceived their children's exercises as neither difficult nor easy had 2.49 times the odds of adhering to therapy compared to those who perceived that their children's exercises to be easy. Adjusting for number of children and accessing other

forms of treatment, the odds of a caregiver who perceived that their child’s exercise regimen was difficult adhering to physiotherapy appointment schedules increased to 10.01 times as compared to those who perceived their children’s exercises to be easy (adjusted 95% CI 1.35-74.02). Caregivers with three or more children were 3.40 times the odds of adhering to physiotherapy appointment schedule compared to those with only one child (unadjusted 95% CI 0.76-15.11).

Table 4.10: Association between significant factors that influence adherence to keeping physiotherapy appointments

	Crude OR (95% CI)	P-value	Adjusted OR (95% CI)	P-value
Access other forms of treatment				
No	1.00		1.0	
Yes	0.24(0.07- 0.79)	0.019	0.29(0.72-1.19)	0.087
Level of difficulty of child				
Easy	2.49(0.55-	0.238	1.60(0.28-8.90)	0.589
Neither easy nor difficult	11.31)	0.012	10.01(1.35,	0.024
difficult	9.59(1.64-		74.02)	
difficult	56.09)			
Caregiver’s no. of children				
1child	1.00		1.00	
2children	0.64(0.18-2.31)	0.499	0.28(0.06-1.36)	0.117
3+children	3.40(0.76-	0.108	2.16(0.42-	0.358
	15.11)		11.13)	
Severe disease condition				
Agree	1.00		1.00	
Disagree	1.00		1.00	
Unsure	1.00		1.00	

4.4.8 Measures of strength of association between significant factors and adherence to home exercises

Table 4.11 shows that caregivers with two children were 25 per cent less likely to adhere to home exercises compared to caregivers with one child (OR=0.25, 95% CI 0.07- 0.83). However, caregivers with three or more children were 25 per cent more

likely to adhere to home exercise than those with one child (OR= 1.25, 95% CI 0.43-3.66) but were 98 per cent less likely to adhere when adjusted for clash with other responsibilities (AOR=0.98, 95% CI 0.29-3.37). The crude odds of caregivers who disagreed that their child's home exercises clashed with other pertinent responsibilities adhering to home exercises was 9.23 times compared to caregivers who agreed (95% CI 3.19-26.69). After adjusting for number of children of caregivers, the odds was 8.09 times among those who disagreed that other responsibilities clashed with home exercise schedules (95% CI 2.67-24.56).

Table 4.11: Association between significant factors and adherence to home exercise schedules, 2017

	Crude OR (95% CI)	P-value	Adjusted OR (95% CI)	P-value
Caregiver's no. of children				
1child	1.00		1.00	
2children	0.25(0.07- 0.83)	0.023	0.27(0.07- 1.06)	0.060
3+children	1.25(0.43- 3.66)	0.682	0.98(0.29- 3.37)	0.981
Clash with other responsibilities				
Agree	1.00		1.00	
Disagree	9.23(3.19- 26.69)	<0.001	8.09(2.67-24.56)	0.001
Unsure	1.43(0.11- 18.29)	0.784	1.35(0.09-19.81)	0.829

CHAPTER FIVE

DISCUSSION

5.0 Introduction

The study sought to explore the factors associated with adherence to physiotherapy among children living with physical disabilities. This chapter discusses the findings of the study. It is organised under six main headings: background characteristics of the study participants, care-givers level of knowledge on physiotherapy, level of adherence to physiotherapy, factors associated with adherence to physiotherapy and limitations of the study.

5.1 Background characteristics of study participants

In this study, the respondents were predominantly females. Even though an attempt was made to recruit more males, less than 5 per cent of them were obtained. This is because caregiving is thought to be the preserve for women in most African countries. In this study, over 70 per cent of the respondents were married. This can be related to the fact that according to the Ghana Statistical Service, (2010), a female is more likely to be married than a male. These findings are consistent with the finding of Geere et al. (2012) where three out twenty respondents were males and 75 per cent of their respondents were married.

Majority (94.1%) of the caregivers had attained basic education and above. This can be attributed to the fact that a large proportion of the country's population are literates according to the Ghana Statistical Service, (2010). This result is similar to the findings of a study conducted by Crouch and McKenzie (2006), where all the caregivers had elementary education and above. The most common condition that was

reported in the various facilities as resulting in childhood physical disability was cerebral palsy. This can be attributed to the increasing awareness of the immense benefits of physiotherapy in the management of this condition. This result is similar to the findings of Yitayeh and Behiru Fisscha, (2015), where cerebral palsy was identified as the major cause of physical disabilities in their study that described the pattern of major conditions that causes physical disabilities among Ethiopian children. This result also agrees with the observation by Sharma and Sinha (2016) that cerebral palsy is quickly becoming the most common cause of childhood disability.

The current study found that most of the respondents were mostly employed in the private sector. This can be attributed to the fact that caring for children with disability can be time consuming therefore making it very difficult for caregivers to work for other people. This finding however contradicts a similar study by Başaran *et al.* (2014) where the majority of their study participants were unemployed. A possible explanation for their result could be that their study was conducted in an European country where there are policies in place for families that have children with special needs to receive some financial assistance from the government unlike Ghana where such policies are non-existent.

5.2 Care-giver's knowledge of physiotherapy

In this study it emerged from both the quantitative and qualitative findings that, most of the caregivers had adequate knowledge on physiotherapy. This can be attributed to the fact that the caregivers who participated in this study have had previous contact with a physiotherapist as they bring their children to the hospital for treatment. This corroborates with the qualitative findings where caregivers described various aspects of the therapy provided for their children when asked about the profession. The result also agrees with the findings of Chiwaridzo and Msiska (2014) where the majority

(66.7%) of their respondents who were sports coaches had adequate knowledge on physiotherapy. Conversely, this finding contradicts the results of the study conducted by Dissanayaka and Banneheka (2014) where most of their study participants were unaware of physiotherapy either as a career or a treatment method.

Majority (83.5%) of the participants in this study were able to identify physiotherapists' place of work. From the qualitative aspect of this study, the caregivers knew that physiotherapists worked in hospitals because they bring their children there to access treatment. This is in line with results reported by Maruf *et al.* (2012), where 76 per cent of their respondents thought that physiotherapy should be available in hospitals. Similar results were reported by Olawale and Adjabeng (2001), where 66.8 per cent of their respondents knew where physiotherapy services could be received. One caregiver stated during the in-depth interview that she had a physiotherapist come home to attend to her grandson. This finding brings to bare the fact that physiotherapy services are not rendered only within health facilities. Physiotherapy services can be provided at homes, schools, offices, football pitches among others. This is because the main tool a physiotherapist needs in his or her work is their hands.

However, this study found that many of the respondents could not identify who a physiotherapist is. They likened them to massage therapists. This is because physiotherapists usually perform massage as part of their work. Nonetheless, they are not massage therapist. This misconception is shared amongst many people as reported by Dissanayaka & Banneheka (2014) in their study where 68 per cent of the respondents who were high school students thought that physiotherapy is practiced by masseurs.

Majority of the caregivers were able to identify conditions that required physiotherapy (96.5%) and knew the roles of physiotherapists (88.2%). This is because this study was conducted in a physiotherapy department where all of the respondents had a child that suffered a medical condition that required treatment and saw the therapist at work.

5.3 Adherence of CLWPD to physiotherapy

This study found that a little over 80 per cent of the respondents had good adherence to keeping therapy appointments. The response from the participants in the in-depth interview suggests that they adhered very well to their appointment schedules because of the benefits it offered and improvements they have noticed in their children. Poor adherence to keeping therapy appointment (18.8%) recorded in this study is slightly higher than what was reported by Vasey (1990), where 14.3 per cent of the respondents failed to complete the recommended treatment course in that study. This is because some of the caregivers face numerous challenges with transportation, lack of time, cost of treatment and ill health.

This study also revealed that 58.8 per cent of the respondents had good adherence to their home exercise regimen while 41.2 per cent adhered poorly as compared to the 65.3 per cent good adherence levels and 34.7 per cent poor adherence levels to home exercise program reported Başaran, Karadavut, Üneri, Balbaloğlu, and Atasoy (2014). The qualitative findings provide more insight into the adherence levels recorded. The caregivers asserted that they were unable to take their children through the prescribed home exercise regimen because of some challenges with time, lack of toys and equipment at home and fatigue.

One caregiver had this to say:

“I don't do the home exercises all the time because I get so occupied with work and other responsibilities. I can only do them over the weekend when I'm free” (39 year old woman)

It is however, very likely that the estimates for adherence to home exercise program is biased as there is no means of effectively assessing whether these exercises are actually being performed or not and also because adherence estimates from most studies are based on statements by care-givers who may tend to please the interviewer by responding in the affirmative as reported by Bassett (2012).

5.4 Factors that influence adherence to physiotherapy

This section discusses the different factors that influences care-givers adherence to physiotherapy.

5.4.1 Client factors

It emerged in this study that the number of children a caregiver is responsible for is a significant predictor of good adherence ($p=0.05$). That is, caregivers with three or more children were more likely to adhere better to keeping their physiotherapy appointments (OR 3.40, CI 95%, 0.76-15.11 $p< 0.108$) and home exercises (OR 1.25, CI 95%, 0.43-3.66, $p < 0.682$) compared to those with just one child. Also caregivers with two children were more likely to adhere to keeping their therapy appointments (OR 0.64, CI 95%, 0.18-2.31, $p<0.499$) and performing their home exercises (OR 0.25, CI 95%, 0.07- 0.83 $p<0.023$) compared to those with only one child. This can be attributed to the fact that parents with more than one child would want their sick child to grow up like their other children who are relatively healthy. They will do whatever it takes such as attending physiotherapy regularly. Also when a child with physical disability has other siblings who would play with him/her, it helps them gain motor

control and strength faster. These siblings can also step in sometimes and assist with the home exercises when the parents (caregivers) are occupied with other chores and responsibilities. This is similar to the findings of Başaran et al. (2014) where there was a significant association between the number of siblings a child has and adherence to home exercise.

The study also showed that, clashing of exercise regimen with other pertinent responsibilities was a significant predictor of adherence to home. Caregivers who disagreed that other activities and responsibilities prevented them from performing home exercises were more likely to adhere to their home exercise regimen compared to those who agreed (OR 9.23, CI95%, 3.19- 26.69, $p<0.001$). This finding reveals that most caregivers make time for their children's home exercises and ensure that nothing interferes with it and agrees with the report by Marwaha, Horobin and Mclean (2010) that clients are more likely to perform their home exercises relative to attending the clinic because physiotherapy can be time consuming and also because home exercises will not require them to alter their daily routines frequently. The qualitative aspect of this study supports this finding as some of the caregivers interviewed asserted that they performed the home exercises every day because of its benefits. These accounts are supported by the works of O'Reilly, Muir, and Doherty (1999), where their study participants noticed an improvement in pain and function after a home exercise regimen was prescribed for them.

The study also showed that the perceived level of difficulty of a child's exercise regimen was statistically significant ($p=0.015$). Caregivers who perceived that their children's exercises were difficult were more likely to adhere better to treatment compared to those who perceived them to be easy (OR 9.59, CI 95%, 1.64-56.09). This could be explained by the fact that parents who see their children's exercise

regimen to be difficult realize that their children may not be as fit as they should be therefore increasing the need for regular physiotherapy compared to those who might see the exercises to be easy. This finding contradicts the finding of Redmond and Parrish (2008), where the respondents who were young adults with cerebral palsy stated that the intense fatigue and frustration they experienced because of their inability to carry out activities and tasks during their physiotherapy sessions influenced their adherence to therapy negatively.

5.4.2 Disease factors and adherence

In the bivariate analysis of the association between disease factors and adherence to physiotherapy, it was found out that there was an association between the perceived severity of a child's disease and adherence to keeping therapy appointments ($p=0.005$). This finding can be attributed to the evidence from the qualitative aspect of this study that when caregivers come to the realization that their wards are unable to achieve certain developmental milestones that other children their age have achieved, then they would continue to need therapy.

This result agrees with the findings of Bassett (2005), that clients adhere better to rehabilitation when they perceive their injury to be severe. However during the multivariate analysis where the strength of that association was sought, it was detected that no association existed ($OR=1$).

5.4.3 Client-therapist relationship factors

Caregivers who agreed that the physiotherapists who attended to their children were friendly adhered better to keeping their therapy appointments. This agrees with the conceptual framework postulated for this study and can be attributed to the fact that when physiotherapists are friendly it makes the session fun for the children and

caregivers as well therefore motivating caregivers to come regularly. When therapists are friendly, it proves to the caregivers that they are dedicated and committed towards the wellbeing of their child thereby enhancing their adherence. Also, the qualitative aspect of this study provides more insight as was asserted by one caregiver that she received encouragement from the therapist who attended to her child which helped boost her adherence positively. This agrees with findings from a study conducted by Pizzari, McBurney, Taylor, & Feller (2002) where clients who had a positive relationship with their therapist were more inclined to show up for their clinic appointments. Encouragement and motivation from the physiotherapist greatly impacts on adherence to therapy as majority of the caregivers who received such encouragement adhered better to treatment as was reported in a similar study by Sluijs, Kok, & van der Zee (1993).

According to the findings from the study conducted by Redmond & Parrish (2008), trust and respect from physiotherapists was greatly desired among their respondents. This phenomenon reflected in the current study with most of the caregivers who agreed that they were treated with respect by their therapist adhering better to keeping their appointments.

5.4.4 Treatment factors

The caregivers reported in the qualitative aspect of the study that they were called in for treatment based on the time they arrived at the clinic. Therefore if they didn't want to wait too long they had to get to the clinic early. This is corroborated by the quantitative results where majority (81.1%) of those who agreed with this notion adhering better to therapy. This finding is in line with the conceptual framework. It however contradicts the findings from a study by Lacy and Reuter (2004) where patients had to wait for long in the waiting area before being seen and before getting

an appointment time. According to Feldman, Champagne, Korner-Bitensky and Meshefedjian (2002), if children and parents have to wait very long for both treatment and prescription of orthotic devices, they may face difficulties participating in their normal daily activities.

The caregivers also agreed that the facility was well equipped and child-friendly with majority of them adhering very well to their appointments. This is consistent with the conceptual framework and the report by Basset (2003) where high adherence levels were recorded among clients who felt comfortable in the clinic where they received treatment. In the qualitative aspect of this study, the caregivers who disagreed expressed concerns about space and emphasized on the need for the various units to be expanded so that it could accommodate more people.

Majority of the caregivers agreed that they were consulted before their next appointment was scheduled with majority of them adhering very well to therapy. This result is supported by Vasey (1990), where it was noted that clients are less likely to adhere to therapy when the appointment schedule is not convenient.

According to Başaran (2014), physiotherapy is very beneficial to children living with physical disability because it helps to improve their mobility and function. Similarly this study found out that a high proportion of the respondents also agreed that attending physiotherapy regularly was helpful to their kids with more than half of them adhering very well to therapy appointments.

5.4.5 Economic Factors

The majority (37.6%) of the caregivers did not identify any economic barrier that influenced their adherence to therapy which can be attributed to the fact that most people are not comfortable discussing their finances with strangers. This result contradicts the findings of Marwaha et al. (2010), where physiotherapists who were

the respondents in the study identified economic factors pertaining to the affordability of services as a determinant of poor adherence. They asked why the researcher was interested in finding out about their income. A few of them would provide an answer after an explanation had been offered but most of them preferred to skip that question. Among those who provided their income, the majority (54.9%) of them earned between GH¢ 200-600.

Almost all (76.4%) the caregivers paid for the physiotherapy services they received through the National Health Insurance Scheme with the majority (83.1%) of them adhering better to their therapy appointments. With the financial difficulties most of these caregivers face as a result of having to stop work in order to cater for their child with physical disabilities, it is not surprising that in this study almost all of them were registered on the National Health Insurance Scheme. That notwithstanding, According to Lin, Sklar, Oh, and Li (2008), patients who are not on any insurance cover are more likely to be non-compliant. In all about 95 per cent of the caregivers were able to afford the treatment with majority of them adhering very well to therapy.

5.4.6 Health seeking behaviour factors

A few (21.2%) of the caregivers who participated in this study had accessed other forms of treatment for their children. This results is similar to the results reported by Maruf et al. (2012), where only 18.8 per cent of their respondents would prefer indigenous health services to physiotherapy.

Accessing other forms of treatment was found to have a significant association with adherence to keeping physiotherapy appointments ($p=0.014$). Despite the fact that the majority (78.8%) of the caregivers did not access other treatment options, those who did were less likely to adhere to their therapy appointments (OR 0.24, CI 95% 0.07-0.79). This finding is in line with the conceptual framework that forms the basis of

this study. It however contradicts the account of the caregivers who participated in the qualitative study. According to the respondents who indicated that they had accessed other forms of treatment, it did not interfere with the physiotherapy appointments. This contradiction may have arisen because the researcher performed the interviews personally and introduced herself as a physiotherapist which may have intimidated the respondents to provide affirmative responses.

The most common forms of treatment sought by caregivers other than physiotherapy were herbal treatment. This is consistent with a report by Vickers and Zollman (1999) where herbal medicine was touted as one of the most alternative medicine sources that predates human history.

5.5 Limitations to the study

The study identified the following limitations:

- The number of participants was small because of the limited time frame allocated by the University of Ghana for data collection.
- The information retrieved from participants concerning the home exercise program was based on self-reported data. This could have introduced some bias as a result of recall challenges such as participants forgetting what happened prior to the interview.
- The effect of these limitations was however reduced by using both quantitative and qualitative data which complemented each other

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

This study sought to determine the factors associated with adherence to physiotherapy among children living with physical disabilities within four health facilities in the Greater Accra Region. The chapter has been organised into two sections: conclusions and recommendations.

6.1 Conclusions

The study found that the majority of the caregivers of children with physical disabilities had adequate knowledge on physiotherapy. The adherence of caregivers to keeping therapy appointment was higher (81.2%) while adherence to home exercise program was 58.8 per cent.

The study found caregivers seeking other forms of treatment, perceived difficulty of child's exercises, the number of children a caregiver is responsible for, perceived severity of child's condition and clashing of child's therapy appointment with other pertinent responsibilities as significant factors that influenced adherence.

6.2 Recommendations

The following recommendations are suggested based on the findings of this study

Policy

The study found that caregivers who sought other forms of treatment adhered poorly to keeping their therapy appointments. As such, they should be given more education on the need to stick to their therapy appointments and reschedule other appointments

for a later day. Physiotherapy departments should have policies where first-timers are given education on the benefits and importance of therapy to help them understand that consistency with recommended number of physiotherapy sessions for effective rehabilitation is very essential.

Research

It is recommended that further research be conducted to explore physiotherapist's perspective on the factors that influences adherence to therapy. This will provide further insight on the issue.



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APPENDIX I

INFORMED CONSENT

MASTER OF PUBLIC HEALTH

**DEPARTMENT OF POPULATIONS FAMILY AND REPRODUCTIVE
HEALTH**

SCHOOL OF PUBLIC HEALTH, UNIVERSITY OF GHANA, LEGON

CONSENT INFORMATION

My name is Adwoa Adowaa Adu, an MPH student from the School of Public Health, College of Health Sciences, University of Ghana, Legon. I am carrying out a study on Factors Associated with Adherence to Physiotherapy among Children Living with Physical Disability. The main objective of this study is to determine the factors associated with adherence to physiotherapy among children living with physical disability.

You were selected as a possible participant in this study because you meet our selection criteria and you were retained in our sampling. This study is looking for a minimum of 87 participants

Procedures

Care-givers aged 18 and above from selected health facilities in the Greater Accra Region will be included in this study. If you choose to participate, the research assistant will explain all the procedures to be followed in a language you understand. You will be given the opportunity to ask all questions you may have and further explanations will be given. You will be required to complete an interviewer administered questionnaire. We will ask you questions about your background, knowledge about physiotherapy, factors that influence your child's adherence to

treatment at home and in the clinic and your other health seeking behaviors. The survey interview is expected to last 30 minutes.

Signing or Thumb printing of Questionnaire

If you agree to participate, you will be requested to sign a consent form or thumb print if you wish to indicate that you fully agree to part. This will be done after understanding the purpose of study and agreeing to be part of study.

Administration of Questionnaire

A set of questions will be asked by the research assistant for which you will be requested to provide genuine answers as much as possible. You can however decide not to answer questions you feel uncomfortable with. The questionnaire will take less than 30 minutes to complete.

Possible Risks and Discomforts

This research poses no potential risk to you, your child or the society. We will be asking questions about factors that are associated with adherence to physiotherapy among children with disability.

Potential Benefits

There is no direct benefit to you for participation or monetary gain. However, the study is envisaged to be beneficial to children living with physical disability and the society at large. It will help us to identify and understand the factors that influence your child's adherence to treatment. This will help physiotherapists improve on their skills in relating to you and your child and come up with strategies to help promote adherence.

Voluntary participation

Your participation in this study is entirely voluntary. Your decision not to participate will not have any negative effect on you or on your relation. In the course of the study you can redraw anytime you want to, without any consequences. You can choose not to answer any question that you do not want to answer. However, you are kindly urged to participate in the study because your answers are important to success of this project.

Anonymity and Confidentiality

You are assured that all information provided will be kept confidential. Your identity or that of your child will not be disclosed to anybody who is not part of the study team. Neither your name nor any identity traceable to you or your relation will be indicated on the survey forms.

Compensation

There is no compensation for participating in this study.

Participant responsibilities

As a participant, your responsibilities include

- Follow the instructions of the research assistant
- Complete your questionnaires as instructed
- Ask questions as you think of them
- Tell the research assistant if you change your mind about staying in the study

Withdrawal from the study

If you first agree to participate and later change your mind, you are free to withdraw your consent and discontinue your participation in the study. Your decision will not affect you in any way.

Participant's rights

You should not feel obligated to agree to participate. Your questions should be answered clearly and to your satisfaction. If you decide not to participate, tell the research assistant.

If you have any questions about your rights as a research participant, you can contact the Administrator of the GHS Ethical Review Committee at the following address:

Hannah Frimpong

GHS-Ethical Review Committee
Research and Development Division
Ghana Health Service
P. O. Box MB 190
Accra
Office: 0302 681 109

Nana Abena Kwaa

Assisstant GHS-ERC Administrator
Mobile: 0244712919
Email: nanatuesdaykad@yahoo.com

Mobile: 024 323 5225 or 050 704 1223
Email: **Hannah.Frimpong@ghsmail.org**

Dissemination of Results

The findings of the study will be disseminated to the management of this hospital. A copy of the study will be kept in the hospital as reference.

Before taking Consent

Do you have any questions you wish to ask about the study? Yes () No ()

(If yes, please, indicate the questions below)

.....
.....
...

Contact information

In case you have any questions or complaints about this research, its procedures, risks and benefits please feel free to ask the research assistant.

If you are not satisfied with the researcher's response, please, do not hesitate to contact

Dr Agnes Kotoh (Supervisor)

School of Public Health

University of Ghana, Legon

Tel: 0208088267

Email: amkotoh@ug.edu.gh

Or

Adwoa Adowaa Adu

School of Public Health

University of Ghana, Legon

Tel: 020 7395597

Email: aadu009@st.ug.edu.gh



VOLUNTARY CONSENT

I declare that the above document describing the purpose, procedures as well as risks and benefits of the research titled “**(Factors associated with adherence to physiotherapy among children living with physical disabilities)**” has been thoroughly explained to me in English/Twi/Ga language. I have been given the opportunity to have any questions about the research answered to my satisfaction. I hereby voluntarily agree to participate as a subject in this study.

_____/_____/_____

Signature or Mark of Participant

Date

If participant cannot read the read the form themselves, a witness must sign here.

I, _____ was present while the purpose, procedures as well as risks and benefits were read to the participant. All questions were answered and the participant has voluntarily agreed to participate as a subject in this research study.

_____/_____/_____

Signature of Witness

Date

Interviewer’s statement:

I, _____, certify that the nature and purpose, the potential benefits and possible risks associated with participating in the study have explained to the above individual in the English/Twi/Ga language. The participant has freely agreed to participate in the study.

_____/_____/_____

Signature of person who obtained consent

Date

APPENDIX II

**DETERMINATION OF FACTORS ASSOCIATED WITH ADHERENCE TO
PHYSIOTHERAPY AMONG CHILDREN LIVING WITH PHYSICAL
DISABILITIES**

QUESTIONNAIRE

ID.....

DATE.....

Dear Respondent,

My name is Adwoa Adowaa Adu, an MPH student from the School of Public Health, College of Health Sciences, University of Ghana, Legon. I am carrying out a study on Factors Associated with Adherence to Physiotherapy among Children Living with Physical Disability. The main objective of this study is to determine the factors that influence your child's adherence to physiotherapy. I will therefore like to take a little time with you to answer these questions. You are assured that the answers you will give will be strictly confidential and would not be held against you.

If you agree to participate, you will be requested to sign a consent form or thumb print. This research poses no potential risk to you, your child or the society. In the course of the study you can redraw anytime you want to, without any consequences. You can choose not to answer any question that you do not want to answer. However, you are kindly urged to participate in the study because your answers are important to success of this project.

PART ONE (SOCIO-DEMOGRAPHIC DATA)

1. Sex Male () Female ()
2. What is your exact age?
3. What is your level of education

No education () Primary () Middle/JHS () Secondary/Vocational ()
Tertiary ()

4. How many children do you have

5. What is your marital studies Single () Married () Divorced () Separated ()
) Cohabitation ()

6. What is your occupation Unemployed () Self-employed () private sector ()
public sector ()

7. Religion Christianity () Islam () traditional () other.....

PART TWO (TYPE OF DISABILITY)

8. What type of physical disability does your child have?

.....

9. Source of referral

.....

PART THREE (ADHERENCE TO PHYSIOTHERAPY)

10. How many sessions of physiotherapy have you missed within the past 3
months?

.....

PART FOUR (LEVEL OF KNOWLEDGE)

11. How did you get to know about physiotherapy?

Friend(s) () other health workers () Media () Physiotherapy patient () A
family member have had encounter with a physiotherapist before ()

12. Have you ever been treated by a physiotherapist?

Yes () No ()

13. In my opinion, a physiotherapist is like a

Medical Doctor () Nurse () Chiropractor () Masseur () None ()

14. Which one of the following groups do you think is the least similar to physiotherapists?

Doctor () Police Officer () Masseur () Medical Laboratory scientist ()

15. Where do physiotherapists work?

Hospital () Massage parlour () Private clinics ()

16. What is the role of a physiotherapist?

Teach exercises () Teach people how to use artificial limbs () Teach people how to walk () Gives massage () does the same work as traditional bone setters ()

17. Which of the following conditions make a person more likely to be attended to by physiotherapist?

Stiff shoulder () Low back pain () Fever () Amputation of a limb () Cerebral palsy () Diarrhoea () Fracture () Polio () Stroke () Poor neck control in a baby ()

PART FIVE (DETERMINANTS OF ADHERENCE)

DISEASE FACTORS

18. My child's condition is not severe so I don't need to come for physio regularly

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

19. My child's condition is severe so I need to come for physio regularly

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

20. My child's condition is chronic so I can afford to miss some sessions

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

CLIENT FACTORS

21. I have missed more than 3 therapy sessions in the last 3 months

Strongly disagree () Disagree () Unsure () Agree () Strongly agree ()

22. Who is primarily responsible for making sure that your child follows his/her treatment recommendations at home?

Mother () Father () Child () Someone else ()

23. My child's therapy appointment clashes with other pertinent responsibilities

Strongly disagree () Disagree () Unsure () Agree () Strongly agree ()

24. My family and friends help bring my child to the clinic when I'm occupied

Strongly disagree () Disagree () Unsure () Agree () Strongly agree ()

25. My child always exhibit negative reactions each time we go for therapy

Strongly disagree () Disagree () Unsure () Agree () Strongly agree ()

26. Which of the following best describes your child's general level of difficulty in following treatment recommendations?

Easy all of the time () Easy most of the time () Neither easy nor difficult ()

Difficult most of the time () Difficult all of the time ()

27. The distance from my house to the clinic is too far

Strongly disagree () Disagree () Unsure () Agree () Strongly agree ()

CLIENT-THERAPIST RELATIONSHIP FACTORS

28. Some physiotherapists are not friendly.

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

29. The therapist does not encourage, advice and does not provide me with certain relevant information.

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

30. The therapist does not involve me in planning treatment for my child

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

31. The therapist has prescribed an orthotic device for me to use on my child

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

32. The therapist treats my child and me with respect

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

33. My child's therapist keeps all his/her records confidential

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

34. I can easily ask my therapist any question regarding my child's condition and therapy

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

TREATMENT FACTORS

35. I wait for too long before my child receives therapy.

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

36. There is enough equipment available for use during my therapy sessions?

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

37. The facility is child- friendly

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

38. The therapist consults me before scheduling our next appointment

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

39. The treatment addresses my child's condition

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

40. Each time we go for therapy we do the same thing

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

41. Which of the following best describes your opinion concerning the helpfulness of therapies?

Helpful none of the time () Helpful some of the time () Helpful half of the time ()
) Helpful most of the time () Helpful all of the time ()

ECONOMIC FACTORS

42. What is your main economic barrier to utilising physiotherapy services?

Affordability of physiotherapy Service () Affordability of transport () Financial dependence/ not working () Payment/Hiring a caregiver () None ()

Other (Specify) _____

43. How much is your monthly income?

Less than GH ₵200 () GH ₵200- GH ₵600 () GH ₵600- GH ₵1000 ()
More than ₵1500 ()

44. How do you pay for the physiotherapy services you receive?

National health insurance () private health insurance () self () sponsorship from friends and families () spouse () NGO care ()

45. Are you able to afford cost of treatment?

Yes () No ()

PART SIX (OTHER TREATMENT)

46. Have you accessed other forms of treatment for your child)

Yes () No ()

If yes

47. What other forms of treatment have you accessed for your child?

Occupational therapy () speech therapy () herbal treatment () massage therapy

() chiropractor () NGO Care () spiritual care () none ()

48. Has seeking these treatments prevented you from keeping your physiotherapy appointment?

Yes () No ()

How often has this happened?

.....

PART SEVEN (DETERMINANTS OF ADHERENCE TO HOME EXERCISE PROGRAM)

DISEASE FACTORS

49. My child's condition is severe so I need to take him/her through the prescribed home exercise program

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

50. My child's condition is chronic so I can afford to miss taking him/her through the prescribed home exercise program

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

CLIENT FACTORS

51. I have not been able to take my child through the home exercises more than 3 times in the last 3 months

Strongly disagree () Disagree () Unsure () Agree () Strongly agree ()

52. I have been so busy with other responsibilities that I'm unable to take my child through the home exercises

Strongly disagree () Disagree () Unsure () Agree () Strongly agree ()

53. My family and friends help my child with the home exercises when I'm occupied

Strongly disagree () Disagree () Unsure () Agree () Strongly agree ()

54. My child always exhibit negative reactions each time we perform the home exercises

Strongly disagree () Disagree () Unsure () Agree () Strongly agree ()

55. Which of the following best describes your child's general level of difficulty in following treatment recommendations?

Easy all of the time () Easy most of the time () Neither easy nor difficult ()

Difficult most of the time () Difficult all of the time ()

CLIENT-THERAPIST RELATIONSHIP FACTORS

56. The therapist encourages, advices and provides me with certain relevant information about the home exercises

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

57. The therapist involves me in planning treatment for my child

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

58. I can easily ask my therapist any question regarding my child's condition and therapy

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

TREATMENT FACTORS

59. There is enough equipment available for performing home exercises?

Strongly disagree () Disagree () Unsure () Agree () strongly agree ()

60. I go for therapy regularly so I don't need to perform the exercises at home for my child

Strongly disagree () Disagree () Unsure () Agree () strongly agree

61. The treatment addresses my child's condition

Strongly disagree () Disagree () Unsure () Agree () strongly agree

62. There is no variability in the home exercises

Strongly disagree () Disagree () Unsure () Agree () strongly agree

63. Which of the following best describes your opinion concerning the helpfulness of therapies?

Helpful none of the time () Helpful some of the time () Helpful half of the time ()
Helpful most of the time () Helpful all of the time ()

OTHER TREATMENT

64. Does seeking other treatment prevented you from taking your child through the home exercises

Yes () No ()

65. How often has this happened?

.....

THANK YOU FOR YOUR TIME



APPENDIX III

IN- DEPTH INTERVIEW GUIDE FOR CARE-GIVERS

University of Ghana

School of Public Health

Department of Population, Family and Reproductive Health

Topic: Factors associated with adherence to physiotherapy among children living with physical disability

Aim: To encourage the participants to speak freely about whatever they think is relevant to the study and their experiences from the onset of their children's disorders considering physiotherapy attendance and home exercise program.

Introduction

Good morning/ Good afternoon. Thank you for accepting to participate in this interview. My name is Adwoa Adowaa Adu and I will be conducting this interview with assistance of _____. Have you ever been involved in an interview of this nature before? This is an in-depth interview that will enable us to hear what you have to say so that we can better understand the challenges and factors that influence your child's adherence to physiotherapy. This will also help your physiotherapist to come up with innovative measures that will help improve your adherence rates. This interview will last for about an hour. I want you to feel free and talk to me about what your opinions are about physiotherapy, factors concerning the disease, treatment, relationship with the physiotherapist and your child and yourself that influences your level of adherence. I am also interested in finding out whether you know about other forms of treatment available for your child's condition and whether you have ever sought any of these treatments.

I want to first let you know a few things about what we are going to do.

Disclosure

Audio taping;

Reporting;

Observers helping to listen/ take note;

Procedures/ Ground Rules

No right or wrong answer; want to hear your personal opinions

Be honest; want to know what you really think;

Every information you provide is important to us- so don't be shy;

No official breaks but going to washroom are allowed.

Age	Ethnicity	Residence	Name of facility	Level of education	Occupation	Number of children	Religion

Getting Started & Ice-breaking – cause and knowledge of disability

Ok, now that you know why I am here and what I have come here to do, can you tell me how your child developed this disability?

Physiotherapy attendance

Treatment factors

Can you tell me about physiotherapy?

Probe: where they work, what services they render, when it is needed, is it relevant to your child

Can you tell me about the kind of therapy that is given to your child?

Probe: does it address your child's condition, would you change anything about your child's physiotherapy? Is it difficult to perform?

Tell me about the improvements you've seen since you started physiotherapy

Probe: are

How has the place been set-up?

Probe: do you feel comfortable there, is the place child-friendly, does it get overcrowded, do you enjoy some privacy when you're there and do you wait for long before your child receives therapy.

Disease factors

How do you feel when you see other children with similar condition as your child's

Do you think your child will continue to need physiotherapy in the future?

Probe: if yes or no tell me why you think so?

Client factors

What are some of the challenges you face while bringing your child to the clinic for therapy

Does your child cry a lot during therapy?

Probe: If yes, what do you think accounted for that?

Have you ever forgotten to bring your child to the clinic for therapy?

Probe: If yes, tell me about your most recent experience

Tell me about your family?

Probe: do they help you in taking care of your child

What work do you do (self-employed, public or private sector)?

Do you face some challenges bringing your child to clinic for therapy?

Probe: tell me about those challenges

Client- therapist relationship factors

What type of relationship exists between you and your child's physiotherapist?

Does the physiotherapist communicate very well with you and your child?

Does the physiotherapist have good interpersonal skills?

Does the physiotherapist show empathy towards your child's condition?

Does the therapist involve you in your child's treatment?

Is the physiotherapist flexible in the sessions offered?

Does the physiotherapist allow the sessions to be fun, offering choice, and helping to organize useful and realistic targets?

Adherence to home exercise program

Do you usually perform the program? Why? Why not?

How did you learn to perform the program?

What benefits and problems do you find in applying the program?

What encourages you to do it?

How could the program be made easier to incorporate?

What things could help you to do the program?

Do you want to talk about something else related to the program or your experience at the centre?

Seeking other forms of treatment

Are you aware of other forms of treatment for your child's condition?

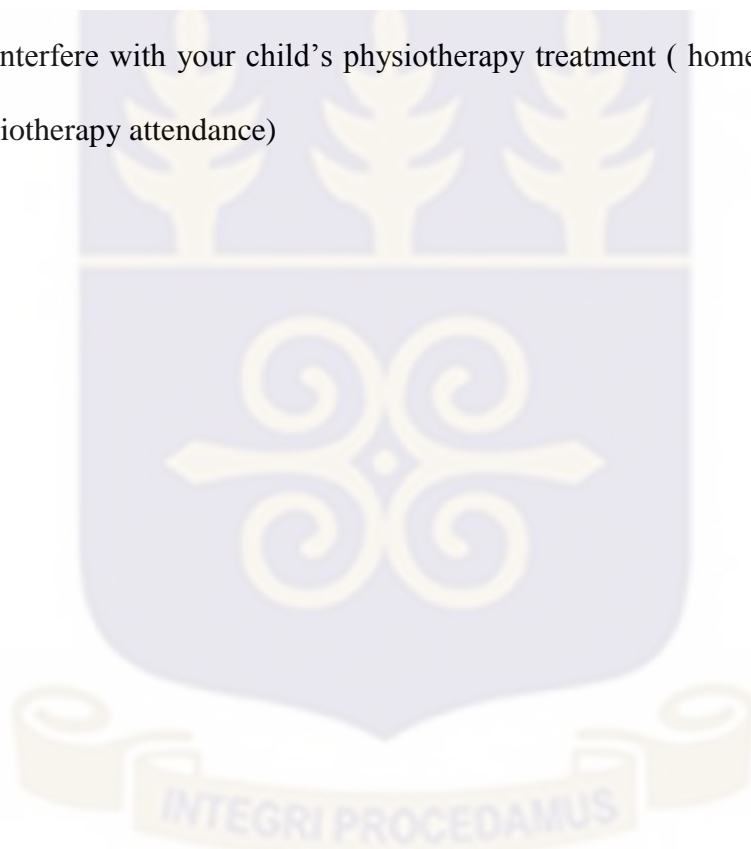
What are they?

Have you tried any of them?

If yes, where, when and how often do you patronize it?

Did it help?

Does it interfere with your child's physiotherapy treatment (home exercise program and physiotherapy attendance)



APPENDIX IV

GHANA HEALTH SERVICE ETHICAL APPROVAL



APPENDIX V

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