
Factors associated with Adherence to Physiotherapy appointments among Caregivers of children with Cerebral palsy in Jigawa state

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Abstract

Non-adherence to physiotherapy appointment is one of the most crucial issue that makes the rehabilitation very difficult for children with cerebral palsy (CP). The aim of the study is to find out the factors associated with adherence to physiotherapy appointment among caregivers of children with cerebral palsy in Jigawa state. Hundred (100) caregivers were recruited from Rasheed Shekoni Specialist hospital (RSSH), Hadejia General hospital (HGH), Dutse General hospital (DGH) and Federal Medical Centre Birnin kudu (FMCB) all in Jigawa state, using purposive sampling technique. However, only 80 participants were eligibly enrolled in to this cross-sectional study. Questionnaires were the major instruments used to obtain the data, however, verbal communication with the caregivers was done where necessary. Socio-economic level was determined using Kuppaswami's scale. Descriptive statistics was used to summarize the results. Inferential statistics of Chi-squares at 5% level of significance, was employed to determine the associations between pairs of categorical variables. Level of education, cost of transportation, knowledge of the condition, length of time since onset, beliefs in traditional medicine, waiting time for treatment and socioeconomic class of the caregivers were found to significantly associate with the adherence (P-value <0.05), while age of the caregivers was found to have no significant association with their adherence to physiotherapy appointment (P-value >0.05). It was found that the most predominant type of CP was spastic quadriplegia, the commonest aetiological factor was birth asphyxia and the commonest co-morbid factors were speech problem and mental retardation.

KEY WORDS:- Cerebral palsy, Adherence, Physiotherapy, Caregivers

Introduction

Cerebral palsy (C.P) refers to a group of permanent disorders of movement and postural development leading to activity limitation, caused by nonprogressive disturbances that occurred in the brain of the developing foetus or infant (Kirsten et al., 2014). According to Bax et al. (2005) it is an umbrella term comprising of a range of different causes, phenotypes and also associated with a variety of co-morbid conditions (such as epilepsy, intellectual disability, sensory disorders, speech and behavioural problems). It is a result of abnormal development or damage to some areas of the brain controlling posture, balance and movement (Bax et al. (2005).

Adherence has been defined as: “the extent to which person's behavior corresponds with agreed recommendations from a healthcare provider” (WHO, 2003). In physiotherapy profession, the concept of adherence is multidimensional and can be related to attendance at appointments, following medical advice, undertaking prescribed exercises, frequency of undertaking the prescribed exercises, correct performance of exercise (Nottidge & Okogbo, 1991).

Research on adherence to paediatric treatment regimes is an issue of concern in recent years. Hence, “optimal adherence to medical and other therapeutic regimens can have personal, social and clinical implication for the child as an adult” (Morris et al., 2006). Lack of information regarding factors associated to adherence to the hospital appointment makes it difficult for health providers to determine the impact of treatment on health status as well in the determination of the cost/benefit ratio for prescribing treatments to the patients (Bhatia & Joseph, 2000).

According to WHO (2003), “one of the main challenges for caregivers of children with chronic health problems is to adhere to appointment in the management of their children effectively and juggle this role with the requirements of everyday living”. Mothers of children with cerebral palsy are usually the primary caregivers of their children, and the care of these children occurs both at home and hospital (National Bureau of Statistics. 2011).

Despite its widespread prevalence, little data exists regarding factors related to appointment adherence among caregivers of children with CP (Colubi et al., 2012).

A lot of speculations about factors associated with adherence to physiotherapy appointment in Jigawa state are made, some clinicians believed that; cost of transportation, distance travelled to access physiotherapy services and weather are the major factors, while others believed that per-capital income, lack of knowledge about the condition and length of time since onset of the CP are the major factors. To the best of my knowledge no published evidence was documented about the factors associated with adherence to physiotherapy appointment among caregivers of children with CP in Jigawa state. Hence, this study aimed at finding out those factors associated with adherence to physiotherapy appointments among the caregivers of children with cerebral palsy in Jigawa state.

Methods

Ethical approval was obtained from the ethical committee of Jigawa state Ministry of Health (Nigeria). The sample size used were all the principal caregivers of children with CP having appointment with physiotherapy units across the state. The research was cross sectional survey. There were 100 CP children receiving physiotherapy across the Jigawa state during the period of the study. However, only 80 participants met the inclusion criteria such as having appointment with the physiotherapy unit for at least one month and agreed to participate by signing the consent form. The participants were recruited according to their proportion from Rasheed Shekoni Specialist hospital (RSSH), Hadejia General hospital (HGH), Dutse General hospital (DGH) and Federal Medical Centre Birnin kudu (FMCB) all in Jigawa state, using systematic sampling technique. The aims of the research and the importance of the outcomes were explained to the participants. They were assured of the confidentiality of their responses, then each participant was required to sign a consent form, agreeing to participate in the study.

The instruments used were questionnaires. The questions in the instrument were generated through literature review of related articles. So the questionnaire was validated by the panel of experts in the department of physiotherapy at University of Lagos. It comprises mostly the close-ended questions, however open-ended were included to allow the participants to express their feelings.

Socio-economic status in this study was assessed by adopting the use of Kuppuwasmi's socio-economic status scale, this is an important tool used in hospital and community based research. The scale takes account of education, occupation and income to classify study

groups into high, middle and low socio-economic status. It gives a maximum score of 29 and lowest of 3 (Gbiri et al., 2011).

Non-adherence to appointment was defined as the tendency to miss greater than 30% appointments out of 100% (Wagner, 2004) or to have the attendance of less than 70%, and this can be obtained using multi-methods approach, which comprises (1) appointments count (2) visual analogous scale (3) self-reporting method (Colubi et al., 2012 & Wagner, 2004). In this research, self-reporting and appointments count methods were used. According to these methods, Adherence is given by considering the number of attendance of the prescribed appointments divided by the total sessions prescribed appointments (from the first appointment) multiplied by one hundred

(Ogwumike et al., 2014). i.e.

$$\text{Adherence} = \frac{\text{Number of attendance}}{\text{Total sessions prescribed appointments}} \times 100$$

Descriptive statistics of means, standard deviation, percentages in form of tables and graphs were used to summarize the results. Inferential statistics of Chi-squares (at 5% level of significance), was used to determine the associations between pairs of categorical variables in the study.

Results

Table 1 depicts the association between age of the caregivers, level of education, caregivers' knowledge of CP, caregiver's belief in traditional medicine, length of time since onset, waiting time for treatment, cost of transportation, socio-economics status and adherence to physiotherapy appointment.

The Chi-square test showed that there was no significant association between the age of the caregivers and adherence to physiotherapy appointment ($p > 0.05$).

The results in table 1 below showed that majority (27) of the participants that adhered to their appointment paid <N100 for their transportation, and there was a significant association between the cost of the transportation and adherence ($P < 0.05$).

From this table, out of the 4 caregivers with postgraduate qualification, none any amongst them missed appointment. While out of the 26 caregivers that did not receive formal education, 52.3% did not adhere to their appointments. It was shown that there was significant relation between the caregivers level of education and adherence ($P < 0.05$).

It was found that, out of 42 number of caregivers that adhered to the appointment, 65.0% had knowledge

about the condition, while out of 38 caregivers that did not adhere to the appointment, 84.2% had no knowledge about the CP. The Chi-square test showed that there was significant association between the knowledge of CP and the adherence ($P < 0.05$).

According to the results in the table 1, the majority 71.5% of the caregivers that adhered to the appointment were in the upper socio-economics level while the highest number 86.9% of non-adherence was recorded among the caregivers in lower socio-economics level.

The Chi-square test showed significant association between socio-economic status and adherence ($P < 0.05$).

No significant association was recorded between time since onset of the CP and adherence to appointment ($p > 0.05$).

The results in table 1 also pointed that, out of those who did not adhere to their appointments, 60.5% of them believed in traditional medicine. It showed that there was significant association between belief in traditional medicine and adherence to physiotherapy appointments ($P < 0.05$).

Table 1: Association between the variables and Adherence

Variables	ADHERENCE		df	X ²	P-value
	YES N=42 n (%)	NO N=38 n (%)			
Age of the caregivers					
< 20	5 (11.9)	5 (13.2)	3	3.181	0.365
20-40	36 (85.7)	31 (81.6)			
40-60	0 (0.0)	2 (5.3)			
60_80	1 (2.4)	0 (0.0)			
Cost of transportation					
<₹ 100	27 (64.3)	6 (17.8)	3	12.34	0.041
₹ 100-300	14 (33.3)	15 (39.5)			
₹ 300-500	1 (2.4)	7 (18.4)			
₹ 500-700	0 (0.0)	10 (26.3)			
Level of Education					
Postgraduate	4 (9.5)	0 (0.0)	4	12.004	0.035
BSc/HND	10 (23.5)	2 (5.3)			
NCE/ND	16 (38.1)	3 (7.9)			
Secondary	3 (7.5)	8 (21.1)			
Primary	4 (9.5)	4 (10.5)			
Non formal ed.	5 (11.9)	21 (52.3)			
Caregivers' knowledge of CP					
Known	27 (65.0)	6 (15.8)	1	8.270	0.031
Not known	15 (35.0)	32 (84.2)			
Socio-economic status					
Upper	30 (71.5)	1 (2.6)	2	7.39	0.013
Middle	7 (16.6)	4 (10.5)			
Lower	5 (11.9)	33 (86.9)			
Length of time since onset					
0-12months	15 (35.7)	3 (7.9)	3	8.781	0.314
12-24months	13 (30.9)	6 (15.8)			
24-36months	12 (28.6)	20 (52.6)			
>36months	2 (4.8)	9 (23.7)			
Beliefs in traditional medicine					
Believed	3 (7.1)	23 (60.5)	3	9.34	0.009
Not believed	37 (88.1)	13 (34.2)			
No response	2 (4.8)	2 (5.3)			

N=80, ,significant level=0.05.

Figure 1 below shows the percentage distribution of the participants based on adherence and non-adherence, it was found that 42(52.5%) of the participants adhered with their appointments, while 38 (47.5%) did not.

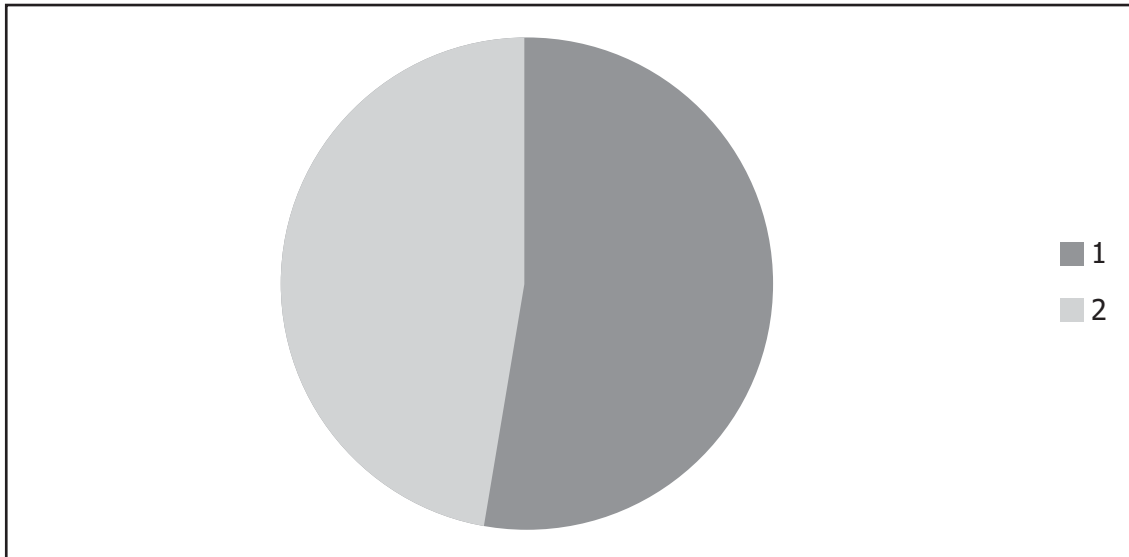


Figure 1: Distribution of the participants with respect to adherence and non-adherence
Adherence=1, non-adherence=2

Figure 2 below shows the clinical presentations of CP in the state, according to the results, the commonest clinical presentation of CP in the state was found to be spastic quadriplegia (42.5%), followed by spastic hemiplegia (35.35%).

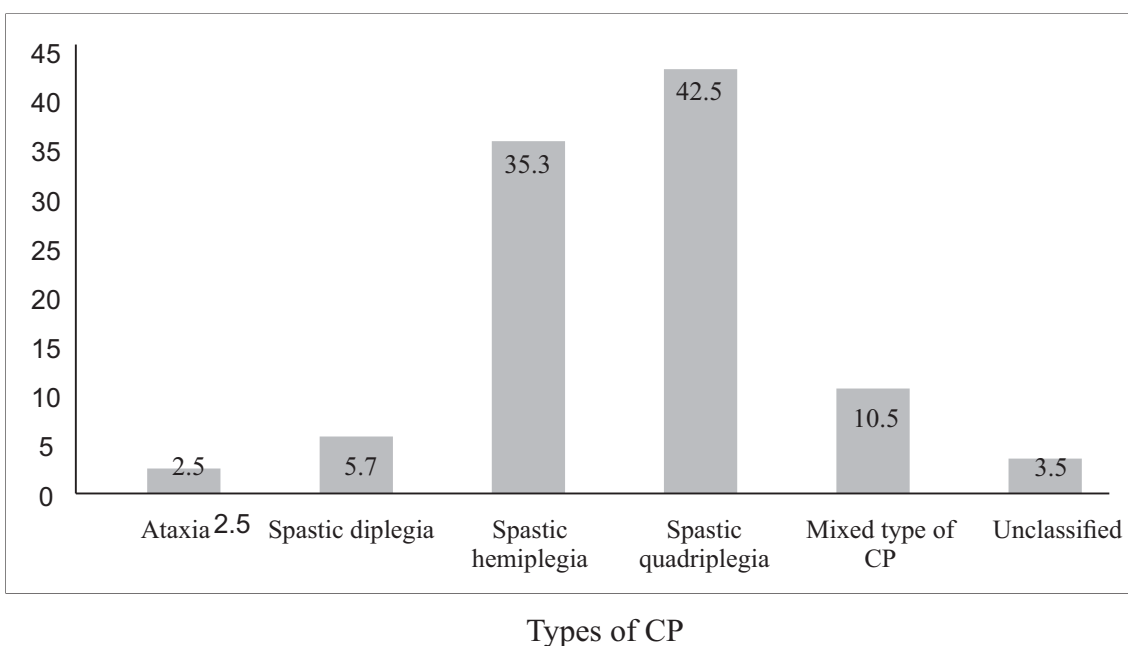


Figure 2: Types of CP in Jigawa state

Figure 3 below shows distribution of the aetiological factors of CP in the state, according to the results, the commonest cause of CP in the state was found to be birth asphyxia (41.8%), followed by cerebral malaria (21.5%).

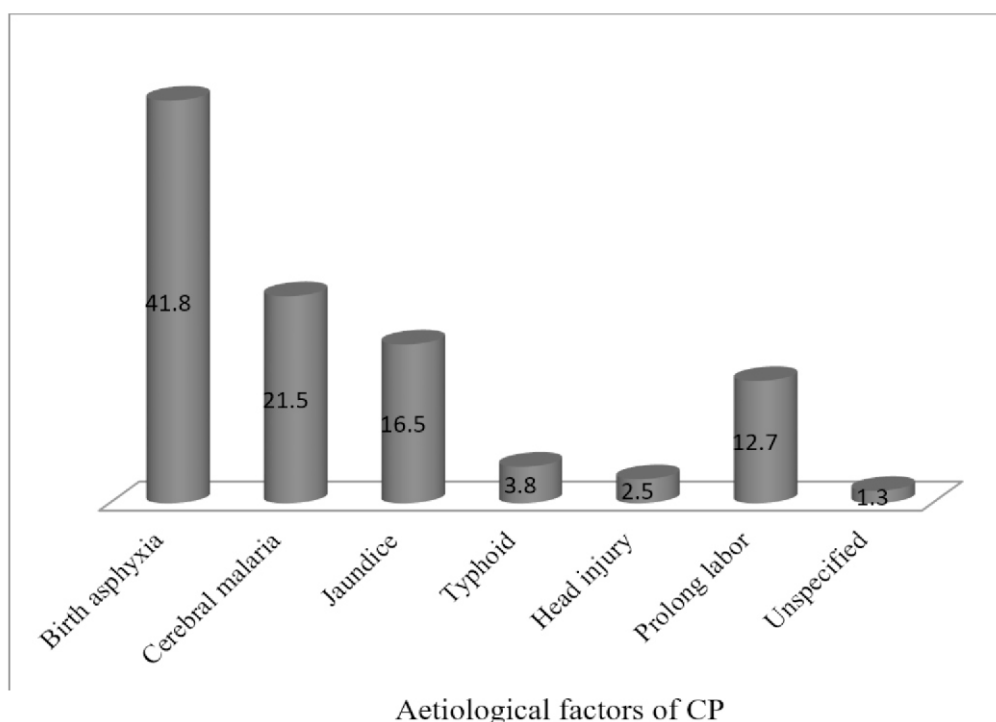
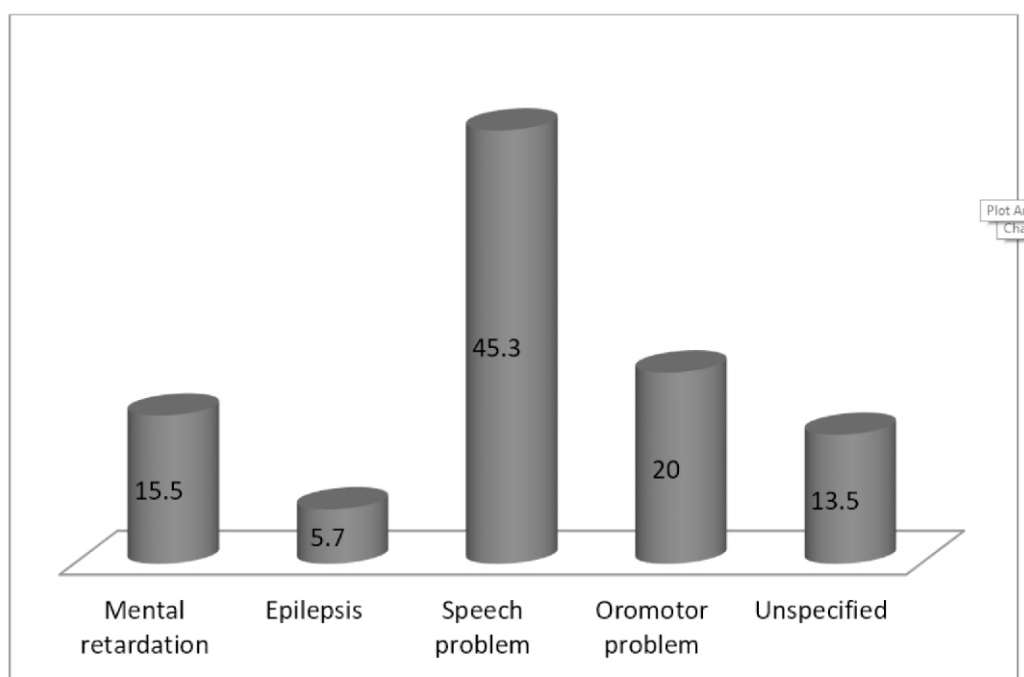


Figure 3: Distribution of the aetiological factors of CP in Jigawa state

Figure 4 below shows distribution of the aetiological factors of CP in the state, according to the results, the commonest cause of CP in the state was found to be birth asphyxia (41.8%), followed by cerebral malaria (21.5%).



Co-morbid factors associated with CP

Figure 4: Distribution of the Co-morbid factors associated with CP in Jigawa state

Discussion

The result of this study showed that the total number of adherence was 42(52.5%) and non-adherence was found to be 38(47.5%).

The result showed that there was no significant relationship between age of the caregivers and adherence. This is in contrast with the results of study by Gbiri et al. (2011) which found that non attendees were more likely to be people aged between twenty three and twenty-seven years old. The implication may be due to the fact that most of the caregivers in Jigawa state were biological mothers of the children not house maids or grandmothers.

According to the results, there was significant association between cost of transport and adherence to physiotherapy appointments. It was clearly shown from the results that out of 42 participants who did not adhere to their appointments, 27(64.3%) of them live near to the hospitals, thus, paid ≤N100 for transportation. This is in agreement with the research conducted by Vander Meer & Hock (2008) who found out that many of the patients reported transport constraints as one of the main reason for not adhered to their appointments.

This study showed that level of education of the caregivers has significant relationship with adherence to physiotherapy appointment. The caregivers with the highest level of academic qualification tend to be more adherent than those with low level or non formal education. This finding is similar to that of Jones & Forde (2009) on diabetic patients at Kalafong Hospital who found that 55% of patients that did not attend their appointment had primary school education or less with only 3.9% of the patients that did not attend having a degree.

According to this research, caregivers' knowledge of the CP found to have significant relationship with the adherence. This is in agreement with the results of the study on HIV related knowledge and adherence to antiretroviral therapy in New York, USA, Wagner (2004) found that all the patients that participated in their study had good knowledge about HIV and complied well with the treatment regimen.

Findings from this study showed a significant relationship between the socioeconomics status and adherence. This coincided with the findings of the research conducted by Hill and Zimmerman (1995) who asserted that despite the availability of effective treatment interventions and the high cure rate, the outcome of treatment in many parts of Africa remains sub-optimal due to poor socio-economic conditions and poor health seeking behaviours.

The results of this study showed that time since onset has no significant association with adherence to appointment. Belief in traditional medicine was found to have significant association with adherence to physiotherapy appointment, high number of the participants that believed in traditional medicine did not adhered to their appointments.

According to the results of this research, the commonest clinical presentation of CP in jigawa state was spastic quadriplegia, this is in agreement with the publication by national institute of neurological disorders and stroke (2003) that the commonest type of CP was spastic quadriplegia. The most predominant aetiological factor of CP was birth asphyxia, this finding was similar to the result of the study conducted by El-Tallawy et al. (2011). The commonest co-morbid factor associated with CP was speech problem.

Conclusion

There were many factors affecting adherence for physiotherapy appointment by caregivers of children with cerebral palsy. According to the results of this study: cost of transportation, level of education, knowledge of the condition, socioeconomic class, Length of time since onset and belief in traditional medicine, were found to be the major factors affecting the adherence in Jigawa state. However, there is need to further evaluate the effect of other factors such as extent of the disability and the type of CP etc. on adherence to physiotherapy appointment across the state.

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