

**Perception of the Parents, Physiotherapists and Allied Health Professionals about the
Role of Physiotherapy in the Rehabilitation of the Children with Cerebral Palsy - A
Case Study of District Bhakkar**

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Abstract

Cerebral palsy (CP) is known as the main developmental disability among infants and children. The brain injury is associated with pre or postnatal period. A physiotherapy is an effective tool of rehabilitation and restoration of the children with CP.

Objectives: *The main purpose of the study was to evaluate the role of physiotherapy in the rehabilitation of the CP children. The main intention of this study was to examine the perception of parents and health professionals about the role of physiotherapy in the rehabilitation process of CP children*

Methods: *This study design is cross sectional and survey method was adopted and purposive sampling method was used for data collection. A Likert scale questionnaire was adopted for data collection from (n = 158) parents, (n = 14) allied health professionals, and (n = 3) physiotherapists of Bhakkar. It was hypothesized that physiotherapy has a significant role in the rehabilitation of CP children. An independent t-test and one-way ANOVA was applied for statistical analysis.*

Results and Conclusions: *Results showed that physiotherapy plays a significant role in the rehabilitation ($P < .00$), and postural control ($P < .01$) of CP children. The perception of the physiotherapists and allied health professionals were the same regarding the role of physiotherapy in the rehabilitation ($P < .00$), function independent and social participation ($p < .00$), postural control ($P < .00$) and motor function ($P < .02$) of the CP children. On the other hand, it was also concluded the regular physiotherapy increases rehabilitation process of CP children. The physiotherapists and allied health professional were satisfied with rehabilitation process. In contrast, the perception of parents was unsatisfactory because they desire the rehabilitate procedure should be shorter. It is suggested that physiotherapists and allied health professionals may educate the parents about the rehabilitation procedure.*

Keywords: Cerebral Palsy; Rehabilitation; Parents, Urban and Rural, Physiotherapy

Introduction

Background of the Study

Cerebral Palsy (CP) generally refers to various physical impairments associated with irregularity of bodily movements and deficiency of neuro-muscular coordination (Das & Ganesh, 2019). According to Carlon, Shields, Yong, Gilmore, Sakzewski, and Boyd (2010) that cerebral palsy is a non-progressive medical condition resulting from the damage of brain. It is a functional disorder of motor development, it may change but it is a permanent sphere of influence of the activities (Rosenbaum, Paneth, Leviton, Goldstein, Bax, Damiano, & Jacobsson, 2007). It is an umbrella term as its different functional impairments associated with brain injury during the physical development of humans (Mutch, Alberman, Hagberg, Kodama, & Perat, 1992). In severe cases, it affects the entire range of activities of the body. Rosenbaum and colleagues (2007) have concluded that CP child having delayed in their motor development which resulted as physical weakness, spasticity, and defect in the dynamic skills. Commonly it has observed, CP is associated with other health problem as musculoskeletal

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pathology (Graham, Harvey, Rodda, Natrass, & Pirpiris, 2004). Neuro-muscular problems are also associated with CP children (Pellegrino, 1997; Shapiro & Capute, 1999). There are several risk factors that alone or in combination may result in causing injury to the brain.

Motor Cortex or Upper Motor Neurons, Basal Ganglia and Cerebellum are the central of the brain, any damage would commonly be responsible for the development of CP. The first type is called Spastic (in tone) and is characterized by tightness in the muscles which is caused by a lesion in the Motor Cortex or in Upper Motor Neurons. The second type is Dyskinetic (Athetoid), this is caused by injury in Basal Ganglia. If the Basal Ganglia is injured, the patient loses control over the movements or irregularity occurs in the normal movements of the victim. The third type is associated with the Cerebellum and it is regarded as the Ataxic cerebral palsy. Literally, the term toxic stands for in-order and Ataxic means without order or disorder, which is about these patients. They are often shaky or un-coordinated and it is mostly caused by damage to the Cerebellum. The cerebellum helps us in coordination and execution of motor movements.

Personal and Social Problems of the CP Child

In eastern communities, the child with CP is taken as the liability of parents. Simply, parents try to keep the child alive alongside the problem and protect him from the external environment (Morgan, Darrah, Gordon, Harbourne, Spittle, Johnson, & Fetters, 2016). With this approach, most of the CP children adapt to independent adult life with great difficulty. In the joint family system, affected ones have constant and everyday help from the family members. An affected child grown up in such type of environment, develop a strong asking and demanding attitude from surrounding (Miller & Bachrach, 2017). This type of approach of the parents put a negative impact on the overall recovery and rehabilitation efforts (Kakooza-Mwesige, Andrews, Peterson, Mangan, Eliasson, & Forsberg, 2017). Deficit facilities in terms of staff, space and equipment have always impeded the way of management of CP case. Bourke-Taylor (2010) has confirmed that non-availability and difficult approach to the facilities have been the main obstacles in the way of proper management of CP cases. The problems commonly confronted with the caregivers revolved around the non-availability of facilities and problems to approach the facilities (Bourke-Taylor, 2010).

Handling and Management of the CP Case

In view of the nature of the problem, collective and collaborated efforts is required to properly manage the situation. In this regard, the physiotherapists, allied health professionals, Occupational Therapists, Clinical Psychologists and Speech therapists; parents and teachers, all should join their work together for CP cases. In this regard, input from the family and case history can play a vital role in overcoming the problem. As a matter of fact, the role of an accurate diagnosis has got paramount significance in the caring and looking after the child with CP (Beckung, Dickinson, Fauconnier, Marcelli, MacManus, & Colver, 2008). Therefore, all-out efforts should be made to reach and locate the basic cause responsible for the development of CP and then after the child should be handled accordingly.

Physiotherapy and Rehabilitation of the Children with CP

Rehabilitation is the process which is directly associated with the people whose normal functional capacities or quality of life is affected congenitally or through an acquired reason. With reference to the CP, the prime purpose of the whole process of rehabilitation has always been to lessen the impact of the damage already done and to minimize the dependence level of the affected child (Cusick, McIntyre, Novak, Lannin, & Lowe, 2006). While coping with the cases of CP, physiotherapist always tries to restore and improve the motor capabilities of the affected child. Physiotherapist employs his attention upon bringing positive change in the physical condition of the child ranging from balancing during positioning the body, sitting to standing, standing to walk and so on. As a common practice, after diagnosis of the problem, physiotherapist undergoes the physiotherapy, schedules the follow-up work and recommends suitable appliances to facilitate the affected child (Butler & Darrah, 2001; Mutlu, Turanlı, Tekinalp, & Yurdakök, 2002). The most frequently and successfully used tool in the process of rehabilitation has always been the physiotherapy which tries to restore the normal physical functioning of the affected part of the body and reinstate the psychological wellbeing of the child by adopting different physical exercises. Collaborated efforts have always been employed in the process of rehabilitation and the ultimate objective of these efforts is to help restore the affected person back to normalcy. Technically speaking, the role of physiotherapy has always been very much positive and detrimental in the redressal of the physical impairment of children with CP. Physiotherapy leads to the

functional independence of children with CP (Law & Darrah, 2011). To enable the affected child and to re-instate their impaired potentialities, always remain a priority of the physiotherapists.

Therefore, it needs of the hour that it required to examine the basic knowledge of perception of health professionals and parents about the CP child. Therefore, this study was design to examine the basic knowledge perception of parents about the rehabilitation process of CP children in Bakker City. It was hypothesized that there is no significance difference among parents, physiotherapist, and health professional about the role of physiotherapy in the rehabilitation process of CP children in Bhakkar City.

Methodology

This study design was a cross sectional and purposive sampling technique was adopted for data collection. The population for this study was comprised on the parents of the children with CP, physiotherapists dealing with CP children, health professional of Bhakkar. The questionnaire comprised two different sections, first data collection from all the centers of the CP children with CP who attended rehabilitation centers from last five years. The second stage of data collection from the health professionals who perform duties in rehabilitation centers. The population was consisting of (n = 158) parents, whom were brought their children to the rehabilitation centers for physiotherapy during the last five years 2013-2017, (n = 03) physiotherapists and (n = 14) allied health professionals to obtain their views regarding the problem of the CP children.

Mean and standard deviation was incorporate of each variable, percentage was applied to find the ratio of participants toward their perception of the physiotherapy role. An independent *t*-test was applied to compares the perception of rural and urban perception about the role of physiotherapy for CP children. One-way analysis of variance (ANOVA) was applied to compare mean difference of parents, physiotherapists and health professional about the role of physiotherapy for rehabilitation of CP children. Significant value was adjusted at (P <.05) and SPSS version 22 was applied for statistical analysis.

Results and Discussion:

Table 1: Role of Physiotherapy in the rehabilitation of children with CP.

Stem Statement In my opinion ...	Not at all 1	To some Extent 2	Completely 3
1. physiotherapy plays an important role in the rehabilitation of a child with cerebral palsy	12 6.851%	80 45.714%	83 47.428%
2. successful management of CP is an important function of Physiotherapy	19 10.857%	79 45.142%	77 44%
3. physiotherapy rehabilitates the deformities of the affected children	27 15.428%	67 38.285%	81 46.285%
4. improving the quality of life of a CP child is one of the important functions of Physiotherapy	30 17.142%	75 42.857%	70 40%
5. physiotherapy helps in improving the fitness level of the CP child	25 14.285%	69 39.428%	81 46.285%
6. physiotherapy helps in re-instating daily life activities	35 20%	66 37.714%	74 42.285%
7. physiotherapy improves the functional skills of the CP child	22 12.571%	72 41.142%	81 46.285%
8. physiotherapy helps in the socialization of the CP child	30 17.142%	69 39.428%	76 43.428%
9. physiotherapy contributes to the motor development of the CP child	30 17.142%	69 39.428%	76 42.428%
10. physical functioning of child improved after having Physiotherapy	26 14.857%	65 37.142%	84 48%
11. the body pain related to CP subsided after Physiotherapy treatment	45 25.714%	60 34.285%	70 40%
12. physiotherapy improves the quality of life of the CP child	23 13.142%	83 47.428% ^S	69 39.428%
13. the CP child tends to take interest in recreational activities after visiting a Physiotherapy centre	20 11.428%	70 40%	85 48.571%
14. the general behaviour of the CP child improved after visiting the Physiotherapist	21 12%	87 49.714%	67 38.285%

15. physiotherapy enhances the social participation of the CP child	35 20%	72 41.142%	68 38.857%
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The above table shows the frequencies and percentages that majority of the respondents 83 (47.428%) were replied “completely” against the statement that physiotherapy plays an important role in the rehabilitation of a child with cerebral palsy. In the same way, the Table also shows that mainstream of respondents 79 (45.142%) responded “to some extent” against the statement that successful management of CP is an important function of physiotherapy. The Table also depicts that a maximum number of respondents 81 (46.285%) replied “completely” when the statement was asked physiotherapy rehabilitates the deformities of the affected child. in the same way, majority of the respondents 75(42.857%) responded “completely” against the statement, that improving the quality of life of a CP child is one of the important functions of physiotherapy. In the same a mainstream of the respondents, 81 (46.29%) responded “Completely” against the statement physiotherapy helps in improving the fitness level of the CP child. In the same way, the statement physiotherapy helps in re-instating daily life activities asked the parents, physiotherapist, and allied health professionals the majority respondents 74 (42.29) % responded “completely”. Similarly, the statement physiotherapy improves the functional skills of the CP child asked the parents, physiotherapist, and allied health professionals the majority respondents 81 (46.29%) responded “completely”. In the same way, the statement physiotherapy helps in the socialization of the CP child asked the parents, physiotherapist, and allied health professionals the majority respondents 76 (43.43%) responded “Completely”. Similarly, the statement physiotherapy contributes to the motor development of the CP child asked the parents, physiotherapist, and allied health professionals the majority respondents 76 (42.43%) replied “Completely”. In the same way, the statement physical functioning of child improved after having Physiotherapy asked the parents, physiotherapist and allied health professionals the majority respondents 84 (48%) replied “Completely”. The statement the body pain related to CP subsided after Physiotherapy treatment asked the parents, physiotherapist and allied health professionals the majority respondents 70 (40%) responded “Completely”. In the same way, the statement physiotherapy improves the quality of life of the CP child asked to the parents, physiotherapist and allied health professionals the majority respondents 83 (47.43%) responded: “To some extent”. On the other hand, the statement the CP child tends to take interest in recreational activities after visiting Physiotherapy center asked the parents, physiotherapist and allied health professionals the majority respondents 85 (48.57%) replied “completely”. In the way the statement general behavior of the CP child improved after visiting the Physiotherapist asked the parents, physiotherapist and allied health professionals the majority respondents 87 (49.71%) responded: “to some extent”. The last statement in this portion physiotherapy enhances the social participation of the CP child asked the parents, physiotherapist and allied health professionals the majority respondents 72 (41.14%) responded: “to some extent”.

Table 2: The viewpoint of parents, allied health workers and physiotherapist regarding the role of physiotherapy in the rehabilitation

Testing Variables	Category	Mean	Std. D	Df	F	Sig.
Motor Function	Parents	2.52	.67			
	Allied Health Professionals	3.00	.00	2,172	4.340	.02
	Physiotherapist	3.00	.00			
	Total	2.57	.65			
Parents	2.36	.65				
Functional Independence & Social Participation	Allied Health Professionals	3.00	.00	2,172	8.12	.00
	Physiotherapist	3.00	.00			
	Total	2.42	.65			
	Parents	2.39	.70			
Postural Control	Allied Health Professionals	3.00	.00	2,172	6.42	.00
	Physiotherapist	3.00	.00			
	Total	2.45	.69			
	Parents	2.25	.73			
Rehabilitation	Allied Health Professionals	3.00	.00	2,172	8.78	.00
	Physiotherapist	3.00	.00			
	Total	2.33	.73			

Significant Value was adjusted at P < .05

The above table shows the results of ANOVA regarding the difference between the respondent's viewpoints regarding the role of physiotherapy in rehabilitation in the respect of respondent's category. The results show that viewpoint of parents, allied health professionals and physiotherapist were significantly different regarding the role of physiotherapy in the improvement of motor function of a child with Cerebral palsy $F(2,172)= 4.40$, Sig.= .014 $<a= .05$. The perception of allied health workers and physiotherapist were the same regarding the role of physiotherapy in the improvement of motor function of a child with Cerebral palsy and different from the parent's perceptions. The results show that viewpoint of parents, allied health professionals and physiotherapist were significantly different regarding the role of physiotherapy in the improvement of functional independence and social participation of child with Cerebral palsy $F(2,172)= 8.12$, Sig.= .000 $<a= .05$. The perception of allied health workers and physiotherapist were the same regarding the role of physiotherapy in the improvement of functional independence and social participation and different from the parents of CP Child perceptions. The results show that viewpoint of parents, allied health professionals and physiotherapist were significantly different regarding the role of physiotherapy in development of postural control of child with Cerebral palsy $F(2,172)= 6.42$, Sig.= .002 $<a= .05$. The perception of allied health workers and physiotherapist were the same regarding the role of physiotherapy in the development of postural control of CP child and different from the parent's perceptions. The results show that viewpoint of parents, allied health professionals and physiotherapist were significantly different regarding the role of physiotherapy in rehabilitation of a child with Cerebral palsy $F(2,172)= 8.778$, Sig.= .000 $<a= .05$. The perception of allied health workers and physiotherapist were the same regarding the role of physiotherapy in the rehabilitation of CP child and different from the parent's perceptions. However, the researcher concluded that hypothesis the viewpoints of parents, physiotherapist and allied health professionals are significantly different regarding the role of physiotherapy in motor function, functional independence/social participation, postural control and rehabilitation of a child with cerebral palsy is hereby accepted.

The viewpoints of rural and urban respondents are significantly different regarding the role of physiotherapy in motor function, functional independence/social participation, postural control and rehabilitation of a child with cerebral palsy.

Table 3: Comparison between rural and urban regarding the role of physiotherapy in the rehabilitation

Testing Variables	Respondents	Mean	Std. D	Df	t	Sig.
Motor Function	Rural	2.67	.53	173	1.73	.09
	Urban	2.50	.71			
FI&SP	Rural	2.47	.56	173	.84	.40
	Urban	2.39	.70			
Postural Control	Rural	2.61	.59	173	2.69	.01
	Urban	2.33	.73			
Rehabilitation	Rural	2.53	.60	173	3.14	.00
	Urban	2.18	.77			

Significant Value was adjusted at $P < .05$

The above table 3 shows the results of t-test regarding the difference between the opinions of rural and urban respondents regarding the role of physiotherapy in the rehabilitation of a child with cerebral palsy. The results indicate that the viewpoint of rural and urban respondents was same and no significant difference found regarding the role of physiotherapy in the improvement of motor function among child with cerebral palsy $t(173)= 1.73$, Sig.= .085 $>a= .05$. In the same way, it is indicates that there is no significant difference between the viewpoint of rural and urban respondents regarding the role of physiotherapy in functional independence and social participation of child with cerebral palsy $t(173)= .84$, Sig.= .400 $>a= .05$. On the other hand, the results indicate that viewpoint of rural and urban respondents was not same regarding the role physiotherapy in the development of postural control of child with cerebral palsy $t (173) = 2.69$, Sig. = .008 $<a= .05$. The rural respondents score greater than urban respondents. Similarly, the results of t-test indicate that there is a significant difference between the perception of rural and urban respondents regarding the role of physiotherapy in the rehabilitation of a child with cerebral palsy $t (173) = 3.14$, Sig. = .002 $<a= .05$. The rural respondents score greater than urban respondents. However, the researcher concluded that the rural

and urban respondents produced the same results in motor function and functional control and social participation and rural were greater in postural control and rehabilitation.

Conclusion

The researcher concluded that physiotherapy plays a significant role in the rehabilitation of a child with cerebral palsy. The researcher also assumed that the perception of allied health professionals and physiotherapist were the same regarding the role of physiotherapy in the rehabilitation of a child with Cerebral palsy and different from the parent's perceptions. The researcher also concluded that there is a significant effect of locality upon the perception of respondent's rural respondents' score greater than urban respondents regarding the role of physiotherapy in rehabilitation of a child with cerebral palsy.

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