

USE OF ICF-CY IN ASSESSING LEVEL OF KNOWLEDGE OF DIFFERENT PROFESSIONALS WORKING WITH CHILDREN HAVING CEREBRAL PALSY

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ABSTRACT

Objective: To assess and compare level of knowledge of doctors and allied health professionals working with cerebral palsy children at the Children's Hospital, Lahore regarding use of ICF-CY

Study Design: Comparative - cross sectional study.

Place and Duration of Study: The Children's Hospital and Institute of Child Health, Lahore, from Jan 2017 to Mar 2017.

Methodology: Sixty two professionals, 31 doctors and 31 allied health professionals, who were primarily involved in rehabilitation of children with cerebral palsy were included. Detailed information was taken from these professionals regarding their baseline knowledge for the use of ICF-CY in children with cerebral palsy using comprehensive core set of ICF-CY. Tutorial sessions were conducted for creating awareness of ICF-CY. Same information was recorded again and level of knowledge was assessed. Post tutorial comparison was made between the knowledge of two groups by applying t-test.

Results: Study showed that participants had fair knowledge of use of different constructs of ICF-CY in children with cerebral palsy after conducting tutorial sessions. There was increase in knowledge in all constructs after tutorials but marked change was observed in Activities & participation. Level of knowledge was 3.4 in both groups. It was increased up to 4.9 by doctors and 4.8 by allied health professionals. No significant difference was found among knowledge of these two groups for all constructs.

Conclusion: Different professionals working with cerebral palsy children at the Children's Hospital, Lahore were able to use ICF-CY competently to acquire information as they gained sufficient similar level of knowledge in all subsets after getting tutorials.

Keywords: Cerebral Palsy, Knowledge of ICF-CY, Multidisciplinary approach.

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INTRODUCTION

Cerebral palsy (CP) describes a group of disorders of development of movement and posture, causing activity limitations, which are attributed to non-progressive disturbances that occurred in the developing fetal or infant brain¹. It is one of the most common childhood motor disability that may have associated disturbances of cognition, communication, behaviors, epilepsy and many others. It may also have dependency for daily living skills^{1,2} that require rehabilitation by different professionals in a dedicated multidisciplinary team for a better outcome³.

Multidisciplinary team involves various

specialists including pediatricians who play a pivotal role along with other allied health professionals like a psychologist, occupational therapist, speech therapist, physiotherapist and sensory therapist¹. The main aim of these combined services is to devise a strategy that improves child's developmental level based on assessment of child's level of functioning and participation in daily life activities. Lack of awareness of common knowledge of child's functioning level and existing delay among professionals is a significant challenge in rendering these rehabilitation services. For this purpose World Health Organization (WHO) has devised a tool termed International Classification of Functioning for Children and Youth (ICF-CY) which provides a means for documenting level of functioning and delay in children with cerebral palsy, not only for professionals but also for parents and caregivers⁴. It

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also helps us in knowing various factors that may influence and put an impact on their knowledge and experience⁵. Development of this classification provides a basis for individualized treatments through a structured goal planning process.

The components of functioning are interpreted by means of four separate but related constructs⁴.

Activities and participation covers the full range of life areas from basic learning to composite areas such as social task.

Environmental factors include physical, social and attitudinal factors that influence the rehabilitation of children with cerebral palsy.

Body functions cover all physiological functions that a normal person can have.

Body structures cover all body systems including brain and its functions. There are five subsets of ICF-CY; comprehensive, common brief, age specific (0-6 years, 6-14 years, 14-18 years). Selection of subsets depends on user intended purpose and the amount of information one wants to get for assessing level of functioning which makes it user friendly⁴. But comprehensive core set is more elaborative as it contains all aspects of functionality that cerebral palsy child can have.

ICY-CY is being used increasingly now a days for cerebral palsy children in different areas of world. In 2016, Margaret in University of Zambia used ICF-CY for management of children with disabilities and found it useful⁸. In Sweden, work was also done by some health professionals on the perception of implementation of ICF-CY in Swedish rehabilitative services¹¹.

This was a new concept in our set up and for its implementation, it was important to create awareness of ICF-CY among different professionals who were primarily dealing with the rehabilitation of these children. For this purpose we aimed to assess the knowledge of different professionals in their respective disciplines regarding use of ICF-CY for children with

cerebral palsy. To achieve this, comprehensive core set was selected as it covered all above aspects related to cerebral palsy⁴. Interventions would be planned to increase baseline knowledge of professionals. Moreover any difference in professionals' knowledge would also be addressed for better use of ICF-CY for rehabilitation of children with cerebral palsy as integrated multi-disciplinary approach remained key to success for these children.

METHODOLOGY

A comparative – cross sectional study was conducted at The Children's Hospital and Institute of Child Health, Lahore from 01 January 2017 to 31 March 2017.

A total of 62 professionals of Children's hospital and Institute of Child Health, Lahore, were taken through purposive sampling. Sample was calculated through WHO calculator and professionals from various disciplines like doctors and allied health professionals (clinical psychologists, occupational therapists and sensory therapists) involved in the assessments and rehabilitation services of children's with cerebral palsy were included.

Professionals with minimum 5 years of experience of rehabilitation of children with cerebral palsy. Other professionals not primarily dealing with rehabilitation.

Comprehensive core set of WHO devised ICY-CY4 was used as a tool for assessing knowledge of rehabilitation among professionals. It has 134 different items consisting of four constructs i.e. body functions, body structures, activities & participation and environmental factors. Participant rated each item on the scale of 1-5 depending on their knowledge and considering its importance for rehabilitation of children with cerebral palsy. Rating of 4 and >4 was considered significant as per WHO criteria as it showed that participants had good knowledge for that specific construct and considered it important for rehabilitation. Each construct was calculated by summing different number of categories included in

each construct that were then converted to scaled score.

Comprehensive core set of ICF-CY was given to all participants after informed consent and their base line knowledge was gathered. Demographic information including gender, age, profession, and professional experience was also recorded.

All professionals were assessed at pre level with Comprehensive core set of ICF-CY. Afterwards, tutorial sessions were conducted

participants had even experience of more than 10 years of working with children having cerebral palsy. There were different numbers of allied health professionals in the present study including clinical psychologist 5 (16%), speech and language pathologists 5 (16%), occupational therapists 4 (12%), disability workers 6 (19%), physiotherapists 5 (16%) and special needs educationists 6 (19%).

When comparison was made between the knowledge of these two groups (doctors and

Table-I: Demographic characteristics of study participants (n=62).

Characteristics		n (%)	Mean \pm SD
Age groups (years)	30-35	30 (48)	36.26 \pm 4.72
	36-40	18 (30)	
	>40	14 (22)	
Gender	Male	12 (20)	-
	Female	50 (80)	
Professionals	Doctor	31 (50)	-
	Allied health professionals	31 (50)	
Work experience (years)	5-7	35 (56)	7.81 \pm 2.49
	7-10	17 (28)	
	>10	10 (16)	

Table-II: Comparison of knowledge between two groups.

Domain	Total Score (Mean \pm SD)		p-value
	Doctors (31)	Allied health professionals (31)	
Body function	7.39 \pm 0.75	7.11 \pm 0.79	0.17
Activities and participation	7.06 \pm 1.01	7.05 \pm 0.66	0.96
Environmental factors	7.76 \pm 1.12	7.26 \pm 0.90	0.62
Body Structures	8.39 \pm 1.52	7.75 \pm 1.01	0.06

over a duration of 2 months for creating awareness of use of different constructs of ICF-CY. Comprehensive core set of ICF-CY was given to each participant again for taking same information and data was converted to scaled score again.

Data Analysis was done using SPSS version 21. Mean \pm SD and percentages were calculated. Comparisons of level of knowledge was done between doctors and allied health professionals by using t-test after tutorial sessions.

RESULTS

Most of participants belonged to age group 31-35 years that was 30 (48%), with predominance of females 50 (80%) (table-I). Some of

allied health professionals) after conducting tutorials, *p*-value was 0.06 for body structures, 0.17 for body functions, 0.96 for activities & participation and 0.62 for environmental factors. This showed that it was non-significant for all constructs.

In pre tutorials, level of knowledge about "Body Functions" was not enough in both groups but this got better after tutorial sessions (fig-1). Initially it was <4 by doctors and allied health professionals depicting similar ratings by both groups, which got better after tutorials as it touched the required level of 4 or more.

Both doctors & allied health professionals did not consider that activities & participation by

children and families was important for rehabilitation of children with cerebral palsy but their insight got significantly better after getting tutorials (fig-2). Initially their knowledge was < 4

both groups of doctors and allied health professionals.

Both set of professionals had a good knowledge about role of “Environmental Factors” in rehabilitation of children with cerebral palsy even before conducting tutorials (fig-3). The level of knowledge was > 4 by both groups and after tutorials there was also some increase in their level of knowledge.

Similarly initially doctors did not give much weightage to the role of body structures with a level of <4 while allied health professionals considered body structure to be more important in planning rehabilitation for children with cerebral palsy with baseline level of 4. Tutorial sessions had also increased their insight.

DISCUSSION

ICF-CY by WHO is increasingly used as a base line framework for goal setting in rehabilitation⁹⁻¹². It gives a new picture of disablement in which disability is viewed as the product of person environment interaction¹³. But it was not used by professionals in our set up. Our study had been done to enhance the better understanding of its different constructs for its future implications.

In our study, it was found that professionals had good knowledge of ICF-CY for rehabilitation of children and thus ICF-CY would be a useful tool for evaluation, training and monitoring children with cerebral palsy. But it remained possible after tutorials. Similarly, *Maartinuzzi et al* also stated that ICF provided more adequate framework for rehabilitation purposed but before its implementation, training sessions for professionals were required for better outcome^{9,14}.

In this study we took a multidisciplinary team involving professionals from various disciplines who were primarily involved with rehabilitation of cerebral palsy children. Similarly *Adolf son* in Sweden also took participants from different disciplines for rehabilitation of children¹¹ but their number was more and it was

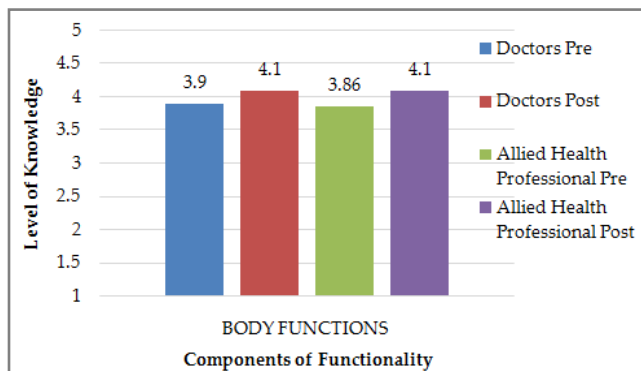


Figure-1: Knowledge of different health professionals regarding body functions.

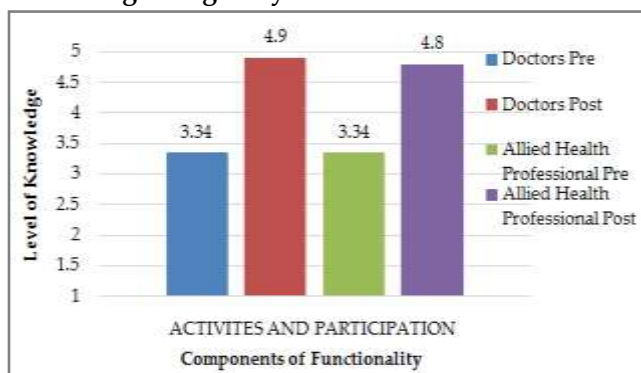


Figure-2: Knowledge of different health professionals regarding activities & participation.

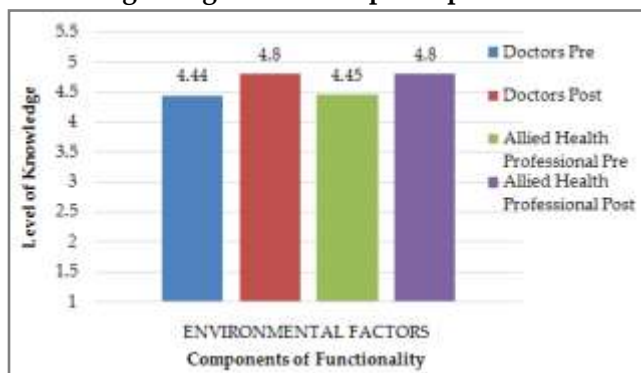


Figure-3: Knowledge of different health professionals regarding environmental factors.

but after tutorial sessions there was a significant change in their thinking regarding construct of “Activities & Participation” for rehabilitation of children with cerebral palsy, reaching almost 5 by

done for a longer period i.e. 2-3 years. In the same study, participants also found out that knowledge of ICF-CY increased their horizon for managing children with cerebral palsy when they used it for prolonged period¹⁵⁻¹⁹.

In our study, initially professionals thought that surroundings in which children live should be more conducive for rehabilitation of children but their perspective changed after tutorial sessions and they started thinking that active participation by children in different tasks was more beneficial for their rehabilitation. This led to higher rating of 'Activities & Participation' as compared to others constructs post tutorially. Dalon and his colleagues at Oslo University hospital, Norway had also found that categories in 'Activities & Participation' were more important than others²⁰⁻²¹ as they expected to enhance rehabilitation by intensive physical training with new technical devices. Similar results were shown by Schenker *et al*¹⁴ who also stressed the importance of physical activity in cerebral palsy children.

Some people worked differently for children with ICF-CY for cerebral palsy. Kostanjsek in Italy¹² and Schiatri in Canada¹⁶ worked with World Health Organization on the development of ICF-CY and its main constructs. Kostanjsek¹² also introduced different tools devised by WHO for better understanding of ICF-CY. On the other hand, Pamela and her colleagues in Rawanda⁷ found that World Health Organization Disability Assessment Schedule for children (WHODAS-Child) was also a reliable tool for assessing functional assessment in children in Rawanda. Pamela took affected children and their parents as participants of study.

Our study showed that professionals from two disciplines had similar level of knowledge regarding ICF-CY. This could be due to the fact that they provided rehabilitation services to particular group of children under similar settings to improve different skill areas like gross motor skills, vision and manipulation, hearing and speech, socialization along with academics.

CONCLUSION

Different professionals working with cerebral palsy children were able to use ICF-CY competently to acquire information. Tutorial sessions should be given to professionals in ICF-CY for better understanding of its main constructs as it is important for its implementation.

SUGGESTIONS

Furthermore, the next step should be the use of ICY-CY on children with cerebral palsy and determine its efficacy for their management. And it should be multicenter, involving others who are also providing services to these children.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

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