Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 9, Issue, 12, pp.63477-63479, December, 2017

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

ISSN: 0975-833X

RESEARCH ARTICLE

MEASURING MOBILITY LIMITATIONS IN CHILDREN WITH CEREBRAL PALSY

***[1]Vadivelan, K. and [2]Aparna, A. and [3]Sivakumar, V.P.R.**

[1]Associate Professor, SRM College of Physiotherapy, SRM Institute of Science and Technology, Kattankulathur, Chennai-603202
[2]Student, SRM College of Physiotherapy, SRM Institute of Science and Technology, Kattankulathur, Chennai-603202
[3]M.P.T, Dean, SRM College of Physiotherapy, SRM Institute of Science and Technology, Kattankulathur, Chennai-603202

ARTICLE INFO

Article History:
Received 10th September, 2017
Received in revised form
03rd October, 2017
Accepted 15th November, 2017
Published online 31st December, 2017

Key words:

Cerebral Palsy,
MOBQUES 28 questionnaire,
Mobility limitations.

ABSTRACT

Objective: To find out the mobility limitations in children with cerebral palsy.
Design: The study design is non-experimental, observational type.
Settings: This study was conducted at Paediatric clinics in and around Chennai.
Procedure: The subjects were selected according to inclusion and exclusion criteria and informed consent was taken from their parents. MOBQUES28 questionnaire was measured for mobility limitations in daily life of the child.
Results: According to the MOBQUES 28 questionnaire the mobility limitations of each child has been assessed and dependency rate for the different age group was found.
Conclusion: This study concludes that there is a significant mobility limitations among the children with Spastic Diplegic cerebral palsy and the dependency level is also significantly high in and around environmental activities among cerebral palsy children.

Citation: Vadivelan, K. Aparna, A. and Sivakumar, V.P.R. 2017. "Measuring mobility limitations in children with cerebral palsy", *International Journal of Current Research*, 9, (12), 63477-63479.

INTRODUCTION

Cerebral palsy is well organized neurological developmental condition beginning in the early childhood and persisting through lifespan originally reported by LITTLE in 1861(cerebral paresis). It is characterized by aberrant control of movement or posture and appears early in life secondary to central nervous system damage. Cerebral palsy is a group of disorders in their activity limitations in the development of movement and posture causing activity limitations that are attributed to non-progressive disturbances that occurred in the developing brain (Bax, 2005). It is the most common cause of disability in childhood. Children with cerebral palsy may have a variety of impaired muscle functions such as spasticity, muscle weakness loss of selective motor control which limits the performance of daily life activities (Relationships between spasticity, 2007). Although impaired motor function is the hallmark of cerebral palsy syndrome, many children with developmental disorder also experience sensory, communicative and intellectual impairment and may have complex limitations in self-care activities (ParmidrRaina, 1995).

Corresponding author: **Vadivelan, K.**
Associate Professor, SRM College of Physiotherapy, SRM Institute of Science and Technology, Kattankulathur, Chennai-603202

Children with cerebral palsy experience activity limitations as a result of motor impairments and many health care interventions are aimed at reducing activity limitations in order to evaluate the effectiveness of their interventions. It is important to have reliable and valid instrument to measure activity limitations in children with cerebral palsy. The world health organization International Classification of Functioning Disability and Health defines activity limitations as difficulties an individual may have in extremity activities. The activity limitations experienced by children with cerebral palsy are often caused by impaired function of the lower extremities for example limitations in walking or climbingstairs (ParmidrRaina, 1995 and Streiner, 1995). Children with cerebral palsy have reduced level of participation in a number of areas of life including education, social life and recreation. In studies of participation in children with cerebral palsy, there is consensus that the severity of motor impairment is a key predictor of participation restriction (Jackie Parker, 1995). Movement and postural control is fundamental to many activities related to participation. Also children with cerebral palsy an intellectual impairment participate less when compared with children without intellectual impairment particularly in recreation personal care; communication, home life, mobility, responsibilities, relationships, schools and social relationships (Russell, 1989 and Haley, 1995). Several

measurement instruments have been developed to assess the mobility in children with cerebral palsy, such as Gross Motor Function Measure, the pediatric Evaluation of Disability Inventory, the Activity Scale For Kids, the Gillette Functional Assessment Questionnaire walking scale, and the Functional Mobility Scale. The main goal of rehabilitation treatment is to reduce the activity limitations with specific focus on mobility limitations (Novacheck, 2000 and Graham, 2004). These measurement instruments are all widely used, and most have good validity and reliability, as summarized in two reviews. These instruments focus on scoring motor function or global function, in a disease specific or more generalized population. Mobility in these instruments is measured in a standardized or daily life environment and scoring may be presented as an overall score or as a level of classification (Eremenco, 2005; Arnould, 2004). Despite these apparent difference, these instruments have in common that their interpretation is always on the level of capacity ("what a child can do") or on the level of performance ("what a child does do") none of these instruments, however, measures the amount of difficulty the child experiences with an in depth focus on mobility, although this outcome is also expected to be influenced by the rehabilitation treatment. To fill this gap mobility questionaaire28 was developed to measure mobility limitations in children with cerebral palsy as rated by their parents. The instrument directly asses the degree of difficulty these children experience in executing mobility activities according to International Classification System Definition (Bjornson, 2008). The Mobques28 is intended to asses comprehensively the mobility limitations experienced in everyday life and to cover a broad range of severity of mobility limitation. This study was aimed to find out the mobility limitations in children with cerebral palsy (Bjornson, 2007).

Aim of the Study

To find out the mobility limitations in children with cerebral palsy.

Need for the Study

To find the dependency level of the cerebral palsy children in and around the environment

MATERIALS AND METHODS

Study design : Non –Experimental
Study type : Observational
Sampling method : Convenient sampling
Sampling size : 40
Study setting : Pediatric clinic in and around Chennai.

Inclusion Criteria

- Children with Spastic Diplegic cerebral palsy.
- Both male and female.
- Age between 4 to 13 years.

Exclusion Criteria

- Other types of cerebral palsy children were excluded.
- Cerebral palsy associated with nutritional deficiency like rickets and other
- Congenital Orthopedic deformities.
- Muscular dystrophy patients were excluded.

Procedure

According to the inclusion and exclusion criteria children were selected and inform consent were given to their parents. Then detailed explanations of mobility questionnaire were given to the parent and then the questionnaire was ask to fill by the parents. MOBQUES28 consists of items that measure mobility limitations in daily life such as sit down on a chair, go up stairs as such. Parents are asked to indicate how hard it is for their children to execute the mobility activities in the usual way without the help of others.

Responses are given on five point rating scale that is

0 – Impossible without help.
1 – Extremely difficult, very difficult and difficult.
2 – Moderately difficult and somewhat difficult.
3 – Slightly difficult.
4 – Not difficult at all.

The parents were encouraged to mark the questionnaire according to the limitations faced by their children.

RESULTS

The study concludes the dependency rate is lesser with the catagories of 31-50, group of 51-70 has fewer depending rate whereas the subjects fall on category 71-90, have higher dependency rate.

Conclusion

This study concludes that there is a significant mobility limitations among the children with Spastic Diplegic cerebral palsy and the dependency level is also significantly high in and around environmental activities among cerebral palsy children.

Limitations

- Small sample size.
- Only spastic cerebral palsy was included.

Recommendations

- Large sample size.
- All types of cerebral palsy children can be included.
- Age group can be extended.

REFERENCES

Arnould, C., Penta, M., Renders, A., and Thonnard, J.L. 2004. ABILHAND-Kids: a measure of manual ability in children with cerebral palsy. *Neurology.* 63: 1045–1052

Bax, M., Goldstein, M., Rosenbarum, P., et al. 2005. Proposed definition and classification of cerebral palsy, April, *Dev Med child Neurol* 2005.

Bjornson, K. 2008. Activity limitations: what are they really doing? *Dev Med ChildNeurol.,* 50:166–1166.

Bjornson, K.F., Belza, B., Kartin, D., Logsdon, R., McLaughlin, J. 2007. Ambulatory physicalactivity performance in youth with cerebral palsy and youth who are developing typically – invited commentary – author response. PhysTher., 87:259–60

Eremenco, S.L., Cella, D., Arnold, B.J. 2005. A comprehensive method for the translation and cross-

cultural validation of health status questionnaires. *Eval Health Prof.,* 28:212–232.

Graham, H.K., Harvey, A., Rodda, J., Nattrass, G.R., Pirpiris, M. 2004. The Functional Mobility Scale (FMS). *J PediatrOrthop.,* 24:514–520.

Haley, S.M., Coster, W.J., Ludlow, L.H., Haltiwanger, J.T., Andrellos, P.J. Pediatric evaluation of disability inventory: development, standardization, and administration manual. New England Medical Centre, Boston; 1992.Young, N.L., Wright, J.G. Measuring pediatric physical function. *J PediatrOrthop.*1995;15:244–253.

Jackie Parker PhD Bnur (Hons) RGN NDN cert, NicholaMcculloughph DB. Nurs(Hons) and Ann Madden Bsc (Hons) RGN.

Novacheck, T.F., Stout, J.L., Tervo, R. Reliability and validity of the Gillette Functional Assessment Questionnaire as an outcome measure in children with walking disabilities. *J PediatrOrthop*.2000;20:75–81.

Relationships between spasticity, strength, gait and GMFM – 66 in person with spastic diplegic cerebral palsy Arch. Phys Med Rehabilitation 2007.

Russell, D.J., Rosenbaum, P.L., Cadman, D.T., Gowland, C., Hardy, S., Jarvis, S. The gross motor function measure: a means to evaluate the effects of physical therapy. *Dev Med Child Neurol.* 1989; 31:341–352.

Streiner, D.L., Norman, G.R. Healthmeasurments scales a practical guide to their development and use 2nd edn.Oxford University Press 1995.

The health and well being of care givers of children with cp. ParmidrRaina, Maureen O Donnell, Peter Rosenbarum, Jamie Brehault, Stephen P.Walter, Dianne Russell, Marilyn Swinton, Binzhu,Ellen Wood.

Van Ravesteyn, N.T., Scholtes, V.A., Becher, J., Roorda, L.D., Verschuren, O., Dallmeijer, A.J. 2010. Measuring mobility limitations in children with cerebral palsy: content and construct validity of a mobility questionnaire (MobQues). Dev Med Child Neurol.In press.

World Health Organisation, International Classification Of Functioning Disability and Health Geneva and World health oraganisation 2001.

****