

Effectiveness of Bobath and conventional treatment in cerebral palsy children

Moazma Jamil, Zohaib Shahid, Marriyam Ijaz

Fatima Jinnah Medical University, Azra Naheed Medical College and Superior University
Lahore, Pakistan

Objective: To determine the effectiveness of Bobath and Conventional approach for development of gross motor function in children of cerebral palsy (CP).

Methodology: Twenty-two children of CP were allocated by two equal groups i.e. Conventional and neurodevelopment management. They were treated for 24 weeks, 40mins/day each patient, 5days/week. All were tested by Modified Ashworth Scale (MAS) before and 24 weeks after treatment.

Results: Bobath technique was more effective as compared to conventional treatment. Bobath technique was effective in all regions, especially in motor development.

Conclusion: It can be concluded that Bobath technique is more effective as compared to conventional treatment. (Rawal Med J 202;45:974-976).

Keywords: Neurodevelopmental, cerebral palsy, Bobath approach.

INTRODUCTION

Cerebral palsy (CP) is a disease caused by non-progressive abnormalities in the developing brain. The motor disorders create motor, neurologic and postural deficits in developing child.^{1,2} Children with CP depend on others in mobility and self-care because one of the main problems in them is impairment in gross motor function (GMF), which confines movement. The incidence of CP is estimated to be 1.4–2.4 per 1,000 live births.^{3,4}

Conventional physiotherapy involves stretching, strengthening and mobilizations. Neurodevelopmental therapy (NDT) assists movements and is used in the management of children of CP who have complaints of function and postural control.^{5,6} In 2011 a study showed improvement in the GMF after treatment ($p < 0.01$).³ One major study from Iran compared NDT and sensory integration therapy on GMF in children with CP and found it effective.⁷ A substantial difference was originate non weight bearing activity effective but weight bearing activity was not showing effective results.⁸

Meta-analysis and RCT using MAS score have been carried out.^{9,10} Intensive Conventional therapy had better result than non-intensive therapy.¹¹ There have been no study in Pakistan on use of Bobath approach. The objective of this study was to

determine the effects of conventional and Bobath approach for improvement of GMF in CP.

METHODOLGY

This experimental study was conducted after the approval from the ethical review board of Azra Naheed Medical College, Lahore. Data were taken from Children and adolescents of CP after the consent of concern department of Al_Khidmat Teaching Mansorah Hospital, Children Hospital and Rehab Care School (city clinics). Written consent is obtained to participate in the study from the parents. Study was completed in three months. A sample of 22 participants was selected with the age of 2 to 4 years and CP was diagnosed by neuro specialist and senior physiotherapist. Children with spastic CP were also included.

They were divided in two equal groups; conventional group, and NDT (Neurodevelopmental Treatment) group (Bobath). They had treatment for three months, 40mins/day, 5 days/week. Interventions which were included were neck holding on form roller, activities on form roller in NDT, gym ball exercises in NDT, weight on both hands on gym ball and hip adductors strengthening. All children were tested by Modified Ashworth Scale (MAS) immediately before and 16 weeks after treatment.

Statistical Analysis: SPSS version 20 was used for

analysis. T-test was used for both groups analysis. Paired sample t test was applied with in group. $p < 0.05$ was considered statistically significant.

RESULTS

Out of 22 children, in conventional group there were 5(45.5%) male and 6(54.5%) female whereas in Bobath group 6(54.5%) were male and 5(45.5%) female. The mean age of participants in conventional group was 6.64 ± 3.67 and in Bobath group was 4.73 ± 1.68 years. Paired sample t test score of elbow, wrist, finger, thumb, hamstring, quadriceps, gastrocnemius and soleus before treatment was 1.82 ± 0.68 , 1.5 ± 0.45 , 1.05 ± 0.15 , 1 ± 0 , 1.73 ± 0.52 , 1.86 ± 0.64 , 1.73 ± 0.56 , 1.73 ± 0.56 and after treatment was 1.55 ± 0.82 , 1.27 ± 0.47 , 1 ± 0 , 1 ± 0 , 1.59 ± 0.63 , 1.77 ± 0.72 , 1.64 ± 0.64 , 1.64 ± 0.64 and p value was (0.03), (0.05), (0.34), (1.00), (0.08), (0.17), (0.17), (0.17) so there is no significant difference in before and after treatment reading.

The score of elbow muscles, wrist muscles, finger muscles, thumb muscles, hamstrings, quadriceps muscles, gastrocnemius muscles and soleus muscles before treatment was 2 ± 0.59 , 1.73 ± 0.72 , 1.18 ± 0.4 , 1.82 ± 0.51 , 1.82 ± 0.51 , 1.59 ± 0.63 , 1.5 ± 0.45 and after treatment was 1.09 ± 0.54 , 1 ± 0.63 , 0.36 ± 0.5 , 0.18 ± 0.4 , 1.14 ± 0.32 , 1.05 ± 0.15 , 0.64 ± 0.5 , 0.64 ± 0.5 and respective P value (0.00), (0.00), (0.04), (0.02), (0.01), (0.03), (0.04), (0.05) calculated through paired sample t test show that there is significant difference in before and after reading.

The mean improvement score of elbow muscles wrist, muscles, finger muscles, thumb muscles, hamstrings, quadriceps muscles, gastrocnemius muscles and soleus muscles in conventional Group was 0.27 ± 0.34 , 0.23 ± 0.34 , 0.05 ± 0.15 , 0.05 ± 0.15 , 0.91 ± 0.3 , 0 ± 0 , 0.14 ± 0.23 , 0.09 ± 0.2 , 0.09 ± 0.2 , 0.09 ± 0.2 and in Bobath Group was 0.91 ± 0.38 . P value (< 0.001) was calculated through independent sample t test show that there is significant difference in the improvement level of both groups.

DISCUSSION

In recent years Bobath technique was extensively used as rehabilitation treatment in children. A study

from Turkey examined the efficacy of eight weeks Bobath treatment in CP found improvement in GMF, enhanced self-supporting as well as the stability outcomes.¹² In our study, Bobath technique was effective in all regions. Studies have shown that this combination gave notable improvement in GMF of CP children and NDT had outstanding outcomes in enhancement of motor functions.^{13,14}

One of the other previous studies in which they used Bobath therapy for extensor muscles of back electromyography in CP children's. In that study they focused on bobath therapy and had instant results in the improvement of muscle functions of spastic CP patients. Patients with lenient disability gave good results as compare to patients with severe disability.¹⁵ Bobath improve GMF as well as increase ranges of all regions of body as compared to conventional treatment.

A previous study in which assessment of practical results of bobath treatment, regular maneuvers were utilized with patients examine accompanied by GMFM as well as PEDI in six week time period and improvement was seen before and after Bobath treatment.² According to a previous study on conventional treatment combined with video gaming treatment. The outcomes were VGT helps in improvement of upper extremities motor functions as well as helps in performing different movements as compare to conventional therapy. But unsuccessful enhancement in activities of daily life, daily life activities improved by CT.¹⁶

However, another study on conventions therapy combined with medicines for CP kids. Individuals in category a treated with conventional therapy and individuals in category b treated with medicines. The result of this study was minority of individuals showed beneficial outcomes of medicines. However, more beneficial results with conventional treatment.¹⁷

CONCLUSION

Bobath technique is effective in all regions especially in motor development. It can be concluded that Bobath technique is more effective as compared to conventional treatment.

Author Contributions:

Conception and design: Moazma Jamil
 Collection and assembly of data: Moazma Jamil
 Analysis and interpretation of the data: Marriyam Ijaz
 Drafting of the article: Marriyam Ijaz
 Critical revision of the article for important intellectual content:
 Zohaib Shahid
 Statistical expertise: Zohaib Shahid
 Final approval and guarantor of the artic: Zohaib Shahid
Corresponding author email: Zohaib Shahid: zabi809@live.com
Conflict of Interest: None declared
 Rec. Date: Aug 27, 2019 Revision Rec. Date: Jul 27, 2020 Accept
 Date: Oct 1, 2020

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