



## Research Article

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### EFFECTS OF SNOEZELLEN IN THE MANAGEMENT OF CHILDREN WITH CEREBRAL PALSY WHO EXHIBITS MALADAPTIVE BEHAVIOUR IN SELECTED SPECIAL CARE UNIT, COIMBATORE, INDIA

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#### ABSTRACT

The snoezelen is a multisensory environment that has been implemented with various populations. Almost complete absence of rigorous research in this field. The confirmation of this approach as an effective therapeutic intervention is warranted. cerebral palsy is a central motor dysfunction affecting muscle tone, posture and movement. The main aim of the study was to analyse the effectiveness of snoezelen on reduction of maladaptive behaviour among cerebral palsy children. Totally 12 children within the age group of 3-13 years were selected. One group pretest post test design without control group was used. Behaviour assessment scale for Indian children with cerebral palsy was used to assess the maladaptive behaviour of those children. overall 69% of them were present with behaviour problem. Wilcoxon signed rank test was used to find the significance difference of pre and post intervention score. The result revealed that there was a significant reduction of maladaptive behaviour was seen among the cerebral palsy children at P<0.05 level. The pretest score and post intervention score (overall score and score separated by domain were compared. Post intervention score for each domain and the overall final BASIC-CP was significantly lower than corresponding pre-assessment score at P< 0.05, representing statistically significant reduction in maladaptive behaviour.

**Keywords:** Cerebral palsy, maladaptive behaviour, snoezelen.

#### INTRODUCTION

Cerebral palsy is a disorder of movement and posture resulting from a non-progressive injury to the developing brain. Often accompanied by other features like seizure behavioural disorder, cognitive impairment and other musculoskeletal problem<sup>1</sup>. It is a most common physical disability in early childhood.<sup>2</sup> It has been clinically defined as a group of motor, cognitive, and perceptible impairments secondary to a non-progressive defect or lesion of the developing brain.<sup>3</sup> A variety of prenatal, perinatal, and postnatal factors contribute to the development of cerebral palsy. The human brain undergoes development during the prenatal period and up to 2 years of age, a brain insult or injury occurring during this period may results in cerebral palsy.<sup>4</sup> A population based cohort study was conducted covering 17,580 Live birth from 2003-2008, to describe the prevalence, sub types, severity and neuro imaging finding of cerebral palsy children born in southern Denmark. The study included 43 children diagnosed with CP The overall prevalence was 2.4 per 1000 live birth. The gestational age specific prevalence ranged from 63.5 per 1000 live births. The prevalence of CP was 1.8 per 1000 in singletons and 15.4 per 1000 in multiples. Low gestational age and birth weight were risk factors for CP. Spastic CP was the predominating sub type of CP<sup>5</sup> A study conducted among thousand children with cerebral palsy were reviewed to study their clinical profile, etiological factors and associated problems, the report says that associated problems were seen in majority of the cases, of which mental retardation was the commonest 72.5 percent. And also 30-50 percent of the children are present with behavioural problems, such as aggressiveness, lack of attention and hyperkinetic behavior. often children with cerebral palsy miss essential milestone due to their physical, emotional, and cognitive

limitations. Maladaptive behavior most frequently happens within this group.

In a study Dr. Neubauer found that children who suffer from cerebral palsy have area showing low levels activity "the recoverable brain" as we grow our brain learn to interpret and respond to information received via senses. Since one newer approach available to this children is sensory stimulation by means of snoezelen. Snoezelen will stimulate the children physically and mentally through their senses such as sight, smell, taste, touch and hearing.<sup>6</sup>

#### Significance of the study

The world wide incidence of cerebral palsy is approximately 2-2.5 per 1000 live birth. A study conducted in United states over the past several decades reports about 7,64,000 children and adults are currently have cerebral palsy, about 500000 children under the age of 18 are currently have cerebral palsy, about 10,000 babies born each year will develop cerebral palsy. Around 8000-10000 babies and infants diagnosed every year with cerebral palsy. Around 1,200-1,500 preschool children are diagnosed every year with cerebral palsy<sup>7</sup> In India there are 25 lac people are with cerebral palsy. In Kerala 2 lac children are affected with cerebral palsy.

Cerebral palsy is not a disease it is a condition caused by developmental differences and with adequate care it can be managed effectively. Behavioural problem is frequently used as an indicator of abnormality or mental dysfunction. Maladaptive behavior is most frequently happen with cerebral palsy. Maladaptive behavior is culturally abnormal behavior of such intensity, frequency or duration that the physical safety of the person or others is likely to put in jeopardy, or behavior which is likely to limit the use of or result in the person being denied access to ordinary community facilities. Some of the

maladaptive behavior seen in cerebral palsy are self injurious behavior, aggressive behavior, stereotyped behavior, and non person directed behavior.

Brassard conducted a study on behavioural difficulties of adolescent with cerebral palsy. The result confirms that behavioural problems are common cerebral palsy. 36.9 percent of the adolescent were present with behavioural difficulties and 61.9 percent of them have peer problems.<sup>8</sup> Yet another study conducted by Suzanna he reports that 25.5 percent of the children had a behavioural problems. Specific behavioural problems that were most problematic with cerebral palsy children were identified as dependency, head strong, and hyperactiveness.<sup>9</sup>

Behaviors are sensory driven. One another treatment available to this population is the provision of sensory stimulation by means of snoezelen. This stimulation invokes environmental manipulation to effect internal change in the child, decreasing the maladaptive behavior, reducing stress and producing more adaptive behavior. Snoezelen is a combination of two Dutch words for (doze and smell). Snoezelen room offers a relaxed atmosphere with pleasant surroundings, soothing sounds, captivating aromas, tactile experiences massage and vibrations, vibrosonic sensation and gentle movement.<sup>10</sup>

People with cerebral palsy do not just happen to play because of motoric problems, low cognitive level, behavioural problems, limited language skill and limited social skills and such are located at base of this problem. This is why it is important that these people get stimulated. powerful stimuli are necessary to get interest of the person with cerebral palsy. They are especially sensitive to sensory stimulation since the study focus on effect of snoezelen in reduction of maladaptive behavior among children with cerebral palsy.

#### Statement of the problem

Effects of snoezelen in reduction of maladaptive behavior among children with cerebral palsy in selected special care unit Coimbatore.

#### Objectives

1. To assess the maladaptive behaviour of children with cerebral palsy in selected special care unit by using behavior assessment scale.
2. To assess the effectiveness of snoezelen in the reduction of maladaptive behaviour among children with cerebral palsy in a selected special care unit.

#### Hypotheses

H<sub>1</sub> There will be a greater decrease in number and duration of maladaptive behavior when the children are in the snoezelen.

### MATERIALS AND METHODS

#### Research design

Pre experimental research with one group pre test post test design.

#### Setting of the study

The study was conducted in national special school, Ganapathy, Coimbatore.

#### Population

The target population of the study was the cerebral palsy children with the age group of 3-13 years residing in national special school Coimbatore.

#### Sample

The sample comprised of 12 cerebral palsy children residing in national special school Coimbatore.

#### Sampling technique

The sample was selected by probability simple random technique in which lottery method was used.

#### Inclusion criteria

Inmates of spastic and athetoid type of cerebral palsy with the age group of 3-13 years and both male and female children diagnosed to have cerebral palsy was included in the study.

#### Exclusion criteria

Cerebral palsy with visual problems hydrocephalus, ataxic, mixed type and day scholars were excluded from the study.

#### Method of data collection

Direct observation with mal adaptive behavior assessment scale of children with cerebral palsy.

#### Ethical consideration

The study was approved by Institutional ethical committee members of Saveetha university 007/IEC/SU Dated 15.10.2013, and the informed concern was obtained from the parents and the Institutional authorities, since the study participants were minor.

#### Procedure

The participants were selected by simple random technique using lottery method. In snoezelen room sensory stimuli is offered to each child through visual, auditory, tactile, and olfactory modalities. It is a specially arranged room. The floor is covered with soft velvet cloths. The room is filled with different type of flashing light, changing to different colours in alternate way, different fresh flowers were kept inside the room to provide pleasant odour. Strings of pearls were hanged around the wall. stimulation bottles (bottle filled with coloured water and sponge were arranged in the room. Comforting music like ocean sound, breeze sound, lullabies, birds singing, music of wind, rhythm of rain were played in the room. Bubbles were spread and floated around the room. And the children were made to touch and taste the variety of food materials.

Initial assessment of behavior was assessed by using behavior assessment scale and weekly 3 days the children were in snoezelen environment, similarly seven weeks of therapy was given. Totally 21 consecutive sessions were given End of the seven week post assessment was done with the same behavior assessment scale.

#### Data collection tool

##### Tool I

Consists of personal information, age, sex, Intelligent quotient, mental age, height, weight, type of cerebral palsy was included.

##### Tool II

A Standardized behavioral assessment scale for Indian children with cerebral palsy was used. The scale contains 75 items, in which 16 violent and destructive behavior, 4 temper tantrums, 7 misbehave with others, 10 self injurious behavior, 8 repetitive behavior, 8 odd behavior, 3 hyperactivity, 9 antisocial behavior, 6 rebellious behavior, and 4 fears. The total score was 150.

### RESULT AND DISCUSSION

The study consisted of one group pre test post test design without control group. Children with cerebral palsy from 3-13 years of age the mean age was 7.5±2.7 and the Intelligence Quotient was 61.4. In this study 60 % of them were male and 40% of them were female. The mean mental age was 3.8% and the average height was 110.75 and the mean weight of the children were 15.8. In this study 75% of them were spastic and the remaining 25% of them were athetoid type.

**Table 1: Distribution of violent behaviour based on behaviour assessment scale for Indian children with cerebral palsy**

S.NO	DOMAIN	Percentage	Pre test Median score	Post test Median score
1.	Violent and destructive behavior	62	20.50	10.5
2.	Temper tantrum	83	7.00	3.5
3.	Misbehave with others	70	10.50	5.0
4.	Self -injurious behaviour	49	14.00	6.0
5.	Repetitive behaviours	77	12.00	9.5
6.	Odd behaviour	68	11.50	6.0
7.	Hyper activity	76	4.50	3.0
8.	Rebellious behaviour	65	8.50	4.0
9.	Antisocial behaviour	69	12.0	7.5
10.	Fear	66	6.00	4.0
	Total	69	94.62	56.3

The Table 1 revealed that there is a significant reduction in maladaptive behaviour among cerebral palsy children from pre and post median score after snoezelen. The pretest score and post intervention score(overall score and score separated by

domain) were compared using wilcoxon signed rank test. Post intervention score for each domain and the overall final BASIC-CP score was significantly lower than the corresponding pre assessment score.

**Table 2: Wilcoxon signed rank test for snoezelen on maladaptive behaviour of cerebral palsy children**

Group	N	Mean	SD	Z Score	P Value	Significance.
Pre test	12	103.75	13.34			
Post test	12	62.50	16.85	-3.063	.002	< 0.05 S*

Table 2 revealed that there is a difference between the pre and post score of maladaptive behaviour of cerebral palsy children. The data was analyzed by using non parametric test of wilcoxon signed rank test. The result revealed that there is a significant reduction of maladaptive behaviour was seen among the cerebral palsy children at  $p < 0.05$  level.

## CONCLUSION

Cerebral palsy children have higher rates of behaviour problem and also they present with disturbances in sensation, perception and communication. Snoezelen stimulates all the senses and had a significant effect on reduction of mal adaptive behaviour. Snoezelen can be introduced in daily care activities of cerebral palsy children.

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