

Effectiveness of Traditional Play to Improve Visual Motor Skills Among Typically Developing Children

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Abstract: This study Effectiveness of Traditional Play to Improve Visual Motor Skills among typically Developing Children is a Quantitative Research and Experimental Design. The sampling method used here is convenient sampling method. for 74 children's on the basis of pre-test results 20 typically developing children's with difficulty in visual motor skills were selected for my intervention study. Then the children were involved in traditional play activities for improving their visual motor skills. The study was Conducted in Schools of Chennai, Tamilnadu. Duration of the intervention is 6 weeks with 6 activities to be performed thrice a week. Each activities needs to be repeated for each week. The children are assessed with Beery – Buktenica developmental test of visual motor integration (VMI), 6 th edition scale for pre-test and after intervention they are assessed with this scale again to find the improvement. Inclusion criteria include Typically developing children in Chennai, Children Age group: 5 – 10 years. Both male and female included. Exclusion criteria include Children with specific medical diagnoses, Children with other neurodevelopmental disorders, disabilities and psychopathology, Children age group below 5 years and above 10 years

Keywords: visual motor skills, traditional play, typically developing children.

INTRODUCTION

Play is a major means by which children develop competence and mastery. Through exploration of the environment and spontaneous engagement in meaningful activity, children develop social, emotional, cognitive, and physical skills that provide the foundation for later role expectations. *Play* is a spontaneous or organized activity that produces enjoyment, entertainment, amusement, or diversion and involves an attitude or mode of experience driven by intrinsic motivation. The emphasis is on the process rather than the product and is driven by internal rather than external control. Stagnitti, (2004).

CONCEPTS OF PLAY

Stagnitti synthesized dispositional “concepts of play” into the following characteristics:

1. Is more internally than externally motivated
2. Transcends reality as well as reflects reality
3. Is controlled by the player
4. Involves more attention to the process than product
5. Is safe
6. Is usually fun, unpredictable, and pleasurable
7. Is spontaneous and involves no obligatory active engagement within the play context or setting, children are intrinsically driven and take on the role of a *player*, which infers active occupational participation in play.

Traditional Games act as learning aids. They teach us many things while playing like to learn to win and lose, develop sensory skills, count, add, improve motor skills, identify colour, improve hand-eye coordination and finally to have fun. The values that we achieve by playing

these games are more when compared to the games that we play nowadays. Some of the values that we gain are that they are environment friendly, we get a chance to learn about our culture and history, and an important thing is, they are suitable for all ages, so they increase the interaction between generations. Many modern games played around the world have their origin in these traditional games. This is the matter of pride to our nation's culture. Some of the prominent traditional games which originated in our country and became popular all over the world. ⁴

Eye hand coordination (also called visual motor integration [VMI]) is the discrete motor skill that enables the coordination of the visual stimulus with the corresponding motor action. Visual motor speed also depends on visual perception². Visual perceptual and visual-motor abilities play an important role in the performance of daily children's activities such as building a puzzle, dressing, reading, writing, colouring, constructing with blocks or other construction toys and tying shoes. Handwriting is a VMI skill used by school aged children. Factors associated with handwriting legibility are visual perception, eye hand coordination and VMI. Visual perception problems can affect all aspects of the child's life and occupation. Playing games with other children can be difficult because of visual perception skills needed. ³¹

SCHEDULE OF TRADITIONAL PLAY INTERVENTION

The aim of the study is to measure visual motor skills through traditional play in typically developing children. The people who met the selection criteria were selected

for the study and the study has been explained to them, consent and assent forms were collected from the children's and their parents and care takers. Duration of the study is 6 weeks 18 sessions (thrice a week). pre-test was taken by using Beery -Buktenica

Developmental Test of Visual Motor Integration (VMI). for 74 children's on the basis of pre-test results 20 typically developing children's with difficulty in visual motor skills were selected for my intervention study. Then the children were involved in traditional play activities for improving their visual motor skills. After the intervention period, post-test was done for the children who took part in the intervention using Beery-Buktenica Developmental Test of Visual Motor Integration (VMI).

THERAPY SESSIONS ACTIVITIES INVOLVED

WEEK 1 SESSION 1

Activity 1: Pallankuzhi
Activity 2: Five stones

SESSION 2

Activity 3: chaupar
Activity 4: Mikado

SESSION 3

Activity 5: Identify the hidden stick in the sand
Activity 6: Kancha or lakhoti

WEEK 2 SESSION 4

Activity 1: Pallankuzhi
Activity 2: Five stones

SESSION 5

Activity 3: chaupar
Activity 4: Mikado

SESSION 6

Activity 5: Identify the hidden stick in the sand
Activity 6: Kancha or lakhoti

WEEK 3 SESSION 7

Activity 1: Pallankuzhi

Activity 2: Five stones

SESSION 8

Activity 3: chaupar
Activity 4: Mikado

SESSION 9

Activity 5: Identify the hidden stick in the sand
Activity 6: Kancha or lakhoti

WEEK 4 SESSION 10

Activity 1: Pallankuzhi
Activity 2: Five stones

SESSION 11

Activity 3: chaupar
Activity 4: Mikado

SESSION 12

Activity 5: Identify the hidden stick in the sand
Activity 6: Kancha or lakhoti

WEEK 5 SESSION 13

Activity 1: Pallankuzhi
Activity 2: Five stones

SESSION 14

Activity 3: chaupar
Activity 4: Mikado

SESSION 15

Activity 5: Identify the hidden stick in the sand
Activity 6: Kancha or lakhoti

WEEK 6 SESSION 16

Activity 1: Pallankuzhi
Activity 2: Five stones

SESSION 17

Activity 3: chaupar
Activity 4: Mikado

SESSION 18

Activity 5: Identify the hidden stick in the sand
Activity 6: Kancha or lakhoti

STATISTICAL ANALYSIS

TABLES, FIGURES AND CHARTS

Table 1: Demographic details of the study population with respect to Gender

GENDER	Population size (N)
MALE	8 (40%)
FEMALE	12 (60%)

Figure 1: Pie chart depicting the population size

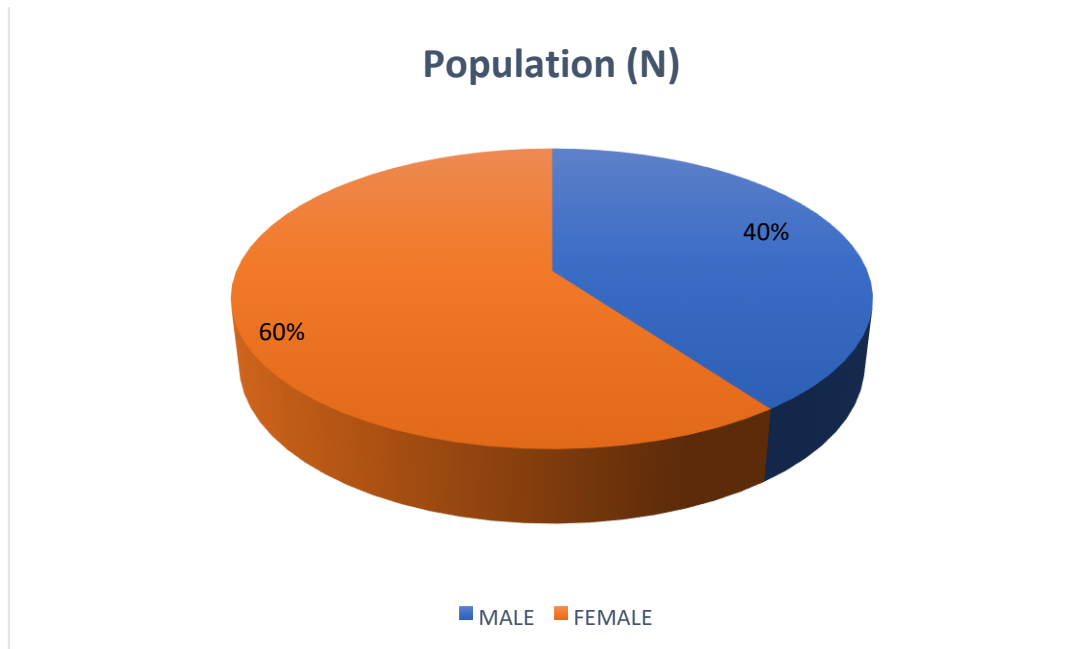


Table 1 & Graph 1 shows that Total No. of population is 20 children's. (Male -8, Female-12).

Table 2: Mean values of the study parameters irrespective of gender

Study parameters	N	Minimum	Maximum	Mean	Std. Deviation
Age	20	6.02	9.08	7.5005	1.13844
Beery VMI	20	67.00	99.00	84.7500	8.87264
VP	20	45.00	101.00	80.8000	12.79638
MC	20	66.00	107.00	85.8000	10.84629
Post Beery VMI	20	85.00	110.00	97.2500	7.63562
Post VP	20	77.00	134.00	100.1000	16.53035
Post MC	20	76.00	121.00	94.1000	11.98640

Figure 2: Bar chart depicting the Mean values of the study parameters

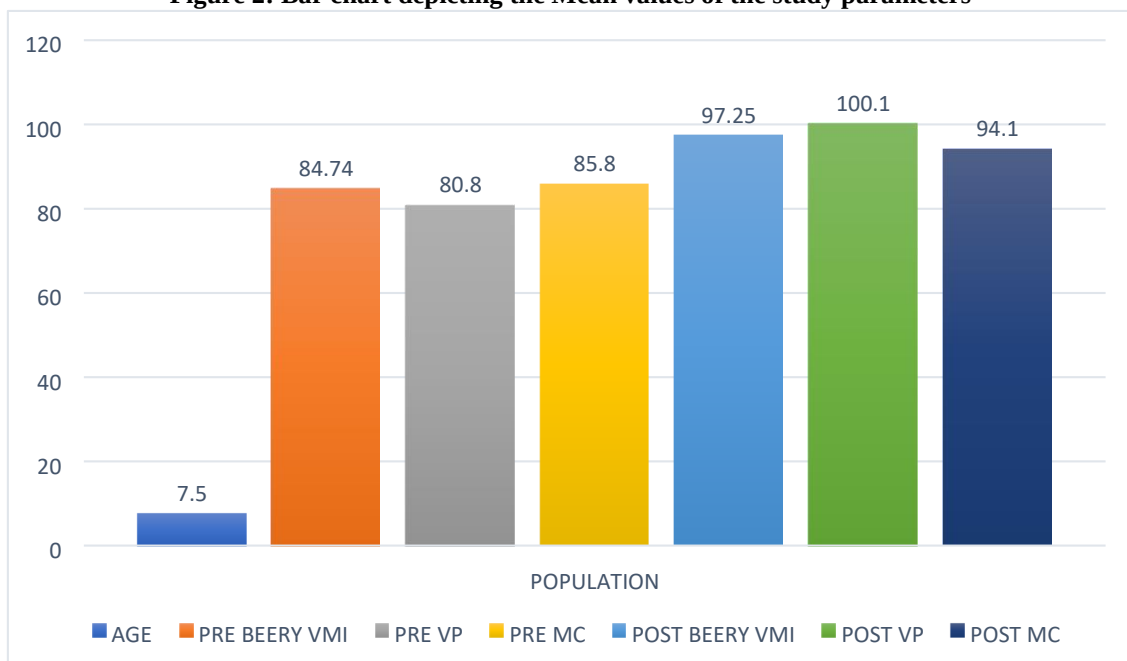


Table 2 & Graph 2 Shows that the total pre & post values of age, Beery VMI, Visual Perception, Motor Coordination.

Table 3: Mean values of the study parameters according to age category

AGE CATEGORIES			Mean	N	Std. Deviation
6 to 7.12 years	Pair 1	Beery VMI	89.3636	11	8.53549
		Post Beery VMI	96.2727	11	7.33609
	Pair 2	VP	85.3636	11	10.30798
		Post VP	106.1818	11	17.65683
	Pair 3	MC	88.0909	11	12.50963
		Post MC	99.5455	11	11.52704
8.1 to 10 years	Pair 1	Beery VMI	79.1111	9	5.55528
		Post Beery VMI	98.4444	9	8.26304
	Pair 2	VP	75.2222	9	13.87243
		Post VP	92.6667	9	12.09339
	Pair 3	MC	83.0000	9	8.23104
		Post MC	87.4444	9	9.19390

Figure 3: Bar chart depicting the Mean values of the study parameters in age 6 – 8 years

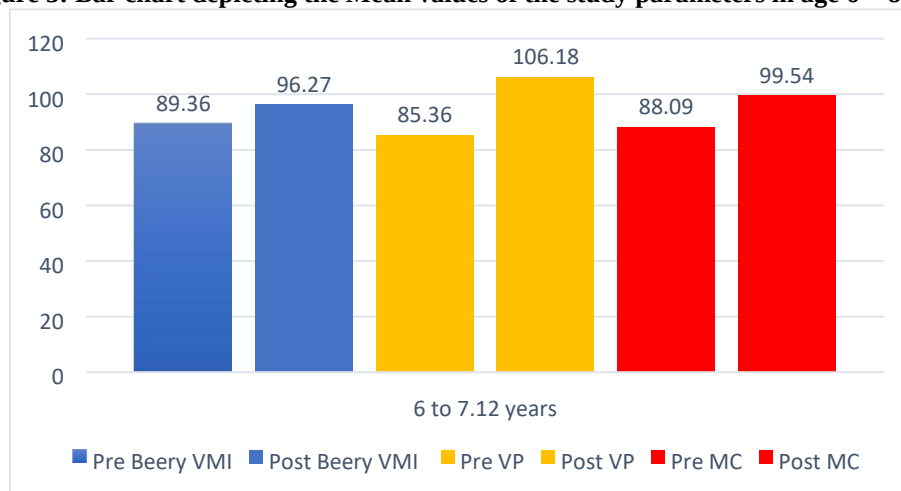


Table 3 & Graph 3 depicts the mean value of Pre-Beery VMI-89.36, VP-85.36, MC-88.09 and Post Beery VMI-96.27, VP-106.18, MC-99.54 & standard deviation of Pre Beery VMI-8.53, VP-10.30, MC-12.50 and post Beery VMI-7.33, VP-17.65, MC-11.52 of the study parameters in age 6-8 years.

Figure 4: Bar chart depicting the Mean values of the study parameters in age 8.1– 10 years

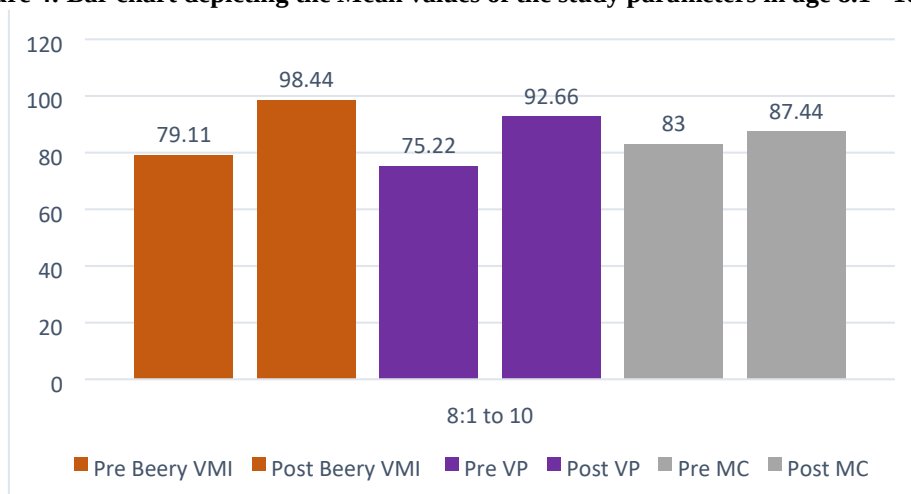


Table 3 & Graph 4 depicts the mean value of Pre Beery VMI-79.11, VP-75.22, MC-83.00 and Post Beery VMI-98.44, VP-92.66, MC-87.44 & standard deviation of Pre Beery VMI-5.55, VP-13.87, MC-8.23 and Post Beery VMI-8.26, VP-12.09, MC-9.19 of the study parameters in age 8.1-10 years.

Table 4: Comparison of Mean values of the study parameters according to age category

AGE CATEGORIES			Mean	N	Std. Deviation	P value
6to 8 years	Pair 1	BeeryVMI	89.3636	11	8.53549	0.020*
		PostBeeryVMI	96.2727	11	7.33609	
	Pair 2	VP	85.3636	11	10.30798	0.002*
		PostVP	106.1818	11	17.65683	
	Pair 3	MC	88.0909	11	12.50963	0.018*
		PostMC	99.5455	11	11.52704	
8.1 to 10 years	Pair 1	BeeryVMI	79.1111	9	5.55528	0.001***
		PostBeeryVMI	98.4444	9	8.26304	
	Pair 2	VP	75.2222	9	13.87243	0.013*
		PostVP	92.6667	9	12.09339	
	Pair 3	MC	83.0000	9	8.23104	0.018*
		PostMC	87.4444	9	9.19390	

*P< 0.05 is statistically significant

**P<0.01 is statistically highly significant

***P<0.001 is statistically very highly significant

Test used: Paired t test

Table 4 shows that comparison of Pre and Post Beery VMI of Mean and P value is 0.020, which means statistically significant. The comparison of pre and post VP of mean and p value is 0.002, which means statistically significant. The comparison of pre and post MC of mean and p value is 0.018, which means statistically significant in the age category of 6-8 years. The comparison of Pre and Post Beery VMI of Mean and P value is 0.001, which means very highly statistically significant. The comparison of pre and post VP of mean and p value is 0.013, which means statistically significant. The comparison of pre and post MC of mean and p value is 0.018, which means statistically significant in the age category of 8.1 -10 years.

Table 5: Comparison of Mean values of the study parameters according to age category and gender

AGE	Gender			Mean	N	Std. Deviation	P value
6 – 8 years	Males	Pair 1	BeeryVMI	88.33	3	9.712	0.289
			PostBeeryVMI	91.66	3	9.865	
		Pair 2	VP	82.33	3	5.859	0.426
			PostVP	95.00	3	19.672	
		Pair 3	MC	84.33	3	16.072	0.300
			PostMC	92.66	3	5.773	
	Females	Pair 1	BeeryVMI	89.75	8	8.746	0.039
			PostBeeryVMI	98.00	8	6.047	
		Pair 2	VP	86.50	8	11.686	0.002**
			PostVP	110.30	8	16.159	
		Pair 3	MC	89.50	8	11.892	0.047*
			PostMC	102.12	8	12.345	
8.1 – 10 years	Males	Pair 1	BeeryVMI	80.60	5	3.049	0.019*
			PostBeeryVMI	95.60	5	7.733	
		Pair 2	VP	69.60	5	14.758	0.046*
			PostVP	94.20	5	13.608	
		Pair 3	MC	82.60	5	7.987	0.306

	Females	Pair 1	PostMC	84.20	5	6.379	0.008**
			BeeryVMI	77.25	4	7.847	
			PostBeeryVMI	102.00	4	8.485	
		Pair 2	VP	82.25	4	10.210	0.060
			PostVP	90.75	4	11.586	
		Pair 3	MC	83.50	4	9.746	0.018*
			PostMC	91.50	4	11.474	

*P< 0.05 is statistically significant

**P<0.01 is statistically highly significant

***P<0.001 is statistically very highly significant

Test used: Paired t test

Table 5 shows that the comparison of pre and post Beery VMI of mean and p value is 0.289, & the comparison of pre and post VP of mean and p value is 0.426, & the comparison of pre and post MC of mean and p value is 0.300, which these are all statistically significant in the age category of 6-8 years for males.

The comparison of pre and post Beery VMI of mean and p value is 0.039, Which means statistically significant& the comparison of pre and post VP of mean and p value is 0.002, whichmeans highly statistically significant& the comparison of pre and post MC of mean and p value is 0.047, whichmeans statistically significant in the age category of 6-8 years for females.

Table 5 shows that the comparison of pre and post Beery VMI of mean and p value is 0.019, & the comparison of pre and post VP of mean and p value is 0.046, & the comparison of pre and post MC of mean and p value is 0.306, which these are all statistically significant in the age category of 8.1 -10 years for males.

The comparison of pre and post Beery VMI of mean and p value is 0.008, Which means highly statistically significant& the comparison of pre and post VP of mean and p value is 0.060, which means statistically significant& the comparison of pre and post MC of mean and p value is 0.018, which means statistically significant in the age category of 8.1-10 years for females.

Table 6: Comparison of Mean values of the study parameters according to gender

Gender			Mean	N	Std. Deviation	P value
Males	Pair 1	VP	74.3750	8	13.33028	0.024*
		PostVP	94.5000	8	14.71637	
	Pair 2	MC	83.2500	8	10.53904	0.137
		PostMC	87.3750	8	7.20986	
	Pair 3	BeeryVMI	83.5000	8	6.94879	0.014*
		PostBeeryVMI	94.1250	8	8.13173	
Females	Pair 1	VP	85.0833	12	10.94165	0.002*
		PostVP	103.8333	12	17.20905	
	Pair 2	MC	87.5000	12	11.16407	0.009*
		PostMC	98.5833	12	12.65959	
	Pair 3	Beery VMI	85.5833	12	10.16642	0.001***
		PostBeeryVMI	99.3333	12	6.84017	

*P< 0.05 is statistically significant

**P<0.01 is statistically highly significant

***P<0.001 is statistically very highly significant

Test used: Paired t test

Females better than males overall

Table 6 shows that overall gender comparisons of pre and post Beery VMI of p value is 0.014, & pre and post VP p value is 0.137 & pre and post MC p value is 0.024, which means statistically significant in males. The comparison of pre and post beery vmi p value is 0.001, which means very highly significant & pre and post VP pvalue is 0.002, which means statistically significant &pre and post MC pvalue is 0.009, which means statistically significant in females.

Table 7: Overall comparison of Mean values of the study parameters according to age category and gender

AGE	Gender			Mean	N	Std. Deviation	P value
6 – 8 years	Males	Pair 1	BeeryVMI	88.33	3	9.712	0.289
			PostBeeryVMI	91.66	3	9.865	
		Pair 2	VP	82.33	3	5.859	0.426
			PostVP	95.00	3	19.672	
		Pair 3	MC	84.33	3	16.072	0.300
			PostMC	92.66	3	5.773	
	Females	Pair 1	Beery VMI	89.75	8	8.746	0.039
			Post Beery VMI	98.00	8	6.047	
		Pair 2	VP	86.50	8	11.686	0.002*
			Post VP	110.30	8	16.159	
		Pair 3	MC	89.50	8	11.892	0.047*
			Post MC	102.12	8	12.345	
8.1 – 10 years	Males	Pair 1	BeeryVMI	80.60	5	3.049	0.019*
			PostBeeryVMI	95.60	5	7.733	
		Pair 2	VP	69.60	5	14.758	0.046*
			PostVP	94.20	5	13.608	
		Pair 3	MC	82.60	5	7.987	0.306
			PostMC	84.20	5	6.379	
	Females	Pair 1	Beery VMI	77.25	4	7.847	0.008*
			Post Beery VMI	102.00	4	8.485	
		Pair 2	VP	82.25	4	10.210	0.060
			Post VP	90.75	4	11.586	
		Pair 3	MC	83.50	4	9.746	0.018*
			Post MC	91.50	4	11.474	

*P< 0.05 is statistically significant

**P<0.01 is statistically highly significant

***P<0.001 is statistically very highly significant

Test used: Paired t test

Table 7 Shows that the overall comparison of age category and gender, which states that Beery VMI, VP&MC shows highly statistically significant in 6-8 & 8.1-10 years for females. This shows that overall comparison, females are better than male's participants.

Table 8: Overall performance of Mean values of the study parameters

Study parameters	N	Minimum	Maximum	Mean	Std. Deviation
Age	20	6.02	9.08	7.5005	1.13844
Beery VMI	20	67.00	99.00	84.7500	8.87264
VP	20	45.00	101.00	80.8000	12.79638
MC	20	66.00	107.00	85.8000	10.84629
Post Beery VMI	20	85.00	110.00	97.2500	7.63562
Post VP	20	77.00	134.00	100.1000	16.53035
Post MC	20	76.00	121.00	94.1000	11.98640

Table 8 shows that the overall comparison of Beery VMI, VP&MC, from this it is inferred that there is better performance in VP.

CONCLUSION

The main objective of this present study is to assess the visual motor skills in typically developing children and to evaluate the effects of Traditional play in typically developing children and its influence on visual motor skills. The overall comparison of Beery VMI, VP&MC,

which depicts that Visual Perception shows better performance and states highly statistically significant but also improvement in Beery VMI and MC. which is statistically significant Thus, the treatment program provides effective regime pertaining occupational Therapy.

LIMITATIONS

- Duration of the therapy was shorter
- The present study was done with limited sample size
- Study was done on restricted age group 6 to 10
- Study involved only typically developing children
- This study focuses only on school children in Chennai

RECOMMENDATIONS

- A large sample size and longer duration of intervention could be considered
- Study can be done on different age group
- The present study can be done for school children in other different states
- Further study can be done in children with neurodevelopmental disabilities, psychiatric issues and other specified disorders

DECLARATION: The authors have no conflict of interest

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