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Interventional effect of meditation on memory in school students with special reference to *Prakṛti*

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Abstract

The purpose of this study was to find out the Interventional Effect of meditation on memory in school students with special reference to *Prakṛti*. School students age ranged 13- 15 years were divided into two groups, mediation group (Group I) and control group (Group-II). ANCOVA and “Paired T- Test” were applied to test the significant changes in the quantitative variables Memory. There was significance change was found in mediation v/s control Group. *Prakṛti* wise comparison on memory score shows significant changes in *Vata*, *Pitta* and *Kapha Prakṛti* individuals after Meditation practices. Level of significance was set 0.05.

Keywords: Memory, mediation, *Prakṛti*

Introduction

Adolescent is considered the transitional stage from childhood to adulthood that occurs between ages 13-19. It is a period of sudden growth spurt and this growth spurt is associated with hormonal, cognitive, and emotional changes that make adolescence an especially vulnerable period of life. Memory is the mental faculty that enables one to retain and recall previously experienced Sensations, Impressions, Information and Ideas.

In Patanjali's eight limbs of Yoga, meditation is the seventh limb. In meditative state, the mind remains continuously focused on a particular object, it may be an image, own deity, guru, or own self (sagun Meditation) or an abstract idea (Nirgun Meditation) There is now strong evidence that we can raise our intellectual capacity-and that meditation may be one of the most efficient way of doing that. Scientific studies have shown that Meditation improves the concentration and enhance one's memory.

Prakṛti of an individual is due to the dominance of one or more humours and attributes of individual the characteristics of that particular humours is slightly more predominance than the others. For example, the *pitta Prakṛti* individuals will be more sensitive to heat, sweat more and eat and drink more. The *vata Prakṛti* ones are more agile and swift in their movements. The *kapha Prakṛti* persons are slow and stable in their movements and are more tolerant than the previous two. In the mixed *Prakṛti*, the person may experience different attributes at different times.

Objectives of the study

1. To examine the effect of meditation on of the school students.
2. To examine the effect of meditation on of the school students as per *Prakṛti*”.

Selection of subject

For the purpose of the present study 292 school level boys from Central Hindu boys school Varanasi who were studying in class IX and had regular attendance in school were selected. Age of the subjects were between 13 to 15 years.

Subjects were divided into two equal groups by random sampling method. One of the Experimental Group (meditation group) and another was the control group.

Experimental Group - 146 Subjects were kept in experimental group who were undergoing meditation practices.

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Control Group - Remaining 146 volunteers were kept in control group. They only involved in their daily routine work/practices.)

Inclusion criteria

- Physically and mentally healthy students were included.
- Students who were interested in the study were included.
- Only those regular students who were studying in class 9th of the Varanasi city were included.

Exclusion criteria

- Physically and mentally challenged students were excluded.
- Students who were not studying in class 9th of the Varanasi city were excluded.
- Students who were suffering from any acute or chronic disease were excluded.

Research Design

- Experimental research design was adapted in this study to test the hypothesis framed and stated above.

Selection of Variables

Independent Variables

- Meditation (Om Chanting 30-45 minutes, for 12 Week).
- Prakṛti* (*Prakṛti* was assessed prepared by Dr. Kishor Patwardhan, modified by Dr. Piyush Kumar Tripathi).

Dependent Variables

- Memory (Immediate memory was measured by Immediate memory span test developed by M.C. Joshi).

Statistical methods

For achieving the purpose of the study Descriptive, Percentile, "Paired T- Test and ANCOVA were applied to test the significant changes in the variables. Non parametric tests (Bonferroni) were used according to the appropriateness of data, and an appropriate statistical test/ method was applied for inter and intra group comparison. The significant level was set 0.05.

Observations, Results and Discussion

Table 1: Group wise pre and post test comparison of subjects showing effect of meditation on memory

Groups	Memory Score		Within the group comparison Paired t- test
	Mean ± SD		
	Pre	Post	
Meditation Group (n=146)	5.10±0.90	5.28±0.88	t=10.165 p=0.000
Control Group (n =146)	5.09±1.02	5.11±1.00	t=1.399 p=0.164

Table No. 1 shows the mean value of memory in Meditation Group from pre to post interventions was 5.10 and 5.28 respectively. On applying paired t- test it was found statistically significant. (p=0.000).

Mean value of memory in Control Group from pre to post interventions was 5.09 and 5.11 respectively. On applying paired t- test, it was found statistically insignificant. (p=0.164).

Table 2: Pair wise group comparison of the subjects showing effect of meditation on memory

Ancova memory Pre Test: covariate, Group: Factor, post test: depended variables							
Group	Post Test marginal mean ± Standard error	Pair wise group comparison					
		SV	SS	Df	MMS	F	P
Meditation Group (N=146)	5.277 ±0.015	Memory Pre	250.385	1	250.385	7351.237	.000
Control Group (N=146)	5.117±0.015						
Pair wise group comparison	Meditation v/s control p- 0.000	Group	1.867	1	1.867	54.828	.000
		Error	9.843	289	.034		
		Corrected Total	262.420	291			

Table 2 shows between groups comparison of post memory applying ANCOVA taking pre value as a covariate and it was found statistically significant difference between groups

(F=54.828), (p=0.000). Further pair wise comparison of groups resulted significant (p=0.000) difference between meditation group and Control group.

Table 3: *Prakṛti* wise comparison of the subjects showing effect of meditation on memory

Groups	<i>Prakṛti</i>	Memory Score		Within the group comparison Paired t- test
		Mean ± SD		
		Pre	Post	
Meditation Group (N=20)	Vata (N=44)	5.01±0.93	5.17±0.94	t=5.600 p=0.000*
	Pitta(N=75)	5.10±0.91	5.29±0.89	t=8.340 p=0.000*
	Kapha(N=27)	5.26±0.81	5.42±0.72	t=3.097 p=0.005
Control Group (N=20)	Vata(N=57)	5.02±1.04	5.03±1.01	t=0.271 p=0.788
	Pitta (N=66)	5.07±1.00	5.09±1.01	t=1.528 p=0.131
	Kapha (N=23)	5.31±1.02	5.34±0.98	t=0.721 p=0.479

Table No. 3: Meditation Group-The mean value of Memory in meditation group at pre and post intervention was 5.01 and 5.17 in Vata *Prakṛti* 5.10 and 5.29 in Pitta *Prakṛti*, 5.26 and 5.42 in Kapha *Prakṛti* individual respectively. This mean was tested by paired t-test was found statistically significant in Vata *Prakṛti* (p=0.000), Pitta *Prakṛti* (p=0.000) and Kapha

Prakṛti (p=0.000) individuals respectively.

Control Group- The mean value of IQ test score in meditation group at pre and post intervention was 5.02 and 5.03 in Vata *Prakṛti*, 5.07 and 5.09 in Pitta *Prakṛti*, 5.31 and 5.34 in Kapha *Prakṛti* individuals respectively. This mean was tested by paired t-test was found statistically insignificant in Vata

Prakṛti (p-0.788), Pitta Prakṛti (p-0.131), Kapha Prakṛti (p-0.479) individuals respectively.

Discussion

In the light of findings our research work shows significant changes in the mean value of pre to post memory test in meditation group and also observed significant changes in between group comparison. *Prakṛti* wise pre to post test comparison in all three *Prakṛti* individuals shows significant changes in meditation group but no significant changes was found in control group.

Scientific studies have shown that Meditation improves the concentration and enhance one's memory. Similar result has been found in the yogic group and the control group this may again due to the fact that, the school children who were practicing yoga including meditation performed better in the memory test. Kauts A. Sharma N. (2012) [6] were conducted a study on "effect of yoga on concentration and memory in relation to stress". The main objective of the study was to assess the effect of yoga module on Concentration and Memory. The study started with 800 adolescent students; 159 high stress students and 142 low-stress students were selected on the basis of scores obtained through Stress Battery. Experimental group and control group were given pre-test to assess their concentration as well as short term memory. A yoga module consisting of yoga asanas, pranayama, meditation, prayer and a value orientation programme was administered on experimental group for 7 weeks. The experimental and control groups were post-tested for their performance in concentration and memory tests. The results shows that the students, who practiced yoga module yielded higher concentration levels and exhibited better short term memory

Conclusion

- After applying paired t-test Pre to Post intervention on memory score shows significant improvement in meditation group but there was no significant changes was found in control group among the school students.
- After applying ANCOVA Post intervention (Meditation training) on memory score, shows significant improvement in pair wise group comparison.
- *Prakṛti* wise comparison on memory score shows significant changes in vata, pitta and khapha *Prakṛti* individuals after Meditation training but there was no significant changes was found in control group among the school students.

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