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MIND - BODY INTERVENTION ON ACADEMIC PERFORMANCE AMONG SCHOOL CHILDREN

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ABSTRACT

Lower academic performance, stress and behavioural issues are common among school students, contributing to dropouts. In recent findings, yoga as a mind-body intervention has been found to improve performance. A quasi-experimental research design was used with 520 and 485 students in study and control group. The study's participants were given mind-body intervention including simple yoga postures, pranayama and meditation for 40 minutes per day for 12 weeks, while the control group performed regular physical exercises like running, jumping, cycling etc. The findings show that there was a substantial improvement in their average mathematical solving capacities (43.01 ± 8.19 and 67.23 ±11.27) and language learning capacities in pre and post-test respectively at $p<0.001$. There is also a significant relationship among BMI and academic performance of study group ($p<0.001$). The study concludes that the mind body intervention improves the academic performance of school children and recommends to adopt it in the regular school curriculum.

KEYWORDS

Academic performance, Mind body intervention and School children.

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INTRODUCTION

Increased academic, social and extracurricular demands trigger stress and anxiety in many school children today. Yoga as a mind body intervention has been shown to be successful in alleviating a broad range of emotional and psychological problems in adults, teenagers and children over the last four decades. Short-term meditation result in beneficial physiological improvements in brain function related to concentration, impulse control

and anxiety, according to a new Harvard University report. Tang *et al*, (2014) documented the effect of mindfulness exercises on the attention and test scores of a group of 208 students between the ages of 13 and 18 and concluded that brief mindfulness meditation is an valuable technique for improving cognition including academic performance[1].

The University of Massachusetts Center for Mindfulness proved that the children participated in the Mindfulness-Based Stress Reduction (MBSR) course showed *increased* grey *matter (hippocampus*) density of the brain which is responsible for cognition. Also part of the limbic network, the amygdale which is related to stress and anxiety, showed decreased grey matter density, while the control group showed no such decrease. In addition, during adolescence, the brain evolves rapidly during puberty, but these changes can also fall behind and be overshadowed and outstripped by the explosion of hormonal changes that occur at the same time. This combination of factors can lead to teenagers taking undue risks and making decisions based on emotion rather than rationality. Furthermore, poor academic performance has been associated with an increase in social and behavioral problems[2]. Hence, this study is aimed to evaluate the mind body intervention on academic performance of school children with the secondary objective to help them to reduce their weight and to control their impulses and make decisions that are not ruled by hormone-driven impulsivity.

MATERIAL AND METHODS

A quasi-experimental research design was used with randomly selected schools. The research included 520 students in the intervention group and 485 students in the control group with 12 years old. A pre-designed proforma was used to collect baseline data on demographic characteristics. The study's participants were given mind-body intervention including simple yoga postures, pranayama and meditation for 40 minutes per day for 12 weeks, while the control group performed regular physical exercises like running, jumping, cycling etc. Academic achievement was determined by the participants' results on mathematics and language learning abilities. The previous quarter assessment was used as baseline data. Institutional Ethical approval, consent from school authorities, parents and assent from children were taken before formal study.

RESULTS AND DISCUSSION

According to the present study results, after intervention, there was a substantial improvement in their average mathematical solving capacities (43.01±8.19 and 67.23±11.27) in pre and post-test respectively. The language learning capacities among school children also shown improvement in areas such as oral comprehension ($p<0.001$), hearing ($p<0.001$). Reading ($p<0.001$) and writing ($p<0.001$) (Table No.1). Our findings are consistent with previous findings that yoga can assist enhance learning, self-esteem, anxiety, melancholy, aggression, impulsiveness, shyness and other negative emotions in teenagers[3,4]. These findings are similar to those obtained through the use of physical education (exercise) and activity, which have shown gains in self-esteem, performance and learning on the part of students.

Regarding the relationship among BMI and academic performance of study group in study periods shows a significant positive correlation at $p = 0.000$ level (Table No.2), which proves that BMI is strongly correlated with academic performance and recommends to adopt this intervention in the school curriculum to reap the physical, mental, social, behavioural and academic benefits of mind - body intervention. There are similar findings which concludes that a brief mindfulness meditation is an effective technique for improving cognitive function, including academic performance[1,5].

There is also similar findings from the study by Khalsa S B *et al*, (2012) which concluded that the mind body intervention could have brought about a decrease in stress, improved memory, attention span and learning[6].

Table No.1: Language learning abilities following yoga intervention

S.No	Learning Abilities	Pre- Intervention	Post- Intervention
1	Oral	2.63± 0.82	3.25 ± 0.68
2	Listening	2.73± 0.76	3.43± 0.59
3	Reading	1.82 ± 0.93	2.59 ± 0.23
4	Writing	1.97± 0.54	2.56 ± 0.71

Table No.2: Relationship among BMI and academic performance

S.No	Study Periods	Correlation variables	Study Group		Control group	
			r - value	p – value	r - value	p – value
1	Pretest	BMI and Academic Performance	-0.043	0.593	-0.102	0.381
2	Posttest	BMI and Academic Performance	-0.078	0.319	-0.17	0.095

CONCLUSION

The findings of this study indicate that brief mind body intervention is a useful tool to improve the academic performance among school children. The findings also imply that teaching yoga in schools is a viable alternative that can be incorporated into regular physical education classes. To validate this intervention, more long term, randomized controlled studies are needed.

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DECLARATION OF CONFLICTING INTEREST

The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

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