



IMPLICATIONS OF YOGA ON EXAM ANXIETY

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In India, 193.56 million children are in the age group of 6 to 13 years. 8.15 million kids are staying out of school. (UNESCO & UIS, 2014) Exam anxiety and fear of school is still tops the chart in preventing the children in being regular with school. Anxiety catches students the most when children are at a tender age caught up in the teenage hormonal rush and going through an identity crisis becoming a young adult. Exams pose a tough challenge ahead of these school kids who need nurturing in handling school life.

Be it school reopening day or an exam day, it has always been a stress factor for a school child. The books, classwork, homework, peer pressure, and performance pressure are just a few examples of the many events that build into exam anxiety.

It is a known fact that some amount of stress or trigger is essential for performance. A significant source of concern for every schoolchild is the exam, preparing for exams, approaching the exam, writing the exams themselves, and waiting for marks mixed with family and peers' reaction for the mark.

Exam stress can lead to heightened anxiety resulting in failure or loss of interest to attempt an exam. (Gini & Espelage, 2014) Exam stress can lead to heightened anxiety resulting in failure or loss of interest to attempt an exam. The fear of failure has pushed some students to take the extreme step of committing suicide. (Gini & Espelage, 2014)

Stress during the learning phase hampers the long-term memory process and the ability to retrieve the information. Exam stress could lead the children towards learning challenges such as difficulty in attention, remembering, recalling, memory and underperformance in exams. (Vogel & Schwabe, 2016) (Telles et al., 1993)

For centuries together, parents and schools are continually searching to find a solution to help students perform better. One such solution is to praise the children when they perform well can have paradoxical effects on subsequent performance. Yoga has proved in many studies offering physical, cognitive, emotional, memory, attention, and mindfulness benefits.

The intervention of yoga, encompassing *asanas, pranayama, pratyahara, Dharana, and dhyana*, appears to help children overcome stress and anxiety (Nanthakumar, 2018). Yoga increases flexibility increases muscle strength, tones the muscle, improves respiration, energy, and vitality, helps maintain a balanced metabolism, helps in weight reduction, improves cardio and circulatory health (Nagendra & Pradhan, 2010). Mindfulness is the essential human capacity to be aware of something by sensing and feelings at that moment without judging the situation. The intervention of care is yet another popular method among school children is fast becoming a viable and compelling method to bring about a solution for disorders among children. Mindfulness as a technique practiced after yoga sessions have positively impacted the school children to handle their stress and anxiety caused due to school and exam. (Greenberg & Harris, 2012a)

Sometimes, the fear of failure has pushed large number of some school children towards suicide attempt. (Gini & Espelage, 2014). According to 2018 NCRB data, teenage death reported has raised to 10,159 from 9905 in 2017. Considering seriousness of school children exam anxiety impact the present study focuses on bringing out the impact of yoga and mindfulness on exam anxiety and stress among school children filling in the research gap. The research includes seated mindfulness sessions along with asanas and exercises for breathing (Nagendra & Pradhan, 2010)

Methods

The pre and post study design of this research aims at studying pre and post impact analysis of yoga on school anxiety and test anxiety among 14 to 15 years old School children from RA. Gita School, Delhi in India.

Participants

A group of 80 male and female students participated in the study from RA. Gita School, Delhi, India, in the age group of 13 to 15 years. For one-month yoga intervention, the study had 40 Students participating in yoga intervention and 40 students in the control group.

The intervention

The yoga group received thirty days of yoga intervention. The intervention module includes standing, sitting, prone, and supine category asanas and meditative and relaxation postures. The intervention also had breathing awareness and deep relaxation technique (DRT), a guided affirmation.

At the same time control group was engaged in normal day-to-day activities.

Procedure to Collect Data and Measure Exam Anxiety Levels

The study used a test anxiety questionnaire to test students' anxiety levels (Suinn, 1969). To test the students' assessment level, the researcher used Digit Letters Substitution Test (DLST)(Natu & Agarwal, 1997). Wechsler memory scale (WMS- IV) helped in assessing the cognitive function test. The study also had a Mindfulness care 8-thing scale to quantify a basic normal for dispositional care, viz., open or responsive consciousness and consideration regarding what is occurring in the present. The extracted data was tabulated and analyzed using R-studio for results.

Statistical analysis

The study used the Shapiro Wilcoxon test to check the normality of baseline data. Data that met the normal distribution were analyzed using repeated measures of ANOVA. For multiple comparisons, Bonferroni Adjustment were used. For few variables that did not get normally distributed are digitally forward and digitally backward. Wilcoxon's sign rank test for within and Mann Whitney U test for between-group analysis was such a nonparametric test. Finally, for Anxiety scores, data were significantly different in the baseline itself, so the baseline correction was done using analysis of covariance (ANCOVA)

Result

Mindfulness was studied by the 2x2 (Groups x States) repeated measures ANOVA for Mindfulness, $F(1, 79) = 0.665$, $p > 0.05$, $\eta^2 = 0.008$ had no main significant effect on states. However, there was statistically significant interaction effect in State x Group, $F(1, 79) = 5.42$, $p < 0.05$, $\eta^2 = 0.064$. *Post hoc* multiple comparisons were made using Bonferroni adjustment, which showed statistically significant improvement in mindfulness of the yoga group but not in the control group.

Digit letter substitution test (DLST) was studied by the 2x2 (Groups x States) repeated measures ANOVA for Digit substitution test $F(1, 79) = 0.665$, $p < 0.01$, $\eta^2 = 0.086$ had main difference effect on states however statistically not significant. There was statistically significant interaction effect in State x Group, $F(1, 79) = 25.171$, $p > 0.05$, $\eta^2 = 0.002$. *Post hoc* multiple comparisons were made using Bonferroni adjustment, which showed statistically significant improvement in DLST of the Yoga group but not in the control group. However, there was an improvement in the yoga group also statistically significant.

Results of the ANCOVA found that the magnitude of increase in the test-anxiety score in the yoga group was significantly lower compared to the control group $F(1, 78) = 56.936$, $p < 0.001$, partial $\eta^2 = 0.422$.

Post hoc multiple comparisons were made using paired t-test, which showed statistically significant improvement in test-anxiety of control group $p < 0.001$ but not in the yoga group.

Discussion

Almost every student before board exams experiences exam anxiety. At the same time, mild fear is useful for students to keep themselves up with the task at hand. Stress and anxiety are primarily associated with poor performance and self-image.

Peer pressure, parents pressure, family pressure, and performance pressure are some of the factors which contribute to anxiety. Parents expect more in achievement, and peer comparison is a natural outcome. Want of control over study hour controls and being supportive also adds pressure on the children who think differently from an adult. (Rao & Subba Publisher, 2008)

In India, a child's life is defined based on the school grades; especially the board exam plays a crucial role in making a child's career. A child well organized in approaching the school and exam does not experience stress/anxiety. Being prepared for exams gives an extra advantage in performing well in their school and exam. In Tamil Nadu, the percentage of female students completing 10 and 12 grades is much higher than male students. The study also shows that male students undergo higher anxiety compared to female students. (Rao & Subba Publisher, 2008)

In this study, we have studied the exam anxiety level among school children in Delhi, using a test anxiety questionnaire to assess the anxiety level and to assess the cognitive function. The study used Digit Letters Substitution Test (DLST).

The current study shows better beneficial effects on examination anxiety and memory. The result obtained from the current study had a positive correlation is found between exams and high anxiety. Factors affecting student performance are a quest for various stakeholders, who are keen to find a solution for the burning issue among children.

A recent study on school children with asana, pranayama, and meditation intervention effectively helped children cope with stress and anxiety (Nanthakumar, 2018). In the current study yoga-based intervention established a positive impact on school children's exam anxiety, mindfulness, attention, and memory status. The balancing postures are helpful to relax the brain, stabilize the mind and help to concentrate. The inverted poses nourish the brain with increased brain circulation and supply oxygen to the cells and improve memory. Asana helps activate the energy channel in our body, thereby empowering the body within. During asana practice, breath awareness and stabilization in the posture profoundly nurture the children's personality.

Meditation studies have shown positive effect on mindfulness and memory. The guided meditation helpful in channelize the mind and thoughts. Meditations techniques are to train the mind to be remaining tranquilize state.

The results of the within and between group comparison have significantly more improved in yoga group than control group because yoga balances the psychological factor and physiological strength, stamina, endurance, posture stability

Yoga-based group students have shown better confront in exam anxiety, enhance mindfulness, attention, and memory. The percentage improvement on exam anxiety at 3.02%, mindfulness at 8.29%, and memory at 19.04% respectively.

Improvement in test-anxiety score in yoga group was significantly lower compared to control group $F(1, 78) = 56.936, p < 0.001, \text{partial } \eta^2 = 0.422$. The study also found statistically significant interaction effect in State x Group, $F(1, 79) = 5.42, p < 0.05, \eta^2 = 0.064$.

Study Limitation

The current study is unique to observe the impact of ancient science and technique for a persisting issue such as exam anxiety. Nevertheless it is recommended, that this pilot study has potential to grow into a full fledged study which could open up new understanding about the new age school children and new type of challenges that are part of their new age childhood.

Conclusion

This study has shown that every school-going child facing exams in the age group of 14 and 15 faces the challenges of exam anxiety. The prevalence of high anxiety among school children implies that it is high time we provide students a new way to overcome exam and school anxiety.

The current study uses time-tested yogic science as an intervention to tackle exam anxiety. Yoga and mindfulness meditation intervention positively affect examination anxiety, mindfulness (awareness), attention, and memory in school children. Yoga-based participants have shown better confront in exam anxiety and enhance mindfulness, concentration, and memory. School-going children can use yoga practices to perform better in academics and attain joyful learning.

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