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A study to assess the effect of autogenic training on reducing academic stress among High School Students at Alchemy Public School in Coimbatore.

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Abstract:

Introduction: Stress in academics is a significant issue among students in high schools and may cause harm to their academic life and wellbeing. **Aim:** The current research was done to determine the efficiency of autogenic training to alleviate academic stress among high school students in Alchemy Public School, Coimbatore. **Methodology:** The study used a quantitative evaluative research design with quasi-experimental pretest-posttest control group design. An experimental group (n = 30) and a control group (n = 30) comprising 60 students aged 11- 15 years were selected through non-probability convenient sampling method. Structured questionnaire including demographic variables and Kim Academic Stress Scale was used to collect the data. The experimental group was undergoing a four-week autogenic training and the control group underwent no intervention. Academic stress levels of both groups were measured using pretest and posttest. **Results:** The results showed that the academic stress in the study population in the experimental group decreased significantly ($t = 7.884$, $p < 0.001$), but no significant change was seen in the control group ($t = 1.925$, $p > 0.05$). Demographic variables were analyzed and it was found that family income per month was significantly related to the levels of posttest academic stress, with the other variables not having any significant relationships. **Conclusion:** The researchers came up with the conclusion that autogenic training is a feasible, non-invasive, and simple approach of alleviating academic stress in high school students. It may be included into the school health programs to advance the mental health and academic achievement of students. More investigations using greater sample sizes and situations should be conducted in order to support the evidence and improve the generalizability of the results.

Keywords: Stress, Academic, Autogenic training

INTRODUCTION

Health is one of the basic human rights and positive resources that can be used in everyday life, it is associated with physical, mental, emotional, intellectual, and social health (Tedros 2014). Good mental health also makes people able to manage regular stress and have a balance with the surrounding world. Students are the future of the state, and their childhood is very impressionable and challenging with references to the academic and personal stresses (John Dewey, 2016). Student life, despite being a good one, has its set of stressful factors, which include workload and academic commitments.

Stress is normal aspect of life that affects normal physiological and psychological functioning (Rajiv Desai, 2011). The academic burden, interpersonal and environmental problems are becoming more stressful factors among college and school students (Veitch and Arkkeelin, 2018). The following are considered major causes of stress bad time management, lack of understanding of expectations, and heavy rain of responsibilities (Goldberg, 2019). Long-term stress can cause depression and low school performance (Busari, 2021). The general adaptation syndrome as proposed by Selye has three stages of stress reactions namely the alarm

resistance, and exhaustion, which have severe health-threatening health effects when sustained.

Autogenic training is an efficient and an ultimate in relaxation methodology that assists in the regulation of the autonomic nervous system and also lessen stress (Linden, 2021; Kanji, 2014). It stimulates mental and physical relaxation, emotional consistency and esteem. Research has revealed that frequent autogenic training is very effective in alleviating stress in students (Mufamatsix et al., 2019). It entails six mental activities, which are on heaviness, warmth, breathing, heart rate, abdomen, and forehead to cause relaxation.

Yoga, guided meditation, and techniques like progressive muscle relaxation are some of the stress management methods that enhance capacity to cope with stress, emotional stability, and well-being (Woodyard, 2011; Corliss, 2014). The methods aid in restoring physiological balance and preclude stress-related disorders (Robinson, 2023). On the whole, relaxation techniques and autogenic training should be considered crucial in the prevention of academic stress and bipolarity among students to enhance mental health.

Need for the study

High expectations, fear of bad performance, parental demands, competition, and heavy workloads have caused academic pressure to the students. The pressures can result in anxiety, burnout, depression, and other emotional issues. Yet, the effect of stress responses on people is not the same, and not every student is affected similarly.

One of the problems that can adversely affect the physical and psychological well-being is academic stress which will sometimes lead to psychosomatic illnesses. Studies have indicated that many students are stressed and the level of stress is usually reported to be higher in women students.

Symptoms that are associated with stress are headaches, tension in the muscles, tiredness, appetite, irritability and nervousness. The fact is that many psychological issues among students are not diagnosed and treated, resulting in academic and personal problems in the long term.

Well-being relies on stress management. My practice of regular exercise, mindfulness, meditation, and relaxation methods can help to improve mood, increase immunity, and improve emotional stability. Autogenic training is a form of self-regulation, whereby self-suggestions are verbal and used to regulate body functions, breathing rate, heart rate and blood pressure to induce deep relaxation and decrease stress.

Research has indicated multimodal therapy, such as autogenic training, mindfulness and cognitive-behavioral methods are effective in lowering stress in students. As academic stress is prevalent in different fields, then there is high demand to have structured stress management programs. It is based on such challenges that the researcher decided to investigate the efficiency of autogenic training in assisting students to manage academic pressures.

AIM OF THE STUDY

The study aimed to assess the effect of autogenic training on reducing academic stress among High School Students at Alchemy Public School in Coimbatore.

METHODOLOGY

The effective use of the autogenic training in reducing academic stress of high school students was evaluated through a quantitative evaluative research approach. The study had a quasi-experimental pretest-posttest control group design. The study was done in Alchemy Public School, Coimbatore. The study population was students which were between the ages of 11 and 15 years. A non-probability convenient sampling method was used to select 60 students of which 30 students were placed under the experimental group and the other 30 students under the control group. Autogenic training was taken as an independent variable and academic stress was used as a dependent variable. Demographic indicators involved age, sex, grade, religion, residence, level of parental education, family income, occupation, family type and siblings.

Tools

The structured questionnaire with two segments was used to collect data. Part A contained a demographic proforma to get the data about age, gender, grade, religion, residence, parental education, income, occupation, family type, and number of siblings. Section B was comprised of Kim Academic Stress Scale which is a standardized 40-item rating scale created by Kim in 1970. The scoring was done on a five-point scale of 0 (No Stress) to 4(Extreme Stress) with a maximum possible result of 160 points. The more the scores, the more the academic stress. The instrument was tested among the professionals of the field of pediatric nursing and the field of pediatrics, and its reliability was tested through inter-rater approach.

Intervention

The experiment group underwent autogenic training of a four-week duration. The training was done using audio instructions and demonstration by the investigator. The treatment was on relaxation of the various parts of the

body such as the arms, shoulders, back, legs, feet and the entire body. The sessions were about 20 minutes and conducted in a systematic order and comprised of self-suggestion and relaxation activities. The control group was left to do nothing in the course of study.

Data Collection Procedure

The school authorities and ethical committee have been consulted and the data collection has been initiated after taking their permission. The researcher informed the learners and their parents about the nature and the aim of the study and oral consent was taken. Sixty students that passed the inclusion criteria were chosen and grouped into experimental and control groups. The Kim Academic Stress Scale was used as a pretest on both groups. After this, the experimental group was subjected to autogenic training during four weeks. A posttest was administered to both groups after the intervention was done using the same scale. The privacy and confidentiality of the participants were ensured during the study.

Statistical Analysis

The statistical analysis of the collected data was performed with the help of descriptive and inferential statistics. Frequency, percent, mean, and standard deviation were the descriptive statistics applied to summarize the demographic variables and academic stress scores. The paired t-test was used as an inferential statistic to compare the pretest and posttest result in the experimental group, the independent t -test was used to compare the posttest academic stress result in experimental and control groups, and the chi-square test was used to identify the relationship between demographic characteristics and posttest academic stress levels. A p-value of below 0.05 was regarded as statistically significant.

RESULTS

Demographic variables

Table 1 revealed that most students in both groups were aged 15 years (26.7% experimental, 33.3% control), and females formed the majority (53.3% and 56.7%). Most students were studying in the 10th standard (26.7% and 33.3%). Half of the students were Christians (50.0%), and most belonged to urban areas (66.7% and 60.0%). Most fathers were undergraduates (40.0% and 33.3%), and most mothers had undergraduate or higher secondary education (80.0% in both groups). The majority of families belonged to the ₹30,001–40,000 income group in the experimental group (46.7%) and ₹20,001–30,000 in the control group (40.0%). More than half of the experimental group (53.3%) and nearly half of the control group (46.7%) had three family members. Fathers were mainly professionals in the experimental group (40.0%) and miscellaneous workers in the control group (46.7%). Nuclear families were common in the experimental group (46.6%), while joint families predominated in the control group (53.4%). Overall, both groups were demographically comparable.

Comparison of pretest and posttest academic stress scores

The findings showed that in the experimental group, the mean academic stress score significantly decreased from 109.23 ± 39.96 in the pretest to 77.70 ± 35.44 in the posttest, with a mean difference of 31.53, which was statistically significant ($t = 7.884$, $p = 0.0001$). In contrast, the control group showed no significant change, with mean scores of 106.36 ± 34.08 in the pretest and 105.80 ± 33.82 in the posttest ($t = 1.925$, $p = 0.064$). (Table 2)

Comparison between the experimental and control groups revealed no significant difference in pretest scores ($t = 0.299$, $p = 0.766$), indicating baseline similarity. However, a significant difference was observed in posttest scores, with the experimental group showing lower stress levels than the control group ($t = 3.142$, $p = 0.003$). These results indicate that autogenic training was effective in reducing academic stress among high school students. (Table 3)

The table 4 reveals that monthly family income showed a statistically significant association with posttest academic stress among high school students in the experimental group ($p < 0.05$). All other demographic variables such as age, gender, grade, religion, residence, parental education, family type, occupation, and number of siblings showed no significant association with posttest academic stress.

DISCUSSION

The findings of the study indicated that autogenic training could be used to alleviate academic stress in high school students who belong to the experimental group. It was found that the posttest mean stress score was significantly lower than the pretest score ($t = 7.884$, $p < 0.001$), which proved the beneficial effect of the intervention. Conversely, the control group did not reveal any significant difference in pretest and posttest scores ($t = 1.925$, $p > 0.05$), which indicates that the decrease in the level of stress was as a result of the autogenic training. In addition, correlation analysis between posttest stress in academic life and demographic factors revealed that there was a significant correlation between stress levels and monthly family income ($p < 0.05$).

Table 1: Demographic variables of high school students in the experimental and control group. N=60

Demographic Variables	Category	Experimental Group (n=30) F	%	Control Group (n=30) F	%
Age (Years)	11	4	13.3	6	20.0
	12	6	20.0	8	26.7
	13	5	16.7	4	13.3
	14	7	23.3	2	6.7
	15	8	26.7	10	33.3
Gender	Male	14	46.7	13	43.3
	Female	16	53.3	17	56.7
Grade	6th	4	13.3	6	20.0
	7th	6	20.0	8	26.7
	8th	5	16.7	4	13.3
	9th	7	23.3	2	6.7
	10th	8	26.7	10	33.3
Religion	Hindu	10	33.3	12	40.0
	Muslim	5	16.7	3	10.0
	Christian	15	50.0	15	50.0
Residence	Rural	10	33.3	12	40.0
	Urban	20	66.7	18	60.0
Father's Education	Illiterate	4	13.3	3	10.0
	Primary	0	0.0	2	6.7
	Secondary	6	20.0	4	13.3
	Higher Secondary	5	16.7	6	20.0
	Undergraduate	12	40.0	10	33.3
	Postgraduate	3	10.0	5	16.7
Mother's Education	Illiterate	6	20.0	6	20.0
	Secondary	0	0.0	2	6.7
	Higher Secondary	10	33.3	12	40.0
	Undergraduate	14	46.7	10	33.3
Monthly Income (₹)	20,001–30,000	7	23.3	12	40.0
	30,001–40,000	14	46.7	7	23.3
	≥40,001	9	30.0	11	36.7
Family Members	3	16	53.3	14	46.7
	4	10	33.3	12	40.0
	Above 4	4	13.3	4	13.3
Father's Occupation	Professional	12	40.0	8	26.7
	Self-employed	8	26.7	4	13.3
	Unemployed	2	6.6	4	13.3
	Miscellaneous	8	26.7	14	46.7
Mother's Occupation	Professional	10	33.3	6	20.0
	Self-employed	4	13.4	10	33.3
	Unemployed	6	20.0	5	16.7
	Miscellaneous	10	33.3	9	30.0
Type of Family	Nuclear	14	46.6	10	33.3
	Joint	8	26.7	16	53.4
	Extended	8	26.7	4	13.3
No. of Siblings	Nil	6	20.0	4	13.3
	1–2	8	26.7	12	40.0
	≥3	16	53.3	14	46.7

Table 2: Effectiveness of Autogenic Training on Academic Stress among High School Students in Experimental and Control Groups

Group	Test	Mean	S.D	Mean Difference	Paired t-value	p-value	Significance
Experimental (n = 30)	Pretest	109.23	39.96	31.53	7.884	0.0001	S***
	Posttest	77.70	35.44				
Control (n = 30)	Pretest	106.36	34.08	0.56	1.925	0.064	N.S
	Posttest	105.80	33.82				

**p<0.01, S – Significant, N.S – Not Significant

Table 3: Comparison of pretest and posttest academic stress scores among high school students between the experimental and control group.

Academic Stress	Experimental Group (n=30)		Control Group (n=30)		Mean Difference Score	Student Independent 't' test & p-value
	Mean	S.D	Mean	S.D		
Pretest	109.23	39.96	106.36	34.08	2.87	t=0.299 p=0.766, N.S
Post Test	77.70	35.44	105.80	33.82	28.10	t=3.142 p=0.003, S**

**p<0.01, S – Significant, N.S – Not Significant

Table 4: Association of posttest level of academic stress among high school students with their selected demographic variables in the experimental group.

Variable	χ^2 Value	df	p-value	Significance
Age	0.545	4	0.969	N.S
Gender	1.975	2	0.372	N.S
Grade	4.471	6	0.346	N.S
Religion	1.350	4	0.853	N.S
Residence	2.138	2	0.343	N.S
Father's Education	9.879	8	0.274	N.S
Mother's Education	3.086	4	0.544	N.S
Monthly Family Income	9.661	4	0.047	S*
Family Members	2.784	4	0.595	N.S
Father's Occupation	4.896	6	0.557	N.S
Mother's Occupation	6.417	6	0.378	N.S
Type of Family	8.942	4	0.063	N.S
Number of Siblings	6.234	4	0.182	N.S

CONCLUSION

The autogenic training was found effective method to reduce the level of academic stress among high school students. The findings of this study provided evidence that autogenic training sessions was effective in reducing the level of academic stress among high school students.

RECOMMENDATION

The study has recommendations that indicate that the same study can be done in future using a bigger sample size in order to enhance generalizability of the result. It is possible to conduct a correlational study that would help to investigate the connection between academic stress and its related aspects among schoolchildren. Moreover, comparative research can be conducted to measure and make a comparison of the academic stress of students in government and institutions and in private schools.

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