

Human Journals

Research Article

March 2022 Vol.:21, Issue:1

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Effectiveness of Expressive Writing Therapy in Reducing Test Anxiety among Adolescents



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Submitted: 21 February 2022

Accepted: 26 February 2022

Published: 30 March 2022



HUMAN JOURNALS

www.ijsrm.humanjournals.com

Keywords: Test anxiety, Expressive writing therapy, Adolescents

ABSTRACT

Background: Academic examinations and schoolwork are considered to be the most stressful events of an adolescent's life. A high level of anxiety is often experienced by students during these performance-related activities. **Aim:** The aim of the study was to "Evaluate the effectiveness of Expressive writing therapy in reducing test anxiety among adolescents. **Methodology:** A Quasi-Experimental design was adopted. The data was collected by using the Westside Test anxiety scale. By using the purposive sampling technique, 144 adolescents who scored 3.0 or above on the Westside Test anxiety scale were selected. The experimental group was instructed to write about their positive emotions which they felt every in a structured notebook prepared by the researcher for 20 minutes consecutively for 30 days. Similarly, the control group was asked to write about their daily activities for the same frequency and duration of time. **Results:** The results showed that the pre and post-test mean scores were statistically significant at the level of $P < 0.001$ within the experimental group and also when compared to the control group it was statistically significant at the level of $P < 0.001$. The post-test score within the experimental group was associated with selected demographic variables; which showed that statistically no significant association was found between any of the socio-demographic variables. **Conclusion:** The study concluded that Expressive writing therapy was very effective in reducing the level of test anxiety among adolescents in the experimental group when compared to the control group.

INTRODUCTION

Mental health problems can develop at any point in life and may be influenced by a variety of factors, including genetics or family history of a disorder, chemical imbalances in the brain, or stressors in the environment.^[1]

World Health Organization reported the increase in mental health problems such as depression, anxiety, and suicide rate may reflect the difficulties that some adolescents face as they encounter the cognitive, physical, psychological, and spiritual changes that accompany puberty. Epidemiological studies suggest that the comorbidity is much higher, thus suggesting an intimate connection between them where the presence of one increases the likelihood of the other occurring.^[2]

The educational standards of school children in India were primarily evaluated based on written examinations. The board exams have been the source of stress and anxiety for several students. In addition to the struggle to meet their own set values, today's students also have to satisfy the demand of their parents and society, which adds further stress and anxiety.^[3]

Test anxiety has been much researched in many countries, suggesting that this is a widespread problem in school and it occurs among students of all ages.^[4] Test anxiety is a form of academic stress that is characterized by a feeling of nervousness before or during an exam.^[5] Test anxiety is composed of two dimensions: worry and emotionality.^[6] Worry is the cognitive component of test anxiety reflecting debilitating thoughts and concerns, such as comparing self-performance to peers, considering the consequences of failure, low levels of confidence in performance, excessive worry over evaluation, causing sorrow for one's parents, or feeling unprepared for tests.^[7]

Expressive writing therapy is simple and not practiced often in our society. It is a healthier way to improve relationships. The writing would facilitate social interaction as well as improve positive moods and reduce tension and fatigue. Writing about emotionally difficult events or feelings for just 20 minutes at a time over four consecutive days was associated with both short-term increases in physiological arousal and long-term decreases in health problems, such as immune system functioning.^[8]

Gerardo R, Beilock S (2012) conducted research on American students in an experimental group to openly express their thoughts and feelings regarding math problems that they were about to perform. They noted a significant improvement in exam scores in the experimental group at a later assessment, and that the use of words related to anxiety, cause, and insight in their writing was positively related to math performance.^[9]

Expressive writing therapy will improve the immune system functioning, reduces blood pressure, improves lung function, improves liver function, improves mood and affect, improves the feeling of greater psychological well-being, reduces depressive symptoms before the examination.^[10]

Expressive writing therapy can be implemented easily and it is a non-invasive technique. A very limited study was conducted in Expressive writing therapy and especially in Puducherry, there were no such studies conducted on Expressive writing therapy. So, the researcher was interested to conduct a study on this topic.

OBJECTIVES OF THE STUDY

1. To assess the pre-test and post-test level of test anxiety among Adolescents in the experimental and control group in selected schools.
2. To evaluate the effectiveness of Expressive writing therapy on the level of test anxiety among Adolescents within the experimental group in selected schools.
3. To compare the effectiveness of Expressive writing therapy on the level of test anxiety between the experimental and control group.
4. To associate the post-test level of test anxiety among Adolescents with selected demographic variables in the experimental group.

MATERIALS AND METHODS

A Quasi-Experimental Design (pre and post-test with control group design) was adopted for the study. By using the purposive sampling technique, 144 adolescents who scored 3.0 or above on the Westside Test anxiety scale were selected and their socio-demographic profiles were obtained. Westside Test anxiety scale was a brief ten-item instrument designed to identify students with anxiety impairments. The score ranges from 1.0 – to 5.0. The interpretation of the

score is measured by the sum of the 10 questions divided by 10. Scores between 1.0 to 2.9 are within the normal range. Scores above 3.0 suggest a high level of test anxiety and they tend to benefit from test anxiety reduction intervention.

Adolescents who scored 3.0 or above on the Westside Test anxiety scale and who fulfilled the inclusion criteria were divided into experimental groups and control groups. The experimental group was instructed to write about their positive emotions which they felt every day in a structured notebook prepared by the researcher. The subjects were asked to write for 20 minutes consecutively for 30 days. Similarly, the control group was asked to write about their daily activities for the same frequency and duration of time.

The data were collected after obtaining permission from the concerned authority. Informed assent was obtained from all the parents, class teachers, and their school principals of the study subjects. Descriptive and Inferential statistics were used to analyze the data.

RESULTS

The study included 144 participants who scored 3.0 or above on the Westside test anxiety scale and who fulfilled inclusion criteria. Among 144 adolescents, 72 were in the experimental group and 72 were in the control group. In the experimental group, 59(82%) of the subjects were 17 years as compared to 57(79.1%) in the control. The majority 54(75%) of the subjects in experimental and 42(58.3%) of the subjects in the control group were males. The majority 35(48.7%) of the subjects in the experimental group and the control group 39(54.2%) were first children. A maximum number of the subjects 38(52.8%) in the experimental group and 65(90.3%) of the subjects in the control group belong to a rural area. In the control group, 72(100%) of the subjects had the Tamil language as their mother tongue as compared to 70(97.8%) subjects in the experimental group. The majority 62(86%) of the subjects in the experimental group and 64(88.9%) of the subjects in the control group were Hindus.

The majority 49(68%) of the subjects in the experimental group and 51(70.8%) in the control group belong to the Nuclear family. Regarding the education of father and mother, 23(31.9%) of the subjects in the experimental group and in the control group 22(30.5%) were educated up to Secondary education. Regarding the occupation of their parents, 44(61.1%) of the subjects in the experimental group and 53(73.6%) of the subjects in the control group were coolie. Around

44(61.1%) of the subjects in the experimental group and 40(55.6%) of the subjects in the control group were having family monthly income of Rs.6,000 – Rs 1,000. Almost 72(100%) of the subjects in the experimental and 72(100%) of the subjects in the control group have not undergone any writing therapy or mind-body-based therapies.

Table 1: Frequency and percentage distribution of Pre-test level of Test anxiety among Adolescents in Experimental and Control Group

(N = 144)

Level of test anxiety	Experimental group (n= 72)		Control group (n= 72)	
	pre-test		pre-test	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Moderately high	39	54.1	32	44.4
High test anxiety	26	36.1	30	41.7
Extremely high anxiety	07	09.8	10	13.9
TOTAL	72	100	72	100

The above table shows the pre-existing level of test anxiety among the experimental and control group. The majority of the subjects 39(54.1%) in the pre-test of the experimental group and 32(44.4%) in the control group had a moderately high level of test anxiety. Whereas 26 (36.1%) in the pre-test of the experimental group and 30(41.7%) in the control group had high test anxiety. But only 7(09.8%) of the subjects in the pre-test of experimental and 10(13.9%) in the control group had extremely high test anxiety.

Table 2: Frequency and percentage distribution of Post-test level of Test anxiety among Adolescents in Experimental and Control Group (N = 144)

LEVEL OF TEST ANXIETY	EXPERIMENTAL GROUP (N= 72)		CONTROL GROUP (N=72)	
	POST-TEST		POST-TEST	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Comfortably low test anxiety	9	12.5	0	0
Normal or average test anxiety	32	44.4	0	0
High normal test anxiety	31	43.1	0	0
Moderately high	0	0	48	66.7
High test anxiety	0	0	18	25
Extremely high anxiety	0	0	6	8.3

The above table shows the assessment of the post-test level of test anxiety in both the experimental and control group. The majority 32(44.4%) of the subjects in the post-test of the experimental group had a normal or average level of test anxiety and 48(66.7%) of the subjects in the post-test of the control group had moderately high test anxiety. Whereas 31(43.1) of the subjects in the experimental had a high normal level of test anxiety and 18(25%) of the subjects in the control group had a high level of test anxiety. But only 9(12.5%) of the subjects in the post-test of experimental had comfortably low test anxiety and 6(8.3%) of the subjects in the control group had extremely high test anxiety.

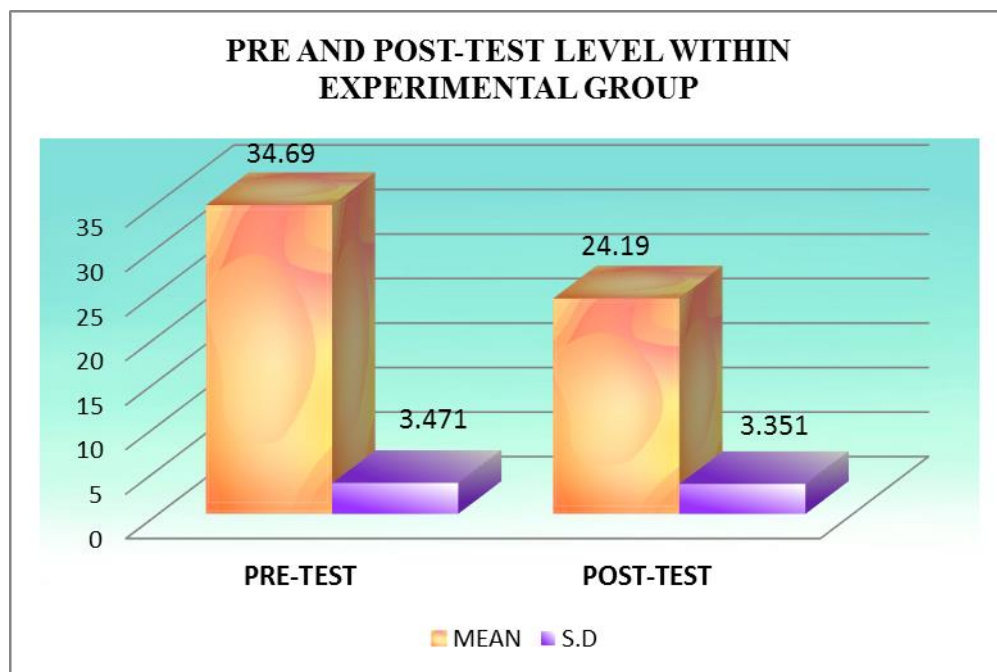
Table 3: Comparison of Pre and post-test level of Test anxiety among Adolescents within the Experimental Group

(N= 72)

Test anxiety score	Mean	Standard deviation	Paired 't-test	'p-value
Pre-test	34.69	3.471	41.579	<0.001 (s) **
Post-test	24.19	3.351		

Significant at P<0.001**

The above table depicts the comparison of pre and post-test scores of test anxiety among adolescents within the experimental group. The mean post-test score of test anxiety in the experimental group was (24.19) which was lower than the pre-test score (34.69) after giving one month of intervention. Paired “t” test results showed a significant difference between the two mean scores which was statistically proved to be significant at P < 0.001. Hence the study findings revealed that Expressive writing therapy was effective in reducing test anxiety among adolescents within the experimental group.



Mean and Standard deviation score of pre-test and post-test level of test anxiety among adolescents within the Experimental group

Table 4: Comparison of the post-test level of test anxiety among adolescents between the Experimental group and Control group

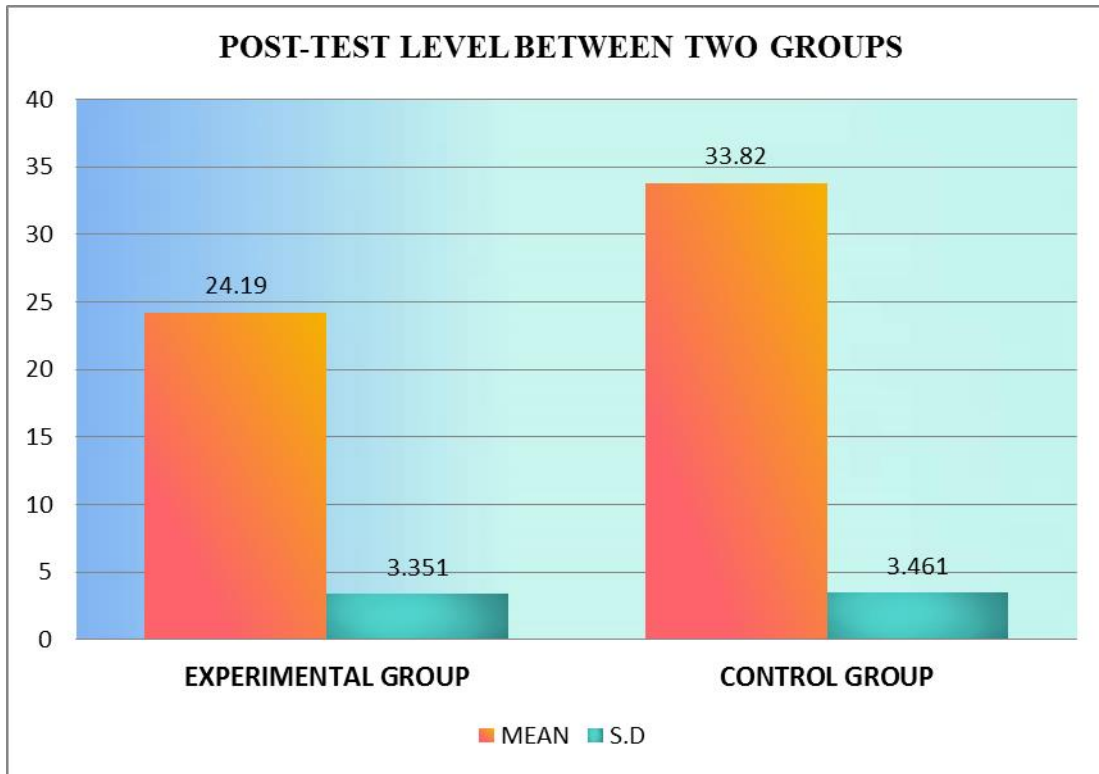
(N= 144)

Post-test	Mean	Standard deviation	'unpaired t' test	'p' value
Experimental group	24.19	3.351	- 16.952	<0.001 (s) **
Control group	33.82	3.461		

Significant at $P < 0.001^{**}$

The above table 2 predicts the mean value of test anxiety among the experimental group was 24.19 with a standard deviation of 3.351. The control group was 33.82 with a standard deviation of 3.461.

The unpaired ‘t’ test has been applied to evaluate the effectiveness of Expressive writing therapy in reducing test anxiety among adolescents. The calculated ‘t’ value was – 16.952 and shows that it was statistically significant at the level of $p < 0.001$, which clearly shows the effectiveness of Expressive writing therapy in reducing test anxiety among adolescents in the experimental group when compared to the control group.



Mean and Standard deviation score of pre-test and post-test level of test anxiety among adolescents between the Experimental group and Control group

Table 5: Association of the post-test level of test anxiety among adolescents with selected demographic variables within the Experimental group

(N =72)

DEMOGRAPHIC VARIABLES		Freq (n)	post				KW/ MW test	p-value
			Mean	SD	Percent ile 25	Percent ile 75		
AGE	16 years	13	22.85	2.23	21	24	3.0297	0.0818 (N.S)
	17 years	59	24.49	3.5	22	28		
GENDER	Male	54	24.13	3.45	21	28	0.0440	0.8339 (N.S)
	Female	18	24.39	3.13	22	27		
BIRTH ORDER	First child	24	23.58	3.76	20.5	27	3.9041	0.1420 (N.S)
	Second child	35	24.06	2.83	22	26		
	Third child	13	25.69	3.66	22	29		
PLACE OF LIVING	Urban	34	24.38	3.3	22	28	0.1674	0.6824 (N.S)
	Rural	38	24.03	3.43	21	27		
MOTHER TONGUE	Tamil	70	24.21	3.31	22	27	0.0429	0.8359 (N.S)
	Others	2	23.5	6.36	19	28		
RELIGION	Hindu	62	23.98	3.43	21	27	2.7989	0.2467 (N.S)
	Christian	9	25.89	2.37	24	28		
	Muslim	1	22	.	22	22		
FAMILY TYPE	Joint family	23	24.87	3.29	22	28	1.3085	0.2527 (N.S)
	Nuclear family	49	23.88	3.36	21	27		
EDUCATION OF FATHER	Primary education	10	23.6	3.72	20	27	1.9114	0.7521 (N.S)
	Secondary education	23	24.22	3.16	22	27		
	Higher	20	23.7	3.39	20.5	26		

	secondary							
	Graduate	4	25.25	3.4	22.5	28		
	No formal education	15	24.93	3.58	23	28		
EDUCATION OF MOTHER	Primary education	17	24.24	3.29	22	26	1.8332	0.7664 (N.S)
	Secondary education	21	23.67	3.09	22	27		
	Higher secondary	14	25	3.57	22	28		
	Graduate	4	25	4.08	21.5	28.5		
	No formal education	16	23.94	3.64	20.5	27.5		
OCCUPATION OF FATHER	Government employee	1	25	1.53	25	25	3.8664	0.4244 (N.S)
	Private employee	7	24	1.53	23	24		
	Self-employee	17	24.82	2.96	24	27		
	Coolie	44	23.77	3.7	20.5	28		
	Unemployed	3	27	2.65	24	29		
OCCUPATION OF MOTHER	Government employee	1	19	1.91	19	19	8.3156	0.0807 (N.S)
	Private employee	4	22.5	1.91	21	24		
	Self-employee	11	25.91	2.55	24	28		
	Coolie	22	23.23	3.29	20	25		
	Unemployed	34	24.62	3.46	22	28		

	d							
MONTHLY FAMILY INCOME	Rs. 1000 – Rs. 5000	8	25	3.42	22	28	2.0029	0.3673 (N.S)
	Rs. 6000 – Rs. 9000	44	23.75	3.35	21	26.5		
	> Rs. 10000	20	24.85	3.33	23.5	27.5		

From the above table, it is evident that statistically there was no significant association were found in the post-test level of test anxiety among adolescents with selected demographic variables within the Experimental group.

DISCUSSION

The purpose of this study was to evaluate the effectiveness of expressive writing therapy in reducing test anxiety among adolescents at selected schools, Puducherry. The study was conducted among 144 adolescents who scored 3.0 or above on the Westside test anxiety scale. The pre-test result revealed that in the experimental group, the majority 39(54.1%) of the participants and 32(44.4%) in the control group had a moderately high level of test anxiety.

The present study findings were supported by **Mary R, Marslin G, Franklin G, Sheeba C** conducted a study to analyze the level of test anxiety among board exam attending school students in Tamilnadu. The result showed that boys are having higher anxiety levels than the girls, among whom 8% of boys had severe anxiety, 38% recorded moderate anxiety, and 4% had mild anxiety. The significance of the difference between the mean value of male and female students was calculated by independent sample *t*-test ((98) = 5.736) and the existing difference was found to be statistically significant ($P = 0.000$).^[11]

The paired ‘t’ test has been applied to compare the effectiveness of Expressive writing therapy in reducing the level of test anxiety among adolescents. The calculated ‘t’ value of 41.579 shows that it was statistically significant at the level of $p < 0.001$, The findings of the study were supported by **Shen L et al.**, The results revealed that Senior-high-school students indicated moderate to high test anxiety and also there was a significant difference in post-test results ($P < 0.001$), with the experimental group scoring obviously lower than the control group.^[12]

The unpaired 't' test has been applied to evaluate the effectiveness of Expressive writing therapy in reducing test anxiety among adolescents between the experimental group and control group. The calculated t value was -16.952. It shows that it was statistically significant at the level of $p < 0.00$, which clearly shows the effectiveness of Expressive writing therapy in reducing the level of test anxiety among adolescents in the experimental group when compared to the control group.

The findings of the study were supported by **Chole A, Javdani S** conducted a pilot study on how expressive writing intervention promotes resilience among 51 juvenile justice youths who were under short-term detention were taken for the study by convenience sampling method. The result indicated that the interventions were delivered with good fidelity, participants reported high levels of satisfaction, and write on participants exhibited significant ($P < 0.01$) gains in resilience compared to their counterparts.^[13]

The present study revealed that in the experimental group, there was no significant relationship between any of the sociodemographic variables with the post-test level of test anxiety. The findings of the study were supported by **Oladipo S.**, The findings revealed that the study does not have a significant correlation with any of the variables in the study. This study concluded that other variables apart from demographics may account for test anxiety among undergraduates in Nigeria.^[14]

CONCLUSION:

From this study, it is evident that Expressive writing therapy was very effective in reducing the level of test anxiety among adolescents. It can be implemented easily and is also a cost-effective technique for all age groups.

Recommendations

- A similar study can be done among college students for the improvement of academic performances.
- Intervention techniques can be compared with other alternative methods.
- A study can be conducted to develop tools and tested in different cultural contexts.

- A correlational study could also be included to find the relationship between the socio-demographic variables and level of test anxiety.

Financial support and sponsorships

Nil.

Conflicts of interest

There are no conflicts of interest.

ACKNOWLEDGEMENT

The author would like to thank his Guide, Principal, and Dean of MTPG & RIHS and also extends his thanks to the Director of School Education Puducherry and Principals of the selected schools for providing permission and timely help for conducting the study.

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