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Efficacy of progressive relaxation training on anxiety of adolescents

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Abstract
Introduction: Anxiety is a usual human emotion; everyone feels uneasy or worried at times. Anxiety rouses you to action. It gears you up to face a threatening situation. And it needs to be recognized that whether an event is perceived to be significant stressful depends on an individual's ability to cope with stress and interpretation of the event as stressful. Everyone go through various phases of stress period in his life. Often, adolescents suffer a unique pattern of stressful conditions of anxiety. Adolescence is a developmental period characterized by maturation across multiple domains. One of area is relaxation methods, by which the tension and anxiety level could be reduced; will power and various other psychological improvements can be brought. Progressive Relaxation Training is a remarkable way to conquer and overcome stress, anxiety and various other psychological factors that affect the well-being of any adolescent. In 1930 Edmund Jacobson trusted that if people can acquire to relax their muscle through an exact technique mental relaxation will follow. It includes straining and relaxing different voluntary muscle groups throughout the body in an arranged succession.
Methodology: An experimental design was selected to investigate the effect of Progressive Relaxation Training on the Anxiety of adolescents. A simple random group design was adopted for this study as it seemed the most appropriate one. The study was conducted on 60 male school adolescents of 16-19 years of age, studying in grades IX to XII. The subjects were divided into two groups namely, Experimental Group (N=30) and Control Group (N=30). The relaxation training program given to experimental group last for six (06) weeks comprising eighteen sessions total which includes three sessions per week on alternate days i.e. Monday, Wednesday and Friday. Each session was of 45 minutes for experimental group. However no relaxation technique was given to the control group. Significance of difference between pre-test and post-test was obtained by applying 't' test. Selected variable i.e. Anxiety (State & Trait) was selected for the study and State and Trait Anxiety Inventory constructed and standardized by Pal and Tiwari (1970) [13] was selected and used to measure Anxiety (State & Trait).
Results: Mean, Mean Difference, Standard Deviation and 't' value of the pre and post-test for experimental group was compared with the tabulated significant value at 0.05 level of confidence with 95 degree of freedom. The mean post test scores of EG and CG on Anxiety (State) was recorded as 51.87 and 54.33 respectively. And SD post-test scores of EG and CG were 4.10 and 3.71 respectively. There mean difference was -2.46 with t-value 2.4368. Whereas, the mean post test scores of EG and CG on Anxiety (Trait) was recorded as 58.87 and 60.33 respectively. And SD post-test scores of EG and CG were 3.14 and 2.67 respectively. There mean difference was -1.46 with t-value 1.9402. As per statistical analysis these differences was considered as significant in respect of Anxiety (State) but insignificant in the variable Anxiety (Trait).
Conclusion: On the bases of results, the hypothesis, 'Progressive Relaxation Training will have significant effect on the Anxiety of adolescents' is partially accepted. It implies that PRT has significant effect on the Anxiety (State) of the adolescent.

Keywords: Progressive relaxation training, anxiety, adolescence

Introduction

Anxiety is a usual human emotion; everyone feels uneasy or worried at times. Anxiety rouses you to action. It gears you up to face a threatening situation. And it needs to be recognized that whether an event is perceived to be significant stressful depends on an individual's ability to cope with stress and interpretation of the event as stressful. Everyone go through various phases of stress period in his life. (Olpin & Hesson, 2012) [12]
The word 'anxiety' usually refers to worry, concern, stress, nervousness, unease and difficulty amongst others. Anxiety is as an unpleasant, vague sense of apprehension, often accompanied

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by physical symptoms such as headache, perspiration, tightness in the chest, mild stomach discomfort, indicated by an inability to sit or stand still for long. Psychologists distinguish between two broad categories of anxiety: trait and state anxiety. (Sadock and Sadock, 2003) [15]

Anxiety is a complex emotional state characterized by general fear or foreboding usually accompanied by tension. It is related to apprehension of fear and is frequently associated with failure either real or anticipated. (Wilt & Revelle, 2010) [18]

Anxiety is a complex emotional state characterized by general fear or foreboding usually accompanied by tension. It is related to apprehension of fear and is frequently associated with failure either real or anticipated. Many people are predisposed towards becoming anxious. This state of anxiety is referred to as trait anxiety because the predisposition is part of the individual's inherent personality. When anxiety is created by a perception of threat - a sense that something bad is going to happen, it is referred to as state anxiety. It is a temporary state that passes once the threat has disappeared. (Edelman, 2006) [6]

Adolescents are in the face of life where they develop the ability to understand abstract ideas, such as developing moral philosophies, including rights and privileges. They also establish and maintain satisfying relationships by learning to share intimacy without feeling worried or inhibited. They start proceeding towards a more mature sense of themselves and their purpose. Furthermore, involve them in questioning old values without losing their own identity. The sudden and rapid physical changes that adolescents go through make adolescents very self-conscious, sensitive, and worried about their own body changes. During adolescence, it is normal for young people to begin to separate from their parents and establish their own identity. (Pressley & McCormick, 2007)

There are various factors that affect adolescents' level of psychological wellbeing and making him in anxious state. Several studies have shown that the quality of relationship within families, especially with parents is a major determining factor of psychological well-being in adolescents (Shek, 1997; Sastre & Ferriere, 2000; Van Wel, Linssen & Abma, 2000). Some other key factors that may contribute to a higher or lower level of psychological well-being in adolescents are stress (Siddique & D'Arcy, 1984) physical health (Mechanic & Hansell, 1987) [11] and both popularity and intimacy in peer relationships (Townsend, McCracken & Wilton, 1988). The importance of meaning in life and commitment to personal life satisfaction and psychological health has been well established (Erikson, 1982; Ledbetter, Smith & Vosler-Hunter, 1991; Ryff, 1989; Stephen, Fraser & Marcia, 1992) [6, 16].

Descriptions of the good life that emphasize happiness, pleasure, and satisfaction (more hedonistic and epicurean views) have been criticized by philosophers, using well known historical figures who experienced pleasure in their lives, but were so unjust, evil, or pointless in the pursuit of their lives as to preclude a description of being good. Alternatively, other historical figures led desolate lives in terms of personal well-being, but were nonetheless profoundly noble, creative, courageous and self-sacrificial. (Martin, 2012) [10]

Relaxation techniques (also called relaxation response techniques) may be used by some to release tension and to counteract the ill effects of stress and anxiety. Relaxation techniques are also used to induce sleep, reduce pain, and calm emotions. This fact sheet provides basic information about relaxation techniques, summarizes scientific research on effectiveness and safety, and suggests sources for additional

information. Relaxation techniques (also called relaxation response techniques) may be used by some to release tension and to counteract the ill effects of stress. Relaxation techniques are also used to induce sleep, reduce pain, and calm emotions. This fact sheet provides basic information about relaxation techniques, summarizes scientific research on effectiveness and safety, and suggests sources for additional information. (Davis, 2009) [3]

Researcher found in a study that training in deep muscular relaxation is common to most behavioral treatments for anxiety and tension-related disorders. (Taylor & Lee, 2002) [17]

Progressive Relaxation Training is a remarkable way to conquer and overcome stress, anxiety and various other psychological factors that affect the psychological state of any adolescent. In contrast to the stress response, the relaxation response slows the heart rate, lowers blood pressure, and decreases oxygen consumption and levels of stress hormones. Because relaxation is the opposite of stress, the theory is that voluntarily creating the relaxation response through regular use of relaxation techniques could counteract the negative effects of stress. (Payne & Donaghy, 2010) [14]

In 1930s Edmund Jacobson trusted that if people can acquire to relax their muscle through an exact technique mental relaxation will follow. It includes straining and relaxing different voluntary muscle groups throughout the body in an arranged succession. Overall, it develops and improves well-being state of any person. Progressive relaxation training benefits because of relationship between your muscle strain and your emotional strain. When you feel emotionally confused, you instinctively tense your muscles. The basic idea is to systematically train tensing and relaxing groups of muscles. Progressive Muscular Relaxation (PMR), is one of famous relaxation method, also known by Progressive Relaxation Training (PRT) is very effective relaxation technique which brings unique calmness and peace of body and mind.

Mind and emotions directly affect health and disease: a thought or emotion can manifest itself bodily; conversely, a bodily process can translate itself into a thought or an emotion. Thus, the mind is a powerful tool for health and its power to influence the body is quite remarkable. Relaxation techniques help to combat the autonomic effects of anxiety in a natural and safe way and makes a person in proper well being state. The goal is similar in all: to consciously produce the body's natural relaxation response, characterized by slower breathing, lower blood pressure, and a feeling of calm and wellbeing. Learning relaxation may also prove helpful for the psychological well being and enhancing the stress coping skills. (Johnson & Kushner, 2001) [9]

Objective
To study the efficacy of Progressive Relaxation Training on Anxiety of adolescents.

Hypothesis
Progressive Relaxation Training would have significant effect on the Anxiety of adolescents.

Methods
Design of the study
An experimental design was selected to investigate the effect of Progressive Relaxation Training on the Anxiety of adolescents.

Progressive Relaxation Training (PRT)
It is a remarkable way to conquer and overcome stress, anxiety and various other psychological factors that affect the well-being of any Adolescent. Edmund Jacobson in 1930's trusted that if people can acquire to relax their muscle through an exact technique mental relaxation will follow. It includes straining and relaxing different voluntary muscle groups throughout the body in an arranged succession. The basic idea is to systematically train tensing and relaxing groups of muscles.

Direction: The subjects were asked to lie in a comfortable position. Researcher asked them to relax various parts of their body in the sequence and how to do it.
1. Right hand and forearm - make a fist - relax.
2. Right upper arm "show off your muscles" - relax.
3. Left hand and a forearm - make a fist - relax.
4. Left upper arm - Bend the arm and tighten the muscles - relax.
5. Forehead - raise your eyebrow - relax your face.
6. Eyes and Cheeks - Squeeze the eyes - relax.
7. Mouth and jaw - Clench your teeth and pull the corners of the mouth back - relax.
8. Shoulder and neck - Pull your shoulders and press your head back - Let your shoulders hang – relax.
9. Chest and back - breathe in deeply and hold your breath pressing the shoulders together at the back same time - Let your shoulders hang, breathe normally.
10. Belly - tighten the abdominal muscles - relax.
11. Right hand thigh - Shovel the right foot forward against resistance - relax.
12. Right hand calf - Lift up the right heel - relax.
13. Right foot - Crook the toes - relax.
14. Left hand thigh - Shovel your left foot forward - relax.
15. Left hand calf - Lift up the left heel - relax.
16. Left foot - Crook the toes – relax
Okay: done.

Sample
A simple random group design was adopted for this study as it seemed the most appropriate one. The study was conducted on 60 male school adolescents of 16-19 years of age, studying in grades IX to XII. The selected subjects were divided into following two groups comprising of thirty (30) subjects each.

Training Design
The relaxation training program last for six (06) weeks comprising eighteen sessions total. There was three sessions per week on alternate days i.e. Monday, Wednesday and Friday. Each session was of 45 minutes for experimental group. However no relaxation technique was given to the control group.

Tool Used
For measuring the above mentioned variables the following tests were administered to the subjects. The issue of selecting the psychological tests has been deliberated upon with the expert available and after considering the validity, reliability of the tests, the mentioned tests were selected for the study and the references are being provided.
• State and Trait Anxiety Inventory constructed and standardized by Pal and Tiwari (1970) [13] was selected and used to measure anxiety.

Administration of Test
Data was collected on the selected variable i.e. Anxiety, at the pre and post experimental stage. The said test was conducted in the class-room. Before the administration of the test, these were thoroughly explained to the subjects separately and specific instructions were given so that they exactly understand how to perform the test. The uniformity of the testing conditions was ensured while administering the test to the subjects under the close supervision of the researcher.

Administration: The self administering test was given to the subjects. There was no time limit to complete the test but the subjects completed it in 15 minutes. The subjects were made clear by the researcher of the "State" Instructions which needs his responses as to how he feels at this movement and the "Trait" instructions which needs his responses as to how he generally feels. As per the manual of the test the State test was first given to the subjects and then the Trait test.

Scoring: The possible range of the scores for state anxiety and Trait Anxiety varies from 30 (minimum) to 90 (maximum). The subjects responded to each item of the both scales by rating themselves according to the standard instructions printed on the sheet) on a three point scales-1. Always, 2. Sometimes, 3. Never for the balancing state and trait scales equal number of items have been taken. High ratings indicate high anxiety where as low ratings indicate low anxiety for the positive items of the each scale, the weightage scores of response were marked 3, 2 and 1 respectively whereas reversed items were marked 1, 2 and 3.

Results & Discussion
After completing the prescribe scoring of the test the raw scores were tabulated and computerized to draw out the meaningful conclusion. Mean, Mean Difference, Standard Deviation and 't' value of the pre and post-test for experimental group was compared with the tabulated significant value at 0.05 level of confidence.

Table I: Pre-test and Post-test of EG – PRT on Anxiety (State)

Test	Mean	Mean difference	Std. deviation	t-value
Pre-test	54.07	.2	3.53	5.2155
Post-test	51.87		4.10	

Significant at .05 level
't' $_{.05}$ (df=29) = 2.045

The above table represents means, mean difference, SDs and t-value between pre-test scores and post-test scores on Anxiety (State) of EG. The number of subjects in EG was Thirty (30). The mean pre-test scores and post-test scores of EG on Anxiety (State), whose subject were given intervention with Progressive Relaxation Training, were 54.07 and 51.87 respectively. Its SD pre-test score and SD post-test scores were 3.53 and 4.10 respectively, and the standard error was calculated to 0.64493 (pre-SE) and 0.74854 (post-SE). The calculated value of t-test of EG was recorded with 5.2155 which were higher than the tabulated value i.e. 2.045. So, it was found that the 't' value was considered to be extremely statistically significant.

Discussion of Results of Table-I: Result entered in Table-I, regarding the pre and post-test scores of EG indicated that the Anxiety (State) level of subjects of EG has intensively shows towards decreasing side. This can further attributed to the efficacy of PRT Technique on reducing the level of Anxiety (State). Significant t-value between the pre-test scores and post-test scores on Anxiety (State) of EG in Table-I suggest that PRT have effectively and significantly reduced the Anxiety (State) of the subjects.

Table II: Pre-test and Post-test of CG on Anxiety (State)

Test	Mean	Mean difference	Std. deviation	t-value
Pre-test	53.90	- 0.43	4.11	1.8191
Post-test	54.33		3.71	

Significant at .05 level
t' .05 (df=29) = 2.045

The above table represents means, mean difference, SDs and t-value between pre-test scores and post-test scores on Anxiety (State) of CG. The number of subjects in CG was Thirty (30). Whereas, the mean pre-test scores and post-test scores of CG whose subjects were not provided with any treatment or training, were 53.90 and 54.33 respectively. Its SD pre-test scores and SD pre-test scores were 4.11 and 3.71 respectively, and the standard error was calculated to 0.74948 (pre-SE) and 0.67693 (post-SE). Further, the t-value between the pre-test scores and post-test scores of CG (Control Group) was recorded with 1.8191, which is considered to be insignificant.

Discussion of Results of Table-II: Result entered in 4.1.2, regarding the pre and post-test scores of CG indicated that there was almost no decrease in the Anxiety (State) of the subjects who were put in the control group, with no treatment.

Table III: Pre-test and Post-test of EG – PRT on Anxiety (Trait)

Test	Mean	Mean difference	Std. deviation	t-value
Pre-test	60.47	1.6	2.06	2.4901
Post-test	58.87		3.14	

Significant at .05 level
't' .05 (df=29) = 2.045

The above table represents means, mean difference, SDs and t-value between pre-test scores and post-test scores on Anxiety (Trait) of EG. The number of subjects in EG was Thirty (30). The mean pre-test scores and post-test scores of EG on Anxiety (Trait), whose subject were given intervention with Progressive Relaxation Training, were 60.47 and 58.87 respectively. Its SD pre-test scores and SD post-test scores were 2.06 and 3.14 respectively, and the standard error was calculated to 0.37672 (pre-SE) and 0.57282 (post-SE). The calculated value of t-test of EG was recorded with 2.4901 which were higher than the tabulated value i.e. 2.045. So, it was found that the 't' value was considered to be statistically significant.

Discussion of Results of Table-III: Result entered in Table-III, regarding the pre and post-test scores of EG indicated that the Anxiety (Trait) level of subjects of EG have shows towards decreasing side. This can further attributed to the efficacy of PRT Technique on reducing the level of Anxiety (Trait). Significant t-value between the pre-test scores and post-test scores on Anxiety (Trait) of EG in table-III suggest that PRT have effectively and significantly reduced the Anxiety (Trait) level of the subjects.

Table IV: Pre-test and Post-test of CG on Anxiety (Trait)

Test	Mean	Mean difference	Std. deviation	t-value
Pre-test	60.43	0.1	2.62	0.3988
Post-test	60.33		2.67	

Significant at .05 level
't' .05 (df=29) = 2.045

The above table represents means, mean difference, SDs and t-value between pre-test scores and post-test scores on Anxiety (Trait) of CG. The number of subjects in CG was Thirty (30). Whereas, the mean pre-test scores and post-test scores of CG, whose subjects were not provided with any treatment or training were 60.43 and 60.33 respectively. Its SD pre-test scores and SD post-test scores were 2.62 and 2.67 respectively, and the standard error was calculated to 0.47870 (pre-SE) and 0.48739 (post-SE). Further, the t-value between the pre-test scores and post-test scores of CG was recorded with 0.3988, which is considered to be not statistically significant.

Discussion of Results of Table-IV: Result entered in Table-IV, regarding the pre and post-test scores of CG indicated that the results given in the table-IV shows, that there was almost no decrease in the Anxiety (Trait) of the subjects who were put in the control group, with no treatment.

Table V: Post-test of EG and CG on Anxiety (State)

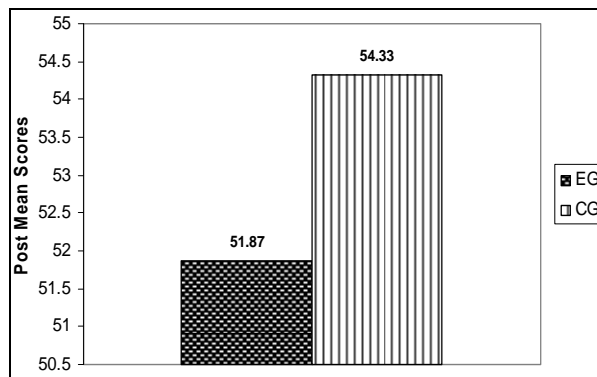| Group	Mean	Mean difference	Std. deviation	t-value
Experimental Group	51.87	-2.6	4.10	2.4368
Control Group	54.33		3.71	

Significant at .05 level
't' .05 (df=58) = 2.021

Fig I: Graphical Presentation of Mean of Post-test of EG and CG on Anxiety (State)

The above table and graphical representation shows the means, mean difference, SDs and t-value between post-test scores on Anxiety (State) of EG and CG. The number of subjects in each group was Thirty (30). The mean post-test scores of EG and CG on Anxiety (State) was recorded as 51.87 and 54.33 respectively. And SD post-test scores of EG and CG were 4.10 and 3.71 respectively.

There mean difference was -2.46 with t-value 2.4368. As per statistical analysis this difference was considered as significant.

Table VI: Post-test of EG and CG Anxiety (Trait)

Group	Mean	Mean difference	Std. deviation	t-value
Experimental Group	58.87	-1.46	3.14	1.9402
Control Group	60.33		2.67	

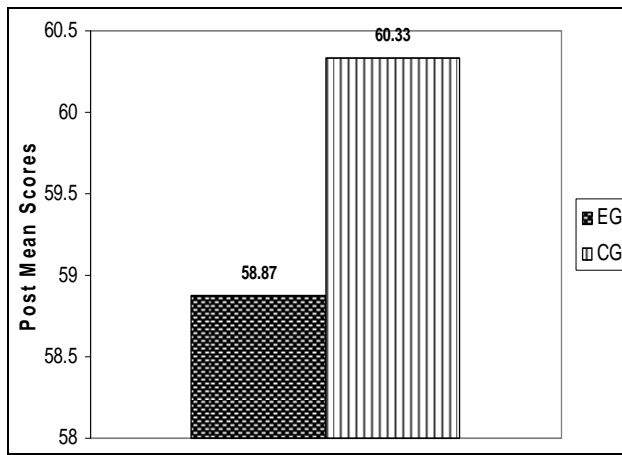Significant at .05 level
't' .05 (df=58) = 2.021

Fig II: Graphical Presentation of Mean of Post-test of EG and CG on Anxiety (Trait)

The above table and graphical representation shows the means, mean difference, SDs and t-value between post-test scores on Anxiety (Trait) of EG and CG. The number of subjects in each group was Thirty (30). The mean post-test scores of EG and CG on Anxiety (Trait) was recorded as 58.87 and 60.33 respectively. And SD post-test scores of EG and CG were 3.14 and 2.67 respectively. There mean difference was -1.46 with t-value 1.9402. As per statistical analysis this difference was considered as insignificant.

Conclusion: Earlier it was hypothesized that the Progressive Relaxation Training would have significant effect on the Anxiety of adolescents. And on the basis of findings of the study, it is revealed that the hypothesis is partially accepted. Hence, it implies that Progressive Relaxation Training would have significantly reduces anxiety (state) but there is no significant effect of Progressive Relaxation Training on the anxiety (trait).

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