

## A study to assess the effect of progressive muscle relaxation technique on level of anxiety among first year bsc nursing students in selected nursing colleges at Barwani district

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### Abstract

Anxiety is a set of responses that includes excessive worry, depression, nervousness and irrelevant thinking, to a class of stimuli from an individual's experience of assessment and outcome.

12 million adult face mental health problem each year. Most of these cause anxiety and depression and much of it is stress related. It is estimated that among the world population, the prevalence rate of anxiety is 16.6%. The prevalence rate of anxiety in India is 18.5% per 1000 population.<sup>23</sup> According to DSM-1V, approximately 3% of people will develop anxiety disorder during a given year and 5% of people will have anxiety at some point in their life. Studies shows that Generalised anxiety disorder may affect people at different rates based on ages.

Researchers reported about 20.1% of adolescent boys and 17.9% of adolescent girls experience severe anxiety. They also reported anxiety rate is in moderate level among 15-24years. Studies also shows that the ratio of Generalised anxiety disorders among female and male is 2:1 respectively.

Nursing students are valuable human resources, but there is a paucity of comprehensive research in the area of nursing student's psychological distress and depressive symptoms. Detection of these symptoms is crucial since anxiety and depression can lead to low productivity, minimized quality of life and suicidal thoughts.

It is observed that nursing students undergo tremendous stress and anxiety during various stages of their course. Occupational mental health and affective well-being among student health professionals has been the focus of increased study in recent years.

Nursing students face high levels of anxiety especially in their first clinical experience. When student nurses suffer from anxiety it decreases their ability to learn and retain information as well as decreases confidence in their ability to function autonomously.

The aim of this study is to reduce the level of anxiety of the nursing students. The nurse educator should understand the nature of the anxiety among the nursing students and can play an important role in reducing the anxiety of the nursing students by practicing progressive muscle relaxation technique.

The researcher from his past experience as a student nurse identifies himself subjected to high anxiety levels in clinical encounters. He also found high level of anxiety among his co-workers when posted to a new clinical area.

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Progressive muscle relaxation technique is one of the simplest forms of relaxation technique. The investigator realised that progressive relaxation technique will help the nursing students to maintain their emotional balance. Keeping this in mind the investigator, by helping the nursing students to practice daily for 30 minutes would help them to reduce the level of anxiety in order to keep their emotion balance and improve their academic performance.

**Keywords:** Progressive muscle relaxation technique; Anxiety; Nursing students; Nursing colleges

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## 1. Statement of the problem

A study to assess the effect of progressive muscle relaxation technique on level of anxiety among first year BSc nursing students in selected nursing colleges at Barwani district.

### *Objectives*

- To assess the level of anxiety among first year BSc nursing students in experimental and control group.
- To assess the level of anxiety among first year BSc nursing students after implementing progressive muscle relaxation technique.
- To find out the effect of progressive muscle relaxation technique on level of anxiety among nursing students.
- To find out the effect of progressive muscle relaxation technique on anxiety subscales.
- To find out association of pre-test level of anxiety among first year BSc nursing students and selected socio-demographic variables.

### 1.1. Hypotheses

- H<sub>1i</sub>: -There is significant difference in mean anxiety scores before and after progressive muscle relaxation technique among experimental group.
- H<sub>1ii</sub>: There is significant difference in mean post-test anxiety scores among experimental and control group.
- H<sub>1iii</sub>: There is significant association between level of anxiety of nursing students with selected socio-demographic variables.

### 1.2. Research Approach

Quantitative descriptive approach.

### 1.3. Research design

A quasi experimental – pre-test, post-test, control group design which includes manipulation, control and no randomization was considered as appropriate design for the study.

### 1.4. Variables

The dependent variable in this study is anxiety.

Progressive muscle relaxation technique is the independent variable.

The demographic variables are age, sex, religion, type of family, father's education, mother's education, father's occupation, mother's occupation, family income per month, medium of instruction of previous school education, academic performance in previous school education, pattern of higher secondary education, number of sibling, hobbies and education loan taken.

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## 2. Setting of the study

Selected Nursing Colleges in Barwani District

### 2.1. Population

All first year BSc nursing students in Barwani district.

### **3. Sample and sampling technique**

30 first year BSc nursing students in experimental and 30 in control group

Convenience sampling technique

#### **3.1. Tool**

Socio-Demographic data and Burns anxiety inventory.

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### **4. Analysis and interpretation**

Descriptive and Inferential Statistics

#### **4.1. Inclusion criteria**

First year BSc nursing students:

- With mild and moderate anxiety.
- Who are willing to participate in the study.

#### **4.2. Exclusion criteria**

First year BSc nursing students:

who are receiving therapies like music, yoga, meditation, laughter therapy etc.

who takes anxiolytic drugs.

who are married.

#### **4.3. Tool / Instruments**

The data collection instruments used in the present study were:

- Socio-Demographic proforma
  - Burns anxiety inventory
  - Progressive muscle relaxation technique.
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### **5. Development of the tool**

The initial draft of the tool was prepared by the investigator after an extensive review of literature and discussion with psychiatric nursing experts. Suggestions from psychiatrists, clinical psychologists and Biostatistician were also obtained for developing the tool.

#### **5.1. Description of the tool**

##### *5.1.1. Socio-Demographic proforma*

The investigator constructed the tool to collect the background data of the study subjects. It consisted of 15 items regarding the age, sex, religion, type of family, father's education, mother's education, father's occupation, mother's occupation, family income per month, medium of instruction of previous school education, academic performance in previous school education, pattern of higher secondary education, number of siblings, hobbies and education loan taken.

##### *5.1.2. Burns anxiety inventory*

The Burns Anxiety Inventory (BAI) is an assessment tool used to measure anxiety, developed by psychiatrist David. D. Burns. The inventory or checklist can be self-administered or administered by a clinician. It can help people to monitor their own anxiety over time, and to become more aware of anxious symptoms. It also aids clinicians in diagnosing anxiety disorders.

The Burns anxiety inventory is a checklist of thirty-three symptoms related to anxiety. They are broken down into three categories: anxious feelings, anxious thoughts, and physical symptoms. Category I anxious feelings have six relevant items with maximum sub score of 18. Category II have eleven relevant items with a maximum score of 33 and category III presents with sixteen important symptoms with a maximum sub score of 48. The items are scored based on a four-point likert scale ranging from a minimum score of zero indicating not at all, score of 1 denoting somewhat, a score of 2 for moderately and a maximum score of 3 for a lot that the symptom has bothered the person. To evaluate the level of anxiety indicated on the checklist, each item is added up numerically. A score of zero to four indicates minimal or no anxiety, five to 10 means borderline anxiety, a score between 11 to 20 signifies mild anxiety, 21 to 30 is moderate anxiety, 31 to 50 means severe anxiety, and a score of 51 to 99 indicates extreme anxiety or panic.

### 5.1.3. Progressive muscle relaxation technique

Progressive muscle relaxation technique refers to a systematic method of deep muscle relaxation which involves alternatively tensing and relaxing the muscles of the body in a particular order for a specific period of time (each session 30 min) in sitting position developed to reduce anxiety and to promote overall health and wellness. Progressive muscle relaxation is given for a period of one week continuously which includes deep breathing exercise followed by relaxation technique. The investigator has undergone certificate course in progressive muscle relaxation technique

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## 6. Results

Results of the present study are discussed under the following headings:

- Section 1: Description of sample characteristics.
- Section 2: Level of anxiety.
- Section 3: Effect of progressive muscle relaxation technique on anxiety among nursing students.
- Section 4: Effect of progressive muscle relaxation technique on anxiety subscales.
- Section 5: Association between level of anxiety and selected demographic variables.

### 6.1. Section 1: Description of sample characteristics

- Based on the age, in experimental group 80% belonged to 17-18 years and 20% belonged to 18-19 years of age. In control group 76.7% were belonged to 17-18 years and 23.3% belonged to 18-19 years of age.
- Based on the sex, in experimental group 6.7% were males and 93.3% were females and in control group 10% were males and 90% were females.
- Based on religion, in experimental group 86.7% of samples were Hindus, 10% were Muslims and 3.3% were Christians. In control group 73.3% were Hindus, 10% Muslims and 16.7% were Christians.
- Regarding the type of family, in experimental group majority 96.7% of samples were in nuclear family and only 3.3% were in joint family. In control group also majority 73.3% were in nuclear family and 23.3% were in joint family.
- Based on father's education, in experimental group more than half, 53.3% had high school education, 20.0% higher secondary, 16.7% diploma, 6.7% primary, 3.3% were graduates and none had post graduate education. In control group also about half, 50.0% had high school education, 16.7% had higher secondary another 16.7% primary, 6.7% had diploma, another 6.7% post graduates and 3.3% were graduates.
- Based on mother's education, in experimental group 46.7% had high school education, 33.3% had higher secondary education, 10.0% were graduates and 3.3% had diploma, primary and post graduate education. In control group 40.0% had high school education, 23.3% had higher secondary education, 16.7% had diploma, and 6.7% had primary, graduate and post graduate education.
- Based on father's occupation, in experimental group 66.7% were employed, 30.0% were self-employed and 3.3% were unemployed. In control group, 63.3% were self-employed, 33.3% were employed and 3.3% were unemployed.
- Regarding mother's occupation, in experimental group majority of samples 80% were employed, 16.7% were home maker and 3.3% were self-employed. In control group 53.3% were employed, 46.7% home maker and none self-employed.
- According to family income, in the experimental group more than half, 53.3% of samples had income up to 10000, 33.3% had income between 10001-20000, 6.7% had income 20001-30000 and income more than 30000. In control group, 46.7% had income up to 10000, 23.3% income between 10001-20000, 13.3% had 20001-30000 and 16.7% had income more than 30000.

- Based on medium of instruction of previous school education in experimental group majority 70.0% belonged to Malayalam medium and 30% English medium. In control group, 63.3% Malayalam medium and 36.7% belonged to English medium.
- Regarding academic performance in previous school education, both in experimental and control group 56.7% scored more than 75% marks, 36.7% scored in between 60-75% marks and 6.7% scored < 60% marks.
- Based on the pattern of higher secondary education, in experimental group majority, 96.7% belonged to state board and 3.3% belonged to another syllabus. In control group, majority, 90% state board, 6.7% CBSE and 3.3% belonged to vocational higher secondary.
- According to number of siblings, in the experimental group 93.3% had 1-2 siblings, 3.3% had no sibling and another 3.3% had more than three siblings. In control group, 86.7% had 1-2 siblings, 6.7% had no siblings and another 6.7% had more than three siblings
- Based on the hobbies, in experimental group all the samples were interested in hearing music, 23.3% involved in reading books, 16.7% paid attention in playing outdoor games, 13.3% were interested in indoor games and 33.3% engaged in other type of hobbies. In control group majority, 93.3% were interested in hearing music, 45.0% reading books, 20.0% playing indoor and outdoor games and 31.7% were interested in other hobbies.
- Regarding education loan taken, in experimental group 56.7% did not take loan and the rest 43.3% had taken education loan. In control group 46.7% took loan and 53.3% did not have education loan.

## 6.2. Section 2: Level of anxiety among nursing students

Results shows that in experimental group 23.3% had mild anxiety, 76.7% had moderate anxiety. In control group 36.7% had mild anxiety and 63.3% had moderate anxiety. None of the samples had minimal and severe anxiety in both groups.

## 6.3. Section 3: Effect of progressive muscle relaxation technique on anxiety among nursing students

It was found that after analysis the average anxiety level among the experimental group before the intervention was  $23.7 \pm 5.2$  and that among the control was  $23.2 \pm 6.6$ . After intervention, among the experimental group anxiety score is reduced to  $13 \pm 5.4$ . Reduction in anxiety level after intervention in the experimental group was statistically significant ( $p < 0.01$ ). Average posttest level of anxiety in control group increased to  $25.6 \pm 8.6$  which have a negative statistical significance ( $P < 0.01$ ). Experimental group shows better improvement in level of anxiety after therapy than the control. There is significant reduction in the mean anxiety score of nursing students before and after progressive muscle relaxation at 0.01 level of significance. Therefore, it is interpreted that there is significant reduction in the mean anxiety score of nursing students before and after progressive muscle relaxation. Thus, it can be concluded that the intervention in experimental group is statistically significant in reducing the anxiety. Hence, null hypothesis ( $H_0$ ) was rejected and research hypothesis ( $H_{11}$  and  $H_{12}$ ) was accepted.

## 6.4. Section 4: Effect of progressive muscle relaxation technique on anxiety subscales.

Results showed that the average anxious feeling score among the experimental group before the intervention was  $5.0 \pm 2.0$  and that among the control was  $4.0 \pm 1.5$ . After intervention, among the experimental group anxiety score is reduced to  $2.8 \pm 1.7$ . Reduction in anxious feeling after intervention in the experimental group was statistically significant ( $p < 0.01$ ).

A preliminary analysis of variance (ANOVA) carried out for pretest and posttest taken separately shows that the average score regarding anxious feeling at pretest level is 5.0 and 4.0 respectively for experimental and control groups. The F statistics for the pre test scores,  $F=4.35$  shows that there is significant difference in the anxious feeling score between the experimental and control groups at pretest level at  $p < 0.05$  level of significance. The F statistics for the post test scores,  $F=13.75$  is significant at 0.01 level. It can be interpreted that the average posttest anxious feeling score of experimental groups (2.8) is significantly less than that of the control group (4.4). After correcting the final anxious feeling scores for difference in initial scores, F statistics applied to the final score,  $F = 27.02$  is significant at 0.01 levels. From the F value it is clear that the final average adjusted post test score in experimental group (2.6) on anxious feeling is significantly less than that in the control group (4.6). So, it can be interpreted that progressive muscle relaxation technique is statistically effective in reducing anxious feeling in experimental group.

Results showed that average anxious thought score among the experimental group before the intervention was  $5.0 \pm 2.0$  and that among the control was  $4.0 \pm 1.5$ . After intervention, among the experimental group anxiety score is reduced to  $2.8 \pm 1.7$ . Reduction in anxiety level after intervention in the experimental group was statistically significant ( $p < 0.01$ ). The mean posttest anxious thought score in the experimental group is 4.5 and that in the control group is 9.6. There is significant difference in the mean posttest anxious thoughts score of nursing students in experimental and control group at 0.01 level of significance.

The average physical symptoms score among the experimental group before the intervention was  $10.5 \pm 2.7$  and that among the control was  $11.0 \pm 2.8$ . After intervention, among the experimental group the score is reduced to  $5.7 \pm 2.3$ . Reduction in physical symptoms level after intervention in the experimental group was statistically significant ( $p < 0.01$ ). The mean posttest physical symptoms score of nursing students in experimental group is 5.4 and that in control group is 11.6. There is significant difference in the mean posttest physical symptoms score of nursing students in experimental and control group at 0.01 level of significance.

#### **6.5. Section 5: Association between level of anxiety and selected demographic variables.**

Chi square test and Fisher's exact test was done to find out association between level of anxiety and selected demographic variables. There was significant association between level of anxiety and mother's education ( $\chi^2 = 5.88$ ). There was no association between level of anxiety and other selected socio-demographic variables.

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### **7. Conclusion**

Anxiety is one among many problems experienced by nursing students. The present study was aimed at assessing the effect of progressive muscle relaxation technique on level of anxiety among nursing students in selected nursing colleges in Barwani district, Madhyapradesh. There is significant difference in the mean anxiety scores of nursing students before and after progressive muscle relaxation technique which is significant in reducing anxiety in nursing students. It is interpreted that progressive muscle relaxation technique is significant at 0.01 levels.

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### **Compliance with ethical standards**

#### *Disclosure of conflict of interest*

We, Cicily Joseph and Varghese Yohannan, hereby declare that we have no conflicts of interest to disclose regarding the research project entitled "A study to assess the effect of progressive muscle relaxation technique on level of anxiety among first year BSc nursing students in selected nursing colleges at Barwani district."

#### *Statement of ethical approval*

The present research work does not contain any studies performed on animals/humans subjects by any of the authors'.

#### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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