

## Effectiveness of stress management program on perception of stress among nursing students

Kasthuri S

M.Sc(N), (Ph.D in nursing), M.B.A, M.A (psy),M.S(Socio), PGDES Professor, Gitam Institute of Nursing, Gitam University, Visakhapatnam.

### Abstract

*An experimental study among 114 B.Sc (Nursing) students was performed to identify the prevalence of perception of stress, the effectiveness of stress management program in decreasing the stress levels during post-test. It was observed that in Experimental group, during pre-test, the perceived stress for majority of students 89.2% (50) are having moderate stress, followed by mild stress 7.14% (4) and severe stress 3.57% (2). After Stress management program, during post-test scores, the moderate stress has been decreased and there was increase in mild stress percentage among majority of students. That is majority of students 50% (28) are under mild stress and 48.2% (27) are under moderate stress and 1.78% (1) are under severe stress. In Control group, there is no considerable change in stress levels during pre-test and post-test scores. In Experimental group, during pre-test, the mean and SD are  $18.679 \pm 4.11$ . During post-test, the mean and SD are  $16.02 \pm 5.29$  showing decrease in post-test mean which showed statistical significance between pre-test and post-test score ( $p=0.000$ ), at 0.05 significance level ( $p<0.05$ ). To find out the effectiveness of stress management program, t-test for independent means for post-test scores between Experimental and Control groups was done. The means and SD of experimental group are  $16.02 \pm 5.297$  and of Control group is  $17.93 \pm 3.89$ . There is significant difference in post-test means. The calculated p-value (0.01) is significant at 0.05 significant level ( $p<0.05$ ).*

**Key words:** Stress management program, stress, nursing students, effectiveness

### Introduction:

Stress is a complex process by which an organism responds to environmental or physiological events called 'stressors', that pose challenge or danger to the organism, representing possible harm or loss or they may be symbols of threat or other psychological representation of danger. Basavanthappa (2004) stated that, a stressor is an event or any stimulus that cause an individual to experience stress<sup>3</sup>.

Borill et.al (1996) reported a prevalence of stress that is more than three times that reported for general population. Nursing students are burdened with many responsibilities of family and academic work load<sup>4</sup>.

Abdullah (2009) reported that the combination of many stressors of college life such as planning for future, struggling with exams, coping with demands and challenging professors, transitioning into financial and emotional independence can be an overwhelming experience for many students. Hence almost all the new students go through an adjustment phase upon entry to a college with each student varied in his or her own pace of development.<sup>1</sup>

William Evans and Billy Kelly (2004) recommended for the provision of adequate support services from a clinical and academic

perspective, which focus on developing student self-awareness skills<sup>12</sup>.

Hamil C (1995) reported that the nursing students often leave home for the first time when going to nursing college and may experience ambivalent feelings because of the need for family support and need for independence at the same time (role conflict)<sup>8</sup>.

### Objectives of the study:

- To assess the perception of stress levels among nursing students.
- To compare pre-test and post-test perception of stress levels among nursing students
- To find out the effectiveness of stress management techniques on perception of stress levels among nursing students
- To find out the association between selected demographic variables and perception of stress.

### Hypothesis:

H<sub>0</sub>: There is no association between pre-test and post-test perception of stress levels.

H<sub>1</sub>: There is significant decrease in post-test perception of stress levels compared to pre-test.

### Methods and Materials:

An experimental study design was used by simple, random and probability sampling technique. The study was conducted at selected nursing college at Srikakulam. Among 114 participants, using lottery method, 56 students were assigned to experimental group and 58 students were assigned to control group. Stress management training program was conducted for experimental group that extended for a period of six weeks. Daily one hour practice sessions were conducted. . Structured questionnaire was used to collect data pertaining

to Pre-test and Post-test demographic data and perception of stress from both experimental and control groups.

### Description of the tool:

**Demographic data:** Data like age, sex, state, year of study, father's and mother's education levels, father's and mother's occupation, monthly income of the family and average number of hours of sleep each day are collected.

**Perceived Stress Scale(PSS):** Cohen PSS-10 Scale<sup>5</sup> was used to collect perception of stress among nursing students. This section consists of 10 questions. Each question has 4 responses in the form of Likert scale. The student marks any one of the response about their feelings they experienced during past one month. The responses in the scale are never, almost never, sometimes fairly often and often.

**Scoring Interpretation:** The total score is 40.

- Mark the individual score as Never = 0, Almost never = 1, sometimes = 2, Fairly often = 3, Often = 4.
- Reverse the scores for questions 4, 5, 7 and 8. The scoring becomes 0=4, 1=3, 2=2, 3=1 and 4=0.
- Now total all the scores that give the total score for perceived stress.

| Scores     | Interpretation  |
|------------|-----------------|
| 1. 0 – 13  | Mild Stress     |
| 2. 14 – 26 | Moderate Stress |
| 3. 27 – 40 | High Stress     |

### Data Analysis:

Categorical data of the study was reported as frequencies. Mean and standard deviations are calculated for continuous data. Paired T-test is

used to compare the mean scores of pre-test and post-test levels of stress of students in PSS-10 scale in control and experimental group. T-test

for independent means is used to compare mean score of experimental and control group for post-test perceived stress.

**Results:**

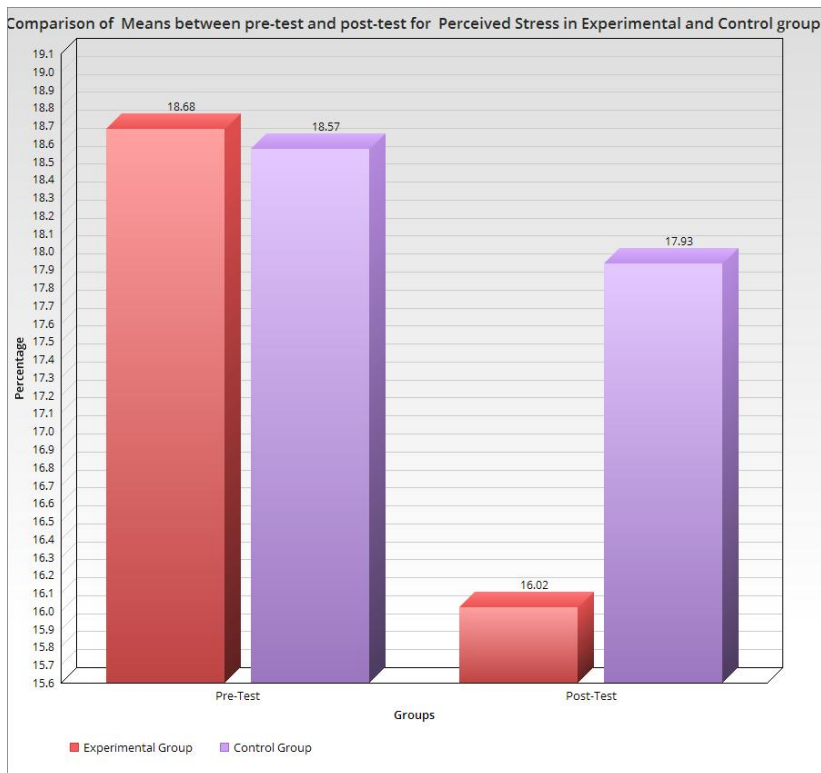
**Table-1:** Frequency and Percentage distribution of participants according to demographic data

| S.NO | DEMOGRAPHIC VARIABLES                            | EXPERIMENTAL GROUP (N=56) |       | CONTROL GROUP(N=58) |       |
|------|--|---------------------------|-------|---------------------|-------|
|      |  | n                         | %     | n                   | %     |
| 1    | <b>Age</b>                                       |                           |       |                     |       |
|      | 18-20  | 37                        | 66.1  | 35                  | 60.3  |
|      | 21-23  | 18                        | 32.1  | 23                  | 39.6  |
|      | >23  | 1                         | 1.8   | 0                   | 0     |
| 2    | <b>Sex</b>                                       |                           |       |                     |       |
|      | Male   | 0                         | 0     | 0                   | 0     |
|      | Female   | 56                        | 100   | 58                  | 100   |
| 3    | <b>State:</b>                                    |                           |       |                     |       |
|      | AP   | 43                        | 76.79 | 27                  | 46.55 |
|      | Telangana  | 0                         | 0     | 0                   | 0     |
|      | Tamil nadu                                       | 0                         | 0     | 0                   | 0     |
|      | Kerala   | 10                        | 17.86 | 36                  | 62.07 |
|      | Others   | 3                         | 5.36  | 4                   | 6.90  |
| 4    | <b>Present year of study</b>                     |                           |       |                     |       |
|      | I year   | 15                        | 26.78 | 15                  | 25.86 |
|      | II year  | 15                        | 26.78 | 13                  | 22.41 |
|      | III year   | 12                        | 21.42 | 15                  | 25.86 |
|      | IV year  | 14                        | 25    | 15                  | 25.86 |
| 5    | <b>Monthly income of family in Rupees/ month</b> |                           |       |                     |       |
|      | a. Below Rs. 10,000                              | 17                        | 30.36 | 28                  | 48.27 |
|      | b. Rs.10,000 – 20,000                            | 23                        | 41.07 | 21                  | 36.20 |
|      | c. Rs.Above 20,000                               | 16                        | 28.57 | 9                   | 15.52 |
| 6    | <b>Occupation of Father</b>                      |                           |       |                     |       |
|      | Government Employee                              | 6                         | 10.71 | 1                   | 1.72  |
|      | Private Employee                                 | 8                         | 14.29 | 3                   | 5.17  |
|      | Not employee                                     | 5                         | 8.9   | 7                   | 12.07 |
|      | Skilled labour                                   | 14                        | 25    | 14                  | 24.14 |
|      | Unskilled labour                                 | 1                         | 1.79  | 28                  | 48.28 |
|      | Business   | 6                         | 10.71 | 5                   | 8.62  |
|      | Others   | 16                        | 28.57 | 0                   | 0     |
| 7    | <b>Occupation of Mother</b>                      |                           |       |                     |       |
|      | Government Employee                              | 3                         | 5.36  | 3                   | 5.17  |
|      | Private Employee                                 | 2                         | 3.57  | 3                   | 5.17  |
|      | Not employee                                     | 43                        | 76.79 | 40                  | 68.97 |
|      | Skilled labour                                   | 5                         | 8.9   | 7                   | 12.06 |
|      | Unskilled labour                                 | 1                         | 1.79  | 3                   | 5.17  |
|      | Business   | 1                         | 1.79  | 2                   | 3.45  |
|      | Others   | 1                         | 1.79  | 0                   | 0     |
| 8    | <b>Family Income</b>                             |                           |       |                     |       |
|      | Below Rs. 10,000                                 | 17                        | 30.36 | 28                  | 48.27 |
|      | Rs.10,000 – 20,000                               | 23                        | 41.07 | 21                  | 36.20 |
|      | Rs. Above 20,000                                 | 16                        | 28.57 | 9                   | 15.52 |
| 9    | <b>Average Sleep at night</b>                    |                           |       |                     |       |

|                 |    |       |    |       |
|-----------------|----|-------|----|-------|
| Less than 4 hrs | 6  | 10.71 | 5  | 8.62  |
| 5 – 7 hrs       | 48 | 85.71 | 49 | 84.48 |
| 8 – 10 hrs      | 1  | 1.79  | 4  | 6.89  |

**Table-2: Distribution of students according to pre-test and post test Perceived Stress in experimental and control groups**

| Perceived Stress             |           | MILD STRESS |      | MODERATE STRESS |      | SEVERE STRESS |      |
|------------------------------|-----------|-------------|------|-----------------|------|---------------|------|
|                              |           | n           | %    | n               | %    | n             | %    |
| Experimental group<br>(N=56) | Pre Test  | 4           | 7.14 | 50              | 89.2 | 2             | 3.6  |
|                              | Post Test | 28          | 50   | 27              | 48.2 | 1             | 1.78 |
| Control Group<br>(N=58)      | Pre Test  | 1           | 1.72 | 56              | 96.6 | 1             | 1.72 |
|                              | Post Test | 3           | 5.2  | 50              | 86.2 | 3             | 5.17 |



**Fig-1: Comparison of Means between pre-test and post-test for Perceived Stress in Experimental and Control groups**

**Table-3: Comparison of Post-test Means of Experimental and Control Groups for Perceived Stress**

| Perceived Stress         | Mean  | SD   | df | T-Test value | P-value | Inference |
|--------------------------|-------|------|----|--------------|---------|-----------|
| Experimental group(N=56) | 16.02 | 5.29 | 55 | -2.2029      | 0.014*  | HS        |
| Control group (N=58)     | 17.93 | 3.89 | 57 |              |         |           |

**Table-4: Association of Selected demographic variables and pre-test perceived stress in Experimental group and Control groups**

| S.NO | DEMOGRAPHIC VARIABLES        | Experimental group (N=56) |          |        |    |                |         | Control group (N=58) |          |        |    |                |         |
|------|------------------------------|---------------------------|----------|--------|----|----------------|---------|----------------------|----------|--------|----|----------------|---------|
|      |                              | MILD                      | MODERATE | SEVERE | df | X <sup>2</sup> | p-value | MILD                 | MODERATE | SEVERE | df | X <sup>2</sup> | p-value |
| 1    | <b>State</b>                 |                           |          |        |    |                |         |                      |          |        |    |                |         |
|      | AP                           | 3                         | 39       | 1      | 4  | 1.926          | 0.75    | 1                    | 25       | 1      | 4  | 2.38           | 0.67    |
|      | Telangana                    | 0                         | 0        | 0      |    |                |         | 0                    | 0        | 0      |    |                |         |
|      | Tamil nadu                   | 0                         | 0        | 0      |    |                |         | 1                    | 28       | 0      |    |                |         |
|      | Kerala                       | 1                         | 8        | 1      |    |                |         | 1                    | 3        | 0      |    |                |         |
|      | Others                       | 0                         | 3        | 0      |    |                |         |                      |          |        |    |                |         |
| 2    | <b>Present year of study</b> |                           |          |        | 3  | 4.59           | 0.58    |                      |          |        | 3  | 6.40           | 0.37    |
|      | I year                       | 1                         | 14       | 0      |    |                |         | 0                    | 15       | 0      |    |                |         |
|      | II year                      | 0                         | 14       | 1      |    |                |         | 0                    | 12       | 1      |    |                |         |
|      | III year                     | 2                         | 10       | 0      |    |                |         | 1                    | 14       | 0      |    |                |         |
|      | IV year                      | 1                         | 12       | 1      |    |                |         | 0                    | 15       | 0      |    |                |         |
| 5    | <b>Marital Status</b>        |                           |          |        | 3  | 0.24           | 0.89    |                      |          |        | 3  | 28.50          | 0.000*  |
|      | Unmarried                    | 4                         | 48       | 2      |    |                |         | 0                    | 55       | 1      |    |                |         |
|      | Married                      | 0                         | 2        | 0      |    |                |         | 1                    | 1        | 0      |    |                |         |
|      | Widow                        | 0                         | 0        | 0      |    |                |         | 0                    | 0        | 0      |    |                |         |
|      | Divorce                      | 0                         | 0        | 0      |    |                |         | 0                    | 0        | 0      |    |                |         |
| 6    | <b>Occupation of father:</b> |                           |          |        | 5  | 12.97          | 0.22    |                      |          |        | 5  | 21.82          | 0.01*   |
|      | Government Employee          | 0                         | 6        | 0      |    |                |         | 0                    | 1        | 0      |    |                |         |
|      | Private Employee             | 1                         | 6        | 1      |    |                |         | 1                    | 2        | 0      |    |                |         |
|      | Not employee                 | 0                         | 5        | 0      |    |                |         | 0                    | 7        | 0      |    |                |         |
|      | Skilled labour               | 3                         | 11       | 0      |    |                |         | 0                    | 13       | 1      |    |                |         |
|      | Unskilled labour             | 0                         | 16       | 1      |    |                |         | 1                    | 28       | 0      |    |                |         |
|      | Business & others            | 0                         | 6        | 0      |    |                |         | 0                    | 5        | 0      |    |                |         |
| 7    | <b>Occupation of mother:</b> |                           |          |        | 5  | 8.18           | 0.61    |                      |          |        | 5  | 28.9           | 0.001*  |
|      | Government Employee          | 0                         | 3        | 0      |    |                |         | 0                    | 3        | 0      |    |                |         |
|      | Private Employee             | 1                         | 1        | 0      |    |                |         | 0                    | 3        | 0      |    |                |         |
|      | Not employee                 | 2                         | 39       | 2      |    |                |         | 1                    | 39       | 0      |    |                |         |
|      | Skilled labour               | 1                         | 4        | 0      |    |                |         | 0                    | 7        | 0      |    |                |         |
|      | Unskilled labour             | 0                         | 1        | 0      |    |                |         | 0                    | 3        | 0      |    |                |         |
|      | Business & others            | 0                         | 2        | 0      |    |                |         | 0                    | 1        | 1      |    |                |         |

## Discussion:

### Frequency and percentage distribution of pre-test and post-test scores of Perceived stress in Experimental group and Control group:

In Experimental group, during pre-test, the perceived stress for majority of students 89.2% (50) are having moderate stress, followed by mild stress 7.14% (4) and severe stress 3.57% (2). After Stress management program, during post-test scores, the moderate stress has been decreased and there was increase in mild stress percentage among majority of students. That is majority of students 50% (28) are under mild stress and 48.2% (27) are under moderate stress and 1.78% (1) are under severe stress. In Control group, there is no considerable change in stress levels during pre-test and post-test scores. Majority of students 96.6% (56) had moderate stress, followed by mild stress and severe stress each of 1.72% (1). In post-test score majority of students 86.2% (50) had moderate stress, followed by 5.17% (3) students having mild stress and severe stress each.

### Comparison of pre-test and post-test scores of perceived stress in Experimental and Control Groups

In Experimental group, during pre-test, the mean and SD are  $18.679 \pm 4.11$ . During post-test, the mean and SD are  $16.02 \pm 5.29$  showing decrease in post-test mean which showed statistical significance between pre-test and post-test score ( $p=0.000$ ), at 0.05 significance level ( $p<0.05$ ). Hence null hypothesis is rejected and alternate hypothesis is accepted which states that perceived stress is decreased after post-test compared to pre-test score. These findings are similar to the findings of Eman NR and Hanem AAA<sup>7</sup> that stress, depression and anxiety level

of the nursing students reduced through implementing education program and three months after program compared to before the program. This was also consistent with other studies conducted by Mehrabi A et.al<sup>9</sup>, Davazdahemami MH et.al<sup>6</sup>, Yazdani et.al<sup>13</sup> that there is efficacy of cognitive and behavioural stress management on reducing the depression.

In Control group, during pre-test the mean and SD are  $18.57 \pm 3.45$  and post-test are  $17.93 \pm 3.89$ , which shows there is no significant decrease in post-test mean at 0.05 significant level.

### Comparison between post-test scores of perceived stress among Experimental and Control groups:

The means and SD of experimental group are  $16.02 \pm 5.297$  and of Control group is  $17.93 \pm 3.89$ . There is significant difference in post-test means. The calculated p-value (0.01) is significant at 0.05 significant level. Hence null hypothesis is rejected and alternate hypothesis is accepted supporting the effectiveness of stress management program on stress. After the stress management program, the post-test means decreased. These findings are similar to findings of Angel R G et.al (2015) that there was a highly significant decrease in the level of stress following meditation in experimental group, compared to control group<sup>2</sup>.

### Association of Selected demographic variables and pre-test perceived stress in Experimental group and Control groups

There is no significant association between selected demographic variables in experimental group like state, year of study, marital status,

occupation of father and occupation of mother. But in Control group, there is significant association between marital status and occupation of mother.

### Conclusion:

Pederson (2012) reported that stress among college students is on the rise<sup>10</sup>. Sneha P et.al.(2014) in their study reported that interventions like Pranayama, relaxation therapy and music therapy can help to reduce the stress among nursing students<sup>11</sup>.

As practice of stress management techniques reduced significant levels of stress, the administrators and curriculum planners can introduce stress management training program into nursing program itself there by its practice can reduce stress levels, decreasing dropout rates and adjustment with the nursing professionally and personally.

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