



Effectiveness of progressive muscle relaxation technique on stress among staff nurses

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Abstract

Stress is the body's reaction to any harmful situations. It can affect all aspects of our life, including our emotions, behaviors, thinking ability, and physical health. The objectives of the study were to assess the pre-test and post-test level of stress, to find out the effectiveness of Progressive Muscle Relaxation Technique and to associate the stress level with selected demographic variable. Pre experimental with one group pretest-posttest design was used in this study. The study was conducted in selected hospitals at Kanyakumari District. The samples consisted of 56 staff nurse and selected by purposive sampling technique on the basis of their pre-test stress score. The tools used for data collection were Demographic Proforma and Perceived Stress Scale. Among the subjects, 87.5% had moderate stress and 12.5% had high stress in pre-test and 87.5% had low stress, 10.71% had moderate stress and 1.79% had high stress in post-test. The study revealed that, the pre-test mean score of stress level was 18.643 ± 4.634 and post-test was 9.768 ± 4.541 . The mean difference of stress level was 8.875, $t=10.236$ and it was statistically highly significant at <0.0001 level.

Keywords: effectiveness, progressive muscle relaxation technique, stress, staff nurses

Introduction

“The greatest weapon against stress is our ability to choose one thought over another.”

William James.

Nature of occupation plays an important role in person's daily life. Occupational stress is a common occurrence among various professions worldwide, it is seen with more frequency and intensity amongst those occupations related to human health professionals especially nurses [1].

Nurses play a pivotal role in any health care institution and encompass the largest workforce in any health care institution. Nurses work long hours; 12-hour shifts are common, especially in hospitals, and the job is physically taxing. In addition, nurses deal with human suffering daily. Medical emergencies added to the tension of patient care, and nurses deal with grief and loss when a patient dies. All of these factors can increase a nurse's stress level and affect nurse health [2].

World Health Organization has viewed stress as a worldwide epidemic because stress has recently been observed to be associated with 90% of visits to physicians. The nursing profession is known to be stressful throughout the world. The United Nations realized the magnitude of this problem as it has labeled job related stress as 20th century disease [3].

Occupational stress is the result of interaction between characteristics of individual workers, resources and stress factors, which are any physical, mental or social factors related to the work environment. An individual may

experience work stress without awareness, however, and in this case its presence may be suspected by others who note changes in the individual's behavior mental or physical status. Heavy work load and a high level of occupational stress diminish nursing quality.

Need for the study

Progressive Muscle Relaxation Technique is a simple exercise to manage stress. It is cost effective for the employers and enables the employees to control their stress perception. It is a method developed in the 1930s in which muscle groups are tightened and then relaxed in succession. This method is based on the idea that mental relaxation will be a natural outcome of physical relaxation. Although muscle activity is involved, this technique requires no special skills or conditioning, and it can be learned by almost anyone. Progressive muscle relaxation is generally practiced for 10-20 minutes a day. With the relaxation response, practice and patience are required for maximum benefits [5].

Statement of the problem

“A Study to Assess the Effectiveness of Progressive Muscle Relaxation Technique on Stress among Staff Nurses in Selected Hospitals at Kanyakumari District, Tamil Nadu, India”

Objectives of the Study

1. To assess the pre-test and post-test level of stress before and after Progressive Muscle Relaxation Technique among

- staff nurses.
- To find out the effectiveness of Progressive Muscle Relaxation Technique on stress among staff nurses.
 - To associate the pre-test score of stress level with selected demographic variables among staff nurses.

Hypotheses

All hypotheses will be tested at $p < 0.05$ level of significance.
 $H_1 \rightarrow$ There will be a significant reduction on stress after Progressive Muscle Relaxation Technique among staff nurses.
 $H_2 \rightarrow$ There will be a significant association between stress and selected demographic variables among staff nurses.

Research approach and design

The research approach used for this study was quantitative approach. Pre experimental with one group pretest-posttest design was used in this study. The schematic diagram of study design is given below.

$O_1 \quad X \quad O_2$

- O_1 - Pre-test assessment of stress among staff nurses
 X - Exposure to an intervention (Progressive Muscle Relaxation Technique)
 O_2 - Post-test assessment of stress among staff nurses

Variables

Dependent variable: Progressive Muscle Relaxation Technique

Independent variable: Stress

Settings of the study

The study was conducted in selected hospitals at Kanyakumari District. These hospitals were selected because of the availability of samples.

Population and sample

The target population of the study was all staff nurses who are working in selected hospitals at Kanyakumari District. Staff nurses between the age group of 21 and 58 years and who fit into the inclusion criteria were selected as samples.

Sample size and sampling technique

The samples consisted of 56 staff nurses. They were selected by purposive sampling technique on the basis of their pre-test stress score.

Criteria for sample selection

Inclusion criteria

- Staff nurses who
- Were in the age group between 21 and 58 years
- Were present during the study period
- We're willing to participate in the study
- Were qualified and registered persons
- Can read, write and understand English language

Exclusion criteria

- Staff nurses who
- We're having problems regarding pulled muscles, broken bones, or any medical contraindication for physical

activities

- Do not want to participate and practice Progressive Muscle Relaxation Technique
- Had no stress in the result of pre-test
- We're receiving any other alternative therapy

Research Tool

The researcher used two data collection instruments.

- Demographic Proforma – to collect the baseline socio demographic information about staff nurses
- Perceived Stress Scale – to assess the level of stress among staff nurses

Description of the tool

Section 1: Demographic Proforma

It consisted of age, sex, marital status, family monthly income, working area and total work experience.

Section 2: Perceived stress scale

It consisted of 10 questions with five alternatives based on their feelings and thoughts. In that, 6 positive and 4 negative questions are there. The score of each positive question was ranged from '0' – '4' ('0' - Never, '1' – Almost never, '2' – Sometimes, '3' – fairly often, '4' – very often) and '4' – '0' for negative questions ('4' - Never, '3' – Almost never, '2' – Sometimes, '1' – fairly often, '0' – very often). The maximum attainable score was '40'. The score was ranged as follows.

0 – 13 Low Stress

14 – 26 Moderate Stress

27 – 40 High stress

Content validity

The demographic proforma, perceived stress scale and Progressive Muscle Relaxation Technique outline were given to seven experts in the field of nursing, physiotherapy and medicine. They were requested to give their valuable opinion on the appropriateness and relevance of the tool. There was 100% agreement for the tool as given by the experts.

Reliability

The reliability of the perceived stress scale was established by test-retest method. Karl Pearson formula was used to determine the relationship among variables and ' γ ' value was found to be 0.91, which indicated that the tool was highly reliable.

Pilot Study

A pilot study was conducted at selected hospital at Kanyakumari District among 5 subjects in a manner in which the final study would be done. Data were analyzed to find out the suitability of statistics. The pilot study revealed that, the study was feasible.

Data collection procedure

The investigator introduced herself to the subjects and obtained their consent. There were 87 staff nurses were participated in the study and their stress level was assessed by perceived stress scale. It was identified that 56 subjects were selected according to the eligibility criteria. Progressive Muscle Relaxation Technique was taught with the information

booklet to the subjects and encouraged them to do the Progressive Muscle Relaxation Technique either morning or evening (according to their convenient time) daily for 4 weeks at their homes. Then, post-test was conducted after 4 weeks. All the data were kept confidential.

Results

Table 1: Distribution of Subjects according to the Selected Demographic Variables (n=56)

Demographic Variables	Frequency	Percentage
Age in Years		
21 – 30	15	26.79
31 – 40	30	53.57
41 – 50	6	10.71
51 - 58	5	8.93
Sex		
Male	10	17.86
Female	46	82.14
Marital Status		
Single	8	14.29
Married	48	85.71
Type of Family		
Nuclear	39	69.64
Joint	17	30.36
Family Monthly Income		
Below Rs. 5,000	2	3.57
Rs. 5,001 – 10,000	15	26.79
Rs. 10,001 – 15,000	32	57.14
Above Rs. 15,001	7	12.5
Working Area		
Operation Theatre	4	7.14
Intensive Care Unit	6	10.71
Casualty	6	10.71
Ward	40	71.44
Total Working Experience		
Below 5 years	7	12.5
6 - 10 years	30	53.57
11 – 15 years	15	26.79
Above 16 years	4	7.14

The data presented in Table – 1 shows that, 55.57% of subjects were falling in the age group of 31 – 40 years, 82.14% were females, 85.71% got married, 69.64% were belongs to the nuclear family, 57.14% were earned Rs. 10,001 – 15,000 per month, 71.44% were working in wards and 53.57% of subjects 6 – 10 years of experience.

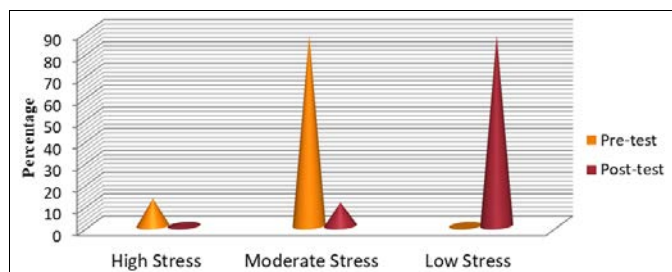


Fig 1: Distribution of Subjects according to the Level of Stress

The above Figure reveals that, 87.5% of subjects had moderate stress and 12.5% had high stress in pre-test and

87.5% had low stress, 10.71% had moderate stress and 1.79% had high stress in post-test.

Table 2: Effectiveness of Progressive Muscle Relaxation Technique among Staff Nurses (n=56)

Progressive Muscle Relaxation Technique	Pre-test		Post-test		Mean Difference	't' Value	P Value
	Mean	SD	Mean	SD			
Level of Stress	18.643	4.634	9.768	4.541	8.875	10.236	P<0.0001

Table-2 shows that, the pre-test mean score of stress level was 18.643±4.634 and post-test was 9.768±4.541. The mean difference of stress level was 8.875, 't'=10.236 and it was statistically highly significant at P<0.0001 level. Hence, the H₁ (There will be a significant reduction on stress after Progressive Muscle Relaxation Technique among staff nurses) was accepted.

Table 3: Association between Pre-test Level of Stress and Selected Demographic Variables (n=56)

Demographic Variables	Below Mean	Above Mean	Total	χ	P Value
Age in Years					
21 – 30	13	21	15	12.75	0.05*
31 – 40	23	7	30		
41 - 50	1	5	6		
51 - 58	2	3	5		
Sex					
Male	4	6	10	5.04	0.08
Female	35	11	46		
Marital Status					
Single	6	2	8	0.12	0.721
Married	33	15	48		
Type of Family					
Nuclear	36	3	39	31.23	0.00001*
Joint	3	14	17		
Family Monthly Income					
Below Rs. 5,000	1	1	2	2.21	0.53
Rs. 5,001 – 10,000	10	5	15		
Rs. 10,001 – 15,000	23	9	32		
Above Rs.15,001	5	2	7		
Working Area					
Operation Theatre	2	2	4	0.95	0.817
Intensive Care Unit	4	2	6		
Casualty	4	2	6		
Ward	29	11	40		
Total Working Experience					
Below 5 years	6	1	7	10.38	0.016*
6 – 10 years	25	5	30		
11 – 15 years	7	8	15		
Above 16 years	1	3	4		

*Significant at 0.05 level

The Table – 3 shows that, there was a significant association between stress level and age (χ²=12.75), type of family (χ²=31.23) and total working experience (χ²=10.38) of staff

nurses. There was no significant association between stress level and sex ($\chi^2=5.04$), marital status ($\chi^2=0.12$), family monthly income ($\chi^2=2.21$) and working area ($\chi^2=0.95$) of subjects. Hence, the H₂ (there will be a significant association between stress and selected demographic variables among staff nurses) was partially accepted.

Discussion

The first objective of the study was to assess the pre-test and post-test level of stress before and after Progressive Muscle Relaxation Technique among staff nurses

Among the subjects, 87.5% had moderate stress, 12.5% had high stress and none of them had low stress in pre-test and 87.5% had low stress, 10.71% had moderate stress and 1.79% had high stress in post-test.

The above finding would be compared with the study done by Palak Patel (2014) describes that, "The effectiveness of progressive muscle relaxation therapy on stress among staff nurses working in selected hospitals at Vadodara City". The study revealed that, in the pre-test most of the nurses 53.3% had moderate stress, 40.0% had mild stress and 6.7% had severe stress and in the post-test most of the nurses had mild stress 73.3 % and no stress 26.7 % [6].

The second objective of the study was to find out the effectiveness of Progressive Muscle Relaxation Technique on stress among staff nurses

The pre-test mean score of stress level was 18.643±4.634 and post-test was 9.768±4.541. The mean difference of stress level was 8.875, 't'=10.236 and it was statistically highly significant at P<0.0001 level.

The finding is supported by the study done by Priya Gangadharan (2018) states that, "Effectiveness of Progressive Muscle Relaxation Techniques on Depression, Anxiety and Stress among Undergraduate Nursing Students". The study concluded that, the difference between the scores found statistically significant at p<0.01 level with a mean and standard deviation of 15.21± 4.58 before intervention and 9.29±4.81 after intervention respectively. Progressive muscle relaxation training was found to be very effective in reducing depression severity levels as more than half of the participants 50.7% identified with normal state after this intervention [7].

The third objective of the study was to associate the pre-test score of stress level with selected demographic variables among staff nurses

There was a significant association between stress level and age ($\chi^2=12.75$), type of family ($\chi^2=31.23$) and total working experience ($\chi^2=10.38$) of staff nurses. There was no significant association between stress level and sex ($\chi^2=5.04$), marital status ($\chi^2=0.12$), family monthly income ($\chi^2=2.21$) and working area ($\chi^2=0.95$) of subjects.

The study finding would be compared with the study done by Arun, M. (2017) did a study on "Effect of Progressive Muscle Relaxation Technique on Stress among Computer Professionals". It concluded that, there is a significant association between level of stress and type of family since p-value is less than 0.05 (p = 0.011) and working hours/a day since p value is less than 0.05 (p = 0.016). There is no significant association between level of stress and age, marital

status, year of experience, salary, resting time in workplace and sleeping hours [8].

Implications of the study

Nursing education

Nurse educators who offer comprehensive services can use Progressive Muscle Relaxation Technique as a method to cope with their stress. Nurse educators can include the complementary therapies for stress in the nursing students' curriculum.

Nursing practice

This study facilitates to educate the Progressive Muscle Relaxation Technique in order to reduce the level of stress. These exercises can be included in the routine activities.

Nursing research

This study adds to the existing body of knowledge in research. This study findings helps to expand professional knowledge upon with further studies can be conducted. This study can be a used for guidance of researcher to make their study effective.

Nursing administration

Nurse administrators should take initiative in organizing the mass educational program in the hospitals and in the community to emphasize the importance of stress reduction program and need to motivate nurses and relatives to encourage participation in the stress reduction programs.

Recommendations

A similar study can be done with control group. Qualitative research should be carried out on stress and interpersonal needs as part of occupational mental health. Active collaboration between the mental health team and the software organizations should take place in order to ensure that proactive measures for the working person's mental health are taken up.

Conclusion

The study suggests the potential benefits of Progressive Muscle Relaxation Technique in reducing negative emotional state of stress among staff nurses. After intervention most of the participants felt relaxed and reduced the severity of negative emotional states and returned to the normal state of emotion. When Progressive Muscle Relaxation Technique is practiced and incorporated into staff nurse's daily routine.

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