



Effectiveness of relaxation technique in reducing stress among nursing students

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Abstract

Introduction: Stress may be viewed as an individual's reaction to change that requires an adjustment or response, which can be physical mental or emotional¹. Responses directed at stabilizing internal biological process and preserving self-esteem can be viewed as healthy adaptation to stress¹. The stress levels of nursing students is higher than those in most other academic programs and some studies have been suggested that their stress levels are higher than their counterparts in medical school social work and Pharmacology programs².

Objectives: To assess the stress of first year BSc nursing students. To assess the effectiveness of relaxation technique in terms of reduction in the mean post-test stress score. To find out the association between mean pre-test stress score and selected demographic variables.

Methodology: An evaluative approach was used for this study. Quasi-experimental one group pre-test post-test design was adopted for the study. 30, 1st year B.Sc. nursing students were selected using simple random sampling method from a selected college of nursing Mangalore. Baseline proforma and stress rating scale were the tools used and the data was analysed using descriptive and inferential statistics.

Results: The results of the study showed that the mean pre-test stress level score (44.10) was more than the mean post- test score (23.20). The computed 't' value ($t_{29}=9.03$) was higher than that of the table value ($t_{29}=2.05$, $p<0.05$). There was no significant Association between the pre- test level of stress score and selected demographic variables.

Conclusion: Findings of the study revealed that progressive muscle relaxation technique was effective to reduce the stress among student nurses. They must be motivated to learn and practice progressive muscle relaxation to promote their level of wellbeing. This study suggested the need for progressive muscle relaxation in the reduction of stress

Keywords: effectiveness, progressive muscle relaxation, stress, student nurses

Introduction

Stress has been defined as a barrier to concentration, problem solving, decision making and other necessary abilities for student's learning; it also has some symptoms and illness in the students such as depression and anxiety^[3]. Stress may influence the health directly or indirectly. Stress has been called the "disease of Civilization". Stress refers to the strain from the conflict between our external environment and us, leading to emotional and physical pressure^[4]. The brain prepares the body for defensive action - the fight or flight response by releasing stress hormones namely cortisone and adrenaline. These hormones raise the blood pressure and the body prepares to react to the situation. With the concrete defensive action, the stress hormones in the blood gets used up, entailing reduce stress effects and symptoms of anxiety^[5].

The degree of stress in our lives is highly dependent upon individual factors such as our physical health, quality of our interpersonal relationships, number of commitments and responsibilities we carry, degree of others dependence upon us, expectations of us, amount of support we receive from others, and the number of changes or traumatic events that have recently occurred in our lives^[5]. Student life coincides with adolescence and stress, and can manifest in children as a reaction to the

changes in life in addition to academic pressure. The adolescent phase is manifested by upheaval of hormonal changes resulting in an increased level of internal tension^[6]. Academic stress among college students has been a topic of interest for many years^[7]. Nursing students often experience immense amount of stress during clinical course and encounter various factors for pressure. Factors such as exams, preparation of articles, and clinical experiences can generate anxiety in nursing students. Relationship with colleagues and patients has also proven significant stressors for many students^[8].

The workload of nursing students is profound not only maintaining academic studies and a clinical practice, but also a work life balance that is important to both young students and those who are more mature, when they achieve degree. Many nursing students today are "Re- careerers" and have multiple family concerns including coping with adolescent children and caring for elderly patients^[2].

Therefore the present study aimed to realize that stress is a common problem experienced by nursing students.

Objectives

1. To assess the stress of 1st year BSc nursing students using a

stress rating scale.

- To assess the effectiveness of relaxation technique in terms of reduction in mean post-test stress score.
- To find out the association between mean pre-test stress score and selected demographic variables.

Methodology

An evaluative approach and a quasi-experimental one group pre-test post-test design was adopted for the study. The setting was a selected college of nursing at Mangalore. Simple random sampling technique was used to select 30, first year B.Sc. nursing students based on inclusion criteria. Demographic proforma and stress rating scale were used for data collection. Demographic proforma consisted of 9 items and stress rating scale consisted of 35 items. The resulting stress scores were categorised as mild stress (0-33%), moderate stress (34-66%) and severe stress (67-100%). Validity of the tools were established by 11 experts. Reliability of the stress rating scale was established using split half method and it was found to be $r=0.78$ (Sphearman’s Brown Prophecy formula). Permission was obtained from the concerned management of the college of nursing to conduct the study. Pilot study was conducted and was found to be feasible and practicable. Informed consent was obtained from year B.Sc nursing students for data collection. After collection of baseline data and stress level of students, progressive muscle relaxation was administered for 7 days. Post- test was conducted on the 7th day using the same rating scale.

Results

1. Description of baseline variables

Majority of the Ist year B.Sc. nursing students (53.4%) were in the age group of 19 years and 43.3% were in the age group of 18 years. Majority (96.7%) student nurses were from nuclear families, 66.7% of student nurses’ fathers had high school education where as 46.7% of student nurses’ mothers had high school education. Most of their father’s occupation was agriculture, 50% of the student nurses had two siblings and only 10% had three siblings. Most of the (56.7%) student nurses were first born child in their family.

2. Stress level of Ist year B.Sc. nursing students

In the pre-test, majority (90%) had moderate stress and only 10% had mild stress. In the post-test majority (90%) had mild stress and 10% had moderate stress level (Table 1)

Table 1: Frequency and percentage distribution of pre-test and post-test stress level of student nurses n=30

| Grading | Stress level | Percentage | Pre-test | | Post-test | |
|----------|--------------|------------|----------|----|-----------|----|
| | | | f | % | f | % |
| Mild | 0-35 | 0-33% | 3 | 10 | 27 | 90 |
| Moderate | 36-70 | 34-66% | 27 | 90 | 3 | 10 |
| Severe | 71-105 | 67-100% | - | - | - | - |

Maximum score: 105

In the area wise analysis, the mean post-test score {academic (9.27), hostel aspects(5.20),health related (1.53), financial (4.17), adjustment in general(3.03)} were significantly lower than the mean pre-test stress score[Academic(18.03), hostel aspects (10.17), health related(3.27),financial(5.57),adjustment in general(7.07)] in all the domains. Maximum reduction was in the

area of adjustment. (Table 2).

Table 2: Area-wise mean percentage and mean reduction of pre-test and post-test stress score n=30

| Area | Max. Score | Pre-test | | Post-test | | Actual reduction |
|----------------|------------|----------|-------|-----------|-------|------------------|
| | | Mean | Mean% | Mean | Mean% | |
| Academic | 51 | 18.03 | 35.36 | 9.27 | 18.17 | 17.19 |
| Hostel aspects | 21 | 10.17 | 48.41 | 5.20 | 24.76 | 23.65 |
| Health related | 9 | 3.27 | 36.30 | 1.53 | 17.04 | 19.26 |
| Financial | 9 | 5.57 | 61.85 | 4.17 | 46.30 | 15.55 |
| Adjustment | 15 | 7.07 | 47.11 | 3.03 | 20.22 | 26.89 |

Max. Score 105

3. Effectiveness of Jacobson progressive muscle relaxation on student nurses in terms of reduction in mean Post-test stress level score.

The mean post-test stress score (23.20) was lower than the mean pre-test stress score (44.10). The Computed‘t’ value ($t_{29}=9.03$) was higher than that of the table value ($t_{29}=2.05$, $p<0.05$). Hence it can be inferred that the Jacobson progressive muscle relaxation was highly effective in reducing stress among student nurses. (Table 3)

Table 3: Paired‘t’ test to test the significant difference between the mean pre-test and post-test stress score. n=30

| | Mean score | Mean difference | SD Difference | t value |
|-----------|------------|-----------------|---------------|---------|
| Pre-test | 44.10 | 20.90 | 12.68 | 9.03 |
| Post-test | 23.20 | | | |

Maximum score = 105, $t_{29}=2.05$, $p<0.05$

4. Association between pre-test stress score and selected baseline variables

The chi square value was computed to find association between mean pre-test stress score and selected baseline variables such as age, type of family, education of father and mother, occupation of father and mother, family income, number of siblings, birth order in the family. The calculated chi – square value was less than the table value (3.84) at 0.05 level of significance except for number of siblings (5.000). Hence it was inferred that there was no significant association between the mean pre- test level of stress score and selected demographic variables except for number of siblings.

Discussion

Majority of the student nurses (53.4%) belonged to the age group of 19 years, 43.3% were in the age group of 18 years, only 3.3 % were in the age group of 20 years. Majority (96.7%) of the student nurses lived in nuclear families. Most of the (66.7%) student nurses fathers’ had high school education, where as 46.7% of the student nurses mothers had high school education. Most of their fathers’ (70%) occupation was agriculture and majority of the student nurses mothers were home makers (93.4%). Half (50%) of the student nurses had two siblings and majority (56.7%) of student nurses were first born in their families.

The present study findings showed the mean post-test stress score (23.20) was lower than the mean pre-test stress score (44.10). The findings of the present study are consistent with the findings of other studies where it was found that the mean percentage of stress score in the post-test is reduced after administering Jacob

sons progressive muscle relaxation. The study conducted at Mangalore among 40 B.Sc. nursing students showed that 55% of the sample experienced severe stress, 12.5% of the sample experienced moderate stress, 32.5% of the sample experienced mild level of stress⁶.

The findings of the present study showed that Jacob sons progressive muscle relaxation is effective in reducing stress among student nurses. The mean post-test stress score (23.20) was lower than the mean pre-test stress score (44.10). These findings were statistically significant at 0.05 level. The Computed 't' value ($t_{29}=9.03$) was higher than that of the table value ($t_{29}=2.05$, $p<0.05$). This shows that Jacobson's progressive muscle relaxation was highly effective in reducing stress among student nurses. The findings of this study are consistent with the study conducted to identify the effectiveness of progressive muscle relaxation technique on examination stress among adolescents in selected high schools of Mangalore, Karnataka showed that the mean pre-test stress score was 111.67 which was more than the mean post-test stress score 74.33. The computed 't' value was ($t_{35}=17.57$) was higher than that of the table value ($t_{35}=1.69$, $p<0.05$). Progressive muscle relaxation technique was effective to reduce examination stress among adolescents⁹.

There was no significant association between selected demographic variables except for number of siblings in the family and the pre-test stress score ($\chi^2<3.84$, $P\leq 0.05$). The findings of the study showed that Jacob sons progressive muscle relaxation was effective in reducing stress among 1st year B.Sc. nursing students.

Conclusion

Progressive muscle relaxation was effective in reducing stress among student nurses. It has no side effects and is cost effective. Implementing techniques to cope with stress in the nursing programme has an effect on retention and academic performances. A reduction in stress can bring about changes in life and in turn it will provide proper protection to self.

Conflict of Interest

None

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