Effectiveness of Laughter Therapy on Reduction of Stress among Nursing Students

Kanika Guleria[1], Pushplata Manta[2]

[1]Assistant Professor, [2]Nursing Tutor, Chitkara School of Health Sciences, Chitkara University, Punjab, India

Abstract

Context: Stability of hormones are being effected by consistent stress in the human body which leads to changes in thoughts and situations that make the individual perplexed, restless or anxious. Laughter therapy is the antidote for stress. It helps to release serotonin in brain which is essential for the uplift of mood.

Aim: The aim of this research is to find out the efficacy of laughter therapy on the decline of stress.

Setting and design: Data collection for the commenced study was conducted at Sri Sukhmani College of Nursing and Amar Professional College of Nursing, Dyalpura, District Mohali, Punjab. A quantitative approach with "Quasi-experimental design" was adopted to conduct this research.

Methods and Material: Technique used for selecting the subjects was purposive sampling technique. 60 subjects were selected and sub grouped into experimental and control group (30 each). 5 point likert scale i.e. Sheldon Cohen"s (1983) Perceived Stress Scale which includes 10 items, was selected to evaluate the level of stress among nursing students.

Statistical analysis used: Descriptive and inferential statistics were used.

Results:

- Before implementation of laughter therapy, it was identified that stress scores were approximately same in both the groups.
- After implementation of therapy, it was identified that stress scores in the experimental group was lower than the control group.

Conclusions: Study concluded with the result that stress level is alleviating among student nurses with help of laughter therapy.

Key Words: *Effect, Laughter therapy, Stress, Nursing students.*

Introduction

Stress can be defined in a number of ways and every individual faces it in their everyday life. But the most important part of an individual is to manage it. Stress may lead to benefits or drawbacks; it leans on one's view that how to perceive and take over it.[1] If the stress is not managed adequately, sentiments of dejection, anxiety, and restlessness may occur. Stress can only be minimized by using adequate coping techniques which brings balance in the human body and mind.

Corresponding Author:
Ms. Kanika Guleria
Chitkara School of Health Sciences
Chitkara University, Punjab
Contact no. 8988051972
Email: kanikaglr@gmail.com

In the nutshell, Student nurses most commonly face the following stresses i.e.

- Societal stress,
- Monetary stress,
- College stress, and
- Clinical field stress.

Societal pressure doesn't mean having individuals around you. It incorporates dread of speech, showdowns, and overseeing authority obligations..

Monetary stress is faced when students are in lack of resources (Example: Money Crisis).

Academic/college stress in students can be due to learning for finals concerning rank competition or dread of failure in finals. Clinical area stress includes clinical placements, fear of making mistakes, and interactions with other staff members.[2]

Students confront numerous stressors and hindrances during student life. Nursing student encounter's even "more stress" as compared to their buddies registered in other courses. Accordingly, various researchers proclaimed that level of stress is high in student nurses. Nursing students are prone to different types of stresses because of the ever-changing environment of college. Increased stress level is supposed to influence students' wellbeing and scholastic functions.[3]

So as to lessen the degree of stress, various relaxation techniques and exercises have been utilized. Among this laughter is considered as the finest stress busting.[4] Laughter is the human's best gift for coping and endurance. The silent strength of laughter is triggered whenever we laugh and need of laughter is much more in this stressful world.[5] "Freud stated in his theory that laughter therapy releases tension and psychic energy", it is a coping mechanism for when one is upset, angry or sad. 15 minutes of laugh is equaled to the benefit of two-hour sleep, 15 minutes laugh adds two days life span. It stimulates the brain, respiratory, nervous, hormonal, and muscular systems. Many researches evidenced that laugh increase the secretion of serotonin in brain which is essential for the uplift of mood.[6] It also triggers the discharge of endorphins (body's natural analgesic) and produces a general feeling of prosperity". Dr. Leeberk investigated that stress hormones can be decreased by therapy of laughter.[4] According to Jhonson Thomas (2011) in Maharashtra, 70% of subjects have become short-tempered and suicide rates are inclined with respect to raise in age only due to stress, but there has recently been an alarming increase in self-destructive behaviors among youngsters because of stress.[7]

Laughter therapy has various benefits in stress management like it helps to decrease the stress hormones like "cortisol, epinephrine (adrenaline), dopamine" and also reinforces the health-promoting hormones like "endorphins". Laughter helps to discharge tensions, physically as well as emotionally; which also keeps the heart healthy. Laughter changes the emphasis beyond outrage, stress, and pessimistic feelings in an advantageous manner than any insignificant distractions. Laughter assists us to connect with others in easy means that can uplift the mood of people around us which may lead to healthy social interaction and a decline in the level of stress.[8]

I. Based on own personal experience, the researcher felt that nursing students experience a lot of stress due to competition, topographical versatility, new way of life, exams, tests, grades, extended periods of time of contemplating, work, family and other individual responsibilities, students also face the difficulties of clinical practice and strict disciplinary lodging life, monetary burden, dispute with friends or classmates, scholastic pressure as well as in the clinical area as they have direct contact with patients. There are many physiological and psychological changes in the body due to stress that may lead to various mental and physical illnesses. As many of studies have revealed that there is an increasing number of suicide due to stress among students and many of the previous researches have shown the benefits of laughter therapy in reduction of stress, but few studies have shown its impact on nursing students, therefore need for conducting the study is recognized among nursing students.

Subjects and Methods

A quantitative research approach with a quasi-experimental research design was adopted to accomplish the objectives of the survey i.e. to determine the effectiveness in reduction of stress level among nursing students with assistance of laughter therapy. Control

group and manipulation (i.e. intervention) was included. But randomization was not done due to the non-availability of a large number of subjects with stress level much higher than average as per eligibility criteria for the study. Two different colleges were included for the study, one for the experimental group and one for the control group to prevent contamination in April 2016. The experimental group was selected from Sri Sukhmani College of Nursing and the Control group was selected from Amar Professional College of Nursing, Dyalpura, District Mohali, Punjab. Purposive sampling technique was utilized to select 60 subjects (30 in each group). A survey was done in both the settings among all the nursing students present at the time of data collection to identify the stress level using the Perceived Stress Scale. 103 subjects were surveyed in a setting chosen for the experimental group, 39 subjects had "much higher than average stress", 28 had "slightly higher than average stress", 26 had "average stress" and 10 subjects had "slightly lower than average stress". Out of 39 subjects who had "much higher than average stress", 30 subjects were conveniently selected in the experimental group. Whereas 88 subjects were surveyed in a setting chosen for the control group, 35 subjects had "much higher than average stress", 21 had "slightly higher than average stress", 19 had "average stress" and 13 subjects had "slightly lower than average stress". None of subjects had "much lower than average stress" in both the settings. Out of 35 subjects who had much higher than average stress, 30 subjects were conveniently selected in control group. Subjects who have much higher than average perceived stress level as measured by Perceived Stress Scale were included in study. Perceived Stress Scale by Sheldon Cohen (1983)[9], the standardized tool was selected to determine the stress level among student nurses. The tool was considered for study after extensive review of literature and experts" opinion. Tool consisted of 2 sections. Section- A: Demographic profile (It consisted of personal information about the nursing students such as age, gender, course, types of family, family income, residence, living arrangement, and marital status), Section-B: Perceived Stress Scale (This section consisted of 5 point likert scale i.e. Sheldon Cohen's (1983) Perceived Stress Scale which includes 10 items, out of which 4 are positive statements and 6 are negative statements). Co-efficient alpha reliability of this scale is 0.84. Researcher got the training and certificate from psychologist for laughter therapy. Pre test of all the students was done in both colleges by using Perceived Stress Scale. A written informed consent was taken from each study sample. Laughter exercise sessions had been taken by researcher for experimental group for 15-20 minutes every day for 10 days. Everyday laughter therapy was started by doing deep breathing exercises. Laughter therapy was done in group with techniques greeting laughter, hearty laughter, milkshake laughter, one meter laughter, cell phone laughter, argument laughter and appreciation laughter. Deep breathing exercise was done after every two laughter exercises to relax the participants and it was also done at the end of each session. No laughter therapy was given to the control group. After 10 days, the post-test stress level was conducted among both experimental & control groups using the Perceived Stress Scale, and the researcher thanked the participants for their cooperation & interest during laughter therapy sessions. Approval from the ethical and research committee of Sri Sukhmani College of Nursing was taken before starting the study.

Results

100% subjects were females in both the groups. In experimental & control groups, majority of the subjects (76.66%, 70%) fall under age group of 17-20 years, 100% subjects were females and single and 70%, 63.33% were undergoing B.Sc.(N) course. In the experimental group, 56.66% subjects belonged to nuclear families whereas in the control group 50% each belonged to joint family and nuclear family. In experimental group, 26.66% each had family income every month between Rs.10,000-20,000, Rs.20,001-30,000, and Rs.30-001-40,000 although in control group half of the subjects (53.33%) had family income per month between Rs.10,000-20,000. In the experimental group & control group the majority of subjects (86.66%, 90%) were presently living in the hostel and nearly half of the subjects (50%, 43.33%) belonged to rural areas. For matching of experimental & control group chi-square test was applied for each demographic variable. For all the variables the value of chi-square was identified non-significant at $p \leq 0.05$. Hence, both groups were considered homogenous [Table 1].

In the experimental group, the mean post-test stress scores (15.13 ± 1.776) of subjects was less from

control group (22.43 ± 1.9241), to find the difference unpaired t-test was applied, the value of t was 15.270 at df 58 and p = 0.000, which was found to be statistically significant at p level ≤ 0.05. And in control group, the mean pretest stress scores of subjects (22.73 ± 1.9640) was found approximately similar to the mean posttest scores (22.43 ± 1.9241), to find the difference one of the Parametric test was applied i.e. "paired t-test". The value of t was 0.9312NS at df 29 was identified to be statistically non-significant at p level ≤ 0.05. The mean post-test stress score of subjects in the experimental group (15.13 ± 1.776) was lowest than mean pre-test scores (23.40 ± 1.811), to find the difference "t-test" was used, value of t was 23.262 at df 29 which was identified to be statistically significant at p level ≤ 0.05 [Table 2].

Table 1: Percentage distribution of sample characteristics in experimental and control group

Demographic variables	Experimental group n=30		Control group n=30		Chi square	df	p-value
	n	%	n	%			
Age							
16-20	23	76.66	21	70	0.3409NS	1	0.5593
Above 20	7	23.33	9	30			
Gender	30	100	30	100	0.000NS	0	0
Female							
Course	21	70	19	63.33	0.3000NS	1	0.5838
B.Sc.(N)	9	30	11	36.66			
GNM							
Type of family	13	43.33	15	50	0.2679NS	1	0.6047
Joint	17	56.66	15	50			
Nuclear							
Family income	8	26.66	16	53.33	5.3333NS	3	0.1488
10,000-20,000	8	26.66	4	13.33			
20,001-30,000	8	26.66	4	13.33			
30,001-40,000	6	20	6	20			
Above 40,001							
Residence	15	50	13	43.33	1.0087NS	2	0.6039
Rural	4	13.33	7	23.33			
Semi-urban	11	36.66	10	33.33			
urban							
Living arrangement							
Hostel	26	86.66	27	90	0.1617NS	1	0.6875
Home	4	13.33	3	10			
Marital status							
Single	30	100	30	100	0.00NS	0	0

Table 2: Comparison of Mean Pre-test and Post-test Stress Scores among Nursing Students in both Groups

Pre-Post test	Experimental Group n = 30		Control group n = 30		t-value	df	p-value
	mean	± S.D	mean	± S.D			
Pre-test Post-test	23.40 15.13	1.811 1.776	22.73 22.43	1.9640 1.9241	1.2375NS 15.270*	58 58	0.1771 0.000
	t= 23.262* df= 29 p-value= 0.0001		t= 0.9312NS df= 29 p-value= 0.3594				

In experimental & control group during pre-test all (100%) nursing students had much higher than average stress. During post test in experimental group, 56.66% subjects had average stress, 43.33% had slightly higher than average, none of the subjects had much higher than average stress in whereas in control group none of the subjects had average stress, 16.66% students had slightly higher than average, and 83.33% students had much higher than average stress. Figure 1 shows that After the implementation of laughter therapy in experimental group less than half had slightly higher than average stress, more than half had average stress and none of subjects had much higher than average stress whereas in control group where laughter therapy was not administered, majority of subjects had much higher than average stress and very few had slightly higher than average stress.

Table 3 Association of Mean Post-test Stress Scores with their selected demographic variables of experimental group

Characteristics	n	mean	± SD	F / t	df	p - value
Age, (In years)						
16-20	23	15.434	1.804	1.7435NS(t)	28	0.0922
Above 20	7	14.142	1.345			
Course						
B.Sc. (N)	21	15.190	1.778	0.2649NS(t)	28	0.7931
GNM	9	15.000	1.870			
Type of family						
Joint.	13	14.538	2.145	1.6514NS(t)	28	0.1098
Nuclear.	17	15.588	1.325			
Family income						
10,000-20,000	8	15.250	1.669		3	0.9959
20,001-30,000	8	15.125	1.885	0.0206NS(F)	26	
30,001-40,000	8	15.125	2.295			
Above 40,001	6	15.000	1.414			
Residence						
Rural	15	14.933	2.051		2	0.8185
Semi-urban	4	15.500	1.732	0.2025NS(F)	27	
Urban	11	15.272	1.489			
Living arrangement						
Hostel	26	15.153	1.869		28	0.8752
Home	4	15.000	1.154	0.1586NS(t)		

Table 3 depicts that using ANOVA and t test, in experimental group no significant correlation was identified among post test stress scores and demographic variables, age (t=1.7435), course (t=0.1649), type of family (t=1.6514), family income (F=0.0206), residence (F=0.2025), and living arrangement (t=0.1586) at p level ≤ 0.05. Hence, it can be inferred that the post test stress scores in experimental group was not associated with any of the demographic variables of nursing students.

Table 4 Association of mean post-test stress scores with selected demographic variables of control group.

Characteristics	n	mean	± SD	F / t	df	p - value
Age, (In years)						
16-20	21	22.238	1.640	0.8447NS(t)	28	0.4054
Above 20	9	22.889	2.522			
Course						
B.Sc. (N)	19	22.736	2.156	1.1414NS(t)	28	0.2634
GNM	11	21.909	1.375			
Type of family						
Joint.	15	22.800	1.971	1.0454NS(t)	28	0.3048
Nuclear.	15	22.066	1.869			
Family income	16	22.000	2.000	1.1540NS(F)	3	0.3448
10,000-20,000	4	22.000	0.816		26	
20,001-30,000	4	23.750	1.258			
30,001-40,000	6	23.000	2.366			
Above 40,001						
Residence	13	22.461	3.017	0.6738NS(F)	2	0.5151
Rural	7	23.571	1.902		27	
Semi-urban	10	22.400	0.966			
Urban						
Living arrangement	27	22.333	1.961	0.8499NS(t)	28	0.4026
Hostel	3	23.333	1.527			
Home						

Table 4 depicts that using ANOVA and t-test, in control group no significant correlation was identified in between post-test stress scores and demographic variables, age (t=0.8447), course (t=1.1414), type of family (t=1.0454), family income (F=1.1540), residence (F=0.6738) and living arrangement (t=0.8499) at p level ≤ 0.05. Hence, it can be inferred that the post-test scores in Control group was not associated with any of the demographic variables of nursing students.

Discussion

These findings are supported by the findings of the studies conducted by Karabacak U (2012)[10] which concluded that majority i.e. 38 (74.50%) of subjects had higher stress and 13 (25.49) of them had low stress. Another study conducted by Sheu S, Lin HS, Hwang SL (2002)[11] revealed that majority of nursing students 428 (76%) has higher stress, 133 (23.07%) had moderate stress; the most documented stressors were inadequate knowledge and skills, caring for patients, and assignment burden.

In this study laughter therapy was administered and it was advantageous in lowering stress among the nursing students which is supported by the findings of studies conducted by Scott E (2009)[12] which concluded that after laughter therapy programme total mean score decreased from 5.25 ± 2.01 to 3.02 ± 1.02, the findings of this research study provide evidence that laughter therapy is effective in reducing stress. Berk AR (2005)[13], Seaward BL (2003)[14] which revealed that after laughter therapy in post test 76% subjects had mild stress and 24% had moderate stress, the distinction between pre

and post test stress scores was significant at $p < 0.05$ level. It was found that, no relationship exist between post test stress level between nursing students and their selected demographic variables in both the groups. These findings are supported by the findings of studies performed by Nicolas AK, Rod A Martin (2010)[15], Rahul M (2010)[16] which concluded that there was no considerable correlation within post-test stress level with their selected demographic variables of nursing students.

Conclusions

Our quasi-experimental study reveals that the pre-test stress scores in both groups were approximately similar. However,

· In Experimental group, mean post-test stress scores were less as compared to mean pre-test stress scores after implementation of laughter therapy.

· In Control group, the mean pre and post-test stress scores were approximately similar. Hence, it is concluded that stress level among nursing students is reduced by use of laughter therapy.

Therefore, the research hypothesis is accepted and it is identified that no correlation was found between the post-test stress scores of student nurses and their selected demographic variables in both groups. (Experimental & Control)

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