

A Pre Experimental Study to Assess the Effectiveness of Yoga on Stress and Anxiety Level among B.Sc. Nursing First Year Students at Selected Nursing Colleges in Gurugram, Haryana

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Abstract: A Pre experimental Study to assess the effectiveness of “yoga” on stress and anxiety level among b.sc. Nursing first year students. In this study a quantitative approach and pre-experimental research design was used. 37 B.Sc. nursing first year students were selected by total enumeration sampling technique in R.R. College of nursing Gurugram Haryana. Modified Stress Assessment Scale was used to assess the stress & Standardized Self rating anxiety scale was used to assess the anxiety of students. The computed “t” value (“t”=2.783) for stress was significant at 0.05 level of significance. The computed “t” value (“t”=1.86) for anxiety was statistically not significant at 0.05 level of significance. The ‘YOGA’ was significantly effective in reducing the stress, and difference obtained in the mean anxiety score after the administration of “YOGA” was found effective in reducing the anxiety level of students.

Keywords: Yoga, Effectiveness. Stress, Anxiety

1. Introduction

Academic sources for stress and anxiety like examinations, long hours of study, lack of free time, assignments and grades and lack of timely feedback after their performance, special activity of the academic program like arrangement and conduction of workshops, also produce stress and anxiety among nursing students.¹ Breathing and relaxation techniques regularly are advocated for reduction of stress control of psycho-physiological states and to improve organ.²

2. Review of Literature

- 1) An exploratory, cross sectional study comprised of 100 conveniently selected postgraduate nursing students from four nursing colleges of Punjab. Results showed that about 34% students had mild, 18% had moderate, 22% had severe anxiety and 15% had extremely severe anxiety. About 15% students had mild stress, 26% had moderate stress, 6% had severe stress and 3% had extremely severe stress. Study suggests that postgraduate nursing students experienced high levels of depression, anxiety and stress which probably may affect their physical and psychological wellbeing.³
- 2) An experimental study was conducted to evaluate the effectiveness of yoga therapy on anxiety perceptions and experiences. Yoga therapy was associated with significant decreases in anxiety perceptions over time, these changes were not significant when compared with the control group.⁴
- 3) An experimental study was conducted to assess and compare the stress level of B.Sc. Nursing first year students before and after the administration of Yoga

Nidra. The findings of the study reveals that mean stress score after Yoga Nidra (17.8) was lesser than the mean stress score before Yoga Nidra (28.82). This indicates decrease in stress scores of B.Sc. nursing first year students.⁵

3. Objectives of Study

- 1) To assess and evaluate the level of stress among B.Sc. Nursing first year students before and after the administration of “YOGA”.
- 2) To assess and evaluate the level of anxiety among B.Sc. Nursing first year students before and after the administration of “YOGA”.
- 3) To determine the association between pre-test stress score with selected personal variables.
- 4) To determine the association between pre-test anxiety score with selected personal variables.
- 5) To find out the association between post-test stress score with selected personal variables.
- 6) To find out the association between post-test anxiety score with selected personal variables.

4. Methodology

Quantitative research approach and pre-experimental research design was used in this study.

Population: B.Sc. Nursing Students

Sample: B.Sc. nursing first year students studying in R.R. College of Nursing Gurugram, Haryana

Sample: 37

Sampling Technique: Total enumeration

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Hypothesis of the Study

H1: There will be a significant difference between pre-test mean stress score and post test mean stress score of B.Sc. Nursing first year students after the administration of “YOGA” in selected Nursing Colleges of Gurugram at 0.05 level of significance.

H2: There will be a significant difference between pre-test mean anxiety score and post test mean anxiety score of B.Sc. Nursing first year students after the administration of “YOGA” in selected Nursing Colleges of Gurugram at 0.05 level of significance.

H01: There will be no significant difference between pre-test mean anxiety score and post test mean anxiety score of B.Sc. Nursing first year students after the administration of “YOGA” in selected Nursing Colleges of Gurugram at 0.05 level of significance

H02: There will be no significant difference between pre-test mean anxiety score and post test mean anxiety score of B.Sc. Nursing first year students after the administration of “YOGA” in selected Nursing Colleges of Gurugram at 0.05 level of significance

Variables of the Study

- 1) Dependent Variables : Stress and anxiety
- 2) Independent Variables : YOGA

Data Collection Tools and Technique

S. No.	Tools	Purpose	Data Collection Technique
1	Selected Personal Variables	To assess the personal information of B.Sc nursing 1 st year students.	Paper and Pencil
2	Modified Stress Assessment Scale	To assess the stress level of B.Sc nursing 1 st year students.	
3	Standardized zung self-rating anxiety scale	To assess the anxiety level of B.Sc nursing 1 st year students.	

Reliability

Name of the Tool	Method	Reliability
Zung self-rating scale	Karl Pearson Correlation Coefficient	.80
Modified Stress Assessment Scale	Test Re-test	.906

Content validity of the tool

The content validity of the tool was obtained by submitting the tools to seven (7) experts. All experts were agreed with statement except for few suggestions. Draft of the tool consisted of 20 items.

Final study

The final study was conducted in the **R.R. College of Nursing Gurugram, Haryana**. The data was collected from 01/02/2019 to 28/02/2019 by using total enumeration technique.

Table 5: Frequency and Percentage Distribution of Selected Personal Variables of B.Sc. Nursing First Year

N=37

Personal Variable	Categories	Frequency (f)	Percentage (%)
Age	16-18	25	67.6
	19-21	10	27
	22-25	2	5.4
Sex	Female	37	100
Religion	Hindu	36	97.3
	Muslim	0	0
	Sikh	1	2.7
	Christian	0	0
Place of residence	Hostler	15	40.5
	Day Scholar	22	59.5
Type of Family	Nuclear	22	59.5
	Joint	15	40.5
No. of Siblings	0	1	2.7
	1	12	32.4
	2	13	35.1
	3	4	10.8
	More than 3	7	18.9
Family income/ Month	Below 20 K	12	32.4
	21-40K	17	45.9
	41-60K	7	18.9
	More than 60 K	1	2.7
Mother's Education	<10th	16	43.2
	12th	13	35.1
	Graduation	3	8.1
Mother's Occupation	PG	5	13.5
	Private Employee	4	10.8
	Business	0	0
	Government Employee	3	8.1
Father's Education	Home Maker	30	81.1
	10th	9	24.3
	12th	14	37.8
	Graduation	11	29.7
	PG	3	8.1
Father's Occupation	Private Employee	15	40.5
	Business	6	16.2
	Government Employee	8	21.6
	Not Working	8	21.6
History of stress disorder	Yes	1	2.7
	No	36	97.3
History of anxiety disorder	No	37	100
Previous exposure to yoga	Yes	11	29.7
	No	26	70.3

Table 5 depicts that majority of B.Sc. Nursing first year students 25 (67.6%) were in the age group of 16-18 year, All the students were female and 36(97.3%) belong from Hindu religion, 22(59.5%) were day scholar. 22(59.5%) of students were belong from nuclear family. 13(35.1%) students have 2 sibling, 17(45.9%) students have 21000 to 40000 family income per month, 16(43.2%) student’s mothers 10th passed, 30(81.1%) mothers were home maker. 14(37.8%) student’s fathers were 12th passed, and 11(29.7%) were graduate. 15(40.5%) student’s father were working in private sector. 1(2.7%) of the student has previous history of stress and no one had any previous anxiety disorder and 26(70.3%) students has not previously exposed to any Yoga session before.

Table 6: Findings Related to Level of Stress of Students Before and After the Administration of “YOGA” N=37

Categories	Pre-Test		Post-Test	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Mild	26	70.3	29	78.4
Moderate	10	27	8	21.6
Severe	01	2.7	0	0

Table-6 reveals that before the administration of “YOGA” 26(70.3%) of students have mild level of stress, 10(27%) of students have moderate level of stress and 1(2.7%) of students have severe level of stress, whereas after the administration of “YOGA” 29(78.4%) of students have mild level of stress, (21.6%) of students have moderate level of stress.

Table 7: Findings Related to Effectiveness of “YOGA” on Stress Level of B.Sc. Nursing First Year Students, N=37

Paired t-Test	Mean	SD	Mean Difference	df	t-test Value	p-Value
Pre-Test Stress score	44.81	12.76±2.09	27.83	36	2.158	.038*
Post-Test Stress score	42.02	10.84±1.78				

(P<0.05), *significance at 0.05 level of significance

Table-7 shows that the computed “t” value (“t”=2.158) (P=.038) was significant at 0.05 level of significance. Thus it is established that difference obtained in the mean stress score before and after the administration of “YOGA” was effective in reducing the stress level of B.Sc. Nursing first year students.

Hence the null hypothesis H₀₁ was rejected and research hypothesis H₁ was accepted.

Table 8: Findings Related to Anxiety Level of B.Sc. Nursing First Year Students Before and After the Administration of “YOGA”, N=37

Categories	Pre-Test		Post-Test	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Normal Range Anxiety	27	73	30	81.1
Mild to Moderate Anxiety	10	27	7	18.9
Marked Severe Anxiety	0	0	0	0
Extreme Anxiety	0	0	0	0

Table-8 reveals that before the administration of “YOGA” 27(73%) of students have normal level of anxiety and 10(27%) of students have mild to moderate level of anxiety, whereas after the administration of “YOGA” 30(81.1%) of students have normal level of anxiety and 7(18.9%) students have mild to moderate level of anxiety.

Table 9: Findings Related to Effectiveness of “YOGA” on Anxiety Level of B.Sc. Nursing First Year Students. N=37

Paired t-Test	Mean	SD	Mean Difference	df	t-test Value	p-Value
Pre-Test Anxiety score	39.37	8.96±1.47	2.05	36	1.86	.071 ^{NS}
Post-Test Anxiety score	37.32	8.34±1.37				

NS (P>0.05), Not significance at 0.05 level of significance

Table-9 shows that the mean anxiety score of B.Sc. Nursing first year students before the administration of “YOGA” was 39.37 and standard deviation was 8.96 and mean anxiety score after the administration of “YOGA” was 37.32 and standard deviation was 8.34 with the mean difference of 2.05. The computed “t” value (“t”=1.86) (P=.071) was statistically not significant at 0.05 level of significance. Thus it is established that difference obtained in the mean anxiety score before and after the administration of “YOGA” was effective in reducing the anxiety level of B.Sc. Nursing first year students.

Hence the null hypothesis H₀₂ was accepted and research hypothesis H₂ was rejected.

Table 10: Fisher’s Exact Value Showing Association of Pre-test Stress Score with Selected Personal Variables of B.Sc. Nursing First Year Students, N = 37

Personal Variable	Categories	Normal Range	Mild Moderate	Severe	Fisher’s Exact	df	p-value
Age	16-18	18	6	1	.426	2	1.00 ^{NS}
	19-21	7	3	0			
	22-25	1	1	0			
Sex	Female	26	10	1
Religion	Hindu	25	10	1	.284	1	1.00 ^{NS}
	Sikh	1	0	0			
Place of residence	Day Scholar	15	6	1	.379	1	.690 ^{NS}
	Hostler	11	4	0			
Type of Family	Nuclear	17	5	0	.379	1	.690 ^{NS}
	Joint	9	5	1			
No. of Siblings	0	1	0	0	1.727	4	.876 ^{NS}
	1	8	4	0			
	2	8	4	1			
	3	3	1	0			
	More than 3	6	1	0			
Family income/ Month	Below 20 K	8	4	0	4.760	3	.173 ^{NS}
	21-40K	12	4	1			
	41-60K	6	1	0			
	More than 60 K	0	1	0			
Mother’s Education	10th	11	5	0	4.012	3	.220 ^{NS}
	12th	10	3	0			
	Graduation	1	1	1			
	PG	4	1	0			
Mother’s Occupation	Private Employee	4	0	0	1.287	2	.605 ^{NS}
	Government Employee	2	1	0			
	Home Maker	20	9	1			
Father’s Education	10th	8	1	0	4.438	3	.198 ^{NS}
	12th	10	4	0			
	Graduation	6	4	1			
	PG	2	1	0			
Father’s Occupation	Private Employee	10	4	0	3.184	3	.377 ^{NS}
	Business	4	2	0			
	Government Employee	6	2	0			
	Not Working	6	2	0			
History of stress disorder	Yes	0	1	0	3.726	1	.216 ^{NS}
	No	26	9	1			

History of anxiety disorder	No	26	10	0
Previous exposure to yoga	Yes	7	3	1	.295	1	.672 ^{NS}
	No	19	7	0			

NS (P>0.05), Not significant at 0.05 level of significance

Table 10 shows that Fisher’s Exact computed between stress score before the administration of “YOGA” with selected were found there were not significant at 0.05 level of significance.

Table 11: Fisher’s Exact Value Showing Association of Pre-test Anxiety Score with Selected Personal Variables of B.Sc. Nursing First Year Students, N= 37

Personal Variable	Categories	Normal Range	Mild Moderate	Fisher's Exact	df	p-value
Age	16-18	15	10	6.305	2	0.033 ^{NS}
	19-21	10	0			
	22-25	2	0			
Sex	Female	27	10
Religion	Hindu	26	10	.381	1	1.00 ^{NS}
	Sikh	1	0			
Place of residence	Day Scholar	15	7	.632	1	.481 ^{NS}
	Hostler	12	3			
Type of Family	Nuclear	17	5	.509	1	.708 ^{NS}
	Joint	10	5			
No. of Siblings	0	1	0	5.711	4	.176 ^{NS}
	1	11	1			
	2	9	4			
	3	3	1			
	More than 3	3	4			
Family income/ Month	Below 20 K	9	3	.704	3	1.00 ^{NS}
	21-40K	12	5			
	41-60K	5	2			
	More than 60 K	1	0			
Mother's Education	10th	12	4	21.132	3	.890 ^{NS}
	12th	10	3			
	Graduation	2	1			
	PG	3	2			
Mother's Occupation	Private Employee	3	1	.908	2	.798 ^{NS}
	Government Employee	3	0			
	Home Maker	21	9			
Father's Education	10th	7	2	.578	3	1.00 ^{NS}
	12th	10	4			
	Graduation	8	3			
	PG	2	1			
Father's Occupation	Private Employee	9	6	8.113	3	.022 ^{NS}
	Business	6	0			
	Government Employee	4	4			
	Not Working	8	0			
History of stress disorder	Yes	0	1	2.775	1	.270 ^{NS}
	No	27	9			
History of anxiety disorder	No	27	10
	Yes	5	6	6.010	1	.022*
No	22	4				

(P<0.05), * Significant at 0.05 level of significance, NS (P>0.05) Not Significant

Table 11 shows that Fisher’s Exact computed between anxiety score before the administration of “YOGA” with selected personal variables. It shows that significant association with age, father’s occupation, and previous exposure to Yoga and rest of others were not significant at 0.05 level of significance.

Table 12: Fisher’s Exact Value Showing Association of Post-test Stress Score with Selected Personal Variables of B.Sc. Nursing First Year Students, N= 37

Personal Variable	Category	Normal Range	Mild Moderate	Severe	Fisher's Exact	df	p-value
Age	16-18	19	6	0	.426	2	1.00 ^{NS}
	19-21	8	2	0			
	22-25	2	0	0			
Sex	Female	29	8	0
Religion	Hindu	28	8	0	.284	1	1.00 ^{NS}
	Sikh	8	0	0			
Place of residence	Day Scholar	11	4	0	.379	1	.690 ^{NS}
	Hostler	18	4	0			
Type of Family	Nuclear	18	4	0	.379	1	.690 ^{NS}
	Joint	11	4	0			
No. of Siblings	0	1	0	0	1.727	4	.876 ^{NS}
	1	10	2	0			
	2	9	4	0			
	3	3	1	0			
	More than 3	6	4	0			
Family income/ Month	Below 20 K	9	3	0	4.760	3	.173 ^{NS}
	21-40K	13	4	0			
	41-60K	7	0	0			
	More than 60 K	0	1	0			
Mother's Education	10th	14	2	0	4.012	3	.220 ^{NS}
	12th	10	3	0			
	Graduation	1	0	0			
	PG	4	1	0			
Mother's Occupation	Private Employee	4	0	0	1.287	2	.605 ^{NS}
	Government Employee	2	0	0			
	Home Maker	23	7	0			
Father's Education	10th	9	0	0	4.438	3	.198 ^{NS}
	12th	11	3	0			
	Graduation	7	4	0			
	PG	2	1	0			
Father's Occupation	Private Employee	11	4	0	3.184	3	.377 ^{NS}
	Business	4	2	0			
	Government Employee	6	2	0			
	Not Working	8	0	0			
History of stress disorder	Yes	0	1	0	3.726	1	.216 ^{NS}
	No	29	7	0			
History of anxiety disorder	No	29	8	0
	Yes	8	3	0	.295	1	.672 ^{NS}
No	21	5	0				

NS (P>0.05) Not significant at 0.05 level of significance

Table 12 shows that Fisher’s Exact computed between stress score after the administration of “YOGA” with selected

personal variables. It shows that there was no significant association with any personal variable at 0.05 level of significance

Table 13: Fisher's Exact Value Showing Association of Post-test Anxiety Score with Selected Personal Variables of B.Sc. Nursing First Year Students, N= 37

Personal Variable	Categories	Normal Range	Mild Moderate	Fisher's Exact	df	p-value
Age	16-18	20	5	.390	2	1.00 ^{NS}
	19-21	8	2			
	22-25	2	0			
Sex	Female	30	7
Religion	Hindu	29	7	.240	1	1.00 ^{NS}
	Sikh	1	0			
Place of residence	Day Scholar	13	2	.513	1	.677 ^{NS}
	Hostler	17	5			
Type of Family	Nuclear	18	4	.019	1	1.00 ^{NS}
	Joint	12	3			
No. of Siblings	0	1	0	4.104	4	.396 ^{NS}
	1	11	1			
	2	11	2			
	3	3	1			
	More than 3	4	3			
Family income/ Month	Below 20 K	10	2	3.437	3	.361 ^{NS}
	21-40K	14	3			
	41-60K	6	1			
	More than 60 K	0	1			
Mother's Education	10th	12	4	1.025	3	.922 ^{NS}
	12th	11	2			
	Graduation	3	0			
	PG	4	1			
Mother's Occupation	Private Employee	4	0	1.040	2	.769 ^{NS}
	Government Employee	3	0			
	Home Maker	23	7			
Father's Education	10th	9	0	3.654	3	.284 ^{NS}
	12th	10	4			
	Graduation	9	2			
	PG	2	1			
Father's Occupation	Private Employee	12	3	3.482	3	.302 ^{NS}
	Business	5	1			
	Government Employee	5	2			
	Not Working	8	0			
History of stress disorder	Yes	1	0	0.240	1	1.00 ^{NS}
	No	29	7			
History of anxiety disorder	No	30	7
	Yes	6	5	7.186	1	0.016*
Previous exposure to yoga	No	24	2			

(P<0.05), *significant at 0.05 level of significance, NS (P>0.05) Not significant

Table 13 shows that Fisher's Exact computed between anxiety score after the administration of "YOGA" with selected personal variables. It shows that significant association with previous exposure to Yoga and rest of others were not significant at 0.05 level of significance.

5. Discussion

Similar study conducted on effect of "YOGA" on anxiety among nursing students. It was found that "YOGA" was effective in reducing the anxiety among nursing students as the calculated 't' value was 16.7 and 11.7 and p value < 0.0001 being less than 0.05 level of significance in psychological and physiological aspects respectively by **Suchismita Pahantasingh, et. al. (2017)**.

6. Conclusion

The administration of 'YOGA' was significantly effective in reducing the stress level of B.Sc. Nursing first year students at the level of 0.05 significance, and difference obtained in the mean anxiety score before and after the administration of "YOGA" was effective in reducing the anxiety level of B.Sc. Nursing first year students but not significance at 0.05 level of significance.

7. Limitation

The study was confined to a small no. of students (37) participating in the study. This limits the generalization of the findings.

8. Recommendations

- 1) The study can be replicated on a large sample of students from different colleges to make broader generalization.
- 2) A longitudinal study can be conducted by administering 'YOGA' over a period of 3-6 months and there after result can be noted.
- 3) An experimental study can be conducted to evaluate the impact of 'YOGA' on physiological parameter of patients.
- 4) An experimental study can be conducted to evaluate the impact of 'YOGA' on psychosomatic disorders (Insomnia, drug addiction, asthma etc.) of patients.
- 5) An experimental study can be conducted to evaluate the impact of 'YOGA' on cardio-vascular stress response.
- 6) A comparative study can be conducted with other methods of relaxation.

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