



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

“A STUDY TO ASSESS THE EFFECTIVENESS OF CALISTHENIC EXERCISES IN REDUCING STRESS AMONG NURSING STUDENTS IN A SELECTED COLLEGE OF NURSING AT DEWAS”

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ABSTRACT

Calisthenic exercises leads to an improvement in overall strength and energy to the body, in turn promoting overall health. Calisthenics also improves mental health, which in turn helps in treating depression, stress, anxiety and the like. **Title:** “A study to assess the effectiveness of calisthenic exercises in reducing stress among nursing students in a selected college of nursing at dewas” **Objectives:** To assess the level of stress and find out the effectiveness of calisthenic exercises, associate the post test stress score with their selected demographic variables among nursing students. **Methods and materials:** A pre experimental design was chosen Non probability convenient sampling technique used to select the sample.60 nursing students were the sample. Perceived stress scale was used to assess the nursing students stress. **Results:** In pretest, the nursing students stress score was 23.12 after the administration of calisthenic exercise the post test stress score was 14.18 Difference is 8.94.It was statistically significant at $p < 0.001$ level. **Conclusion:** Statistical significance was calculated by using chi square test and one way Anova-test, student paired t-test. After calisthenic exercise the stress level has reduced among nursing students. So calisthenic exercise has significant impact in reducing the stress among nursing students.

Key words: stress, nursing students, calisthenic exercises,

INTRODUCTION

Health is a state of complete physical, mental and social well being and not merely an absence of any diseases or infirmities-WHO. This implies that disease in humans can occur due to physical, mental or psychological disturbances. In today's fast growing society and increase in demands, stress is thought to play a major role in illness, causation of diseases and disabilities at all ages¹.

Stress has been identified as a 20th century disease and has been viewed as a complex and dynamic transaction between individuals and their environments². Stressors can be broadly defined as situations or events that have the potential to affect health outcomes³. Stress can be regarded as a psychological threat, in which the individual perceives a situation as a potential threat⁴.

Stress refers to a forceful interaction between the individual and the environment. In this interaction and boundaries related to work maybe apparent as threatening to exceed the person's resources and skills⁵. Stress is not equal with nervousness or anxiety but also provides the originality, abilities and energies; though it can cause tiredness and sickness, either physical or psychologically. Stress is a psychological factor that influences the academic performance⁶. Although every profession is effected by stress but the health professionals are more at risk to stress especially nursing profession⁷.

NEED FOR THE STUDY

The World Health Organization (WHO) has estimated that stress- related disorders will be one of the leading causes of disability by the year 2020²⁰. Nursing schools are now recognized as a stressful environment that often exerts a negative effect on the academic performance and psychological well-being of the students²¹. Studies from the United Kingdom and India have reported increasing levels of stress among nursing students.

Based on the above reviews it confirmed that the under graduate nursing students are experienced a stress in their academic year in the same way calisthenic exercises improve the mood status of the individual. So the investigator felt that to conduct a study to reduce stress among nursing students by calisthenic exercises.

STATEMENT OF THE PROBLEM

"A study to assess the effectiveness of calisthenic exercises in reducing stress among nursing students in a selected college of nursing at dewas"

OBJECTIVES OF THE STUDY

- To assess the existing level of stress among nursing students before calisthenic exercises intervention.
- To evaluate the post test level of stress among nursing students after calisthenic exercises intervention.
- To determine the effectiveness of calisthenic exercises on stress among nursing students.
- To find out the association between the level of stress in nursing students with their selected demographic variables.

HYPOTHESIS

H1: There will be significant difference between pretest and posttest scores of students in reduction of stress through calisthenic exercise.

H2: There will be significant association between the post levels of stress among nursing students with their selected demographic variables.

ASSUMPTIONS

- The nursing student may have mild, moderate or high levels of academic stress.
- Stress level may vary from individual to individual.
- Calisthenic exercises on stress management will help nursing students to cope better with their day today life stressors.
- The reduction in stress among the nursing students may show effective practical and preventive measures.

DELIMITATIONS OF THE STUDY

- The setting of the study (selected college of nursing) is limited to the study.
- The sample size is limited to 60 subjects.
- The period of data collection is limited to 4 weeks.

METHODOLOGY

RESEARCH APPROACH

Therefore a quantitative evaluation approach was essential to test the effectiveness of interventions.

RESEARCH DESIGN

The investigator has selected the pre-experimental design as suitable method for study (one group pre-test, post test). There was a manipulation for the subjects without a control group and randomization.

VARIABLES IN THE STUDY

Variables: A variable is a characteristic, which can be taken on different values. The categories of variables discussed in the present study were

Independent Variable: Calisthenic exercises for management of stress among nursing students.

Dependent variable: Level of stress among nursing students **Extraneous variables:** Demographic variables such as age, religion, education, socio-economic status, personal habits, methods of recreation, rest and sleep.

SETTING OF THE STUDY

The study was conducted to nursing students residing at Amaltas Institute of Nursing Sciences, Dewas.

SAMPLE

All the Baccalaureate nursing students were included in the study and those who fulfilled the sampling criteria.

SAMPLE SIZE

The sample size was 60.

SAMPLING TECHNIQUE

Convenient Sampling technique will be used to select the 60 samples of nursing students

SAMPLING CRITERIA

The study sample was selected by the following inclusion and exclusion criteria.

Inclusion criteria:

- Those who are studying in Baccalaureate nursing programme.
- Those who are available and willing to participate in this study.

Exclusion criteria:

- Those who have already undergone calisthenic exercise programme.
- Those who are having orthopaedic related problems.
- Those who are having any systemic illness.

RESULT:-**SECTION I****Distribution of nursing students according to the sociodemographic variables**

Demographic information		No. of students	%
Age in years	17 -18 years	37	61.7%
	19 -20 years	23	38.3%
	21 -22 years	0	0.0%
Basic Education	+ 2	54	90.0%
	Graduate	6	10.0%
Religion	Hindu	54	90.0%
	Muslim	3	5.0%
	Christian	3	5.0%
Year of study	I Year	30	50.0%
	II Year	30	50.0%
Occupation of parents	Government	5	8.3%
	Private	13	21.7%
	Business	2	3.3%
	Others	40	66.7%
Family Monthly income	Below 10,000	24	40.0%
	Rs.10,000- 15,000	22	36.7%
	Rs.15,000- 20,000	8	13.3%
	>Rs. 20,000	6	10.0%
Medium of the instruction in higher secondary education	Hindi	40	66.7%
	English	20	33.3%
Percentage of marks obtained in higher secondary	70-80 percent	5	8.3%
	80-90 percent	13	21.7%
	Above 90	42	70.0%
Types of family	Nuclear	52	86.7%
	Joint	6	10.0%
	Extended	2	3.3%
Residence	Rural	40	66.7%
	Urban	14	23.3%

	Semi urban	6	10.0%
Any problems in the family	Nil	46	76.7%
	Financial problem	14	23.3%
	Others	0	0.0%
Average study time per day	< 1 hours	20	33.4%
	1-2 hours	29	48.3%
	>2 hours	11	18.3%
Leisure activities carried out in a day	Exercise	4	6.7%
	Gardening	0	0.0%
	Playing	7	11.7%
	Watching T.V	37	61.6%
	Others	12	20.0%

SECTION II

pretest level of stress among nursing students before administering calisthenic exercise

sno	Items					
		Never	Almost never	Sometimes	Fairly often	Very often
1	In the last month, how often have you been upset because of something that happened unexpectedly?	6	4	29	18	3
2	In the last month, how often have you felt that you were unable to control the important things in your life?	2	12	24	15	7
3	In the last month, how often have you felt nervous and stressed?	2	5	25	16	12
4	In the last month, how often have you felt confident about your ability to handle your personal problems?	5	9	27	9	10
5	In the last month, how often have you felt that things were going your way?	6	4	19	11	20
6	In the last month, how often have you found that you could not cope with all the things that you had to do?	3	11	29	11	6
7	In the last month, how often have you been able to control irritations in your life?	1	16	22	11	10
8	In the last month, how often have you felt that you were on top of things?	4	2	15	23	16

9	In the last month, how often have you been angered because of things that happened that were outside of your control?	2	12	25	16	5
10	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	1	17	19	11	12

Each question wise pre test percentage of perceived stress scale score

sno	Items	Maximum score	Mean score	SD	% of mean score
1	In the last month, how often have you been upset because of something that happened unexpectedly?	4	2.13	.98	53.25%
2	In the last month, how often have you felt that you were unable to control the important things in your life?	4	2.22	1.01	55.50%
3	In the last month, how often have you felt nervous and stressed?	4	2.52	1.02	63.00%
4	In the last month, how often have you felt confident about your ability to handle your personal problems?	4	2.17	1.14	54.25%
5	In the last month, how often have you felt that things were going your way?	4	2.58	1.29	64.50%
6	In the last month, how often have you found that you could not cope with all the things that you had to do?	4	2.10	.99	52.50%
7	In the last month, how often have you been able to control irritations in your life?	4	2.22	1.08	55.50%
8	In the last month, how often have you felt that you were on top of things?	4	2.75	1.10	68.75%
9	In the last month, how often have you been angered because of things that happened that were outside of your control?	4	2.17	.96	54.25%
10	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	4	2.27	1.13	56.75%
	Total	40	23.12	4.64	57.80%

PRE TEST LEVEL OF STRESS AMONG NURSINGSTUDENTS

Level of stress	No. of Students	%
Low stress	0	0.0%
Moderate stress	42	70.0%
High perceived stress	18	30.0%
Total	60	100%

Stress score interpretation

0 – never 1 - almost never 2 – sometimes 3 - fairly often 4 - very often Min=0 Max=4 Total questions=10 Maximum marks= 40

S no.	Grade	Percentage	Marks
1.	Low stress	1 – 33%	1 – 13
2.	Moderate stress	34 – 66%	14 – 26
3.	High perceived stress	67 – 100 %	27 – 40

SECTION III**Post test level of stress among nursing students after administration of calisthenic exercise**

S.no	Items					
		Never	Almost never	Sometimes	Fairly often	Very often
1	In the last month, how often have you been upset because of something that happened unexpectedly?	13	18	25	3	1
2	In the last month, how often have you felt that you were unable to control the important things in your life?	12	25	20	3	0
3	In the last month, how often have you felt nervous and stressed?	9	18	26	6	1
4	In the last month, how often have you felt confident about your ability to handle your personal problems?	9	18	29	2	2
5	In the last month, how often have you felt that things were going your way?	13	19	20	5	3
6	In the last month, how often have you found that you could not cope with all the things that you had to do?	8	16	26	10	0

7	In the last month, how often have you been able to control irritations in your life?	7	23	24	6	0
8	In the last month, how often have you felt that you were on top of things?	12	27	16	5	0
9	In the last month, how often have you been angered because of things that happened that were outside of your control?	8	23	22	6	1
10	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	9	28	22	0	1

Each question wise post test percentage of perceived stress scale score

S.no	Items	Maximum score	Mean score	SD	% of mean score
1	In the last month, how often have you been upset because of something that happened unexpectedly?	4	1.35	.94	33.75 %
2	In the last month, how often have you felt that you were unable to control the important things in your life?	4	1.23	.83	30.75 %
3	In the last month, how often have you felt nervous and stressed?	4	1.53	.93	38.25 %
4	In the last month, how often have you felt confident about your ability to handle your personal problems?	4	1.50	.91	37.50 %
5	In the last month, how often have you felt that things were going your way?	4	1.43	1.08	35.75 %
6	In the last month, how often have you found that you could not cope with all the things that you had to do?	4	1.63	.92	40.75 %
7	In the last month, how often have you been able to control irritations in your life?	4	1.48	.83	37.00 %
8	In the last month, how often have you felt that you were on top of things?	4	1.23	.87	30.75 %
9	In the last month, how often have you been angered because of things that happened that were outside of your control?	4	1.48	.91	37.00 %
10	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	4	1.27	.78	31.75 %
	Total	40	14.18	3.20	35.45 %

POST TEST LEVEL OF STRESS

Level of stress	No. of Students	%
Low stress	29	48.3%
Moderate stress	31	51.7%
High perceived stress	0	0.0%
Total	60	100%

SECTION IV

Assess the effectiveness of calisthenic exercises on stress among nursing students

	Perceived Stress Scale Items	Pretest		Posttest		Mean Difference	Student's paired t-test
		Mean	SD	Mean	SD		
1	In the last month, how often have you been upset because of something that happened unexpectedly?	2.13	.98	1.35	.94	0.78	t=5.34 P=0.001 *** DF=59, Significant
2	In the last month, how often have you felt that you were unable to control the important things in your life?	2.22	1.01	1.23	.83	0.99	t=5.40 P=0.001 *** DF=59, Significant
3	In the last month, how often have you felt nervous and stressed?	2.52	1.02	1.53	.93	0.99	t=5.60 P=0.001 *** DF=59, Significant
4	In the last month, how often have you felt confident about your ability to handle your personal problems?	2.17	1.14	1.50	.91	0.67	t=4.15 P=0.001 *** DF=59, Significant
5	In the last month, how often have you felt that things were going your way?	2.58	1.29	1.43	1.08	1.15	t=6.00 P=0.001 *** DF=59, Significant

6	In the last month, how often have you found that you could not cope with all the things that you had to do?	2.10	.99	1.63	.92	0.47	t=3.50 P=0.001 *** DF=59 , Significant
7	In the last month, how often have you been able to control irritations in your life?	2.22	1.08	1.48	.83	0.74	t=4.32 P=0.001 *** DF=59 , Significant
8	In the last month, how often have you felt that you were on top of things?	2.75	1.10	1.23	.87	1.52	t=8.20 P=0.001 *** DF=59 , Significant
9	In the last month, how often have you been angered because of things that happened that were outside of your control?	2.17	.96	1.48	.91	0.69	t=4.35 P=0.001 *** DF=59 , Significant
10	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	2.27	1.13	1.27	.78	1.00	t=5.30 P=0.001 *** DF=59 , Significant

*** Very high significant at $p < 0.001$

COMPARISON OF OVERALL STRESS SCORE BEFORE AND AFTER CALISTHENIC EXERCISES

	No. Of students	Pretest Mean \pm SD	Posttest Mean \pm SD	Mean difference Mean \pm SD	Student's paired t-test
Overall Stress Score	60	23.12 \pm 4.64	14.18 \pm 3.20	8.94 \pm 3.83	t=17.81 P=0.001*** DF = 59, significant

*** very high significant at $P \leq 0.001$

the comparison of overall stress before and after the administration of; calisthenic exercises. On an average, students are reduced their stress from 23.12 to 14.18 after the administration of calisthenic exercise. Difference is 8.94, this difference is statistically significant. Statistical significance was calculated by using student's paired 't' test.

Each question wise pretest and posttest percentage of stress

sno	Perceived Stress Scale Items	Pretest stress	Posttest stress	% of stress reduction score
1	In the last month, how often have you been upset because of something that happened unexpectedly?	53.25%	33.75%	19.50%
2	In the last month, how often have you felt that you were unable to control the important things in your life?	55.50%	30.75%	24.75%
3	In the last month, how often have you felt nervous and stressed?	63.00%	38.25%	24.75%
4	In the last month, how often have you felt confident about your ability to handle your personal problems?	54.25%	37.50%	16.75%
5	In the last month, how often have you felt that things were going your way?	64.50%	35.75%	28.75%
6	In the last month, how often have you found that you could not cope with all the things that you had to do?	52.50%	40.75%	11.75%
7	In the last month, how often have you been able to control irritations in your life?	55.50%	37.00%	18.50%
8	In the last month, how often have you felt that you were on top of things?	68.75%	30.75%	38.00%
9	In the last month, how often have you been angered because of things that happened that were outside of your control?	54.25%	37.00%	17.25%

10	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	56.75%	31.75%	25.00%
	Overall	57.80%	35.45%	22.35%

Comparison of pretest and posttest level of stress score

Level of stress	Pretest		Posttest		Generalized McNemar's test
	N	%	n	%	
Low stress	0	0.0%	29	48.3%	$\chi^2=43.33$ $P=0.001^{***}(S)$
Moderate Stress	42	70.0%	31	51.7%	
High perceived stress	18	30.0%	0	0.0%	
Total	60	100.0%	60	100.0%	

***significant at $p < 0.001$ level

Assess the effectiveness of the calisthenic exercise among nursing students

Effectiveness and generalization of calisthenic exercise

	Max score	Mean score	Mean Difference of stress reduction score with 95% Confidence interval	Percentage Difference of stress reduction score with 95% Confidence interval
Pretest	40	23.12	8.94(7.93 – 9.93)	22.35 % (19.83% – 24.83%)
Posttest	40	14.18		

SECTION V

Association between the post test level of stress and selected demographic variables among nursing students.

Demographic variables		Pretest level of stress score						N	Chi square test	
		Low		Moderate		High perceived				
		n	%	n	%	n	%			
Age in years	17 -18 Years	0	0.0 %	26	70.3%	11	29.7%	37	$\chi^2=0.01$ P=0.95 (NS)	
	19 -20 Years	0	0.0 %	16	69.6%	7	30.4%			23
	21 -22 Years	0	0.0 %	0	0.0%	0	0.0%			0
Basic Education	+ 2	0	0.0 %	39	72.2%	15	27.8%	54	$\chi^2=1.27$ P=0.26 (NS)	
	Graduate	0	0.0 %	3	50.0%	3	50.0%			6
Religion	Hindu	0	0.0 %	38	70.4%	16	29.6%	54	$\chi^2=0.03$ P=0.98 (NS)	
	Muslim	0	0.0 %	2	66.7%	1	33.3%			3
	Christian	0	0.0 %	2	66.7%	1	33.3%			3
Year of study	I Year	0	0.0 %	20	66.7%	10	33.3%	30	$\chi^2=0.31$ P=0.57 (NS)	
	II Year	0	0.0 %	22	73.3%	8	26.7%			30
Occupation of parents	Government	0	0.0 %	3	60.0%	2	40.0%	5	$\chi^2=1.65$ P=0.64 (NS)	
	Private	0	0.0 %	8	61.5%	5	38.5%			13
	Business	0	0.0 %	2	100.0 %	0	0.0%			2
	Others	0	0.0 %	29	72.5%	11	27.5%			40
Family Monthly income	Below 10,000	0	0.0 %	16	66.7%	8	33.3%	24	$\chi^2=1.36$ P=0.71 (NS)	
	Rs.10,000-15,000	0	0.0 %	15	68.2%	7	31.8%			22
	Rs.15,000-20,000	0	0.0 %	7	87.5%	1	12.5%			8
	>Rs. 20,000	0	0.0 %	4	66.7%	2	33.3%	6		
Medium of the instruction in higher secondary education	Hindi	0	0.0 %	27	67.5%	13	32.5%	40	$\chi^2=0.35$ P=0.55 (NS)	
	English	0	0.0 %	15	75.0%	5	25.0%			20

Percentage of marks obtained in higher secondary	70-80 percent	0	0.0 %	3	60.0%	2	40.0%	5	$\chi^2=0.97$ P=0.61 (NS)
	80-90 percent	0	0.0 %	8	61.5%	5	38.5%	13	
	Above 90	0	0.0 %	31	73.8%	11	26.2%	42	
Types of family	Nuclear	0	0.0 %	35	67.3%	17	32.7%	52	$\chi^2=3.13$ P=0.20 (NS)
	Joint	0	0.0 %	6	100.0 %	0	0.0%	6	
	Extended	0	0.0 %	1	50.0%	1	50.0%	2	
Residence	Rural	0	0.0 %	29	72.5%	11	27.5%	40	$\chi^2=1.27$ P=0.52 (NS)
	Urban	0	0.0 %	10	71.4%	4	28.6%	14	
	Semi urban	0	0.0 %	3	50.0%	3	50.0%	6	
Any problems in the family	Nil	0	0.0 %	31	67.4%	15	32.6%	46	$\chi^2=0.63$ P=0.42 (NS)
	Financial problem	0	0.0 %	11	78.6%	3	21.4%	14	
	Others	0	0.0 %	0	0.0%	0	0.0%	0	
Average study time per day	< 1 hours	0	0.0 %	14	70.0%	6	30.0%	20	$\chi^2=0.05$ P=0.97 (NS)
	1-2 hours	0	0.0 %	20	69.0%	9	31.0%	29	
	>2 hours	0	0.0 %	8	72.7%	3	27.3%	11	
Leisure activities carried out	Exercise	0	0.0 %	2	50.0%	2	50.0%	4	$\chi^2=3.91$ P=0.27 (NS)
	Gardening	0	0.0 %	0	0.0%	0	0.0%	0	

in a day		%						
Playing	0	0.0%	5	71.4%	2	28.6%	7	
Watching T.V	0	0.0%	24	64.9%	13	35.1%	37	
Others	0	0.0%	11	91.7%	1	8.3%	12	

Association between posttest level of stress and their demographic variables

Demographic variables		Posttest level of stress score						N	Chi square test
		Low		Moderate		High perceived			
		n	%	n	%	n	%		
Age in years	17 -18 years	14	37.8%	23	62.2%	0	0.0%	37	$\chi^2=4.26$ P=0.05* (S)
	19 -20 years	15	65.2%	8	34.8%	0	0.0%	23	
	21 -22 years	0	0.0%	0	0.0%	0	0.0%	0	
Basic Education	+ 2	26	48.1%	28	51.9%	0	0.0%	54	$\chi^2=0.01$ P=0.93 (NS)
	Graduate	3	50.0%	3	50.0%	0	0.0%	6	
Religion	Hindu	27	50.0%	27	50.0%	0	0.0%	54	$\chi^2=0.60$ P=0.74 (NS)
	Muslim	1	33.3%	2	66.7%	0	0.0%	3	
	Christian	1	33.3%	2	66.7%	0	0.0%	3	
Year of study	I Year	11	36.7%	19	63.3%	0	0.0%	30	$\chi^2=4.73$ P=0.09* (S)
	II Year	20	66.7%	10	33.3%	0	0.0%	30	
Occupation of parents	Government	3	60.0%	2	40.0%	0	0.0%	5	$\chi^2=1.72$ P=0.63 (NS)
	Private	8	61.5%	5	38.5%	0	0.0%	13	
	Business	1	50.0%	1	50.0%	0	0.0%	2	
	Others	17	42.5%	23	57.5%	0	0.0%	40	
Family Monthly income	Below 10,000	9	37.5%	15	62.5%	0	0.0%	24	$\chi^2=2.16$ P=0.53 (NS)
	Rs.10,000-15,000	13	59.1%	9	40.9%	0	0.0%	22	
	Rs.15,000-20,000	4	50.0%	4	50.0%	0	0.0%	8	
	>Rs. 20,000	3	50.0%	3	50.0%	0	0.0%	6	
Medium of the	Hindi	15	37.5%	25	62.5%	0	0.0%	40	$\chi^2=5.63$

Instruction in higher secondary education	English	14	70.0%	6	30.0%	0	0.0%	20	$\chi^2=0.02^*$ (S)
Percentage of marks obtained in higher secondary	70-80 percent	2	40.0%	3	60.0%	0	0.0%	5	$\chi^2=0.92$ P=0.63 (NS)
	80-90 percent	5	38.5%	8	61.5%	0	0.0%	13	
	Above 90	22	52.4%	20	47.6%	0	0.0%	42	
Types of family	Nuclear	25	48.1%	27	51.9%	0	0.0%	52	$\chi^2=2.68$ P=0.62 (NS)
	Joint	4	66.7%	2	33.3%	0	0.0%	6	
	Extended	0	0.0%	2	100.0%	0	0.0%	2	
Residence	Rural	24	60.0%	16	40.0%	0	0.0%	40	$\chi^2=8.68$ P=0.01* (S)
	Urban	2	14.3%	12	85.7%	0	0.0%	14	
	Semi urban	3	50.0%	3	50.0%	0	0.0%	6	
Any problems in the family	Nil	24	52.2%	22	47.8%	0	0.0%	46	$\chi^2=1.16$ P=0.28 (NS)
	Financial problem	5	35.7%	9	64.3%	0	0.0%	14	
	Others	0	0.0%	0	0.0%	0	0.0%	0	
Average study time per day	< 1 hours	10	50.0%	10	50.0%	0	0.0%	20	$\chi^2=0.33$ P=0.84 (NS)
	1-2 hours	13	44.8%	16	55.2%	0	0.0%	29	
	>2 hours	6	54.5%	5	45.5%	0	0.0%	11	
Leisure activities carried out in a day	Exercise	0	0.0%	4	100.0%	0	0.0%	4	$\chi^2=6.88$ P=0.08 (NS)
	Gardening	0	0.0%	0	0.0%	0	0.0%	0	
	Playing	2	28.6%	5	71.4%	0	0.0%	7	
	Watching T.V	22	59.5%	15	40.5%	0	0.0%	37	
	Others	5	41.7%	7	58.3%	0	0.0%	12	

Association between stress reduction score and demographic variables

Demographic variables		Stress reduction score						N	Chi square test
		Pretest		Posttest		Gain score = Post-Pre			
		Mean	SD	Mean	SD	Mean	SD		
Age in years	17 -18 years	22.95	4.85	14.93	2.93	8.02	4.29	37	t=2.03 P=0.05* (S)
	19 -20 years	23.39	4.36	13.27	3.64	10.12	3.16		
	21 -22 years	0.00	0.00	0.00	0.00	0.00	0.00		
Basic Education	Plus Two	22.96	4.69	14.17	3.27	8.80	3.86	54	t=0.81 P=0.41 (NS)
	Graduate	24.50	4.18	14.33	2.73	10.17	4.26		
Religion	Hindu	22.96	4.80	14.04	3.05	8.93	3.86	54	F=0.34 P=0.71 (NS)
	Muslim	24.33	3.21	16.67	6.03	7.67	6.66		
	Christian	24.67	2.52	14.33	2.89	10.33	1.15		
Year of study	I Year	23.57	4.75	15.52	3.17	8.05	4.12	32	t=2.00 P=0.05* (S)
	II Year	22.67	4.55	13.70	3.27	8.97	3.61		
Occupation of parents	Government	23.80	5.81	16.00	6.00	7.80	3.77	55	F=0.45 P=0.71 (NS)
	Private	23.38	4.44	13.54	2.50	9.85	3.51		
	Business	23.50	.71	13.50	3.54	10.00	2.83		
	Others	22.92	4.78	14.20	2.99	8.73	4.10		
Family Monthly income	Below 10,000	23.58	4.75	14.13	2.98	9.46	4.06	28	F=0.39 P=0.75 (NS)
	Rs.10,000 - 15,000	22.86	4.49	14.00	3.12	8.86	3.91		
	Rs.15,000 - 20,000	21.25	4.68	13.50	2.20	7.75	3.85		

	>Rs. 20,000	24.6 7	4.9 7	16.0 0	5.2 2	8.67	3.6 7	6	
Medium of the instruction in higher secondary education	Hindi	23.3 0	4.8 2	15.1 5	2.6 7	8.15	3.8 4	4	t=1.99 P=0.05* (S)
	English	22.7 5	4.3 5	12.4 7	4.1 1	10.2 8	3.9 2	2 9	
Percentage of marks obtained in higher secondary	70-80 percent	25.2 0	3.2 7	14.2 0	2.9 5	11.0 0	1.2 2	5	F=1.58 P=0.24 (NS)
	80-90 percent	24.1 5	4.2 4	14.2 3	2.3 5	9.92	2.7 5	1 3	
	Above 90	22.5 5	4.8 4	14.1 7	3.5 0	8.38	4.2 7	4 2	
Types of family	Nuclear	23.2 9	4.6 3	14.2 9	3.2 9	9.00	4.0 1	5 2	F=0.40 P=0.67 (NS)
	Joint	20.5 0	4.1 4	12.6 7	2.3 4	7.83	2.9 3	6	
	Extended	26.5 0	4.9 5	16.0 0	1.4 1	10.5 0	3.5 4	2	
Residence	Rural	22.6 3	4.9 2	13.6 5	2.5 6	7.21	3.9 6	4 0	F=3.30 P=0.04* (S)
	Urban	23.3 6	3.8 9	14.6 4	3.5 0	10.1 1	4.1 0	1 4	
	Semi urban	25.8 3	3.7 6	16.6 7	5.2 4	9.67	3.4 3	6	
Any problems in the family	Nil	23.2 2	4.7 0	14.2 2	3.4 6	9.00	3.8 1	4 6	t=0.06 P=0.81(NS)
	Financial problem	22.7 9	4.5 6	14.0 7	2.2 0	8.71	4.2 5	1 4	
	Others	0.00	0.0 0	0.00	0.0 0	0.00	0.0 0	0	
Average study time per day	< 1 hours	23.4 5	4.0 6	13.5 5	2.5 4	9.90	3.5 8	2 0	F=1.36 P=0.26 (NS)
	1-2 hours	22.8 6	5.2 8	14.7 6	3.7 4	8.10	4.3 0	2 9	
	>2 hours	23.1 8	4.1 2	13.8 2	2.6 4	9.36	2.9 4	1 1	

Leisure activities carried out in a day	Exercise	26.50	3.00	18.00	3.56	8.50	6.03	F=0.76 P=0.52 (NS)
	Gardening	0.00	0.00	0.00	0.00	0.00	0.00	
	Playing	23.86	5.58	15.29	3.09	8.57	4.54	
	Watching T.V	23.24	4.74	13.76	3.35	9.49	3.63	
	Others	21.17	3.69	13.58	1.51	7.58	3.61	

CONCLUSION

Education in evidence based care gives the opportunity to nurses to improve their ability to use theoretical knowledge in practice. The study was conducted to find the effectiveness of calisthenic exercises on stress among nursing students. Calisthenic exercises which stimulate the brain function through physical activity and reduce the mental stress. So the investigator concluded that the calisthenic exercises are an appropriate method to reduce the stress.

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