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Research Article

A STUDY TO ASSESS THE EFFECTIVENESS OF CALISTHENIC EXERCISE ON STRESS AMONG B.SC NURSING STUDENTS IN SELECTED COLLEGE AT CHENNAI

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ABSTRACT

Calisthenic exercise consist of variety of movements which helps to build muscle and improve the mental status of human beings. Calisthenic exercise leads to an improvement in overall strength and energy to the body, in turn promoting overall health. A study was conducted to assess the effectiveness of calisthenic exercise on stress among B.Sc. Nursing students in selected college at chennai. A Quasi experimental research design was adopted for the study and 60 B.Sc.Nursing 1 St year students, 30 experimental group and 30 control group were selected using simple random sampling technique. Pre test was done to the 60 samples using Modified Perceived stress scale to assess the level of stress. Experimental Group underwent one week intervention on calisthenic exercise for one hour, the posttest was done to both the experimental and control group using the same tool. The study findings concluded that, the calisthenic exercise in the experimental group led to a significant reduction in stress levels, as evidenced by the substantial decrease in mean stress scores and the low p-value (<0.05) whereas, in the control group, there was no statistically significant change in stress levels, as indicated by the non-significant p-value (0.359). Hence, the intervention had a positive and statistically significant effect on stress reduction in the experimental group compared to the control group, where stress levels remained relatively stable.

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INTRODUCTION

The word 'calisthenic' comes from the ancient Greek words 'kallos', meaning "beauty" and sthenos meaning "strength". Calisthenic is a form of strength training consisting of a variety of movements that exercise large muscle groups, such as standing, grasping, pushing, etc. It consists of squats, push-ups, jumping jacks, jump squats, plank, standing, toe touches, side lunges, lunges, neck rotation, burpees.

Calisthenic is associated with the rapidly growing international sport called **stress workout**. Calisthenics are a great way to build muscle and improve mood. Calisthenic can act as a self-confidence and self-esteem booster. Calisthenic exercise leads to an improvement in overall strength and energy to the body, in turn promoting overall health. These exercises have been known to improve **mental health**, which in turn helps in treating depression, stress, anxiety.

Stress has been identified as a 20th century disease and has been viewed as a complex and dynamic transaction between individuals and their environment. Stressors can be broadly

defined as situations or events that have the potential to affect health outcomes.

Nursing students face not only academic stress but stress at work during their training period. One focus of interest in research on stress at work is the sources of stress, or stressors, which interact and contribute to the onset of stress in organizational setting (Spielberg & Reheiser., 2005)

Statement of the Problem

A study to assess the effectiveness of calisthenic exercise on stress among B.Sc. Nursing students in selected college at Chennai.

Objectives

1. To assess the pretest and post-test level of stress among nursing students in experimental and control group.

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- To compare the pre test and post test level of stress among nursing students between experimental and control group.
- To find out the association of post test level of stress among nursing students with the selected demographic variable in both experimental and control group.

Hypothesis

H1: There is a significant difference in the pre test and post test regarding the stress among both experimental and control group.

H2: There is a significant association between the post test level of stress between the experimental and control group.

MATERIALS AND METHODS

Quantitative research approach was adopted for the study. Quasi experimental research design was selected. The study was conducted in Madha College of Nursing in Kundrathur at Chennai. The sample of 60 B.Sc. Nursing 1st year students. Using simple random sampling technique, the samples were selected 30 in experimental group and 30 in control group who fulfilled the inclusion criteria. The pretest was done (day 1) to both experimental and control group using Modified Perceived stress scale (Cohen, et al 1983). This is a 5-point Likert scale from Never to Very often that consists of 10 questions regarding stress level among the nursing students. The total score was 40, which is interpreted as 0-13 as low, 14-26 as moderate, 27-40 as high level of stress. Later, a one-week intervention of calisthenic exercise was conducted to the experimental group for 1 hour during mornings. On day 7, the post test was done using the same tool to both the experimental and control group.

RESULTS AND DISCUSSION

The data collected was analyzed using descriptive and inferential statistics. With regard to age in experimental group, 70% of the participants were 17-18 years, 30% of the participants were 19-20 years, and no participants were in 21-22 years. In control group, 66.7% of the participants were 17-18 years, 30% of the participants were 19-20 years, 3.3% of the participants were in the age group of 21-22 years.

In accordance with gender, majority of the participants 80% were females in experimental group and 66.7% in control group, and remaining males were 20% in experimental group and 33.3% in control group. Considering to the average study time/day, in the experimental group, 18 students reported studying for less than 1 hour a day (60.0%), 10 students studied for 1-2 hours a day (33.3%), and 2 students studied for more than 2 hours a day (6.7%). In the control group, 20 students studied for less than 1 hour a day (66.7%), 8 students studied for 1-2 hours a day (26.7%), and 2 students studied for more than 2 hours a day (6.7%).

With regard to the leisure activities, the most common in the experimental group were playing 7 (23.3%) and watching TV 7 (23.3%), followed by others 15 (50.0%) and exercise 1 (3.3%). In the control group, the most common leisure activities were playing 7 (23.3%) and others 18 (60.0%), followed by watching TV 2 (6.7%), exercise 1 (3.3%), and gardening 1 (3.3%). In respect to type of family, the majority 24 (80.0%) of students were from nuclear families, and 5 (16.7%) students from joint families and 1 (3.3%) student from extended family in both groups equally.

Table 1 Frequency and percentage distribution according to the demographic characteristics

Sl. No	Demographic Characteristics	N=60			
		Experimental Group		Control Group	
		F	%	F	%
1	Age in Years				
	a) 17-18 Years	21	70.0	20	66.7
	b) 19-20 Years	9	30.0	9	30.0
2	Gender				
	a) Male	6	20.0	10	33.3
	b) Female	24	80.0	20	66.7
3	Average Study time/day				
	a) <1 hour	18	60.0	20	66.7
	b) 1-2 hour	10	33.3	8	26.7
4	Leisure activities				
	a) Exercise	1	3.3	2	6.7
	b) Gardening	0	0.0	1	3.3
5	Type of Family				
	a) Nuclear	24	80.0	24	80.0
	b) Joint	5	16.7	5	16.7
6	Others				
	c) Extended	1	3.3	1	3.3

Presents the frequency and percentage distribution according to demographic characteristics

The first objective was to assess the pre test and post test level of stress among nursing students.

In pre test, majority of students in the experimental group 21 (70%) experienced moderate stress, while 6 (20%) had high level of stress and 3 (10%) had a low level of stress. Where as in the post test after the calisthenic exercise intervention 18 (60%) students had moderate level of stress, 12 (40%) of students had low level of stress.

In pretest, majority of students in the control group 25 (83.3%) experiencing moderate stress, while 4 (13.3%) had high level of stress and 1 (3.3%) had a low level of stress. Where as in the post test 25 (83.3%) students had moderate level of stress, 3 (10%) students had high level of stress, 2 (6.7%) students with low stress levels.

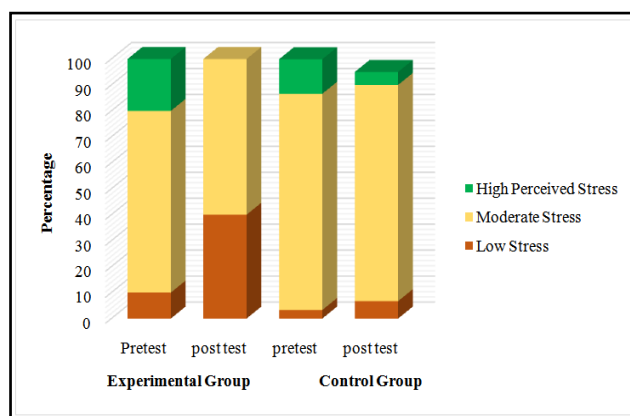


Fig 1. Percentage distribution of calisthenic exercise on level of stress among students between experimental and control group in pre-test and post-test

The second objective was to compare the pre test and post test level of stress among nursing students between experimental and control group.

In the experimental group (N=30), the mean stress score at the pre-test was 20.30 with a standard deviation of 6.582. After the intervention, at the post-test, the mean stress score significantly

decreased to 14.20 with a lower standard deviation of 3.178. The paired t-value, which indicates the significance of this change, was found to be 4.226 with 29 degrees of freedom (df), and the significance value was <0.000 ($p < 0.05$). The findings show that the intervention had a significant impact on reducing stress levels in the experimental group.

In contrast, in the control group (N=30), the mean stress score at the pre-test was 20.23 with a standard deviation of 4.659. whereas, at the post-test, the mean stress score only slightly decreased to 19.33, and the standard deviation remained relatively stable at 4.773. The paired t-value for this group was 0.923 with 29 degrees of freedom, and the significance value was 0.359 ($p > 0.05$). Therefore, the change in stress levels in the control group was not statistically significant (NS).

Table- 1 Comparison of mean stress score and standard deviation between pre-test and post-test and its level of significance in experimental group and control group

Group	Observation	Mean	SD	Paired t-value df =29	Significant value
Experimental Group (N=30)	Pre-test	20.30	6.582	4.226 *	0.000
	Post-test	14.20	3.178		
Control Group (N=30)	Pre-test	20.23	4.659	0.923 NS	0.359
	Post-test	19.33	4.773		

NS – Not Significant at $P < 0.05$, * Significant at $P < 0.05$

Represents a comparison of the mean stress scores and standard deviations between the pre-test and post-test and its significance level in experimental and control group

The table results concluded that, the intervention in the experimental group led to a significant reduction in stress levels, as evidenced by the substantial decrease in mean stress scores and the low p-value (<0.05) and in the control group, there was no statistically significant change in stress levels, as indicated by the non-significant p-value (0.359). Hence, the intervention had a positive and statistically significant effect on stress reduction in the experimental group compared to the control group, where stress levels remained relatively stable. Therefore, the hypothesis, H_1 : There is a significant difference in post test regarding the stress among experimental group and no difference in control group and hence the H_1 was accepted

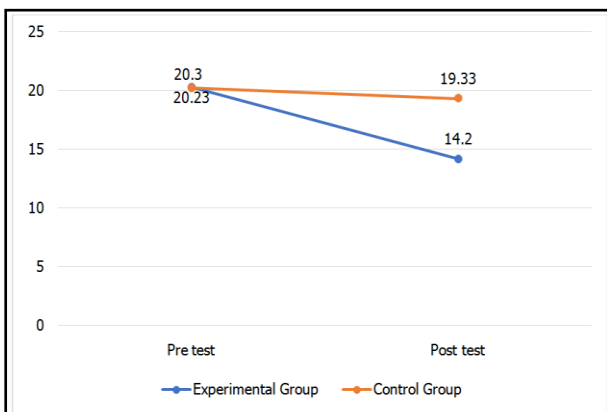


Fig.2 Represents a comparison of the mean stress scores between the pre-test and post-test and its significance level in experimental and control group

The third objective was to associate post test level of stress among nursing students with the selected demographic variables in both experimental and control group.

The finding from the table reveals that, there was a statistically significant association between the type of family and the post-

test level of stress and there was no statistically significant association between the other selected demographic characteristics such as age, gender, average study time/day and leisure activities with the post-test level of stress among students in experimental group.

In contrast with the findings, there was no statistically significant association between the other selected demographic characteristics such as age, gender, average study time/day and type of family with the post-test level of stress among students in control group.

Table 2 Association between the level of stress and selected demographic variables in experimental group

Sl No.	Demographic variables	Level of Stress		Chi Square Value	df	Sig Value
		Low	Moderate			
1	Age in Years					
	a) 17-18 Years	8	13	0.106	1	0.745
	b) 19-20 Years	4	5	NS		
2	Gender					
	a) Male	1	5	1.701	1	0.192
	b) Female	11	13	NS		
3	Average Study time/day					
	a) <1 hour	5	13	2.801	1	
	b) ≥ 1 hour	7	5	NS		0.094
4	Leisure activities					
	a) Exercise / Playing	2	6	2.242	2	
	b) Watching TV	2	5	NS		0.326
	c) Others	8	7			
5	Type of Family (N=29)					
	a) Nuclear	7	17	4.542 *	1	
	b) Joint	4	1			0.033

Depicts the association between selected demographic variables with post-test level of stress in experimental group.

CONCLUSION

This study was done to assess the effectiveness of calisthenic exercise on stress among B.Sc Nursing students in selected college. From this study the research found the effectiveness of calisthenic exercise on stress in experimental group. Based on the findings that provision of intervention program on calisthenic exercise to reduce the level of stress among the nursing students.

References

1. Hackensmith, Charles W. (1966) History of Physical Education, New York: Harper and Row.
2. Haley, Bruce (1978) The Healthy Body and Victorian Culture, 1st edition.
3. Bond M. (1988) stress and self awareness, a guide for nurses, Heinemann.
4. Cooper C.L., Cooper R.D., Eaker L.H. (1987) Living with stress, penguin.
5. Tyler M. (1999) Stress Management Training for Trainers Handbook, Living with stress Ltd.
6. Srivastava R. Effect of Pilates, Calisthenics and Combined Exercises on selected Physical Motor Fitness.
7. Chilamur KC, Jyoti DM. Effect of Yogasanas, aerobics and calisthenic exercise.

8. Michael J. Meaney Neurobiology of Brain Disorders: Biological Basis of Neurological and Psychiatric Disorders, Second Edition (2022)
9. Alexandra D. Cross well, Kimberly G. Lockwood Health Psychology Open (2020)
10. Trickett S. (2001) Anxiety and Depression: a Natural Approach, Ulysses Press.
11. Weller S. (2000) The Breath Book: 20 Ways to Breathe Away Stress, Anxiety and Fatigue, Thorsons.
12. Seaward B.L. (1999) Managing stress: Principles and Strategies for Health and Wellbeing, 2nd edition, Jones and Bartlett Publishers.
13. Lehrer P.M., Woolfolk R.L. (1993) Principles and Practices of Stress Management. The Guildford Press.

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