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RESEARCH ARTICLE

AEROBIC EXERCISES ON SELF-ESTEEM OF FEMALE NURSING STUDENTS: A QUASI EXPERIMENTAL STUDY

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ABSTRACT

Background of the study: Self-esteem is fundamental component in psychological health and is affected with dynamics of physical exercise. And there is a close relationship between self-esteem and physical health. Individuals with a healthy self-esteem have a tendency to take care of themselves by eating well, exercising, and being good to themselves and others. This study will explore the effects of selected aerobic exercise programs on self-esteem. **Objectives of the study:** The aim of the study is to assess the effectiveness of aerobic exercises on self-esteem of female students in selected nursing colleges of Punjab. **Material and Methods:** A quantitative research approach and a Quasi experimental research design was used. Non-probability convenient sampling technique was used to select 60 female nursing students. Questionnaire method was used to collect data by using Coopersmith self-esteem inventory for adults. Aerobic exercise was given to experimental group for 60 min. once a day for 21 consecutive days. **Results:** The findings of the study revealed that in experimental group majority 24(80%) of female nursing students in the experimental group had low self-esteem. 6 (20%) had medium self-esteem whereas no one had high self-esteem in the pre-test. And after the post-intervention 04 (33.34%) female nursing students in the experimental group had a high level of self-esteem while 10 (36.66%) had a medium level of self-esteem and 16 (53.34%) had a low level of self-esteem. Whereas in the control group of female nursing students, majority had low self-esteem 22 (73.34%), and 8 (26.66%) in the medium self-esteem group and no one had high self-esteem in the pre-test. And after the post-test, the control group of 23 (76.66%) female nursing students had a low level of self-esteem, 7 (23.34%) had a medium level of self-esteem and no one in the high level of self-esteem. In experimental group difference between pre-test 57.80 ± 10.54 and post-test 70.93 ± 12.91 , level of self-esteem was statistically significant at 0.05 level but difference between pretest 52.80 ± 19.18 and posttest 54.60 ± 13.36 level of self-esteem of control group was statistically non-significant at 0.05 level of significance. **Conclusion:** This study concluded that aerobic exercise was effective in improving the self-esteem of female nursing students.

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INTRODUCTION

"If exercise were a pill, it would be one of the most cost-effective drugs ever invented".

Dr. Nick Cavill

Self-esteem is a significant aspect of human behavior. It mirrors a person's complete assessment or appraisal of his or her own value. It includes opinions and sentiments such as pride, dejection, and embarrassment. Self-esteem is probably considered as an enduring characteristic of human personality. The synonyms or near-synonyms of self-esteem are 'self-worth', 'self-regard', 'self-love' and 'self-respect'.¹ Physical activity is extremely beneficial to our mental health. Various researches suggests two findings related to physical activity and mental health. Physical activity and sport enhances psychological well-being and reduces problem levels of anxiety

and depression. The psychological benefits are increased motivation, increased self-esteem, and improved states in mood. Engaging in physical activity significantly enhances mental health. It has a positive impact on elevating mood and improving self-concept and self-esteem.² Aerobics is a widespread form of physical activity for adults and being exposed to this early in life will give students the awareness, understanding, and knowledge for use in the future. Aerobic dance is a type of exercise that has many benefits for the body. It includes five dimensions: physical, emotional, intellectual, spiritual, social, and, occupational. It is usually offered at three intensity levels: low, intermediate and high. Low impact is usually for beginners. It is performed at a lower intensity and at a slower pace. At the intermediate-level dancers start to receive the benefits of dance aerobics. Their lungs and heart become stronger and more efficient. At the high-level intensity dancers work extremely hard and this also helps the heart and lungs become for efficient and stronger.³ A wealth of recent

research suggests that any type of exercise that raises your heart rate and gets you moving and sweating for a sustained period of time - known as aerobic exercise - has a significant, beneficial impact on the brain. "Aerobic exercise is the key for your head, just as it is for your heart," said an article in the Harvard Medical School blog "Mind and Mood."⁴ Between 10% and 20% of children and adolescents have psychological and behavioural problems and about 7% need psychological treatment. Resilience research has led to an increasing awareness of positive factors in the environment, social relations, and individuals that protect against the development of problems. Among individual qualities, self-concept is one of the indicators given most attention.⁵ According to Healthy People 2000, postsecondary educational institutions are the settings where exercise should be promoted (Dishman, 1990). The target age group is from age eighteen to twenty-four. Physical activity can lead to improvements in self-esteem in young people, at least in the short-term, though it is recognized that self-esteem is a complex issue with a number of factors not necessarily affected by physical activity.⁶ As the self-esteem enhances an inner sense of wellbeing and integrity in adults that makes them feel more comfortable about themselves and gives self-confidence. This increase in self-esteem will help them to increase self-confidence which will further help to increase productivity in their life. This study investigated new way to boost self confidence in their personal as well as professional life.

MATERIALS AND METHODS

A quantitative research approach, experimental, quasi-experimental research design was used to explore the extent to which the aerobic exercises enhances the self-esteem of female nursing students. The present study was conducted in Dashmesh College of Nursing, Faridkot and Baba Banda Singh Bahadur college of Nursing, Faridkot Punjab. The nursing students were selected on the basis of convenience sampling technique. Sample consisted of 60 female nursing students from selected nursing colleges those meeting the inclusion criteria were selected for this study. Following tools are used to measure variable under study.

Section A: Demographic data of the study participants which comprises of items seeking information pertaining to selected demographic variables such as age, educational status, habitat, type of family, nutritional status, dietary habits, total family income/month (in rupee), academic results of last year, time of exercise, type of exercise, information on fitness, and training on aerobic exercise

Section B: Coopersmith self inventory scale for adults was used to assess the level of self-esteem among female students in selected nursing colleges.

The inventory was originally designed to measure children's self-esteem. However, it was modified by Ryden (1978) for use on adults. It has been adapted from the short form for use with persons over fifteen years of age. The Adult form consists of 25 items, most of these based on items selected from the School Short form. This form includes two types of positive and negative responses. The statements were developed on 2-point Likert scale i.e. such as "Like Me" and "Unlike Me". The maximum possible total score is 100 and the lowest score was below 69. A low score indicates low self-esteem and high score shows high self-esteem. The reliability of tool was

confirmed by the test-retest method (0.78). The analysis of the pilot study was done in accordance with the objectives of the study. Findings of the pilot study revealed that it was feasible to conduct the study and criterion measure was found to be effective.

RESULTS

Table 1. Frequency and percentage distribution of pre-interventional self-esteem in the experimental group and control group

LEVEL Range (69-100)	N=60			
	Experimental group n=30		Control group n=30	
	f	%	f	%
Low (69 and below)	24	80%	22	73.34%
Medium (72-85)	6	20%	8	26.66%
High (86-100)	0	0%	0	0%

The findings of Table 1 represents that during pre-intervention 24(80%) nursing students in the experimental group had low self-esteem. 6 (20%) had medium self-esteem whereas no one had high self-esteem. The control group of female nursing students had low self-esteem 22 (73.34%), and 8 (26.66%) in the medium self-esteem group and no one had high self-esteem.

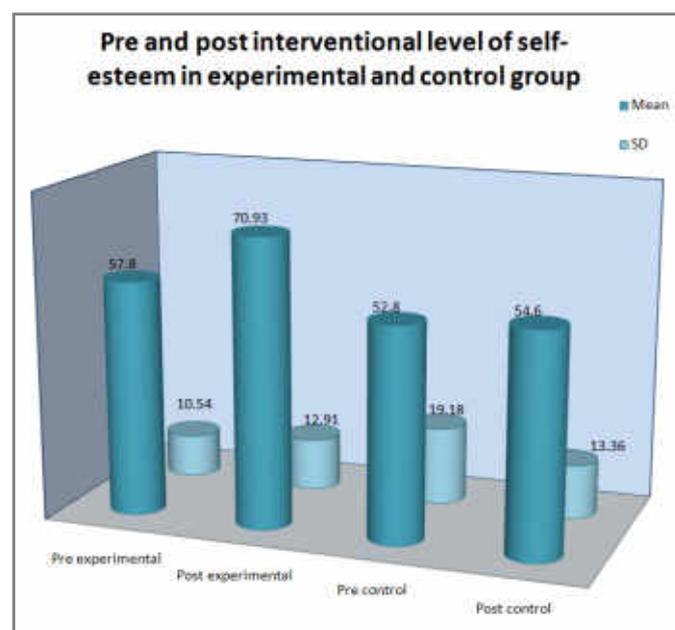


Figure 1. Bar Diagram showing pre interventional level of self-esteem in female nursing students in the experimental and control group

Table 2. Frequency and percentage distribution of post-interventional self-esteem of female students in the experimental group and control group after 21 days

Level of self-esteem	N=60			
	Experimental group n=30		Control group n=30	
	f	%	f	%
Low(69and below)	16	53.34%	23	76.66%
Medium (72-85)	4	13.34%	07	23.34%
High (86-100)	10	33.34%	0	0%

The findings of Table 2 represents that during post-intervention after 21 days 04 (33.34%) female nursing students in the experimental group had a high level of self-esteem while 10 (36.66%) had a medium level of self-esteem and 16

(53.34)% had a low level of self-esteem. The control group of 23 (76.66%) female nursing students had a low level of self-esteem, 7 (23.34%) had a medium level of self-esteem and no one in the high level of self-esteem respectively.

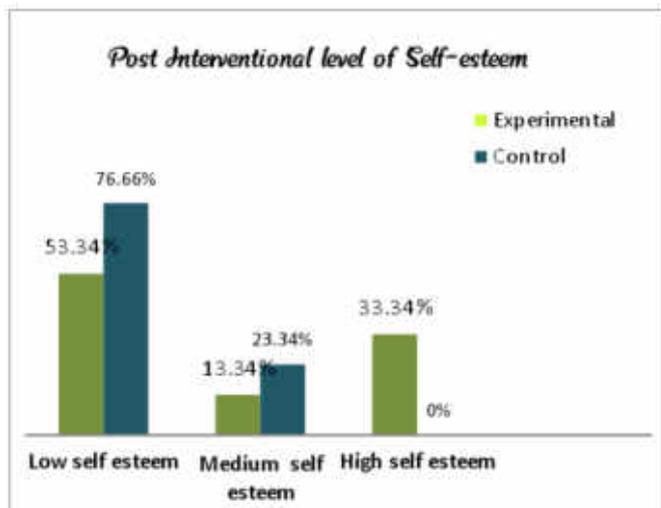


Figure 2. Bar Diagram showing post-interventional self-esteem level after 21 days in female nursing students in the experimental and control group.

Table 3. Comparison of pre and post interventional self-esteem level of nursing students in the experimental and control group after 21 days

Group	Self-esteem level				Paired "t"-test		
	Pre- intervention		Post -intervention		df	t	p
	Mean	SD	Mean	SD			
Experimental (n=30)	57.80	10.54	70.93	12.91	29	4.0322	0.0004*
Control (n=30)	52.80	19.18	54.60	13.36	29	0.4317	0.6691 ^{NS}
Unpaired "t" test	t	1.2515	t	4.8159			
	df	58	df	58			
	p	0.2158 ^{NS}	p	0.0001*			

NS= Non-significant ; *= Significant; Level of significance p=0.05

Table 3 and Figure 3 depicts the comparison of pre and post interventional self-esteem in the experimental and control group. In experimental group pre interventional mean± S.D was 57.80±10.54 and post-interventional (after 21 days) mean± S.D is 70.93±12.91, $t=4.0322$, $df=29$, $p = 0.0004$ showing significance at the level of 0.05. It is concluded after using paired t-test that there was a significant difference between pre-interventional and post-interventional self-esteem in the experimental group after administration of aerobic exercises.

In the control group, pre-interventional mean± S.D is 52.80±19.18 and post-interventional after 21 days, mean± S.D is 54.60±13.36, $t=0.4317$, $df=29$, $p=0.6691$ showing no significant results at the level of 0.05. It is concluded after using paired t-test that there was no significant difference between pre interventional and post-interventional self-esteem in control group. In the experimental and control group, pre-interventional mean± S.D is 57.80±10.54 and 52.80±19.18. It is concluded after using unpaired t-test in the experimental and control group that in pre-intervention t is 1.2515, the p-value is 0.2158 which means that there was no statistically significant difference in self-esteem in experimental and control group. In the experimental and control group, post interventional (after 21 days) mean± S.D is 70.93±12.91 and 54.60±13.36. It is concluded after using unpaired t-test in the experimental and control group that in post-intervention t is 4.8159, p-value is 0.0001 which means that there was a statistically significant difference in level of self-esteem experimental and control

group. Hence the developed hypothesis: H_1 (There will be a statistically significant difference between the pre and post interventional wellbeing in the experimental group at $p<0.05$ level of significance) has been proven.

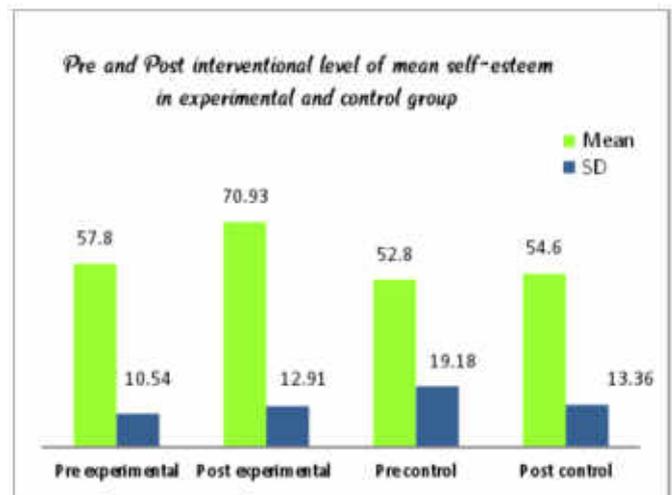


Figure 3. Bar Diagram showing a comparison of pre and post-interventional Self-esteem of female students in the experimental and control group

DISCUSSION

The study aimed to explore the extent to which the aerobic exercises enhance the self-esteem of female nursing students. The findings of the study revealed that in experimental group majority 24(80%) of female nursing students in pre-intervention had low self-esteem. 6 (20%) had medium self-esteem whereas no one had high self-esteem. And after the intervention 04 (33.34%) female nursing students in the experimental group had a high level of self-esteem, 10 (36.66%) had a medium level of self-esteem and 16 (53.34%) had a low level of self-esteem. In experimental group difference between pre-test 57.80±10.54 and post-test 70.93±12.91, level of self-esteem was statistically significant at 0.05 level but difference between pretest 52.80±19.18 and posttest 54.60±13.36 level of self-esteem of control group was non-significant at 0.05 level of significance. Similar findings were found in a study conducted by Norlena Salamuddin *et al.* (2014). An experimental study was conducted on a sample of 120 female undergraduate students. The instruments used were the Self-Esteem Scale. Data was analyzed using inferential statistics. T-test conducted shows significant differences in self-esteem score between pretest and posttest in all modalities of aerobic exercise programs. Analysis of variance reveals that there is a significant difference ($F=81.299$, $p<0.01$) between the four modalities of aerobic exercise programs, and post hoc test shows that combination of step-dance aerobics and weight training program is most effective in increasing self-esteem among female students. Results of this study contribute to developing the role of aerobic exercise in improving self-esteem. It was also useful in assisting to develop policies and programs that enhance self-esteem. The result shows the association of pre-interventional level of self-esteem with selected socio-demographic variables of the experimental group. There is no significant association between the relationship with age, education, habitat, dietary habits, total monthly income (in rupee), academic results of last year, time of exercise, type of exercise, information on fitness and training on aerobic exercises except their type of family, and

nutritional status among female nursing students. After 21 days, there was no significant association between the level of self-esteem with any of the selected demographic variable.

Conclusion: By helping the female nursing students to practice aerobic exercises daily would help them to increase the level of self-esteem. As the self-esteem enhances an inner sense of wellbeing and integrity in the female adults makes them feel more comfortable about themselves. This increase in self-esteem will help them to increase self-confidence which will further help to increase productivity in their life. This study investigated new way to boost self confidence in their personal as well as professional life. So it can be concluded that aerobic exercise helps in increasing the level of self-esteem among female nursing students.

Implications and recommendation: The findings of the study have several implications which were discussed under certain areas for the nursing profession i.e. nursing practice, nursing education, nursing administration, and nursing research. In all the areas nurses act as an educator, leader, organizer, counselor, and motivator. Self-esteem is one of the important components of a person's work life, and it is found that there are many factors which affect nurses' self-esteem. A nurse with good self-esteem will be able to provide much better care to her patients. She will be satisfied with her job and fully committed to it. She will be able to develop her morals and values and a successful professional image. The nurses are the part of the health care professionals in the hospital and community setting for assessing, planning and evaluating the outcome of any kind of treatment to patients. Therefore, Self-esteem enhancement programme need to be emphasized in the curriculum and short courses on these can be conducted. School authorities should take initiative and responsibility in starting such program in their institutions.

Limitations

The study was limited only to nursing students from selected nursing colleges of Faridkot, Punjab further restricts the generalization of the study to a particular setting.

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Conflicts of interest: The authors declare that they have no conflict of interests with any organization regarding the materials discussed in this manuscript.

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WHO	World Health Organization
CDC	Center for Disease Control
CSE	Coopersmith self-esteem inventory Scale
H ₀	Null Hypothesis
H ₁	Research Hypothesis
N	Total number of sample
df	Degree of freedom
SD	Standard Deviation
R	Reliability
SE	Standard Error
f	Frequency

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