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A PRE EXPERIMENTAL STUDY TO EVALUATE THE EFFECTIVENESS OF AEROBIC EXERCISE ON PSYCHOLOGICAL WELL-BEING AND BODY IMAGE SATISFACTION AMONG NURSING STUDENTS IN A SELECTED COLLEGE OF MEERUT, U.P

Akshita Malik[1]*, Mrs. Nishat Parveen[2], Prof. Dr. S. Balamani Bose[3], Prof. Hemalatha M[4], Mrs. Shivani Malik[5]

[1]M.Sc. Nursing Student , College of Nursing, LLRM Medical College, Meerut, Uttar Pardesh, India, Email ID: akshitamalik98@gmail.com , ORCID ID: 0009-0003-2950-152X
[2]Assistant Professor, Department of Psychiatric Nursing, College of Nursing, LLRM Medical College, Meerut, Uttar Pardesh, India, Email ID: nishatparveen691@gmail.com, ORCID ID: 0000-0002-7386-9490
[3]Principal, College of Nursing, LLRM Medical College, Meerut, Uttar Pardesh, India, Email ID: balabosejeeva@gmail.com, ORCID ID: 0009-0000-2983-1789
[4]Professor, College of Nursing, L.L.R.M Medical College, Meerut, Uttar Pradesh, India, Email ID: diajohn2009@gamil.com ORCID ID:0000-0003-9900-166X
[5]Assistant Professor, Department of Psychiatric Nursing, College of Nursing, LLRM Medical College, Meerut, Uttar Pardesh, India, Email ID: shivanimalik0321@gmail.com ORCID ID: 0009-0007-0610-626X
*Corresponding author: Prof. Dr. S Balamani Bose, Email.id: balabosejeeva@gmail.com, Principal of College of Nursing, Meerut, Uttar Pardesh, India

ABSTRACT

Introduction: Psychological well-being and body image satisfaction are essential components of mental health among nursing students. Academic pressure, clinical responsibilities, and lifestyle-related factors may negatively affect psychological well-being and body image perception. Aerobic exercise is recognized as a cost-effective, non-pharmacological intervention that promotes both physical and mental health. Therefore, the present study was undertaken to evaluate the effectiveness of aerobic exercise on psychological well-being and body image satisfaction among nursing students.

Objectives: To assess the Effectiveness of Aerobic Exercise on improving Body Image Satisfaction and Psychological Well-being among Nursing Students.

Methods: A quantitative research approach with a pre-experimental one-group pre-test post-test design was adopted. The study was conducted among 60 nursing students selected through convenience sampling from the College of Nursing, LLRM Medical College, Meerut. Data were collected using a socio-demographic proforma, Ryff's Psychological Well-Being Scale, and Body Image Satisfaction Scale. Aerobic exercise sessions were administered for four weeks. Descriptive and inferential statistics including paired t-test, Pearson correlation coefficient, and Chi-square test were used for analysis.

Results: The mean psychological well-being score increased from 57.46 ± 18.22 in the pre-test to 101.56 ± 11.00 in the post-test. The calculated paired t-value was 15.02. The mean body image satisfaction score increased from 11.84 ± 4.00 to 26.39 ± 5.51 with a paired t-value of 16.92. A moderate positive correlation was found between psychological well-being and body image satisfaction ($r=0.445$, $p=0.003$). No statistically significant association was observed between the study variables and selected demographic characteristics.

Conclusion: Aerobic exercise was found to be highly effective in improving psychological well-being and body image satisfaction among nursing students. Regular aerobic exercise may be incorporated into student wellness programs to promote mental health.

KEYWORDS: Aerobic Exercise, Psychological Well-Being, Body Image Satisfaction, Nursing Students, Mental Health.

INTRODUCTION

Psychological well-being and body image satisfaction are important components of overall health among nursing students. Nursing education is academically demanding and requires students to balance theoretical learning, clinical responsibilities, examinations, and professional expectations. These challenges often expose nursing students to high levels of stress, anxiety, emotional exhaustion, and reduced self-confidence, which may negatively affect their psychological well-being and perception of body image.

Psychological well-being refers to a positive state of mental health characterized by self-acceptance, personal growth, purpose in life, autonomy, environmental mastery, and positive relationships. Body image satisfaction reflects an individual's perception, feelings, and attitudes toward their physical appearance. Previous studies have demonstrated a positive association between body image satisfaction and psychological well-being, indicating that individuals who are satisfied with their bodies tend to experience better mental health outcomes.

Physical activity, particularly aerobic exercise, has been recognized as an effective non-pharmacological intervention for improving mental health and promoting positive body image. Regular aerobic exercise has been associated with reduced stress, anxiety, and depressive symptoms, along with enhanced self-esteem, emotional stability, and overall well-being. Studies conducted among college and nursing students have reported that participation in structured aerobic exercise programs significantly improves psychological well-being and body image satisfaction.

In India, nursing students frequently experience psychological distress due to academic workload, clinical exposure, and adjustment-related challenges. Research has reported high prevalence rates of anxiety, depression, and stress among nursing students, highlighting the need for effective and feasible interventions. Although several studies have examined the relationship between physical activity and mental health, limited intervention-based research has simultaneously evaluated the effect of aerobic exercise on both psychological well-being and body image satisfaction among nursing students, particularly in Meerut, Uttar Pradesh.

Considering the growing concern regarding student mental health and the practical benefits of exercise-based interventions, the present study was undertaken to assess the effectiveness of aerobic exercise on psychological well-being and body image satisfaction among nursing students in a selected college of Meerut. The findings may provide evidence for incorporating structured aerobic exercise programs into nursing education and student wellness initiatives.

Objectives of the study were:

1. To assess the pre-test and post-test levels of psychological well-being and body image satisfaction among nursing students.
2. To evaluate the effectiveness of aerobic exercise on psychological well-being and body image satisfaction among nursing students.
3. To determine the correlation between psychological well-being and body image satisfaction among nursing students.
4. To find the association between psychological well-being and selected demographic variables.
5. To find the association between body image satisfaction and selected demographic variables.

RESEARCH METHODOLOGY

The researcher selected 60 young adults by using a convenience sampling technique who met the inclusion criteria and were willing to participate in the study. Written informed consent was obtained from all participants after explaining the purpose of the study and assuring them of the confidentiality of the information provided. A one-group pre-test and post-test pre-experimental research design was adopted. The study was conducted from 9-03-2026 to 9-04-2026 at College of Nursing, L.L.R.M Medical College, Meerut, Uttar Pradesh, after obtaining formal permission from the concerned authorities. The data were collected using a Demographic Proforma, Ryff's Psychological Well-Being Scale, and the Body Image Satisfaction Scale. A pre-test was administered to assess the baseline level of psychological well-being and body image satisfaction among the participants. Following the pre-test, an aerobic exercise intervention was implemented according to the planned protocol. The aerobic exercise intervention included structured aerobic sessions consisting of warm-up exercises, disco steps, hand rolls, knee-up and knee-back movements, side twists, and cool-down exercises. The intervention was administered for four weeks, one hour per day, five days per week.

The intervention consisted of structured aerobic exercise sessions conducted regularly for the participants.After completion of the intervention period, a post-test was conducted using the same assessment tools to evaluate the effectiveness of aerobic exercise on psychological well-being and body image satisfaction. The collected data were analyzed using descriptive and inferential statistics to determine the effectiveness of the intervention and the relationship between psychological well-being and body image satisfaction among young adults.

The study included nursing students who were willing to participate and provided written informed consent for the research. Only those nursing students who were available throughout the study period and were physically fit to perform aerobic exercise were included in the study. Participants were required to be capable of safely engaging in the planned aerobic exercise sessions without any physical limitations that could interfere with their participation.

Nursing students with medical conditions that contraindicated participation in moderate-intensity aerobic exercise, such as cardiac disease, uncontrolled hypertension, or recent surgery, were excluded from the study. In addition, students with a current psychiatric disorder undergoing active treatment, including severe depression with suicidal ideation or psychotic disorders, were not included in the study to ensure participant safety and the validity of the study findings.

RESULTS

The findings of study are presented according to the objectives of the study. The data is prepared under the subsequent sections: -

Table 1 Description of Background Variables of the participant (N=60)

Background variables	Frequency (n)	Percentage (%)
Age		
18-20 years	28	46.67%
21-23 years	32	53.33%
24-26 years	0	0%
Above 26 years	0	0%
Gender		

Male	0	0%
Female	60	100%
Other (specify)	0	0%
Course		
Bsc Nursing/post bsc	60	100%
G.N.M	0	0%
Msc Nursing	0	0%
Type of Family		
Nuclear	35	58.33%
Joint	20	33.34%
Extended	5	8.33%
Residential Status		
Hostel	60	100%
PG/Rented room	0	0%
With Family	0	0%
Monthly Family Income		
Below Rs. 10,000	0	0%
Rs. 10,001-20,000	0	0%
Rs. 20,001-40,000	12	20%
Above Rs. 40,000	48	80%
Dietary Pattern		
Vegetarian	54	90%
Non-vegetarian	6	10%
Comorbid Illness		
PCOD	8	13.34%
No comorbid	52	86.67%
Others	0	0%

Table 2 Frequency and percentage of Pre-Test and Post Test Levels of Psychological Well-Being among Nursing Students (N=60)

	Psychological Well Being			
Levels	**Pre Test**		**Post Test**	
	(f)	**(%)**	**(f)**	**(%)**
Low	25	41.67	0	0
Moderate	35	58.33	16	26.7
High	0	0	44	73.3
Total	60	100	60	100

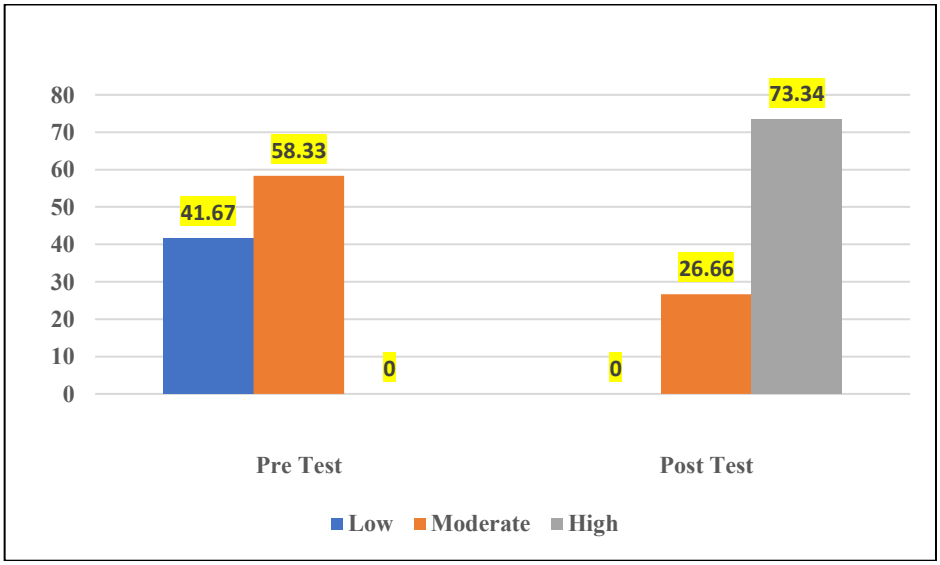

Figure 1 Percentage Distribution of Pre-Test and Post Test Level of Psychological Well-Being among Nursing Students

Table 3- Frequency and percentage of Pre-Test and Post Test Level of Body image satisfaction among Nursing Students (N=60)

Body Image Satisfaction				
Levels	**Pre Test**		**Post Test**	
	(f)	**(%)**	**(f)**	**(%)**
Very Dissatisfied	0	0	0	0
Dissatisfied	45	75	0	0
Neither Satisfied nor Dissatisfied	15	25	15	25
Satisfied	0	0	30	50
Very Satisfied	0	0	15	25
Total	60	100	60	100

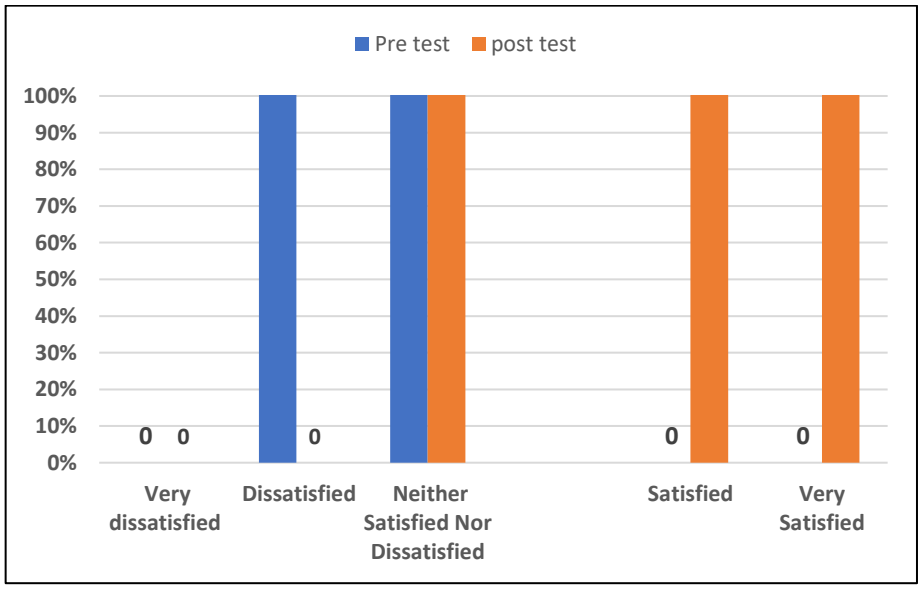

Figure 2 Percentage Distribution of Pre-Test and Post Test Level of Body Image Satisfaction among Nursing Students

Table 4 Effectiveness of aerobic exercise on improving psychological well-being (N=60)

Group	Mean	Standard Deviation	Mean Difference	t value	df	P value	Interpretation
Pre Test	57.46	18.22	44.1	15.02	59	0.001	Significant
Post Test	101.56	11					

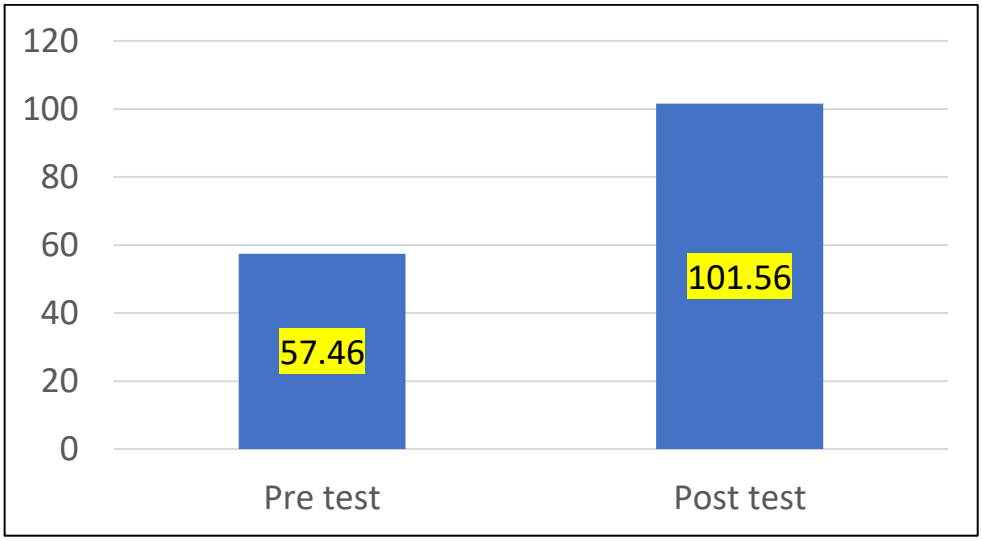

Figure 3 Bar Diagram represent the effectiveness of aerobic exercise on improving psychological well being

Table 5 Effectiveness of aerobic exercise on improving Body image satisfaction

Group	Mean	Standard Deviation	Mean Difference	t value	df	p value	Interpretation
Pre Test	11.84	4.00	14.55	16.92	59	0.001	Significant

Post Test	26.39	5.51					

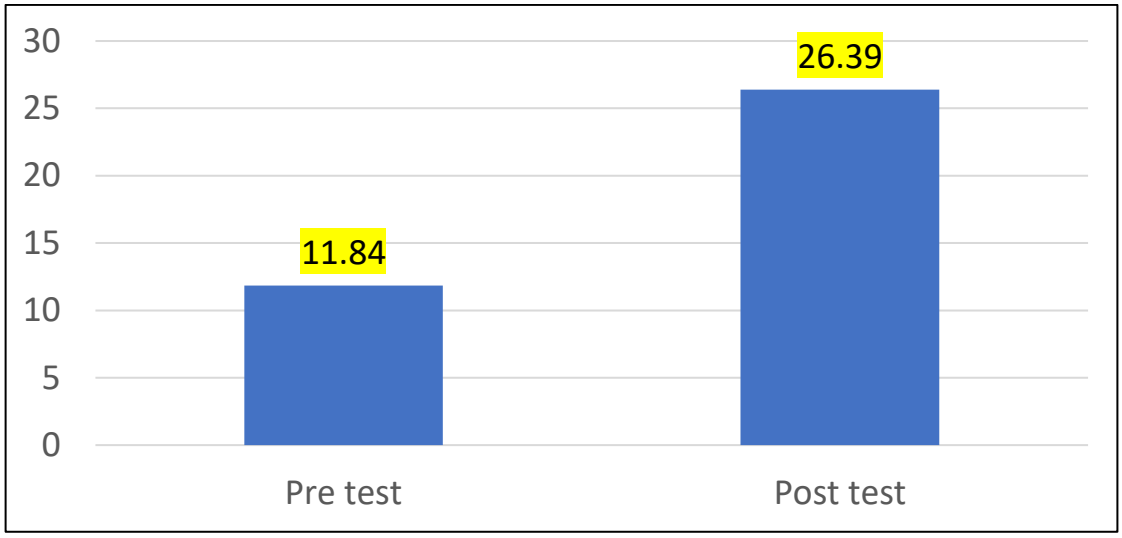

Figure 4 Bar Diagram represent the effectiveness of aerobic exercise on Body Image Satisfaction

Table 6 Correlation between Psychological Well-Being and Body Image Satisfaction

Aspect	Mean	S.D	Mean Difference	Pearson Correlation (r)	p value	Interpretation	Inference
Psychological well being (X)	57.46	18.22	45.62	0.445	0.003	Moderate positive correlation	Significant
Body Image satisfaction (Y)	11.84	4					

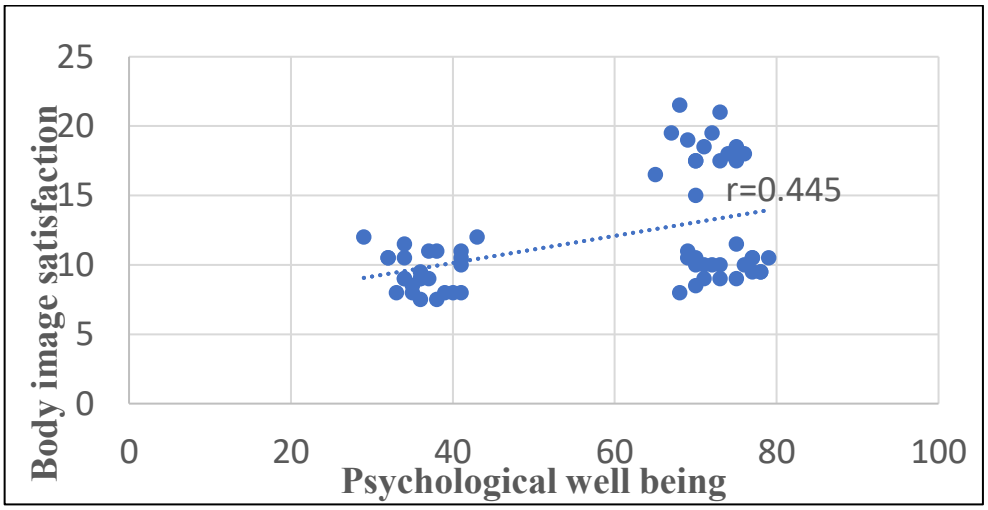

Table 7 Association between pre test psychological well being with their selected demographic variables

Demographic variables	Category	PWB Score		df	x²value	P value	Inference
		Low	Moderate				
Age	18-20 years	12	16	1	0.03	0.86	NS
	21-23 years	13	19				
	24-26 years	0	0				
	Above 26 years	0	0				
Gender	Male	0	0	NA	NA	NA	NA
	Female	25	35				
	Other(specify)	0	0				
Course	Bsc Nursing/post bsc	25	35	NA	NA	NA	NA
	G.N.M	0	0				

	Msc Nursing	0	0				
Type of family	Nuclear	14	21	2	0.13	0.93	NS
	Joint	9	11				
	Extended	2	3				
Residential Status	Hostel	25	35	NA	NA	NA	NA
	PG/Rented room	0	0				
	With Family	0	0				
Monthly family income	Below Rs.10,000	0	0	1	0.42	0.51	NS
	Rs.10,001-20,000	0	0				
	Rs.20,001-40,000	6	6				
	Above Rs.40,000	19	29				
Dietary Pattern	Vegetarian	22	32	1	0.19	0.66	NS
	Non-vegetarian	3	3				
Comorbid Illnes	PCOD	4	4	1	0.26	0.6	NS
	No comorbid	21	31				
	Others	0	0				

Table 8 Association between pre test body image satisfaction with their selected demographic variables

Demographic Variables	Category	Dissatisfied	Neither satisfied nor Dissatisfied	df	x^2 value	P value	Inference
Age	18-20 years	20	8	1	0.35	0.55	NS
	21-23 years	25	7				
	24-26 years	0	0				
	Above 26 years	0	0				
Gender	Male	0	0	NA	NA	NA	NA
	Female	45	15				
	Other (specify)	0	0				
Course	Bsc Nursing/ post bsc	**45**	**15**	**NA**	**NA**	**NA**	NA
	G.N.M	**0**	**0**				
	Msc Nursing	**0**	**0**				
Type of Family	Nuclear	28	7	2	1.33	0.51	NS
	Joint	14	16				
	Extended	3	2				
Residential status	Hostel	45	15	NA	NA	NA	NA
	PG/Rented room	0	0				
	With family	0	0				
Monthly family income	Below Rs.10,000	0	0	1	0.55	0.45	NS
	Rs.10,001-20,000	0	0				
	Rs.20,001-40,000	10	2				
	Above Rs. 40,000	35	13				
Dietary Pattern	Vegetarian	40	14	1	0.24	0.61	NS
	Non-vegetarian	5	1				
Comorbid illness	PCOD	7	1	1	0.76	0.38	NS
	No comorbid	38	14				
	Others	0	0				

The findings of the study revealed that aerobic exercise had a positive effect on both psychological well-being and body image satisfaction among nursing students. In the pre-test, 41.67% of the students had low psychological well-being and 58.33% had moderate psychological well-being, whereas after the intervention 73.33% of the students achieved a high level of psychological well-being. Similarly, before the intervention, 75% of the students were dissatisfied with their body image and 25% were neither satisfied nor dissatisfied, while in the post-test 50% were satisfied and 25% were very

satisfied with their body image. The comparison of pre-test and post-test scores showed a statistically significant improvement in psychological well-being ($t = 15.02$, $p = 0.001$) and body image satisfaction ($t = 16.92$, $p = 0.001$) following the aerobic exercise intervention. Pearson's correlation analysis revealed a moderate positive correlation between psychological well-being and body image satisfaction ($r = 0.445$, $p = 0.003$), indicating that students with better psychological well-being tended to have greater body image satisfaction. Chi-square analysis showed no significant association between psychological well-being, body image satisfaction, and the selected demographic variables ($p > 0.05$). The findings indicate that aerobic exercise was effective in enhancing psychological well-being and body image satisfaction among nursing students.

DISCUSSION

The present study revealed that aerobic exercise significantly improved psychological well-being among nursing students. The mean psychological well-being score increased from 57.46 in the pre-test to 101.56 in the post-test. These findings support the study conducted by Khoshnood et al. (2018), which reported a positive relationship between physical activity and mental well-being among student nurses.

Similarly, body image satisfaction improved significantly following the intervention. The mean score increased from 11.84 to 26.39. These findings are consistent with Alizadeh et al. (2014), who found that short-term aerobic exercise significantly improved body image and reduced depressive symptoms among women.

The present study also found a moderate positive correlation ($r = 0.445$) between psychological well-being and body image satisfaction, suggesting that students with better psychological well-being tend to report greater satisfaction with their body image.

No significant association was found between study variables and selected demographic characteristics, indicating that the beneficial effects of aerobic exercise were observed irrespective of demographic background.

NURSING IMPLICATIONS

Nursing Practice

The findings of the present study emphasize the important role of nurses in promoting psychological well-being and body image satisfaction among nursing students through regular aerobic exercise. Nurses can assess students for signs of stress, anxiety, poor self-esteem, and negative body image and encourage them to participate in structured physical activity programs. Aerobic exercise can be incorporated as a non-pharmacological intervention to improve mental health, enhance emotional stability, and promote a positive perception of body image. Nurses should provide health education regarding the benefits of regular exercise and motivate students to adopt healthy lifestyle practices for maintaining psychological well-being.

Nursing Education

Nursing educators should integrate the concept of physical activity, mental health promotion, and body image awareness into the nursing curriculum. Educational programs, workshops, and seminars can be organized to increase awareness among nursing students regarding the importance of aerobic exercise in maintaining psychological well-being. Students should be encouraged to actively participate in fitness and wellness activities. Incorporating exercise-based health promotion strategies into nursing education can help students develop healthy habits that contribute to both their personal well-being and professional effectiveness.

Nursing Administration

Nursing administrators and college authorities should take initiatives to develop and implement structured wellness programs for students. Adequate facilities, resources, and opportunities for regular physical activity should be provided within educational institutions. Periodic fitness sessions, aerobic exercise classes, and mental health promotion activities may be organized to enhance students' overall health. Nursing administrators should also formulate policies that support student wellness and create a supportive environment that encourages healthy lifestyle behaviors.

Nursing Research

The findings of this study provide a basis for further research on the effectiveness of aerobic exercise in improving psychological well-being and body image satisfaction. Future studies can be conducted using larger sample sizes, different populations, and true experimental designs with control groups to strengthen the evidence. Comparative studies involving different forms of physical activity such as yoga, meditation, dance therapy, and resistance training may also be undertaken. Longitudinal studies are recommended to assess the long-term effects of aerobic exercise on mental health and body image satisfaction among nursing students and other young adult populations.

RECOMMENDATIONS

- Similar studies may be conducted on larger samples.
- Comparative studies may be undertaken using different exercise interventions.
- Longitudinal studies may assess long-term outcomes of aerobic exercise.
- Experimental studies with control groups are recommended.
- Similar studies may be conducted among different populations and educational settings.
- Qualitative studies may explore students' experiences related to exercise and mental health.

LIMITATIONS

- The study involved only 60 nursing students.
- A one-group pre-test post-test design was used without a control group.
- Convenience sampling technique may limit generalizability.
- The study was conducted in a single institution.
- Long-term effects of aerobic exercise were not evaluated.

CONCLUSION

The study concluded that aerobic exercise was highly effective in improving psychological well-being and body image satisfaction among nursing students. Significant improvements were observed in post-test scores following the intervention. A moderate positive correlation existed between psychological well-being and body image satisfaction. The findings support the incorporation of aerobic exercise into nursing student wellness programs as a practical strategy for promoting mental health and positive body image.

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