

Effect of Swimming on Body Image and Self-Esteem in Adults

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ABSTRACT

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Engagement in physical and athletic activities may enhance body image and psychological well-being; however, evidence on the effects of swimming on body image and self-esteem among adults remains limited. To determine the effect of swimming on body image (BI) and self-esteem (SE) among adults. A cross-sectional study was conducted over six months in various swimming facilities in Lahore, Pakistan, including the University of Lahore Sports Complex, Punjab University Swimming Team, Punjab International Swimming Complex, and HUFC Swimming Pool. A total of 70 participants (25 males, 45 females) were recruited using convenience sampling. Data were collected using the Rosenberg Self-Esteem Scale (RSES) and Body Image Scale (BIS). Descriptive statistics and regression analysis were applied. Participants showed a mean body image score of 50.10 ± 7.55 and self-esteem score of 13.40 ± 4.03 . Regression analysis showed a significant positive association between swimming and body image ($p < 0.001$), whereas swimming demonstrated a significant negative association with self-esteem ($p < 0.001$). The practitioners may promote swimming activities and incorporate such activities into health promotional and recreational programs as an effective strategy for enhancing body image among adults. Swimming may contribute to more positive BI among adults; however, its impact on SE appears to be more complex and not uniformly beneficial. These findings highlight the need to consider broader psychological factors when evaluating the psychological outcomes of physical activity participants.

Keywords: Adults, Body Image, Physical Activity, Self-Esteem, Swimming, Cross-Sectional Study.

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Introduction

Despite the well-documented advantages of physical activity for mental health, there is a notable gap in research regarding the specific effects of swimming on self-esteem and body image in adults. A positive self-perception and healthy body image are vital for psychological wellness and the formation of identity during adulthood. Hence, this study concentrates on the key elements that influence body and self-perception in adults. For individuals to cultivate self-assurance and a robust sense of identity, they must possess a healthy and positive self-view. This study examines the factors that affect their body image and self-esteem. Research has consistently shows that physical activity, particularly swimming, plays a significant role in enhancing self-esteem and body image, especially during the developmental phase of adolescence (Tiggemann & Anderberg, 2025).

Nevertheless, applying these findings to adult groups is still speculative. Still, there was a lack of research that justified the approach of the current study by connecting different perspectives on how swimming affects adults' body image and self-esteem. In North America, societal expectations and media portrayal reinforced the notion of a slim physique, resulting in body dissatisfaction and a poor self-image among women. Self-esteem and body perception significantly affect both individuals and society as a whole. Upholding unattainable beauty ideals can worsen negative body image, contribute to mental health issues, and promote social comparisons, while fostering a positive body image can enhance mental well-being, inclusive, and empowerment. This cultural fixation on thinness is perpetually supported by beauty magazines, social media platforms, and various other media outlets, making it challenging for women to break free from the pressure to adhere to unrealistic beauty ideals. Studies found that females of all ages internalized the "thin ideal" due to exposure to TV and other media (Jiotsa et al., 2025; Rodgers & Melioli, 2025)

In yesterday's media-driven society, body dissatisfaction among women was the norm, with those who were content with their bodies being the rare exception. (p. 66) Body dissatisfaction had become a normal part of life for most typical women. Previous research shows swimming offered a distinctive setting that cultivated a positive body image, boosted self-esteem, and promoted holistic physical and mental well-being. Swimming helped teenagers gain a more self-assured and positive body image, which was essential for their general well-being and long-term health results. Young people who swim had a good body image and increased self-esteem, which in turn benefited their mental health, resilience, and dedication to healthy living for the rest of their lives (Z hang et al., 2025; Sarda et al., 2025).Adolescents

of different shapes, sizes, and abilities can experience a welcoming and inclusive setting in swimming. This environment emphasized technique and personal development rather than appearance, allowing teenagers to feel safe and comfortable in their own bodies. Such an inclusive atmosphere nurtured a positive and empowering relationship between teenagers and their physical selves, helping to challenge harmful societal beauty standards (Tort-Nasarre & Pollina-Pocallet, 2023).

Self-esteem of teenagers significantly improved through swimming, which also contributed to their sense of confidence and achievement. Physical exercise involved in swimming stimulated the release of endorphins, leading to improved mood, reduced stress, and overall wellness. The organized and encouraging setting of swimming provided adults with a distinctive opportunity to develop a healthy self-image and body confidence, aided by the support of coaches and the companionship of fellow swimmers (Murphy et al., 2022). Engaging in swimming enhances self-esteem by cultivating a feeling of accomplishment and confidence. By accepting their bodies as distinctive and worthy, adults nurtured a positive body image and self-worth through swimming (Gualdi-Russo et al., 2022).

As teenagers established and reached their objectives in the pool, they gained self-assurance and fostered a healthy body image. Finishing a specific distance, perfecting a new stroke or technique, and tackling difficulties all illustrated their capabilities and showed that they could face challenges and emerge even more resilient. With every accomplishment, their self-confidence increased, and they started to view their bodies as powerful and capable. We understood that every scar, stretch mark, and contour represented our hard work and commitment, and swimming contributed to helping adolescents foster a positive body image that motivated them to embrace new challenges and realize their full potential. By emphasizing their accomplishments and personal growth instead of their looks, adolescents cultivated a positive body image that encouraged them to face new challenges and achieve their fullest potential (Tort-Nasarre et al., 2023).

Engaging in swimming significantly influences the body image and self-worth of adolescents, allowing them to cultivate a favorable self-view, increased confidence, and improved overall health. The welcoming atmosphere of swimming has contributed to dismantling detrimental societal beauty ideals, fostering a constructive and empowering connection between individuals and their bodies. Reexamining restrictions and investigating new spheres of life were necessary for the creation of the leisure constraints theory. Research on the relationship between swimming, body image, and self-esteem was comparatively lacking. The objective of this research was to fill the current

gap in studies by investigating how swimming influences body image and self-esteem in adults(Hunnius, 2024).

This study addresses many gaps in the existing literature on physical activity, BI, and SE. First, it extends previous research that has predominantly focused on adolescents swimmers, thereby responding to evidence that psychological outcomes of exercise vary across the lifespan due to differences in identity development, social comparison, and contextual life demands (Rodgers et al., 2023; Sabiston et al., 2023). This study advances the literature by investigating the dual and potentially non-linear relationship between swimming, body image, and self-esteem, highlighting that improvements in body image do not always translate into higher self-esteem. Finally, the study challenges the widely held assumption that physical activity uniformly enhances psychological well-being, also supporting emerging evidence that the effects of exercise are complex, context-dependent, and influenced by sport type, body exposure, and sociocultural factors (Eime et al., 2023).

Rationale

With its ability to improve both physical and emotional health, there is increasing interest in how swimming affects body image and self-esteem. As a comprehensive workout, swimming can assist individuals in toning their muscles, boosting cardiovascular fitness, and achieving and maintaining a healthy weight. These physical benefits can contribute to a more positive body image, as individuals may feel more confident and comfortable in their skin. Additionally, swimming serves as a calming and meditative activity that can boost self-esteem and improve body image. Future research in this area could explore the potential benefits for individuals facing specific body image challenges or mental health conditions, as well as the lasting impacts of swimming on self-esteem and body image.

Materials and Method

Study Design

A quantitative research design was employed to investigate the association between self-esteem and body image of swimmers. Data were collected at a single point in time without any intervention. This study design is considered as appropriate in sports population for examining relationship among variables within naturally occurring population (Setia, 2016; Yi&Lee, 2025).

Study Population

Study population consist of actively participating swimmers from selected swimming facilities in Pakistan. These participants were within the young adult age group (18–27 years) and engaged in regular swimming activities.

The population was chosen to explore the relationship between self-esteem and body image within a physically active sports group. Participants were recruited from the swimming pool of the University of Lahore, Punjab University swimming team, Punjab International Swimming Complex, and HUFC Swimming Pool, Pakistan.

Sample and Sample Size

A total sample of 70 participants (25 males and 45 females) was selected for this research study.

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Correlation sample size

Total sample size required to determine whether a correlation coefficient differs from zero.

Instructions: Enter parameters in the green cells. Answers will appear in the blue box below.

α (two-tailed) = 0.05 Threshold probability for rejecting the null hypothesis. Type I error rate.
 β = 0.20 Probability of failing to reject the null hypothesis under the alternative hypothesis. Type II error rate.
 r = 0.33 The expected correlation coefficient.

[Calculate]

The standard normal deviate for $\alpha = Z_{\alpha} = 1.9600$
The standard normal deviate for $\beta = Z_{\beta} = 0.8416$
 $C = 0.5 * \ln[(1+r)/(1-r)] = 0.3428$

Total sample size = $N = [(Z_{\alpha} + Z_{\beta})/C]^2 + 3 = 70$

Sample Selection

Respondents including the age range (18–27 years) (Hunnius, 2024; Zhang & Liu, 2024). Both male and female to ensure gender representation (Zartaloudi et al., 2023). Participants were required to have completed at least Higher Secondary Certificate (HSC) education,(Ouyang et al., 2020). Participants were excluded if they had drug addiction (Siddiqui et al., 2024). Individuals involved in other strenuous sports physical activity effects (Garrido et al., 2010). Participants with cardiovascular disease (Cirer-Sastre et al., 2021). Or those with chlorine allergy (Couto et al., 2021).

Tools for Data Collection

Data were collected using structured self-administered questionnaire with three sections. The first section included sociodemographic and anthropometric variables such as age, gender, and BMI. Body Image was assessed using 18-item Body Image Satisfaction Scale rated on 5-point likert scale,with higher scores indicate greater satisfaction. This scale is widely used in modern body image research (Cash & Smolak, 2011; BESAA validation literature, 2025). Self-esteem was measured using Rosenberg self-esteem scale(RSES),a 10-item scale rated on a 4point likert scale, with total score rating (0-30),lower score rates low self-esteem. It demonstrates strong

reliability (0.85–0.90) and validity. (Rosenberg, 1965; Ghasempour et al., 2025; Atika et al., 2026). In the current study, Cronbach's alpha was 0.87 for the RSES and 0.84 for the BIS, indicating good internal consistency.

Validity and Reliability of Instrument

The instruments used in this study were adopted from previously validated standardized scales. The Rosenberg Self-Esteem Scale (RSES) continues to demonstrate high internal consistency, with recent studies reporting Cronbach's alpha values ranging from 0.80 to 0.90 across diverse populations (Atika et al., 2026; Yi & Lee, 2025). Similarly, the Body Image Scale (BIS) has shown acceptable validity and reliability in recent psychometric evaluations, particularly in adult and adolescent populations (Cash & Smolak, 2011; BESAA/BIS validation studies, 2025). Data validity was ensured through expert review of the questionnaire to confirm clarity, cultural relevance, and conceptual alignment with study variables before data collection.

Ethical Consideration

Ethical approval was obtained from the concerned institutional authorities before the start of data collection. The study was conducted in accordance with the Declaration of Helsinki for research involving human participants World Medical Association, (2013). Written informed consent was taken from all participants after explaining the purpose of study. Confidentiality, anonymity, and voluntary participation were strictly maintained. Participants were informed that they could withdraw from the study at any time without any consequences.

Modes of Data collection

Data were collected using a self-administered questionnaire from eligible participants at the selected swimming facilities. Participants were screened according to the inclusion and exclusion criteria before participation. Questionnaire were completed under the supervision of the researcher to ensure clarity and completeness. All responses were checked for missing information, coded, and entered into SPSS version 20.0 for statistical analysis.

Results

Study showed a significant positive association between swimming and body image ($p < 0.001$), whereas swimming demonstrated a significant negative association with self-esteem ($p < 0.001$).

Table 1

Descriptive Statistics of Participants' Demographic Characteristics (N = 70)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	Mean $\pm$ SD	23.07 $\pm$ 2.66	—
Gender	Male	25	35.7
	Female	45	64.3
BMI	Underweight	3	4.3
	Normal	44	62.9
	Overweight	22	31.4
	Obese	1	1.4
Occupation	Student	32	45.7
	Housewife	7	10.0
	Academician	17	24.3
	Doctor	3	4.3
	Job holder	11	15.7
Marital Status	Married	22	31.4
	Unmarried	48	68.6
Education Level	Secondary	9	12.9
	Undergraduate	1	1.4
	Graduate	18	25.7
	Postgraduate	42	60.0

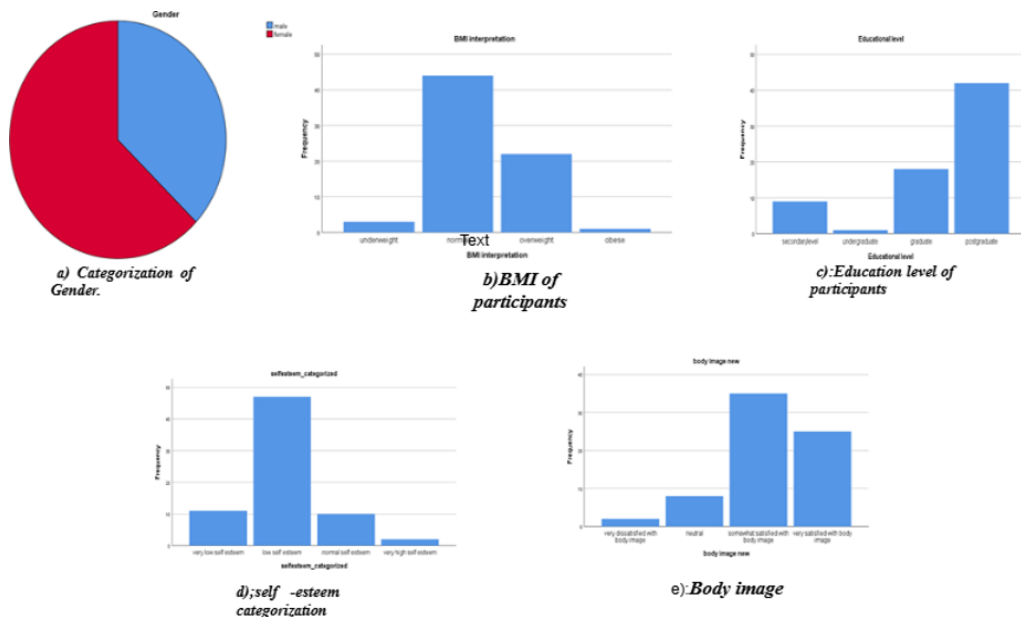


Table 2

Different age groups cross-tabulation with body image

Age categories	very dissatisfied with image	Neutral body	somewhat satisfied with body image	very satisfied with body image
18-22yrs	1	6	15	10
23-27	1	2	20	15

Table 2 suggests a potential positive shift in body image satisfaction as individuals transition into their adulthood. According to Table 2's findings, body image satisfaction rises with age. Just a small percentage of participants aged 18–22 years were neutral (6) or very dissatisfied (1), whereas the majority were somewhat satisfied (15) or very satisfied (10). There were 20 somewhat satisfied and 15 very satisfied people in the 23–27 years group, indicating even higher levels of satisfaction. In general, older individuals expressed higher levels of satisfaction with their bodies than younger ones.

Table3

Different age groups crosstabulation with self-esteem

Age groups	very low esteem	self-low esteem	self-normal esteem	self-very high self-esteem
18-22yrs	4	24	3	1
23-27	7	23	7	1

In both age groups, the most prevalent trait is low self-esteem (Table 3). Only a small percentage of participants aged 18–22 years reported normal (n=3) or very high (n=1) self-esteem; the majority reported low self-esteem (n=24). A similar pattern can be seen in the 23–27 years group, where very low (n=7) and normal (n=7) self-esteem follow low-self-esteem (n=23).

Table4

Crosstabulation of Occupational, Educational level and marital status with body image

Variables	Parameters	Chi-Square
Occupation	I look robust and resistant.	$\chi^2=27.04$, df (16) p-value=0.041
	I am impure and dirty	$\chi^2=21.031$, df (9) p-value =.013
Educational level	I look tender and loving	$\chi^2=22.4$, df (12) p-value = 0.033
	I look full of life.	$\chi^2=9.93$, df (4) p-value =0.04
Gender	I look physically attractive	$\chi^2=26.01$, df (12) p-value =0.01
	I seem to not have any expressions.	$\chi^2=16.59$, df (9) p-value =0.055
BMI interpretation	I do not look sexy at all	$\chi^2=28.7$, df (12) p-value =0.004
	At times I think I am no good at all.	$\chi^2=15.68$, df (8) p-value =0.47
Age	I look appeasing (people will be appeased when they look at me).	$\chi^2=16.8$, df (8) p-value =0.032
	I look like I have lot to show	$\chi^2=15.68$, df (8) p-value =0.047

Table 4 represents chi-square test results examining the relationship between various demographic variables (gender, educational level, occupation, and age) and different aspects of body image. The ($p < 0.05$) determines the statistical significance of these associations while other variables yield insignificant results.

Table 5

Cross-tabulation of Occupational, Educational- level ,Gender and age with self-esteem

Variables	Parameters	Chi-Square
Gender	I feel that I have a number of good.	$\chi^2 = 8.65, df(3)$ $P = (.034)$
Educational Level	I feel that I have a number of good.	$\chi^2 = 26.84, df(9)$ $P = 0.001$
Occupation	I wish I could have more respect for myself.	$\chi^2 = 21.22, df(12)$ $P = 0.047$
Age	On the whole, I am satisfied with myself	$\chi^2 = 12.83, df(6)$ $P = 0.045$

This table represents chi-square test results examining the relationship between various demographic variables (gender, educational level, occupation, and age) and different aspects of self-esteem. The ($p < 0.05$) determines the statistical significance of these associations while other variables yield insignificant results.

Table 6

Relationship between swimming participation and self-esteem

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p-value</i>	<i>St.Err</i>	<i>t-value</i>	<i>p-value</i>
Regression1	4.147	4.147	38.685	.000	.073	-6.220	.000	

Table 6 shows the relationship between swimming styles (independent variable) and self-esteem satisfaction, showing significance impact. The high F-statistics (38.685) and the low p-value (.000) strongly suggest a significant relationship. T-value evaluates the statistical significance, showing negative and inverse relation between these two variables, style of swimming and self-esteem.

Table7

Relationship between swimming styles and body image

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p-value</i>	<i>St.Err</i>	<i>t-value</i>	<i>p-value</i>
Regression1	6.1818	181	153.304	.000	.231	12.391	.000	

Table 6 evaluates the statistical significance of the regression model. Specifically, its highlights how well the model explains the variation in the dependent variable, with the F-statistic indicating the overall fit of the model. A high F-value and a low p-value (e.g.< 0.05) suggest that the regression model is statistically significant, meaning the independent variables collectively have a meaningful impact on the dependent variable (body image).

Discussion And Conclusion

This study examined the impact of swimming on body image and self-esteem among adult swimmers and contributes to the growing literature on sports psychology and physical activity. Findings indicate that swimming is positively associated with body image, as participants generally reported higher body satisfaction and improved physical self-perception. These findings are consistent with recent evidence suggesting that participation in sports and aquatic activities enhances body image, body confidence, and physical awareness among both adolescents and adults (Zaccagni & Gualdi-Russo, 2023; Ricketts et al., 2023). However, the current results partially contrast with earlier research, reporting a strong and direct association between sports participation and both body image and self-esteem. For example, Beard et al. (2023) found that athletic involvement was significantly associated with improved self-esteem in addition to body image, while Yahaya et al. (2021) reported similar positive effects among adolescent populations. In contrast, the present study observed that although body image improved consistently, self-esteem showed variability and was not uniformly enhanced among adult swimmers. This discrepancy may be explained by developmental differences, as adults typically have more stable self-concept structures and are influenced by broader psychosocial factors beyond physical appearance, including occupational stress, cultural expectations, and social comparison processes (Rodgers et al., 2023; Sabiston et al., 2023). Additionally, contextual factors in South Asian settings, where body image is strongly shaped by sociocultural norms and media-driven ideals, may further moderate the relationship between physical activity and psychological outcomes. Recent evidence also suggests that media exposure and appearance-based social

comparisons have intensified body dissatisfaction across diverse cultural settings, with internalization of idealized body standards.

Recent literature further supports the idea that physical activity contributes significantly to positive body perception; however, its influence on self-esteem remains more complex. While sports participation can improve physical confidence, self-esteem is shaped by multiple psychological and sociocultural factors including emotional well-being, cultural expectations, and social support systems (Burgon et al., 2023). This explains why improvements in body image do not always result in a corresponding increase in self-esteem. This study employed a cross-sectional design and focused on adult swimmers, whereas previous studies have used different populations and methodologies. For instance, Beard et al. (2023) investigated both athletes and non-athletes using a longitudinal approach, while Yahaya et al. (2021) focused on adolescents using a survey design. These methodological differences may account for variations in findings across studies. Beard et al. (2023) reported that athletic participation was associated with improved body image and higher SE, which is partially consistent with the current findings.

This study also found variability in SE among swimmers, indicating that not all individuals experience improved self-esteem through swimming. This suggests that psychological outcomes of sports participation are not uniform and may be influenced by individual characteristics such as age, gender, education, and personal experiences. In addition, in culturally conservative contexts, social norms and expectations may further shape self-perception beyond physical activity involvement. Overall, the findings support the positive role of swimming in enhancing body image and physical confidence. However, the relationship between swimming and self-esteem appears to be indirect and influenced by broader psychological and social determinants. These results highlight the importance of considering contextual and individual differences when examining the psychological effects of sports participation.

First limitation of this study is required longitudinal research to better understand SE issues. Secondly generalizability of findings. Third key support variables such as training duration, weekly frequency, competitive level and exercise intensity were not assessed, which may influence both BI and SE outcomes. Importantly, psychological responses to physical activity may differ across age groups, as adults typically experience more complex self-concept structures compared to adolescents, alongside there is strong cultural impact and occupational body evaluation pressures (Rodgers et al., 2023; Sabiston et al., 2026). Therefore, findings from adolescent-focused literature cannot be directly generalized to adult populations. Finally, the study was conducted within a South Asian cultural context, where body image is strongly

influenced by cultural norms, gender expectations, and media-driven beauty ideals. These culturally embedded factors may shape both body satisfaction and self-esteem in ways that differ from Western populations, limiting cross-cultural generalizability (Khan et al., 2024; Tiggemann, 2023).

This study concludes that swimming is positively associated with body image, as most participants reported improved body satisfaction and physical confidence. However, the relationship between swimming and self-esteem is complex and inconsistent, indicating that improved appearance does not necessarily lead to higher self-esteem. Overall, the findings suggest that swimming enhances body image, while self-esteem is influenced by multiple psychological, social, and cultural factors beyond physical activity. Future longitudinal studies employing larger and more diverse samples are required to clarify causal pathways and explore the mechanisms underlying the differential effects of swimming on BI and SE.

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The author declares that no data have been fabricated, falsified, or manipulated in this study.

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