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The role of exercise in enhancing self-esteem and life satisfaction among adults in metropolitan cities

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Abstract

The study investigates the relationship between Exercise motivation, Self-esteem and Life satisfaction among adults and compares the level of exercise motivation between exercisers (N=190) and non-exercisers (N=76). The data was collected from 266 participants using a convenient sampling method. The level of exercise Motivation, self-esteem and Life-satisfaction was measured using Behavioral Regulation in Exercise Questionnaire -BREQ-3 (2014), Rosenberg Self-Esteem Scale (1965) and Satisfaction with Life Scale - SWLS (1985) respectively. Data was analyzed using IBM SPSS 25. The collected data was then analyzed to find the correlation between the variables using Spearman's rank order correlation and to compare the means of two groups. The results revealed that exercise motivation and life satisfaction are positively correlated, which means that individuals who are motivated to exercise tend to have slightly higher life satisfaction than non-exercisers. There is a weak negative correlation between Self-esteem and life satisfaction. There is no correlation between exercise motivation and self-esteem.

Keywords: Exercise Motivation; Self-Esteem; Life Satisfaction; Exercisers; Non-Exerciser; Metropolitan Cities

1. Introduction

Urbanization is transforming global living habits at a very high rate, with more than half the world population living in urban areas (UN, 2018). As much as there is increased exposure to education, employment, and healthcare in cities, there is also heightened vulnerability to stress, pollution, and restricted green cover (Leder Bogen et al., 2011). Rapid-paced living and high human density levels foster anxiety, depression, and isolation (Peen et al., 2010; Killgore et al., 2020). Economic inequalities exacerbate stress, especially among the poor (WHO, 2014; Hartig et al., 2014). An investigation of self-esteem, exercise motivation, and satisfaction with life is crucial to support mental well-being in urban environments.

1.1. Self-Esteem

Self-esteem, or feelings of self-worth, is an important aspect of mental health (Rosenberg, 1965). It enhances emotional well-being and coping in high-stress environments (Orth and Robins, 2014). High self-esteem promotes achievement and motivation (Deci and Ryan, 1985), whereas low self-esteem is associated with anxiety and depression (Soils and Orth, 2013). Self-esteem can be enhanced in order to manage urban stress better.

1.2. Exercise Motivation

Exercise is good for mental health, but motivation to do it varies. Self-Determination Theory accounts for a continuum from intrinsic motivation to amotivation (Deci and Ryan, 1985). Autonomous motivations such as enjoyment and

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personal value are linked with regular exercise habits and psychological advantages (Ryan and Deci, 2000). Stress and restricted time or space in urban settings can prevent activity. Nevertheless, exercise enhances self-esteem by improved fitness and body image (Fox, 2000), and intrinsic motivation can overcome urban barriers (Standage et al., 2003).

1.3. Life Satisfaction

Satisfaction with life, or assessing the overall quality of one's life, is one of the primary indicators of well-being (Diener et al., 1985). Health, relationships, and psychological components such as self-esteem affect it. Self-esteem, when high, promotes efficacy and results in higher satisfaction (Orth et al., 2012). It can act as a buffer for stress and provide a balanced life in competitive city lifestyles.

1.4. Intersections of Self-Esteem, Exercise, and Life Satisfaction

Self-esteem is a determinant of psychological health and is associated with identity and accomplishment (Maslow, 1968). Life satisfaction is contingent upon meaning, participation, and self-development (Seligman, 2002). Research indicates a positive correlation between self-esteem and life satisfaction (Moksnes and ESPNEWS, 2013), and both influence participation, particularly in students.

Exercise enhances self-esteem and satisfaction with life through improved mood, body image, and self-regulation (Biddle and Mutrie, 2008; Sani et al., 2016; Deng et al., 2023). Recurrent activity also enhances resilience and autonomy (Vaquero Solís et al., 2019). Nonetheless, urban challenges such as time and space constraints reduce motivation (Xu et al., 2023). Facilitating intrinsic motivation and exercise-conducive environments can enhance overall well-being.

This study explores how self-esteem, exercise motivation, and life satisfaction interact in urban life marked by stress and social disconnection. Findings can inform health initiatives and urban planning to enhance resilience and well-being in growing city populations (Teixeira et al., 2012; Orth and Robins, 2014).

2. Review of Literature

2.1. Self-esteem and Life satisfaction

There is a relationship among self -esteem, life satisfaction, and student engagement across different populations. The self-esteem and life satisfaction among 328 young adults, self-esteem was strongly and positively correlated with life satisfaction (Savitri et al., 2023). There was another research conducted on adolescents aged between 13 to 18 years (Moksnes and ESPNEWS, 2013) in Norway that showed a positive correlation between the two variables. The boys reported higher levels of both self-esteem and life satisfaction than the girls, while no interaction effect of gender or age was found to significantly predict life satisfaction. Research conducted Thus, these studies show a positive correlation between self-esteem and Life-satisfaction.

2.2. Exercise and self esteem

A study on physical activity and self-esteem among adults aged 20-60 years revealed that physical activity enhances self-esteem directly and indirectly. physical activity boosts self-esteem through physical fitness and positive body image (Sani et al., 2016). Another longitudinal study showed that among mid-life women, self-esteem enhancement occurred in response to increasing physical activity and decreasing body mass index (BMI) (Elavsky, 2010). Systematic review tested whether exercise can improve self-esteem in children and young people among 288 participants aged between 4 and 20 years which showed that exercise has a positive effect on self-esteem (Ekeland et al., 2005).

2.3. Life satisfaction and physical activity

A mediational study on physical activity is positively associated with life satisfaction, self-efficacy, and resilience (Deng et al., 2023). Where self-efficacy and resilience mediate physical activity's direct influences on life satisfaction and indirectly influences on self-efficacy and resilience.

In a similar trend, physical activity impacts life satisfaction, self-control, and psychological distress among adolescents, (Zhou et al., 2023). Positive correlations were found between life satisfaction and self-control, with negative correlation with psychological distress. Life satisfaction increases self-control, whereas self-control reduces psychological distress. Another research among adolescents was on considering Physical activity acts as a moderator between motivation and life satisfaction. It showed that when psychological needs are met in the areas of autonomous motivation and physical activity, it leads to greater life-satisfaction whereas frustration of needs leads to controlled motivation which affects

physical activity and life satisfaction (Vaquero Solís et al., 2019). Effect of physical exercise on life satisfaction and happiness among young adults shows a positive correlation between physical exercise and life satisfaction (Sran, 2021).

2.4. Self-esteem, Life satisfaction and Exercise:

The effect of regular exercise was studied on life satisfaction, self-esteem, and self-efficacy among men aged 65 years and above in which out of 215 males, 110 were exercisers and 105 were non-exercisers. It showed a positive correlation among exercisers and those of non-exercisers was weaker (Toros et al., 2023). There are limited researches studied on these three variables- Self-esteem, Life satisfaction and Exercise

2.4.1. Hypothesis

- Exercise motivation affects self-esteem and life satisfaction.
- There is a significant Correlation between exercise motivation and self-esteem.
- There is a significant relationship between exercise motivation and life satisfaction.
- There is a significant relationship between Self-esteem and life satisfaction.

2.4.2. Research Questions

- What is the correlation between exercise motivation and self-esteem?
- What is the correlation between exercise motivation and life satisfaction?
- What is the level of exercise motivation of adults living in metropolitan cities?

2.4.3. Research Objectives

- To understand the relationship between exercise motivation and self-esteem.
- To understand the relationship between exercise motivation and life satisfaction.
- To explore the level of exercise motivation in adults living in metropolitan cities.

3. Methodology

3.1. Research Design

In this study quantitative research design was used to explore the relationship between Exercise motivation, Self-esteem, and Life satisfaction among adults aged between 18 to 40 years living in metropolitan cities of India such as Bangalore, Kolkata, Mumbai, Delhi and Chennai. Data was collected through google forms from those who fall under the delineated inclusion and exclusion criteria. The study includes standardized self-report questionnaires designed to measure Exercise motivation, Self-esteem, and Life satisfaction. The questionnaires used are the Behavioral Regulation in Exercise Questionnaire -BREQ-3 (2014), Rosenberg Self-Esteem Scale (1965) and Satisfaction with Life Scale - SWLS (1985). The responses were tabulated in Excel spreadsheet before analyzing through SPSS.

3.2. Participants

The participants involved in this study were adults aged between 18-40 years, living in metropolitan cities of India. This research consists of 266 participants among which 190 participants were exercisers and 76 non-exercisers. The data was inclusive of all genders with 163 females, 101 males and 2 individuals who preferred not to disclose their gender. The basic demographic details such as age, sex, and socioeconomic status were collected which is used for research purposes. The sample was selected using a convenience sampling method.

3.3. Inclusion and Exclusion Criteria:

According to Erikson's Stages of Psychosocial Development, ages 18 to 25 years is considered early adulthood and ages 26 to 40 years is considered middle adulthood. Individuals living in metropolitan cities of India such as Bangalore, Kolkata, Mumbai, Delhi and Chennai are included. Both the genders are included along with an inclusion of those who do not prefer to disclose their gender. People below 18 years and above 40 years have been excluded. The aim is to study about their exercise motivation and its relationship with self-esteem and life satisfaction.

3.4. Ethical Considerations

Participant's confidentiality was prioritized to ensure that the data provided by participants was only used for research purposes. Consent was taken to take part in this research study and participation was completely voluntary. Even after consenting to participate in the study, they are still free to withdraw at any time without giving a reason. If withdrawn

before completing the study, the data will not be used or destroyed. Code names and numbers were used throughout to ensure privacy and anonymity. Participants were provided with contact details in case of any concern, query or support.

3.5. Instruments

3.5.1. Behavioral Regulation in Exercise Questionnaire-3 (BREQ-3) - (2014)

The Behavioral Regulation in Exercise Questionnaire (2014) by Mullan Markland and Ingledew is a self-report tool based on Self-Determination Theory, used to assess exercise motivation across a continuum from amotivation to intrinsic motivation. It consists of 24 items divided into six subscales: amotivation, external regulation, introjected regulation, identified regulation, integrated regulation, and intrinsic regulation. Respondents rate items on a 5-point Likert scale (rated 0-4), hence, the minimum score one can obtain is 0 and the maximum being 96. BREQ-3 has a reliability score of 0.70 measured by Cronbach's alpha and has good predictive validity. Widely used in research and practice, the BREQ-3 helps understand and enhance exercise behavior in various populations.

3.5.2. Rosenberg Self-Esteem Scale (RSES) - (1965)

The Rosenberg Self-Esteem Scale (RSES), developed by Morris Rosenberg in 1965, is one of the most widely used tools for measuring self-esteem. It is a 10-item, 4-point Likert-scale questionnaire that assesses global self-esteem by evaluating positive and negative feelings toward oneself. The total score ranges from 10 to 40, with higher scores indicating higher self-esteem. The RSES has shown to have reliability of 0.92 and validity across diverse populations and is widely used in psychological research to assess general self-worth.

3.5.3. Satisfaction with Life Scale (SWLS)- (1985)

The Satisfaction with Life Scale (SWLS), developed by Diener et al. (1985), is a widely used measure of subjective well-being, specifically focusing on an individual's global cognitive assessment of life satisfaction. It is a 7-point Likert scale from "Strongly Disagree" to "Strongly Agree" with 5 items. The total score ranges from 5 to 35, with higher scores indicating greater life satisfaction. The SWLS exhibits a reliable internal consistency of 0.70 as indicated by Cronbach's alpha and is valid in measuring life satisfaction across different cultures and age groups.

3.6. Data Analysis

Statistical data analysis using Jamai provided valuable insights into the relationships between exercise motivation, self-esteem, and life satisfaction.

4. Result

Table 1 Exercise motivation among Exercisers and Non- Exercisers

		Statistics	**df**	**P**
Self Esteem	Student's t	0.439	2	0.661
	Mann-Whitney	7200	64	0.972
SWLS	Student's t	2.572	2	0.011
	Mann-Whitney U	5531	64	0.003
Exercise Motivation	Student's t	7.354	2	<.001
	Mann-Whitney U	3407	64	<.001

This test compared individuals who exercise with those who do not. The results showed that exercise motivation was significantly higher among those who exercised ($p < .001$), confirming that people who work out tend to be more motivated in this area. Life satisfaction was also significantly higher in those who exercised ($p = .011$), suggesting a link between physical activity and overall well-being. However, self-esteem did not show a significant difference between the two groups ($p = .661$), meaning that whether someone exercises or not doesn't seem to have a major impact on their self-esteem.

Table 2 Analysis of variance among Self-esteem, Life satisfaction and Exercise motivation

	F	df	df2	p
Self Esteem	0.61108	1	264	0.435
SWLS	0.00638	1	264	0.936
Exercise Motivation	0.81778	1	264	0.367

Note. Note. A low p-value suggests a violation of the assumption of equal variances

Table 2 shows no significant difference between Self-Esteem (p = 0.435), SWLS (p = 0.936), and Exercise Motivation (p = 0.367) since the values greater than 0.05 indicates no significant impact on variables.

Table 3 Correlation between Exercise motivation, Self-esteem and Life satisfaction

		Exercise Motivation	Self Esteem	SWLS
Exercise Motivation	Pearson's r	—		
	DF	—		
	p-value	—		
	Spearman's rho	—		
	DF	—		
	p-value	—		
Self Esteem	Pearson's r	0.006	—	
	DF	265	—	
	p-value	0.927	—	
	Spearman's rho	0.024	—	
	DF	265	—	
	p-value	0.699	—	
SWLS	Pearson's r	0.222	-0.138	—
	DF	265	265	—
	p-value	<.001	0.024	—
	Spearman's rho	0.223	-0.125	—
	DF	265	265	—
	p-value	<.001	0.040	—

The correlation analysis examined the relationships between exercise motivation, self-esteem, and life satisfaction. There was no meaningful correlation between exercise motivation and self-esteem (r = 0.006, p = 0.927), suggesting that just because someone is motivated to exercise, it doesn't necessarily mean they have higher self-esteem. However, exercise motivation and life satisfaction showed a small but significant positive correlation (r = 0.222, p < .001), meaning that individuals who are more motivated to exercise tend to have slightly higher life satisfaction. Interestingly, self-esteem and life satisfaction had a weak but significant negative correlation (r = -0.138, p = 0.024), which is an unusual finding and could indicate that higher self-esteem does not always equate to greater life satisfaction in this sample.

5. Discussion

The research aimed to explore the relationship between Exercise motivation, self-esteem, and life satisfaction among Young Adults in Metropolitan cities, by comparing exercisers and non-exercisers. The fast-paced lifestyle in metropolitan cities. The challenges faced by individuals are high stress levels, limited time for leisure or recreational activities, lack of natural spaces or urban lifestyle constraints. The analysis of the research supports that regular physical activity has a positive influence on life satisfaction. Individuals who engage in consistent exercise report higher levels of life satisfaction compared to non- exercisers which affects the physical and psychological health such as improved mood, Sleep quality, feels a sense of accomplishment, stress reduction. (Fox, 1999). The connection is supported by Self-determination theory states that people who are intrinsically motivated tend to be persistent, consistent and stay motivated by fulfillment of the three basic psychological needs of autonomy, competence, and relatedness. People are more likely to exercise when their psychological needs are met such as autonomy, competence, and relatedness. Life satisfaction is much higher too, and this could be because people in cities have better life satisfaction due to availability of amenities and better quality of life (Datta et al., 2025). Physical exercise primarily contributes to the enhancement of overall health and improves quality of life.

The finding of significant differences on Exercise Motivation and self-esteem is more nuanced. Several studies showed that consistent physical exercise has a positive impact on self-esteem and self-concept (McAuley et al., 2000). However, the correlation is not universally strong. The factors that influence negative correlation are exercise for appearance, social approval, under pressure may not experience genuine improvements in self-esteem (Earl, 2022). In addition, personal achievements, social interactions, might play a more significant role in shaping self-esteem which indicates that one's self-esteem is perhaps not highly correlated with these internalized types of exercise motivation. The absence of social support or a sense of belonging within exercise environments can also limit their psychological benefits which is associated with physical activity. These results contradict prior literature that indicates greater self-esteem correlates with intrinsic and identified motivation for exercise (Deci and Ryan, 2000).

The analyses revealed that there is a weak negative correlation between life satisfaction and self-esteem which stems from the complex interplay of individual expectations and societal pressures. Individuals with high Self-esteem whose self-worth depends on external validation, achievements still experience low life satisfaction due to chronic pressure or fear of failure (Baumeister et al., 2003). In collectivistic cultures, where life satisfaction may not be strongly linked to individual self-esteem, as it often is in more individualistic societies. There is a significant discrepancy between one's ideal self and actual life circumstances can also contribute to lower life satisfaction which creates cognitive dissonance and a sense of underachievement. Research supports our findings Negative self-esteem has a significant indirect effect on life satisfaction (Darnique-Hinostroza et al., 2024).

The current analysis compared exercisers and non-exercisers on self-esteem, life satisfaction (SWLS), and exercise motivation, using both parametric (Student's t-test) and non-parametric (Mann-Whitney U) tests, with Levene's Test confirming equal variances across groups. Results showed that exercisers had significantly higher exercise motivation ($p < .001$) and life satisfaction ($p = .011$), highlighting the positive impact of physical activity on well-being and the reinforcing nature of motivation through regular exercise. However, no significant difference was observed in self-esteem ($p = .661$), suggesting that it may be influenced by factors beyond physical activity. These findings underscore the psychological benefits of exercise, particularly in enhancing motivation and life satisfaction, while indicating that self-esteem may require broader contextual or personal factors for significant change.

6. Conclusion

The purpose of this study was to explore the relationship between Exercise motivation, self-esteem, and life satisfaction among Young Adults in Metropolitan cities. The research findings showed no meaningful correlation between exercise motivation and self-esteem and exercise motivation and life satisfaction showed a small but significant positive correlation. Self-esteem and life satisfaction had a weak but significant negative correlation.

Limitation

This research is limited by its reliance on a convenience sampling technique that might limit the generalizability of results to urban, internet-accessible populations. The sample was only recruited from metropolitan cities, and no views from rural or semi-urban cities were taken into consideration where lifestyle and exercise habits might be very different. All assessments were also based on self-report questionnaires that are subject to social desirability and response bias. Cross-sectional design disallows causal conclusions between variables. Self-esteem and life satisfaction, however, were not normally distributed, as shown, recommending that non-parametric analysis would be more suitable

for future work. There was a negative and unanticipated correlation between self-esteem and life satisfaction, suggesting an apparently culturally or contextually distinctive pattern which will be investigated in further work.

Implication

The findings of this study offer valuable insights into the relationship between exercise motivation, self-esteem, and life satisfaction among young adults in metropolitan areas. The higher mean scores for self-esteem and life satisfaction suggest a growing awareness of mental health and its importance in urban populations. It may be useful for mental health professionals and policymakers aiming to design interventions that support psychological well-being. The average to slightly high levels of exercise motivation may reflect lifestyle demands unique to city living, such as sedentary routines and greater access to fitness facilities. These results can inform the development of targeted wellness programs in educational institutions, workplaces, and community settings. Furthermore, the weak correlations between self-esteem and internal forms of motivation indicate that exercise in this demographic may be driven more by external or situational factors. This suggests a need for culturally and contextually relevant approaches to motivation-building in urban health promotion strategies. Altogether, the study's outcomes can be applied to guide future research, health interventions, and urban planning efforts aimed at enhancing both physical and mental health among young adults.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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