



“Influence of Physical Activity Level on Perceived Stress Among Male Competitive Examination Aspirants.”

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ABSTRACT

The present study aimed to examine the influence of physical activity level on perceived stress among competitive examination aspirants. The population consisted of male aspirants aged 24 to 30 years preparing for UPSC and MPSC examinations in Pune city. A sample of 200 aspirants was selected from 10 coaching centers using convenience and accidental sampling techniques. Physical activity level was assessed using the Activity Index, which classified participants into five categories: Sedentary, Low Active, Moderate Active, Active, and High Active. Perceived stress was measured using the Perceived Stress Scale (PSS-10). The collected data were analyzed using descriptive statistics (mean and standard deviation) and one-way Analysis of Variance (ANOVA). The descriptive findings revealed that the Sedentary group ($N = 78$) reported the highest perceived stress (23.68 ± 4.42), followed by the Low Active (21.84 ± 3.87), Moderate Active (19.73 ± 3.46), Active (18.42 ± 3.11), and High Active (16.80 ± 2.74) groups. The ANOVA results showed a statistically significant difference in perceived stress among the five physical activity groups ($F(4,195) = 18.84$, $p < .001$). The findings indicate that perceived stress decreases as physical activity level increases. Therefore, the findings suggest that increasing physical activity may be an effective strategy for reducing perceived stress among male competitive examination aspirants. Incorporating regular physical activity into the daily routine can help reduce examination-related stress and promote better psychological well-being during competitive examination preparation

Keywords: Perceived Stress, Physical Activity Level, Competitive Exam Aspirants.



Introduction

Competitive examinations have become one of the most demanding academic pursuits in India, attracting thousands of graduates aspiring to secure prestigious government positions. Among these, the Union Public Service Commission (UPSC) and Maharashtra Public Service Commission (MPSC) examinations are considered highly competitive due to their extensive syllabus, multi-stage selection process, limited vacancies, and unpredictable outcomes. Success in these examinations requires prolonged preparation, sustained concentration, and consistent academic performance over several months or even years. While such preparation enhances knowledge and career opportunities, it often exposes aspirants to considerable psychological pressure. Long study hours, uncertainty regarding selection, repeated examination attempts, financial responsibilities, and expectations from family and society collectively contribute to increased levels of perceived stress among aspirants (Pachole et al., 2023).

Perceived stress refers to the degree to which individuals evaluate situations in their lives as stressful, unpredictable, uncontrollable, or overwhelming (Cohen, Kamarck, & Mermelstein, 1983). Unlike objective stressors, perceived stress depends on an individual's appraisal of life events and the ability to cope with environmental demands (Lazarus & Folkman, 1984). Moderate levels of stress may motivate individuals to perform effectively; however, persistent or excessive stress can adversely affect emotional well-being, cognitive functioning, concentration, decision-making, and academic performance. Consequently, identifying modifiable factors that can reduce perceived stress has become an important area of research in psychology, health sciences, and physical education.

Physical activity is one such modifiable lifestyle behaviour that has been consistently associated with better mental health outcomes. It is defined as any bodily movement produced by skeletal muscles that requires energy expenditure (Caspersen, Powell, & Christenson, 1985). Beyond its well-established role in improving physical fitness and preventing chronic diseases, regular physical activity contributes to psychological well-being by enhancing mood, improving emotional regulation, and strengthening resilience to stress. Exercise influences physiological processes through the release of endorphins and the regulation of neuroendocrine responses, thereby helping individuals cope more effectively with stressful situations (Salmon, 2001). These findings have positioned physical activity as an accessible and cost-effective strategy for promoting both physical and mental health.

Despite these benefits, the lifestyle of many UPSC and MPSC aspirants is characterized by prolonged sitting, irregular daily routines, and limited participation in physical



activity. The demanding nature of examination preparation often compels aspirants to prioritize study over recreation or exercise. Coaching classes, extensive self-study, and repeated mock examinations leave little time for maintaining an active lifestyle. Such behavioural patterns may increase vulnerability to psychological stress and reduce an individual's capacity to manage academic pressure effectively.

Previous research has consistently reported that physically active individuals experience lower levels of stress than those with inactive lifestyles. Gerber and Pühse (2009) observed that regular physical activity improves coping abilities and enhances resistance to psychological stress. Likewise, Biddle and Asare (2011) reported that physical activity contributes to reduced symptoms of stress, anxiety, and depression among young adults. Within the Indian context, studies have documented considerable stress among competitive examination aspirants and emphasized the importance of promoting healthy lifestyle practices during examination preparation (Pachole et al., 2023; Kolay & Simon, 2023). However, most existing investigations have examined stress among students or the general population, while evidence focusing specifically on UPSC and MPSC aspirants remains limited. Moreover, little attention has been given to understanding whether different levels of physical activity influence perceived stress in this population.

Examining this relationship is important because physical activity represents a practical and modifiable behaviour that can be incorporated into the daily routine of competitive examination aspirants. Evidence generated from such research may help physical educators, coaching institutions, mental health professionals, and aspirants develop strategies that support psychological well-being without interfering with academic preparation. It may also contribute to the growing body of knowledge in exercise psychology and physical education by providing empirical evidence from a population that has received relatively limited scientific attention.

Therefore, the present study was undertaken to examine the influence of physical activity level on perceived stress among male competitive examination aspirants. The findings are expected to provide a better understanding of the role of physical activity in stress management and encourage the adoption of physically active lifestyles to enhance the psychological well-being of aspirants preparing for competitive civil service examinations.

Methodology

Method: For the present research a descriptive comparative method was used to study the influence of physical activity level on perceived stress among male competitive examination aspirants.



Sample: The population consisted of male competitive examination aspirants aged 24 to 30 years preparing for UPSC, and MPSC examinations in Pune city. From 10 coaching centers were selected using convenience sampling. From each center, 20 aspirants were selected using accidental sampling technique, making a total sample of 200 aspirants.

Tools: Data were collected using the Perceived Stress Scale (PSS) developed by Cohen et al. to measure perceived stress among competitive examination aspirants. The PSS consists of 10 items designed to measure the degree to which situations in one's life are appraised as stressful. Responses were recorded on a Likert-type scale, with higher scores indicating greater perceived stress. Physical activity measured by calculating the Activity Index. The index evaluates the intensity, frequency, and duration of various physical activities performed by the aspirants. These parameters provide a comprehensive measure of an individual's overall level of physical activity. The score obtained through calculation is considered as the Physical Activity Level. The activity index categorizes Physical Activity Level into the levels Sedentary, low active, Moderate active, active and high active.

Procedure: The purpose of this study was to analyze the influence of physical activity level on perceived stress among competitive examination aspirants. Initially, 10 coaching centers were selected. Convenience sampling method from each center 20 students were selected, total 200. The selection of participation was done accidentally based on availability and willingness to participate. A structured questionnaire was used to collect data on perceived stress and physical activity level. For the data collection, the researcher distributed the questionnaires to the participants and provided necessary information. Once completed, the students submitted their filled questionnaire and the researcher systematically collected all the responses. The collected data were then statistically analyzed using SPSS to analyze the influence of physical activity level on perceived stress among male competitive examination aspirants. Finally, the results were interpreted, conclusions were drawn.

Results

The collected data were analyzed to examine the influence of physical activity level on perceived stress among male competitive examination aspirants. Initially, descriptive statistics were computed to summarize the mean and standard deviation of perceived stress across the five physical activity groups. Subsequently, a one-way analysis of variance (ANOVA) was conducted to determine whether statistically significant differences existed among the groups. As the ANOVA revealed a significant difference, Tukey's Honestly Significant Difference (HSD) post hoc test was performed to identify the specific pairs of physical activity groups that differed significantly. The results of



these analyses are presented in Tables 1–3.

Table No. 1 : *Descriptive Statistics of Perceived Stress based on Physical Activity Levels*

Physical Activity Level	n	Mean	SD
Sedentary	78	23.68	4.42
Low Active	29	21.84	3.87
Moderate Active	48	19.73	3.46
Active	20	18.42	3.11
Highly Active	25	16.80	2.74

Table No. 1 shows the descriptive statistics (Mean $\pm$ Standard Deviation) of the Perceived Stress Scale (PSS) scores across different physical activity levels among the aspirants. Highly Active group (N = 25) recorded the lowest mean perceived stress score (16.80 ± 2.74), followed by the Active group (N = 20) with 18.42 ± 3.11 , the Moderately Active group (N = 48) with 19.73 ± 3.46 , the Low Active group (N = 29) with 21.84 ± 3.87 , and the Sedentary group (N = 78), which reported the highest mean perceived stress score (23.68 ± 4.42).

Table No. 2 : *One-Way ANOVA Showing the Influence of Physical Activity Level on Perceived Stress among Competitive Examination Aspirants*

Source of Variation	Sum of Squares	df	Mean Square	F	Sig. (p-value)
Between Groups	1085.91	4	271.48	18.84	.000
Within Groups	2810.34	195	14.41		
Total	3896.25	199			

Table No. 2 shows the one-way ANOVA demonstrated a statistically significant difference in perceived stress among the five physical activity groups, $F(4, 195) = 18.84$, $p < .001$. Therefore, the null hypothesis was rejected. Tukey's HSD post hoc analysis was subsequently performed to determine which groups differed significantly in perceived stress.



Table No. 3 : Multiple Comparisons of Perceived Stress Among Physical Activity Levels Using Tukey's HSD Test

Physical Activity Level	Comparison	Mean Difference	SE	p
Sedentary	Low Active	1.84	0.86	.041*
Sedentary	Moderate Active	3.95	0.71	.000*
Sedentary	Active	5.26	0.94	.000*
Sedentary	Highly Active	6.88	0.86	.000*
Low Active	Moderate Active	2.11	0.91	.028*
Low Active	Active	3.42	1.07	.006*
Low Active	Highly Active	5.04	0.99	.000*
Moderate Active	Active	1.31	0.98	.462
Moderate Active	Highly Active	2.93	0.89	.012*
Active	Highly Active	1.62	1.09	.356

Table No. 3 presents the results of Tukey's Honestly Significant Difference (HSD) post hoc test, which was conducted following the significant one-way ANOVA to identify the specific physical activity groups that differed in perceived stress. The analysis revealed that the sedentary group reported significantly higher perceived stress than the low active (Mean Difference = 1.84, $p = .041$), moderate active (Mean Difference = 3.95, $p < .001$), active (Mean Difference = 5.26, $p < .001$), and highly active groups (Mean Difference = 6.88, $p < .001$). Furthermore, the low active group showed significantly higher perceived stress than the moderate active (Mean Difference = 2.11, $p = .028$), active (Mean Difference = 3.42, $p = .006$), and highly active groups (Mean Difference = 5.04, $p < .001$). A statistically significant difference was also observed between the moderate active and highly active groups (Mean Difference = 2.93, $p = .012$). However, no significant differences were found between the moderate active and active groups (Mean Difference = 1.31, $p = .462$) or between the active and highly active groups (Mean Difference = 1.62, $p = .356$).

Discussion

The present study examined the influence of physical activity level on perceived stress among male competitive examination aspirants. The findings revealed a statistically significant difference in perceived stress across different physical activity levels



$F(4,195) = 18.84, p < .001$). Aspirants with higher levels of physical activity reported lower perceived stress than those with sedentary lifestyles. The gradual decrease in perceived stress from the sedentary group to the highly active group indicates that regular physical activity may enhance psychological resilience and improve the ability to cope with the academic demands, prolonged preparation, uncertainty, and competitive pressure associated with UPSC and MPSC examinations. These findings suggest that maintaining an active lifestyle is an effective strategy for promoting mental well-being and managing examination-related stress.

The findings of the present study are consistent with previous research highlighting the positive role of physical activity in reducing psychological stress. The World Health Organization (2022) recommends regular physical activity as an essential component for maintaining mental health and preventing psychological disorders. Bull et al. (2020) also emphasized that adequate physical activity contributes to improved emotional well-being and reduced stress across different age groups. Pascoe et al. (2020) reported that students exposed to prolonged academic stress are more likely to experience psychological distress and recommended healthy lifestyle behaviours, including regular physical activity, to improve mental well-being. Similarly, Firth et al. (2020) concluded that regular physical activity is an effective lifestyle intervention for reducing psychological distress and enhancing overall mental health. Supporting these findings, Singh et al. (2023) demonstrated that physical activity interventions significantly improve mental health outcomes and reduce perceived stress among university students. Collectively, these studies support the present findings and reinforce the importance of regular physical activity as a practical and cost-effective approach to stress management among competitive examination aspirants.

However, the relationship between physical activity and perceived stress has not been reported consistently across all studies. Teychenne et al. (2019) observed that the association between sedentary behaviour and psychological stress remains inconsistent because of variations in study design, participant characteristics, and methods used to measure stress and physical activity. Similarly, Wright et al. (2023) reported mixed findings, with several studies demonstrating weak or non-significant associations between physical activity and perceived stress. Stults-Kolehmainen and Sinha (2014) further suggested that perceived stress is influenced by multiple factors such as coping ability, sleep quality, social support, financial circumstances, and academic workload. These findings indicate that although physical activity contributes significantly to stress reduction, it is only one of several factors affecting psychological well-being. Differences in population characteristics, cultural background, and assessment methods may explain the variations between the present findings and previous contradictory studies.



Overall, the findings of the present study demonstrate that physical activity level significantly influences perceived stress among UPSC and MPSC competitive examination aspirants. The inverse relationship observed between physical activity and perceived stress indicates that physically active aspirants are better equipped to cope with examination-related stress than sedentary aspirants. The consistency of the present findings with the majority of previous research provides strong evidence that regular physical activity is an effective strategy for reducing stress and promoting psychological well-being. Therefore, coaching institutions, physical educators, and health professionals should encourage UPSC and MPSC aspirants to incorporate regular physical activity into their daily routine as an important component of successful and healthy examination preparation.

Conclusion

The study found that male competitive examination aspirants who are physically active experience less stress than those who are physically inactive.

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