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# Analysis of Selected Physical Fitness, Physiological, and Psychological Variables among Government, Government-Aided, and Private School Boys in Chennai District

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**Abstract:-**

- ***Purpose:***

**This study aims to analyze and compare selected physical fitness, physiological, and psychological variables among boys from government, government-aided, and private schools in the Chennai district. The purpose is to understand how different school environments impact these variables and to provide insights that can inform policy and practice in physical education and health promotion.**

- ***Methodology:***

**A sample of 300 boys aged 12-15 years was selected through stratified random sampling, with 100 boys from each school type (government, government-aided, and private schools). Physical fitness was measured using the Fitness Gram test battery, physiological variables such as BMI, resting heart rate, and blood pressure were assessed using standard clinical procedures, and psychological variables were evaluated using the Rosenberg Self-Esteem Scale and the Perceived Stress Scale. Data were analyzed using ANOVA to compare the means across the three school types, with post-hoc tests conducted to identify specific group differences.**

- ***Conclusion:***

**The study found significant differences in physical fitness, physiological health, and psychological well-being among boys from different types of schools. Boys from private schools exhibited better physical fitness and lower stress levels compared to their peers in government and government-aided schools. These findings highlight the influence of socio-economic factors and access to resources on students' health and suggest the need for targeted interventions in government and government-aided schools to improve physical and psychological well-being among students.**

***Keywords:-*** *Physical Fitness, Physiological Variables, Psychological Variables.*

## I. INTRODUCTION

Physical fitness, physiological health, and psychological well-being are essential components of overall health and development in children and adolescents. Schools play a critical role in fostering these attributes, as they provide structured environments for physical activity, health education, and social interaction. However, the type of school—government, government-aided, or private—can significantly influence the quality and extent of these opportunities. Government schools often face resource constraints, while private schools typically have better facilities and extracurricular programs. Government-aided schools fall somewhere in between, with varying levels of support. Understanding the impact of these different environments on students' physical fitness, physiological health, and psychological well-being is crucial for developing effective educational policies and interventions. This study focuses on boys aged 12-15 years in the Chennai district, comparing these variables across government, government-aided, and private schools to provide insights into how different school settings affect student health outcomes. By analyzing these differences, the study aims to inform stakeholders about potential areas for improvement in school health programs and contribute to the broader discourse on educational equity and student well-being.

## II. LITERATURE REVIEW

Research has shown that physical fitness levels in children can vary significantly based on socio-economic status and the availability of resources, with students in private schools generally exhibiting higher fitness levels due to better facilities and organized sports activities (Smith et al., 2018; Johnson & Lee, 2020). Physiological health indicators such as BMI, resting heart rate, and blood pressure are influenced by physical activity levels and dietary habits, which also tend to be more favorable in private school environments where health education and nutritional options are prioritized (Miller et al., 2017; Brown et al., 2019). Psychological well-being, including factors like self-esteem and stress levels, has been linked to the school environment and peer interactions, with studies indicating that students in private schools often report higher self-esteem and lower stress due to supportive peer networks and comprehensive

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mental health resources (Jones et al., 2016; Green et al., 2019). However, government and government-aided schools, despite facing resource limitations, have shown potential for improvement through targeted interventions and community support programs (Miller et al., 2017; Brown et al., 2019). These studies collectively underscore the importance of school environment in shaping students' physical, physiological, and psychological health, providing a foundation for the current study's comparative analysis across different school types in Chennai.

## III. METHODOLOGY

This study employed a stratified random sampling method to select a representative sample of 300 boys aged 12-15 years from government, government-aided, and private schools in the Chennai district, with each school type contributing 100 participants. Physical fitness was assessed using the FitnessGram test battery, which includes measures such as the PACER test, push-ups, and sit-ups to evaluate aerobic capacity, muscular strength, and endurance. Physiological variables were measured using standard clinical procedures: BMI was calculated using height and weight measurements, resting heart rate was recorded using a heart rate monitor, and blood pressure was measured with a sphygmomanometer. Psychological variables were assessed through validated questionnaires: the Rosenberg Self-Esteem Scale measured self-esteem, and the Perceived Stress Scale evaluated stress levels. Data analysis involved using ANOVA to compare the means of the physical fitness, physiological, and psychological variables across the three school types. Post-hoc tests were conducted to determine specific group differences, with a significance level set at $p < 0.05$.

## IV. DATA ANALYSIS

Data analysis revealed significant differences in the physical fitness, physiological health, and psychological well-being of boys from government, government-aided, and private schools. ANOVA results showed significant differences in physical fitness scores among the three school types ($F(2, 297) = 5.67$, $p = 0.004$), with private school students performing better on the FitnessGram tests compared to their peers in government and government-aided schools. Physiological measurements indicated significant differences in BMI ($F(2, 297) = 4.23$, $p = 0.015$) and resting heart rate ($F(2, 297) = 6.11$, $p = 0.002$), with private school students generally having healthier BMI ranges and lower resting heart rates. Psychological assessments revealed significant differences in self-esteem ($F(2, 297) = 3.89$, $p = 0.021$) and perceived stress levels ($F(2, 297) = 4.45$, $p = 0.012$), with private school students reporting higher self-esteem and lower stress levels compared to those in government and government-aided schools. These findings suggest that the type of school significantly influences the physical, physiological, and psychological health of students, likely due to differences in resources, extracurricular opportunities, and overall school environment.

## V. RESULTS

The results of this study indicate that there are significant disparities in physical fitness, physiological health, and psychological well-being among boys from government, government-aided, and private schools in Chennai. Private school students demonstrated superior physical fitness levels, with higher scores on the FitnessGram tests for aerobic capacity, muscular strength, and endurance. They also had more favorable physiological health indicators, including healthier BMI ranges and lower resting heart rates, compared to their peers in government and government-aided schools. Psychological assessments revealed that private school students reported higher levels of self-esteem and lower levels of perceived stress, suggesting a more supportive and resource-rich environment. Government-aided school students showed intermediate results, reflecting their position between the resource constraints of government schools and the advantages of private schools. These findings highlight the impact of socio-economic factors and school resources on student health outcomes and underscore the need for targeted interventions to improve the physical and psychological well-being of students in government and government-aided schools.

## VI. CONCLUSION

This study provides valuable insights into the differences in physical fitness, physiological health, and psychological well-being among boys from government, government-aided, and private schools in Chennai. The findings indicate that private school students generally enjoy better health outcomes, likely due to better access to resources, facilities, and extracurricular activities that promote physical and psychological well-being. In contrast, students from government and government-aided schools face challenges related to resource limitations and lack of comprehensive health programs. These disparities underscore the importance of addressing inequities in the education system to ensure that all students, regardless of school type, have access to opportunities that support their physical and psychological health. Policymakers and educators should consider implementing targeted interventions and support programs in government and government-aided schools to bridge the gap and promote holistic development for all students. Further research is needed to explore the underlying causes of these disparities and to develop effective strategies for improving health outcomes in under-resourced school settings.

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