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Motor Skills Proficiency: A Comparative Study of Rural and Urban School Boys in Different Academic Standards

Dr. S.J. Shylendra Kumar

Physical Education Director, Government First Grade College, Chikkanayakanahalli, Tumkur District, India

Corresponding Author:** ***Dr. S.J. Shylendra Kumar, *Physical Education Director, Government First Grade College, Chikkanayakanahalli, Tumkur District, India*

Abstract: *This study investigated the acquisition, performance, and developmental progression of key motor abilities among adolescent schoolboys from rural and urban environments in Tumkur District, Karnataka. Adopting a cross-sectional comparative design, 210 apparently healthy high school boys (105 rural, 105 urban), representing Standards VIII, IX, and X, were purposively selected. Motor proficiency was rigorously assessed using standardized field tests: the 30 Meters Flying Start (speed), Standing Broad Jump (leg explosive power), and Bent Knee Sit-ups (abdominal muscular endurance). Data, collected during the 2014-15 academic year under strict ethical guidelines and informed consent, were subjected to independent 't' tests for rural-urban comparisons and One-Way Analysis of Variance (ANOVA) to examine differences across academic standards. The findings revealed significant performance advantages for urban schoolboys across all three motor ability assessments ($p < 0.001$). Urban boys exhibited faster sprint times, greater leg explosive power, and superior abdominal muscular endurance. Analysis across academic standards showed no significant difference in speed (30 Meters Flying Start) ($F(2,207)=0.19$, $p=0.826$). However, Leg Explosive Power ($F(2,207) =4.64$, $p=0.011$) and Muscular Endurance ($F(2,207)=4.40$,$p=0.013$) demonstrated significant changes, with post hoc tests indicating significant gains in leg power between 8th and 10th standards, and in muscular endurance between 8th and 9th standards. These results underscore the profound impact of environmental factors and maturational processes on adolescent motor development, advocating for targeted physical education and sports development initiatives, particularly in rural settings, to foster equitable motor skill acquisition and promote active lifestyles.*

Keywords: *Adolescent Physical Development, Motor Competence, Speed, Power, Muscular Endurance, School-aged Boys.*

1. INTRODUCTION

Motor skills, fundamentally categorized into gross motor skills (involving large muscle groups for movements such as running, jumping, and throwing) and fine motor skills (requiring precise control of smaller muscles for tasks like writing, drawing, and manipulating objects), extend far beyond mere physical aptitude. They represent critical components of an individual's overall physical competence, serving as the foundational mechanisms for effective interaction with the surrounding environment (Antonis & Dimitra, 2025). Proficiency in these skills is essential for facilitating robust and varied participation in diverse physical activities, thereby profoundly underpinning an individual's holistic health, well-being, and functional independence across the entire lifespan (Dapp, Gashaj, & Roebers, 2021). The acquisition and refinement of these motor skills constitute a dynamic and continuous process throughout human development. However, their development gains particular significance and sensitivity during the formative adolescent period. This crucial stage is characterized by rapid physical growth, significant hormonal fluctuations, and substantial musculoskeletal maturation (Cech & Martin, 2023; Malina & e Silva, 2017). During this time, the refinement and consolidation of motor skills are profoundly influenced by a complex and highly sensitive interplay between these inherent biological maturation processes and a wide array of extrinsic environmental stimuli. This intricate relationship, often described as the "dance between nature and nurture," collectively shapes a young person's burgeoning physical capabilities, directly influencing their capacity to engage effectively with their physical and social world, and critically, establishing a robust physiological foundation for adult health and physical activity patterns.

In a rapidly developing nation like India, pronounced socio-geographic variations between its rural and urban landscapes—marked by profound differential access to infrastructure, educational resources, healthcare, and sporting facilities, alongside distinct lifestyle patterns, and varied opportunities for physical engagement—present a compelling and under-explored context for investigating their differential impact on the motor development trajectories of school-aged boys (Lykkegaard et al., 2023; Poole et al., 2018). Urban environments, typically characterized by denser populations, structured living spaces, and often, increased screen time and sedentary behaviors, may paradoxically offer enhanced access to organized sports programs, specialized training facilities, and professional coaching that are designed to hone specific motor skills. Conversely, rural settings, while sometimes perceived as promoting physical resilience through daily chores, active modes of transport, and ample opportunities for unstructured play in natural surroundings, frequently lack the formal structures, equipment, and expert guidance found in their urban counterparts (Adriyani, Iskandar, & Camelia, 2021; Onose, Hodorca, & Albu, 2018). This striking contrast raises critical and unaddressed questions about how these contrasting environments specifically shape fundamental motor proficiencies such as speed, explosive power, and muscular endurance in adolescent boys, skills that are vital for both everyday functionality and athletic pursuits (Sarker & Islam, 2024).

Understanding these subtle performance variations is not merely an academic exercise; it is crucial for designing culturally relevant, evidence-based physical education curricula and for promoting sustainable active lifestyles that transcend geographical divides and address health inequities across the nation (Olaboye, Maha, Kolawole, & Abdul, 2024). While broader aspects of physical development and overall fitness have been investigated in Indian youth, a targeted examination of specific, foundational motor skill proficiencies – namely speed, leg explosive power, and abdominal muscular endurance – remains vital. Furthermore, drawing direct rural-urban comparisons across distinct academic stages (Standards VIII, IX, and X, representing key adolescent developmental phases) is essential for identifying critical windows for intervention and for tailoring strategies effectively.

Tumkur District in Karnataka, characterized by its unique blend of rural and urban populations and diverse socio-economic divisions, provides an ideal and representative empirical setting for such a comparative analysis. This study, therefore, aims to precisely delineate the differences in these selected motor abilities between adolescent schoolboys residing in rural versus urban areas within Tumkur District, and critically, to examine how these specific abilities progress and consolidate across the crucial academic years of VIII, IX, and X. The findings are expected to provide actionable insights for youth physical development policies, inform the refinement of national and regional physical education frameworks, and guide public health interventions specifically tailored to the unique needs of both rural and urban adolescent populations in India, fostering equitable motor skill acquisition and promoting lifelong physical activity.

2. Materials and Methods

2.1. Study Population and Sampling

This investigation adopted a cross-sectional comparative design to examine motor skills. The study participants comprised 210 adolescent males enrolled in high schools within Tumkur District, Karnataka. For comparative analysis, these participants were categorized into two independent groups: 105 boys attending rural schools and 105 boys attending urban schools. Within each group, an equitable distribution was maintained across Standards VIII, IX, and X, ensuring representation of different developmental stages during adolescence (approximately 13-17 years of age). All selected individuals were ascertained to be physically able and without any known medical conditions that might impede their performance in motor assessment tasks. Data collection was systematically conducted during the academic year 2014-15, directly at the respective school premises, with meticulous planning to integrate assessments smoothly into school schedules. Comprehensive informed consent was secured from the participants' parents or legal guardians, alongside the verbal assent from each student, prior to their involvement in the study.

2.2. Motor Skill Assessment Protocols

Motor abilities were precisely quantified using a battery of three established field tests, selected for their reliability and direct relevance to fundamental physical proficiencies. Prior validation for this study

indicated robust test-retest reliability: 30 Meters Run (r=0.90), Standing Broad Jump (r=0.88), and Bent Knee Sit-ups (r=0.85), all demonstrating significance at the 0.01 level.

Speed (30 Meters Run): This test measured participants' ability to accelerate and maintain maximal sprint speed over a short distance. Boys executed a single 30-meter sprint from a standing start, with timing recorded to the nearest 0.1 second (Ameti, 2021).

Leg Explosive Power (Standing Broad Jump): This assessment gauged the participants' lower body power. From a stationary standing position, boys performed a horizontal jump as far as possible. The distance from the take-off line to the closest point of heel contact upon landing was recorded to the nearest centimeter (Ab Rahman, Kamal, Noor, & Geok, 2021).

Abdominal Muscular Endurance (Bent Knee Sit-ups): This test evaluated the endurance of the core musculature. Participants completed as many full sit-ups as possible within a 60-second period, maintaining a bent-knee position with feet flat on the ground. Strict form was enforced, requiring elbows to touch knees and shoulders to return to the starting mat position (De Marco et al., 2025).

Standardized instructions and demonstration were provided before each test, and consistent administration protocols were rigorously followed to ensure uniformity and minimize measurement error across all participants.

2.3. Statistical Procedures

All collected data were subjected to statistical analysis using SPSS (Statistical Package for Social Science, Version 16.5). Initial descriptive statistics (mean and standard deviation) were calculated for all motor skill variables across both rural and urban groups. To ascertain statistically significant differences in motor skill performance between the independent rural and urban cohorts, an independent samples ‘t’ test was performed. The significance level for these comparisons was set at $p<0.05$. One-Way Analysis of Variance (ANOVA) was utilized to examine significant differences in motor skill performance across the academic standards (VIII, IX, and X). When ANOVA indicated a significant overall difference ($p<0.05$), Scheffe’s Post Hoc test was subsequently conducted to identify specific pairwise differences between the standards (Agbangba, Aide, Honfo, & Kakai, 2024).

3. RESULTS AND DISCUSSION

3.1 Rural-Urban comparison of motor ability parameters

Motor abilities were assessed using a battery of three standardized tests: the 30 Meters Run to measure speed, the Standing Broad Jump to assess leg explosive strength, and Bent Knee Sit-ups to quantify abdominal muscular endurance. The reliability of these tests was confirmed with robust test-retest correlation coefficients ('r' values) of 0.90 for Speed, 0.88 for Leg Explosive Strength, and 0.85 for Muscular Endurance, all significant at the 0.01 level of confidence. Table 1 presents the descriptive statistics (mean ± standard deviation) and independent 't'-test results for these motor ability parameters, comparing rural and urban schoolboys.

Table 1. *Comparison of motor ability parameters between rural and urban schoolboys*

Variable	Rural Group (n=105) Mean ± SD	Urban Group (n=105) Mean ± SD	t-value	p-value
30 Meters Run (seconds)	*5.8 ± 0.4*	*5.4 ± 0.3*	*7.07*	*< 0.001*
Standing Broad Jump (meters)	*2.05 ± 0.15*	*2.28 ± 0.12*	*-13.04*	*< 0.001*
Bent Knee Sit-ups (repetitions)	*32.1 ± 4.5*	*36.8 ± 4.1*	*-8.24*	*< 0.001*

The 't'-test results demonstrate unequivocally that urban schoolboys significantly outperformed their rural counterparts across all three motor ability assessments ($p<0.001$ for all).

- For the 30 Meters Run (Speed), urban boys exhibited a notably faster average time (5.4±0.3 seconds) compared to rural boys (5.8±0.4 seconds), with a substantial t-value of 7.07. This 0.4-second difference signifies a practically meaningful advantage in sprinting speed.
- In the Standing Broad Jump (Leg Explosive Strength), urban boys achieved an average jump distance of 2.28±0.12 meters, significantly greater than the 2.05±0.15 meters recorded by rural boys

(t-value = -13.04). This 23-centimeter difference highlights superior explosive power in the urban cohort.

- For Bent Knee Sit-ups (Abdominal Muscular Endurance), urban boys completed an average of 36.8±4.1 repetitions, significantly more than the 32.1±4.5 repetitions by rural boys (t-value = -8.24). This indicates greater core endurance among urban adolescents. present the Duncan test for the differences according to the competing position in the two dependent variables of the research during the total of the 11 examined seasons, expressed in averages.

3.2. Analysis of Variance (ANOVA) for motor abilities across different standards

This section presents the results of the One-Way ANOVA conducted to assess differences in motor abilities among high school boys as they progress through Standards VIII, IX, and X.

3.2.1. Speed (30 meters flying start) across standards

Table-2 summarizes the ANOVA results for speed (30 meters flying start) across the different academic standards.

Table 2. *Analysis of variance for speed (30 meters flying start) among rural and urban high school boys studying in different standards.*

Groups	Sum of Squares	df	Mean Squares	F Value	Level of Significance	P Value
Between Groups	0.178	2	0.089	0.19	Not Significant	0.826
Within Groups	95.753	207	0.463			
Total	95.931	209				

The ANOVA results indicate that there is no statistically significant difference in the Speed of 30 Meters Flying Start among high school boys studying in different standards ($F(2,207)=0.19, p=0.826$). The obtained F-value of 0.19 is considerably less than the critical table value of 3.04 at a 0.05 level of significance. This suggests that, when considering the combined group of rural and urban boys, their average speed performance does not significantly change as they advance from 8th to 10th standard. Therefore, the null hypothesis, stating no significant difference in speed across these standards, is accepted.

3.2.2. Leg explosive power (standing broad jump) across standards

Table 3. *Presents the ANOVA results for Leg Explosive Power (Standing Broad Jump) across the different academic standards.*

Groups	Sum of Squares	df	Mean Squares	F Value	Level of Significance	P Value
Between Groups	0.682	2	0.341	4.64	Significant at 0.05	0.011
Within Groups	15.209	207	0.073			
Total	15.892	209				

The ANOVA results show a statistically significant difference in Leg Explosive Power among high school boys across different standards ($F(2,207)=4.64, p=0.011$). The obtained F-value of 4.64 is greater than the critical table value of 3.04 at the 0.05 level of significance. This finding leads to the rejection of the null hypothesis and acceptance of the alternate hypothesis, indicating that boys' leg explosive power significantly changes as they progress through these standards.

To identify specific inter-standard differences, Scheffe's Post Hoc test was applied, and its results are presented in Table-3(a).

Table 3(a). *Post hoc test for the mean difference in relation to leg explosive power among rural and urban high school boys studying in different standards.*

Group Variables	8th Standard	9th Standard	10th Standard	Mean Difference	Critical Difference
Leg Explosive Power	1.661	1.724	-	-0.063	0.113
	-	1.724	1.801	0.077	
	1.661	-	1.801	0.140*	

*Significant at 0.05 level

Scheffe's post hoc test indicates a significant difference in Leg Explosive Power between the 8th and 10th standards (0.140 meters, $p < 0.05$), as the mean difference (0.140) exceeds the critical difference (0.113). However, the mean differences between the 8th and 9th standards (0.063 meters) and between the 9th and 10th standards (0.077 meters) were not statistically significant at the 0.05 level, as both were less than the critical difference of 0.113. This suggests that while there's an overall progression in leg explosive power across the high school years, the most significant gain occurs between the initial (8th) and final (10th) years of the study period.

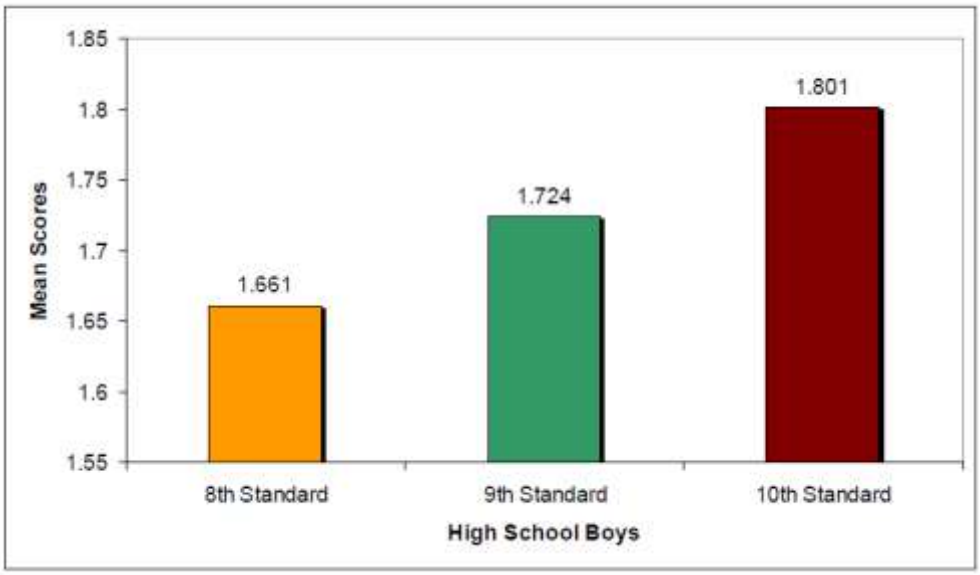

Fig 1. *Mean differences of the leg explosive power among rural and urban high school boys studying in 8th, 9th and 10th standard.*

3.2.3. Muscular endurance (bent knee sit-ups) across standards

Table-4 presents the ANOVA results for muscular endurance (bent knee sit-ups) across the different academic standards.

Table 4. *Analysis of variance for muscular endurance (bent knee sit-ups) among rural and urban high school boys studying in different standards.*

Groups	Sum of Squares	df	Mean Squares	F Value	Level of Significance	P Value
Between Groups	344.581	2	172.290	4.40	Significant at 0.05	0.013
Within Groups	8111.800	207	39.187			
Total	8456.381	209				

The ANOVA results indicate a statistically significant difference in Muscular Endurance among high school boys across different standards ($F(2,207)=4.40, p=0.013$). The obtained F-value of 4.40 is greater than the critical table value of 3.04 at the 0.05 level of significance. This leads to the rejection of the null hypothesis, confirming that muscular endurance significantly differs as boys progress through these academic years.

Scheffe's Post Hoc test was applied to investigate specific paired mean differences, as shown in Table-4 (a).

Table 4(a). *Post Hoc Test for the Mean Difference in relation to Muscular Endurance among Rural and Urban high school boys studying in different standards.*

Group Variables	8th Standard	9th Standard	10th Standard	Mean Difference	Critical Difference
Muscular Endurance	14.028	17.157	-	3.129*	2.609
	-	17.157	15.385	1.772	
	14.028	-	15.385	1.357	

*Significant at 0.05 level

Scheffe's post hoc test revealed a significant difference in Muscular Endurance between the 8th and 9th standards (3.129 repetitions, $p < 0.05$), as the mean difference (3.129) exceeds the critical difference (2.609). However, no significant differences were found between the 9th and 10th standards (1.772 repetitions) or between the 8th and 10th standards (1.357 repetitions) at the 0.05 level, as these obtained mean differences were less than the critical difference value. This indicates that the most notable improvement in muscular endurance occurs early in this high school period, specifically between the 8th and 9th standards.

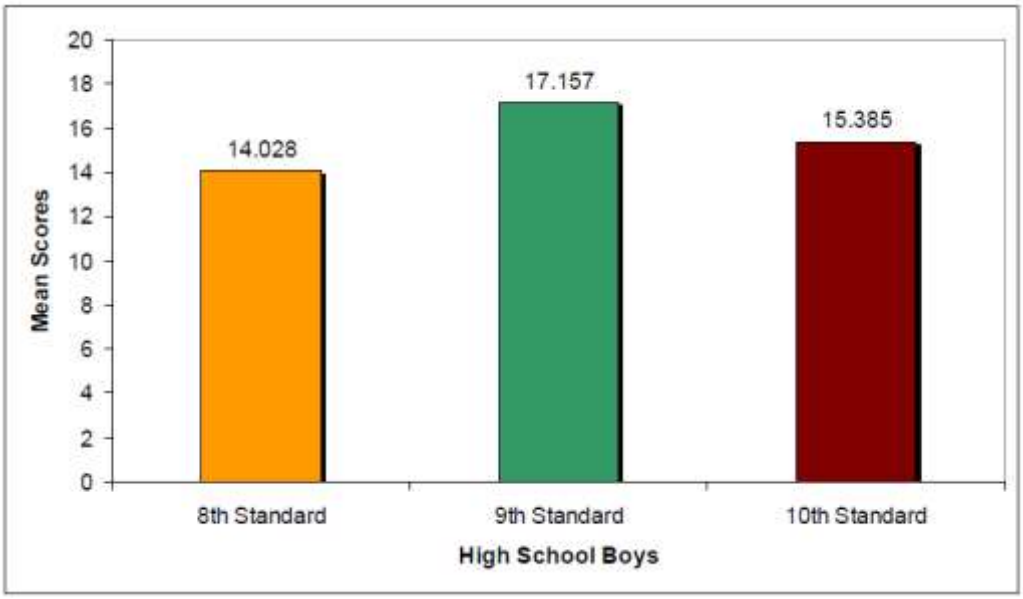

Fig 2. *Mean differences of the muscular endurance among rural and urban high school boys studying in 8th, 9th and 10th standard.*

4. Overall Discussion on Motor Skills

This study provides valuable insights into the motor skill proficiency of adolescent schoolboys in Tumkur District, highlighting significant disparities between rural and urban populations and distinct developmental trajectories across academic standards. The most striking finding is the consistent and significant outperformance of urban schoolboys across all assessed motor abilities: speed, leg explosive power, and abdominal muscular endurance. This observation aligns with previous research from India and other developing nations, which frequently report superior physical fitness and motor competence among urban youth compared to their rural counterparts (Chaeroni et al., 2024; Malik & Chatterjee, 2023).

Several factors could contribute to this pronounced rural-urban disparity. Urban environments typically offer greater access to structured sports facilities, professional coaching, and organized physical activity programs (Gallotta et al., 2022; Plumb, Hands, McIntyre, & Timler, 2021). These structured opportunities provide consistent and targeted training for specific motor components, leading to enhanced performance. Furthermore, urban children may benefit from better nutritional status, access to healthcare, and reduced engagement in strenuous manual labor, which can collectively foster optimal physical development conducive to higher motor performance (Baral et al., 2025). While rural environments might promote general physical activity through daily routines, this "unstructured play" might not translate into the specific gains seen in standardized tests of speed, power, and endurance as effectively as dedicated training in urban settings. The rural context, often characterized by limited access to specialized equipment, trained physical education teachers, and competitive sports, could explain the observed deficit.

The analysis of motor abilities across academic standards revealed interesting developmental patterns. Speed, as measured by the 30 Meters Run, showed no significant change from 8th to 10th standard. This could suggest that peak speed capabilities are either largely established by the early adolescent years, or that the training stimuli within the general school environment are insufficient to elicit further significant gains in this specific parameter during later adolescence. This finding contrasts with some literature indicating continued improvement in speed through late adolescence, possibly due to neuro-

muscular maturation (Stricker et al., 2020). The lack of improvement here might underscore the need for more specialized speed training components in physical education curricula.

In contrast, Leg Explosive Power demonstrated significant gains, particularly between the 8th and 10th standards. This is consistent with the pubertal growth spurt and associated increases in muscle mass and strength during mid to late adolescence (Badenhorst, 2017; Pereira et al., 2022). The biological maturation process provides a crucial foundation for improvements in power-based activities. The continuous physical development during these years directly contributes to the ability to generate force quickly, which is fundamental to tasks like the standing broad jump.

Similarly, Abdominal Muscular Endurance showed significant improvement, specifically between the 8th and 9th standards. This early gain in endurance during high school may reflect an initial phase of adaptation to increased physical activity demands or a general maturation of core musculature (Bauer, Gruber, & Muehlbauer, 2022). The plateauing of gains between 9th and 10th standards could indicate that without specific progressive overload training, further substantial improvements in general muscular endurance might slow down (Evaristo et al., 2019). This suggests that early adolescence is a critical window for developing core strength and endurance.

The findings of this study have significant implications for public health and educational policy in India. The observed rural-urban disparities underscore the urgent need for targeted interventions to promote physical activity and motor skill development in rural schools (Ausenhus et al., 2023). This could involve investing in basic sports infrastructure, providing training for physical education teachers in rural areas, introducing structured sports programs, and advocating for policies that encourage active lifestyles (Burson, Mulhearn, Castelli, & van der Mars, 2021). Recognizing the maturational sensitive periods for power and endurance development can also inform the design of age-appropriate physical education curricula that maximize gains during crucial developmental windows. Promoting equitable opportunities for motor skill acquisition is vital not only for enhancing immediate physical performance but also for fostering lifelong active lifestyles and overall well-being.

5. LIMITATIONS OF THE STUDY

This research has a few key limitations that are important to note:

One-Time Snapshot: Since this was a cross-sectional study, motor skills were only observed at a single point in time. This means it's not possible to tell how these skills develop or change in individuals over several years.

Specific Population: The boys were purposely selected, so the findings might not apply to all adolescent boys in Tumkur District, nor to girls, or to youth in other regions.

Narrow Focus: Only speed, explosive leg power, and abdominal muscular endurance were measured. This doesn't cover all aspects of motor competence, like agility or coordination, so the conclusions are limited to these specific skills.

Environmental Details: While this research compared rural and urban groups, it didn't gather detailed information on specific factors like access to sports facilities, quality of physical education, or nutritional differences that might explain why urban boys performed better.

6. CONCLUSION

This comparative study clearly demonstrates a significant advantage in motor skill proficiency (speed, leg explosive power, and abdominal muscular endurance) among urban schoolboys compared to their rural counterparts in Tumkur District, Karnataka. While sprint speed remained relatively constant across academic standards (8th to 10th), leg explosive power showed significant improvements between the 8th and 10th standards, and muscular endurance saw notable gains between the 8th and 9th standards. These findings underscore the profound influence of environmental opportunities and biological developmental processes on adolescent motor competence. The persistent rural-urban disparity in motor skills necessitates urgent policy attention and the implementation of targeted physical education and sports development programs, particularly in underserved rural settings, to ensure equitable opportunities for motor skill acquisition and promote the holistic health and active lifestyles of all Indian youth. Future longitudinal studies exploring the specific environmental and socioeconomic determinants of these disparities are recommended.

6.1. Future studies

Building upon the foundational insights of this study, future research should pursue a multi-faceted approach to comprehensively understand and address adolescent motor skill development in India. Firstly, longitudinal investigations are paramount to precisely map the developmental trajectories of speed, power, and endurance in both rural and urban cohorts, moving beyond the cross-sectional snapshot. This will allow for the identification of critical windows for intervention and the tracking of individual progression. Secondly, a deeper dive into the socio-ecological determinants of motor proficiency is crucial. This entails examining specific environmental factors—beyond the broad rural-urban dichotomy—such as the availability and quality of sports infrastructure, the presence of trained physical education professionals, and the prevalence of organized versus unstructured physical activity opportunities. Simultaneously, research must explore the influence of individual-level factors including nutritional status, screen time, sleep patterns, and family socioeconomic status, to elucidate their interplay with motor skill acquisition. Thirdly, there is a significant need for intervention-based research. This involves designing, implementing, and rigorously evaluating targeted physical education curricula and community-based sports programs, particularly in underserved rural areas, to assess their efficacy in enhancing specific motor skills. Such studies should also explore the scalability and sustainability of these interventions. Fourthly, expanding the scope to include female adolescents and diverse age groups is essential to provide a comprehensive understanding of motor development across all Indian youth. Finally, future studies could incorporate qualitative methodologies to gather nuanced perspectives from students, parents, and educators regarding barriers and facilitators to physical activity and motor skill development in their respective environments, thereby enriching the quantitative findings.

REFERENCES

[1] Ab Rahman, Z., Kamal, A. A., Noor, M. A. M., & Geok, S. K. (2021). Reliability, validity, and norm references of standing broad jump. Revista Geintec-Gestao Inovacao E Tecnologias, 11(3), 1340–1354.

[2] Adriyani, R., Iskandar, D., & Camelia, L. S. (2021). Urban-Rural Children Differences in Motor Coordination, Cardiorespiratory Fitness, and Agility. International Joint Conference on Arts and Humanities 2021 (IJCAH 2021), 433–437. https://doi.org/10.2991/assehr.k.211223.075

[3] Agbangba, C. E., Aide, E. S., Honfo, H., & Kakai, R. G. (2024). On the use of post-hoc tests in environmental and biological sciences: A critical review. Heliyon, 10(3).

[4] Ameti, V. (2021). The impact of some motor abilities upon the success of sprint running on 30 and 80 meters among 14-year-old students. International Journal of Sport Sciences and Health, 8(15–16), 82–91.

[5] Antonis, T., & Dimitra, K. (2025). Developmental Motor Coordination Disorder Gross and fine motor skills of preschool, school-age and adolescent children. Clinical Research and Clinical Trials, 12(5). https://doi.org/10.31579/2693-4779/270

[6] Ausenhus, C., Gold, J. M., Perry, C. K., Kozak, A. T., Wang, M. L., Jang, S. H., … Ko, L. K. (2023). Factors impacting implementation of nutrition and physical activity policies in rural schools. BMC Public Health, 23(1), 308. https://doi.org/10.1186/s12889-023-15176-y

[7] Badenhorst, J. (2017). The effect of the growth spurt on strength, power, speed and agility training in boys during mid-adolescence. North-West University, Potchefstroom Campus.

[8] Baral, S., Singh, A. K., Aryal, A., Subedi, J., Dhakal, U., & Khanal, A. (2025). Food habit, physical activity and nutritional status of adolescents in selected schools of Madhyapur Thimi municipality, Nepal: A cross-sectional study. PLOS Global Public Health, 5(1), e0004136. https://doi.org/10.1371/journal.pgph.0004136

[9] Bauer, J., Gruber, M., & Muehlbauer, T. (2022). Correlations between core muscle strength endurance and upper-extremity performance in adolescent male sub-elite handball players. Frontiers in Sports and Active Living, 4, 1050279. https://doi.org/10.3389/fspor.2022.1050279

[10] Burson, S. L., Mulhearn, S. C., Castelli, D. M., & van der Mars, H. (2021). Essential components of physical education: Policy and environment. Research Quarterly for Exercise and Sport, 92(2), 209–221. https://doi.org/10.1080/02701367.2021.1884178

[11] Cech, D. J., & Martin, S. T. (2023). Functional Movement Development Across the Life Span-E-Book. Elsevier Health Sciences.

[12] Chaeroni, A., Pranoto, N. W., Talib, K., Ahmed, M., Khishe, M., Okilanda, A., & Lani, M. N. (2024). Effects of physical activity on physical health, behavior and personality by social status of urban and rural children: A systematic review. Retos: Nuevas Tendencias En Educación F{\'\i}sica, Deporte y Recreación, (56), 1148–1160.

[13] Dapp, L. C., Gashaj, V., & Roebers, C. M. (2021). Physical activity and motor skills in children: A differentiated approach. Psychology of Sport and Exercise, 54, 101916. https://doi.org/10.1016/j.psychsport.2021.101916

[14] De Marco, J. C. P., Bim, M. A., de Souza, F. U., Martins, R., de Araújo Pinto, A., Felden, É. P. G., & Pelegrini, A. (2025). Association of abdominal endurance with body adiposity, physical activity and sitting time in adolescents. Journal of Sport and Health Research, 17(1), 23–30. https://doi.org/10.58727/jshr.102584

[15] Evaristo, S., Moreira, C., Lopes, L., Oliveira, A., Abreu, S., Agostinis-Sobrinho, C., … Mota, J. (2019). Muscular fitness and cardiorespiratory fitness are associated with health-related quality of life: Results from labmed physical activity study. Journal of Exercise Science \& Fitness, 17(2), 55–61. https://doi.org/10.1016/j.jesf.2019.01.002

[16] Gallotta, M. C., Zimatore, G., Falcioni, L., Migliaccio, S., Lanza, M., Schena, F., … others. (2022). Influence of geographical area and living setting on children's weight status, motor coordination, and physical activity. Frontiers in Pediatrics, 9, 794284. https://doi.org/10.3389/fped.2021.794284

[17] Lykkegaard, C. R., Andersen, H. S., Wehberg, S., Holden, S., Waldorff, F. B., Søndergaard, J., … Wedderkopp, N. (2023). The association between childhood motor performance and developmental trajectories of sport participation over 5 years in Danish students aged 6--16-year-old. Scientific Reports, 13(1), 4133. https://doi.org/10.1038/s41598-023-31344-x

[18] Malik, A. S., & Chatterjee, K. (2023). A cross-sectional study to compare levels of physical activity among adolescents in rural and urban areas of Western Maharashtra. Medical Journal Armed Forces India, 79, S237--S243. https://doi.org/10.1016/j.mjafi.2022.10.003

[19] Malina, R. M., & e Silva, M. J. C. (2017). Physical activity, growth, and maturation of youth. In Body Composition (1st ed., pp. 69–88). CRC Press.

[20] Olaboye, J. A., Maha, C. C., Kolawole, T. O., & Abdul, S. (2024). Promoting health and educational equity: Cross-disciplinary strategies for enhancing public health and educational outcomes. International Journal of Applied Research in Social Sciences, 6(6), 1178–1193. https://doi.org/10.51594/ijarss.v6i6.1179

[21] Onose, I., Hodorca, R. M., & Albu, A. (2018). The link between physical development and motor skills of rural students in Romania. European Proceedings of Social and Behavioural Sciences. https://doi.org/10.15405/epsbs.2018.06.02.5

[22] Pereira, S., Santos, C., Tani, G., Freitas, D., Garbeloto, F., Guimarães, E., … Maia, J. (2022). Physical fitness spurts in pre-adolescent boys and girls: Timing, intensity and sequencing. Journal of Sports Sciences, 40(6), 630–637. https://doi.org/10.1080/02640414.2021.2009201

[23] Plumb, M. S., Hands, B., McIntyre, F., & Timler, A. (2021). Self-report motor competence in adolescents aged 12--18 years in regional and rural Victoria (Australia). Research Quarterly for Exercise and Sport, 92(3), 388–398. https://doi.org/10.1080/02701367.2020.1739606

[24] Poole, K. L., Schmidt, L. A., Ferro, M. A., Missiuna, C., Saigal, S., Boyle, M. H., & Van Lieshout, R. J. (2018). Early developmental influences on self-esteem trajectories from adolescence through adulthood: Impact of birth weight and motor skills. Development and Psychopathology, 30(1), 113–123. https://doi.org/10.1017/S0954579417000505

[25] Sarker, A., & Islam, M. A. (2024). Age-Based Comparison of Explosive Strength and Strength Endurance in 9-to 11-Year-Old School Boys. Sports Science & Health Advances, 2(2), 267–274. https://doi.org/10.60081/SSHA.2.2.2024.267-274

[26] Stricker, P. R., Faigenbaum, A. D., McCambridge, T. M., on Sports Medicine, C., Fitness, LaBella, C. R., … Logan, K. (2020). Resistance training for children and adolescents. Pediatrics, 145(6), e20201011. https://doi.org/10.1542/peds.2020-1011

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