

THE ROLE OF ATHLETICS IN DEVELOPING PHYSICAL QUALITIES OF 14-15-YEAR-OLD SECONDARY SCHOOL STUDENTS

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Abstract

This study explores the effectiveness of systematically organized athletics training in enhancing the physical qualities of 14–15-year-old secondary school students. The research focuses on the development of speed, endurance, strength, agility, and flexibility through structured athletics exercises. An experimental design involving control and experimental groups was applied to evaluate changes in physical fitness indicators. The findings reveal that regular athletics-based training significantly improves all major physical qualities and contributes to students' overall physical development, confirming the pedagogical value of athletics in school physical education programs.

Keywords

athletics, physical fitness, adolescents, speed, endurance, strength, agility, flexibility

1. Introduction

Physical education is a fundamental component of the general education system, aimed at promoting students' health, physical development, and functional readiness. Adolescence, particularly the age of 14–15, is characterized by intensive biological and physiological changes, making this period especially sensitive to the development of physical qualities. At this stage, properly organized physical activity plays a crucial role in forming a stable foundation for future physical performance and health.

Athletics is widely recognized as one of the most effective means of developing physical qualities due to its diverse range of exercises and accessibility within school settings. Athletics training provides optimal conditions for improving speed, endurance, strength, agility, and flexibility, while simultaneously enhancing coordination abilities and movement efficiency. In addition, regular

participation in athletics contributes to the development of discipline, self-regulation, and motivation for physical activity among students.

2. Materials and Methods

The study was conducted with the participation of 40 secondary school students aged 14–15. Participants were randomly divided into two groups: an experimental group (n = 20) and a control group (n = 20). The experimental group followed a specially designed athletics training program for eight weeks, with training sessions held three times per week, each lasting 45 minutes. The control group continued to attend standard physical education classes according to the school curriculum.

To assess the effectiveness of the training program, a set of standardized physical fitness tests was used. Speed was measured using a 30-meter sprint test, endurance was assessed through a 6-minute continuous running test, strength was evaluated using sit-up repetitions and standing long jump performance, agility was measured via an obstacle running test, and flexibility was assessed using the sit-and-reach test. Statistical analysis was performed using Student’s t-test, with significance set at $p < 0.05$.

3. Results and Discussion

The results obtained after the completion of the eight-week athletics training program demonstrated statistically significant improvements in all measured physical qualities within the experimental group compared to the control group. The most pronounced changes were observed in indicators of speed, endurance, and strength, reflecting the positive impact of systematic athletics training on students’ physical fitness.

Table 1. Comparative indicators of physical fitness development

Physical quality	Control group (initial-final)	Experimental group (initial-final)
Speed (30 m sprint, s)	5.3 - 5.2	5.2 - 4.8
Endurance (6-min run, m)	815 - 820	820 - 920
Strength (sit-ups, reps)	18 - 19	19 - 24
Agility (obstacle run, s)	12.5 - 12.3	12.4 - 11.2
Flexibility (cm)	18 - 19	18 - 23

The statistical analysis confirmed the reliability of the observed differences ($p < 0.05$). The experimental group demonstrated substantial improvement across all parameters, whereas the control group showed only marginal changes. These findings support previous research indicating that athletics training has a comprehensive and positive effect on adolescents’ physical development.

4. Conclusion

The findings of this study confirm that systematically organized athletics training is an effective means of developing the key physical qualities of 14–15-year-old secondary school students. Significant improvements were recorded in speed, endurance, strength, agility, and flexibility among students participating in the experimental program. In addition to physical benefits, athletics training contributes to increased motivation, discipline, and engagement in physical activity.

Despite the positive results, the study is limited by its relatively short duration and the specific age group of participants. Future research should involve longer intervention periods and include different age categories to further validate the effectiveness of athletics-based training programs in school physical education.

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