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EFFECT OF PROGRESSIVE INTENSITY FLOOR AEROBICS TRAINING ON SELECTED MOTOR FITNESS VARIABLES OF SCHOOL CHILDREN

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ABSTRACT:

The purpose of the study was to investigate the effect of a 12-week floor aerobics program with progressive intensity on the selected motor fitness variables among school children aged 12-14 in Greater Mumbai. A total of thirty students were randomly selected as the sample of the study. The pre-test and post-test were conducted to assess the coordination, speed, agility, cardiovascular endurance, and reaction time. The training was conducted thrice a week, for a 12-week duration. The intensity of the load was increased every two weeks. Statistical analysis using paired t-tests revealed significant improvements in all five motor fitness components, with t-values ranging between 3.88 and 6.32. These findings support the effectiveness of structured, progressively intense floor aerobics in enhancing motor performance in adolescents.

KEYWORDS: *Motor fitness, Floor Aerobics, Constant Intensity, Changing Intensity, Speed, Agility, Coordination, Reaction time, Cardiovascular Endurance, t-test.*

INTRODUCTION

Physical activity plays a vital role in the integrated growth and development of children - physically, mentally, emotionally, and socially. It is crucial to train the brain during the formative years, using various movement-based signals, actions, beats, and rhythms, to establish neuromuscular coordination through repetitive general and specific actions. (Zorana Bukvić, Dragana Cirovic, Dejan Nikolić, 2021). Participation in regular physical activities and sports reduces the risk of hypokinetic disease, which is trending as a byproduct of a sedentary lifestyle. (Akbar Moradi, Esmaeil Sadri Damirchi, Mohammad Narimani, Samad Esmaeilzadeh, 2009). On the contrary, regular physical activities benefit the child to accelerate the cognitive functioning, improve sensory and central mechanisms, improve dynamic balance, readiness, agility, and endurance. It also enhances the kinetic energy, focus, and patience to push the performance threshold. (Zorana Bukvić, Dragana Cirovic, Dejan Nikolić, 2021). As children progress through different stages of chronological age, corresponding changes occur in their biological structure; therefore, conditioning their biological potential requires appropriate planning and its implementation based on a pedagogical training process.

There are several training means and methods available to train the early teenage years. Among the many physical training modalities, Floor Aerobics is a different training due to its versatility and accessibility. Floor Aerobics combines rhythmic movements with music and body weight exercises that can be customized for different age groups according to the need. The Research studies support its efficiency in enhancing cardiovascular health, improving body composition, and increasing energy in

youth. However, limited literature exists on its specific impact on motor fitness variables, such as coordination, agility, and reaction time- particularly when delivered with progressive intensity over a defined period.

The present study focuses on Floor Aerobics and how progressive intensity affects motor fitness performance over a period of time.

The purpose of the study is to identify whether progressive intensity over the 12-week training period results in more significant improvement in school children. To measure improvement, the following tests were used: the 30-meter dash (speed), shuttle run (agility), skipping test (coordination), stick hold test (reaction time), and the Modified Harvard Step Test (cardiovascular endurance), all measured in seconds.

MATERIALS AND METHODOLOGY

Participants:

Thirty school children aged 12-14 years from Greater Mumbai were randomly assigned to the experimental group for the study.

Overall Design and Procedure

The study followed a Single-group Pre-test and Post-test design. The training intervention was conducted over a period of 12 weeks, comprising three sessions per week, each lasting 40 minutes. This structured schedule was designed to ensure regular participation and facilitate progressive development throughout the program. "Pretest and posttest assessments were conducted to evaluate the effect of the training on the following motor fitness variables.

- Speed : 30 meters dash (seconds)
- Agility : Shuttle run (seconds)
- Coordination : Skipping test (seconds)
- Reaction Time : Stick hold test (seconds)
- Cardiovascular Endurance : Modified Harvard Step Test (seconds)

A paired sample t-test was used to compare the Pre-test and Post-test data for all five Fitness variables. Statistical significance was set at $p < 0.05$. (American College of Sports Medicine, 2014) (Faigenbaum, A. D., Kraemer, W. J., Blimkie, C. J., Jeffreys, I., Micheli, L. J., Nitka, M., & Rowland, T. W., 2009) (Kirk, 2005)

RESULTS

Table 1 shows the comparison of pre-test and post-test scores for the five selected motor fitness variables using paired t-tests.

Variable	Pre-Test Mean ± SD	Post-Test Mean ± SD	Correlated t-value	p-value	df	Significant (p < 0.05)
Coordination (sec)	29.89 ± 2.88	29.04 ± 2.91	6.23	0.0001	29	Yes
Speed (sec)	6.26 ± 0.34	4.98 ± 1.09	6.32	0.0001	29	Yes
Agility (sec)	11.98 ± 0.54	10.81 ± 1.31	5.79	0.0001	29	Yes
Cardiovascular Endurance (sec)	75.27 ± 5.76	74.32 ± 6.03	3.88	0.0006	29	Yes
Reaction Time (sec)	0.32 ± 0.02	0.24 ± 0.08	5.73	0.0001	29	Yes

DISCUSSION

The results indicate significant improvements in all five motor fitness variables following the 12-week Floor Aerobics Training with Progressive Intensity. The decreased time in coordination, speed, and agility tests indicates the improvement in neuromuscular control and efficiency. The cardiovascular endurance, as given by the fitness index score of the Modified Harvard Step Test, revealed the improvement in aerobic capacity as an effect of training. The reaction time improvement, evidenced by faster responses in the stick hold test, points toward better central nervous system responsiveness. These findings align with prior literature suggesting that rhythmic and structured movement training can enhance motor skills, particularly when training load is progressively adjusted. The results support the inclusion of progressive-intensity Floor Aerobics in the Physical Education curriculum targeting early adolescents.

CONCLUSION

The 12-week floor aerobics program with increasing intensity produced statistically significant improvements in coordination, speed, agility, cardiovascular endurance, and reaction time among 12-14-year-old school children in Greater Mumbai. This suggests that floor aerobics, when structured and scaled in intensity, can be an effective and enjoyable modality for motor fitness development in adolescents. Future studies may explore long-term retention and the impact across diverse demographic groups. (Tomporowski, P. D., Davis, C. L., Miller, P. H., & Naglieri, J. A., 2008)

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