OPTIMIZATION PHYSICAL DEVELOPMENT AND MOTOR SKILLS IN LOWER SECONDARY SCHOOL STUDENTS LIVING IN RURAL AREAS THROUGH PHYSICAL EXERCISE COMBINED WITH PLANT-BASED BIOLOGICAL PREPARATION

SCIENTIFIC SUPERVISOR:
PROF. UNIV. DR. VIRGIL TUDOR

PHD CANDIDATE:

STOICESCU N. DAN CRISTIAN

Abstract

The present study addresses the need to improve the quality of the educational process in physical education through the optimization of motor content and instructional strategies. Within this scientific framework, which integrates both theoretical and practical dimensions, the primary objective was to investigate the comparative effects of structured physical education programs combined with plant-based biological preparations on the physical development and motor skills of lower secondary school students rural areas.

The research design involved two groups: an experimental group, which participated in a combined intervention consisting of a structured physical exercise program and the administration of plant-based biological preparations, and a control group, which followed the standard physical education curriculum without additional interventions. Both groups were assessed at identical time intervals to ensure the validity, objectivity, and comparability of the results.

The assessment protocol included a comprehensive set of anthropometric and functional indicators, such as body lengths, diameters, circumferences, and skinfold thickness, complemented by standardized motor performance tests. These parameters were selected to provide a multidimensional perspective on students' physical development and motor capacity.

From a methodological perspective, the study employed quantitative research methods supported by statistical analysis. Data processing was conducted using Microsoft Excel and the online statistical platform VassarStats. Independent samples t-test and paired samples t-tests were applied to identify statistically significant differences both within groups (pre- and post-intervention) and between groups. This approach enabled an accurate evaluation of the intervention's effectiveness over time.

The findings indicate that the experimental group showed significantly greater improvements in both anthropometric parameters and motor performance compared to the control group. These results suggest that the integration of plant-based biological preparations into physical education programs may enhance the benefits of regular physical activity.

In conclusion, the study supports the hypothesis that combining physical exercise with plant-based biological preparations, specifically those based on Spirulina and Safflower oil, represents an effective strategy for optimizing physical development and motor skills in lower secondary school students rural environments. The research contributes to the advancement of innovative educational practices and provides practical implications for improving health and physical performance among school-aged populations.