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Descrierea CIP a Bibliotecii Naționale a României

POPESCU, VIORELA ELENA

The role and influence of physical exercise on body composition in overweight and obese female students in higher economic education / Viorela Elena Popescu. - București : Editura Thea ;

Craiova : Universitaria, 2025

ISBN 978-606-95771-2-7

ISBN 978-606-14-2156-5

796

Viorela-Elena Popescu

The role and influence of physical exercise on body composition in overweight and obese female students in higher economic education

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București, 2025



Craiova, 2025

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INTRODUCTION

In contemporary society, obesity has emerged as one of the most pervasive health concerns, transcending age demographics and imposing significant medical and socio-economic burdens. It has become increasingly evident that obesity is not confined to high-risk populations but also affects children, adolescents, and young adults, many of whom adopt lifestyles characterized by nutritionally deficient diets, a lack of structured physical education, and overall sedentarism. The rapid advancement of technology and modern transportation has further exacerbated this phenomenon, as individuals increasingly substitute recreational physical activity with sedentary behaviors such as excessive screen time, reliance on digital devices, and prolonged engagement with electronic entertainment. This paradigm shift has contributed to a progressive decline in daily movement, thereby reinforcing the obesogenic environment prevalent in contemporary society.

This book constitutes the theoretical foundation of the doctoral dissertation titled “The Influence of Physical Exercise on Body Composition in Overweight and Obese Female Students in Economic Higher Education.” The study aims to advance the existing body of knowledge on overweight and obesity among young women enrolled in economics programs, offering a comparative analysis of contemporary perspectives on physical education in European higher education, with a particular emphasis on the economic academic sector. A subsequent section provides a theoretical exposition of the biopsychosocial characteristics of university students aged 18–25, highlighting the somatic, functional, and psychosocial attributes that define normative health standards within this demographic. Furthermore, this section rigorously and comparatively examines five

*Chapter 1***Physical Education in Higher Education –
Contemporary Approaches**

Systematic physical education has been present since Antiquity, during the time of philosophers such as Plato and Aristotle, and has long been regarded as an essential component of human education and development. From Latin culture, we have inherited Juvenal's dictum "*Mens sana in corpore sano*" – "*A healthy mind in a healthy body*" – while the ancient Greeks viewed the Olympic Games as a "*manifestation of athleticism, courage, and honesty*"¹.

Traditionally and in the present day, physical education has been a mandatory subject at all levels of education in Romania, highlighting the recognized importance of physical training in shaping young individuals. From a pedagogical perspective, it is considered an educational dimension (moral, intellectual, professional, and aesthetic) with multiple influences on the human body and personality development².

According to the *Explanatory Dictionary of the Romanian Language*, physical education is defined as "*a set of measures aimed at ensuring the harmonious physical development of individuals, strengthening health, and forming and perfecting the knowledge, skills, and movement abilities necessary for both work and sports activities*"³.

¹ <http://www.scrigroup.com/didactica-pedagogie/Educatia-fizica24389.php>

² http://www.studentie.ro/referate/pedagogie/sensul-pedagogic-al-educatiei-fizice_i46_c993_97153.html

³ Romanian Academy, "Iorgu Iordan" Institute of Linguistics, 1998, *Explanatory Dictionary of the Romanian Language*, Bucharest.

Therefore, physical education represents a fundamental component of general education, “a cultural phenomenon and act, a means of emancipation with pedagogical content, aimed at achieving harmonious physical development, psychological strengthening, and the cultivation of an individual's character traits” (M. Popescu, 1995)⁴.

In the modern perspective, physical education, as a distinctly human activity, cannot be confined solely to the practice of physical exercises. Instead, it encompasses “all functions related to nutrition and interaction, as well as individual and collective hygiene”. It is a physiological activity by the nature of the exercises employed, a pedagogical activity through its methods, a biological activity through its results, and a social activity through its effects⁵.

A comprehensive definition of physical education was provided by the distinguished professor and scientist C. Kirişescu in his works *L'éducation physique, science et discipline universitaire* (1939) and *Palestrica* (1964): “Physical education is the conscious physiological activity of the human body, guided by pedagogical methods, aimed at maintaining health and enhancing the individual's biological potential to increase their social efficiency. It is closely linked to intellectual, moral, and aesthetic education, being dependent on the first and influencing the latter two”⁶.

From our viewpoint, physical education is an indispensable part of general education, representing the primary form of training with direct influences on the human body. It focuses on the biological aspect of the individual and aims to ensure healthy and harmonious physical development, strengthen health, enhance physical resilience, and refine essential physical qualities required for work, sports activities, and the formation of moral attributes.

⁴ M. Popescu, 1995, *Physical Education and Sports in Student Training*, Didactic and Pedagogical Publishing House, Bucharest.

⁵ C. Kirişescu, 1964, *Palestrica*, Union of Physical Culture and Sports Publishing House, Bucharest.

⁶ C. Kirişescu, 1939, cited in C. Kirişescu, 1964, *op. cit.*, p.19.

In contemporary terms, physical education is no longer viewed simply as a subject within the curriculum, but a duty for students, teachers, and faculty, or an exclusively practical activity confined to rigid structures that fail to meet “the preferences of practitioners or the demands of the field of motor education”. Both the evolution of perspectives on physical exercise and the emergence of various natural and social factors impacting the human body necessitate the composition of a long-term strategy that focuses on the individual and their needs for holistic development. Thus, this approach must include not only a precise definition of the scientific field but also a clear understanding of the purpose of physical education, the establishment of its objectives and competencies, and the creation or modification of the curriculum as well as the methodology for its implementation. The strategy should also align with key factors such as “health, complex bio-psycho-social stimulation, and lifelong education”⁷.

With an approach of this kind, A. Bota and S. Teodorescu (2010)⁸ argue that physical education can manifest as a coherent system, with a distinct identity, and as an integral part of formative motor activities, exerting multiple influences on personality development. This is the sole method that makes it possible to transition from viewing physical education as a “study subject” to seeing it as a “way of life”, one that “enhances the essence of a nation, making it capable of expressing itself, exploring, and developing in a balanced relationship with the natural and social environment”.

I. Neacşu and M. Ene (1987)⁹ assert that “I. Neacşu and M. Ene (1987) assert that ‘Physical education is primarily a form of education, followed by education through and for physical activities.’”. They base

⁷ A. Bota, S. Teodorescu, 2010, *Physical Education. A Subject in the Curriculum*, Discobolul Publishing House, Bucharest.

⁸ *Ibid.*, p. 5.

⁹ I. Neacşu, M. Ene, 1987, *Education and Self-Education in the Formation of the Sports Personality*, Sport-Tourism Publishing House, Bucharest.

this on the idea that the characteristic feature of physical education is the systematic practice of physical exercises, and through movement, this discipline aims to develop the psycho-physical aspect of students.

At the philosophical level, W. Oberteuffer and McCloy (1980)¹⁰ insist that the term “*physical education*” is a misnomer. They recommend the use of the term “*education through movement*”, as it emphasizes the development of the physical body itself, rather than education via physical activities, which focuses on movements aimed at specific body parts.

We agree with the expression “*education through movement*”, which signifies an education of the body through movement, leading to the “*progressive construction of the body in all its components*”¹¹.

Physical education and sport are “*interdisciplinary scientific fields that overlap*”,¹² not confined to a single discipline, but rather spanning multiple fundamental sciences such as biology, medicine, psychology, sociology, and anthropology, “*with the intersection*” occurring through the practice of physical exercise.

1.1 Modern concepts about physical education

In some countries, such as Italy, Spain, and Portugal, the term “*physical education*” is used as such, while in France, the designation “*physical and sports education*” is accepted. In Germany, the term “*sports training*” is employed, in Sweden, the phrase “*sport and health*” is used, whereas in Finland, there are two distinct sectors: physical education and health education, both of which, however, fulfill the same overarching objective.

¹⁰ W. Oberteuffer and C.H. McCloy, *The Physical Educator*, 1980, cited in I. Neacșu, M. Ene, *op. cit.*, p. 24.

¹¹ *Ibid.*, p. 25.

¹² A. Gagea, 2007, *Methodology of Scientific Research in Physical Education and Sport, Part I*, Reprograph Publishing House, Craiova.

Regarding the various conceptions of physical education, in 1984, J.B. Parks conducted an analysis of works published between 1930 and 1984, identifying three schools of thought:

1. ***Physical Education – Education through the Physical***. This conception promotes the idea that physical education can lead to mental education, fostering the harmonious development of the individual through physical activity.
2. ***Education of the Physical***. Proponents of this view argue that the development of the body can contribute to the formation of character and personality, focusing on physical aspects, with the aim of addressing the specific requirements of the educational field. While this conception sought to redirect the content of the field, it was not widely accepted in 20th-century thought.
3. ***Education through and for Movement***. In support of this approach, the American Association for Health, Physical Education, and Recreation (AAHPER) asserts that physical education is part of general education, contributing to individual development through movement¹³.

B. J. Logsdon, as cited by A. Dragnea et al. (2010),¹⁴ considers that “*physical education is part of the education of movement*”, conceived “*as an educational program within the school curriculum*”.

The European conception is based on the idea that physical and sports education is an integral component of education, addressing the essential needs of children in schools at all levels:

- a. The need for physical activity that supports the processes of growth and development;

¹³ A. Dragnea, A. Bota, S. Teodorescu et al., 2010, *Contemporary Paradigms in Physical Education – Implications for Educational Policies*, Discobolul Journal, no. 19, UNEFS Publishing House, Bucharest, p. 14, according to the American Association for Health, Physical Education and Recreation.

¹⁴ B. J. Logsdon, cited in A. Dragnea, A. Bota, S. Teodorescu et al., *op. cit.*, p. 14.

- b. The acquisition of motor experience through the development of motor skills, abilities, and physical qualities;
- c. The need to be integrated and to work within a group;
- d. The need to be praised and appreciated.

In European countries, the following objectives of physical education are targeted:

- ✓ Establishing habits for practicing physical exercises for health;
- ✓ Developing the habit of engaging in physical exercise throughout life;
- ✓ Developing motor, artistic, and expressive skills, as well as motor qualities;
- ✓ Achieving optimal physical development and fostering correct body posture;
- ✓ Balanced development of personality components;
- ✓ Promoting integration and communication within a group;
- ✓ Shaping psycho-behavioral states and applying them in daily life practice (e.g., fair play, team spirit, tolerance, responsibility, respect for rules, self-control, etc.).

To achieve these objectives, Council of Europe member states dedicate three lessons per week to physical education. Each country is committed to continuously creating the best possible conditions for conducting physical and sports activities.

The objectives of the Council of Europe emphasize promoting physical exercise and highlighting the benefits it brings to society. Such approaches are reflected in important documents aimed at encouraging the development of programs to promote a healthy lifestyle through activities that highlight the value and importance of physical exercise for education, health, and development.

Thus, it can be concluded that in most European countries, the concept of physical education is undergoing a reevaluation, based on

new vectors of development “*that have led to boundary approaches*” (“*in-between approaches*”)¹⁵.

1.2 Physical education in the Romanian Higher Education System

In the Romanian higher education system, the discipline of Physical Education and Sports is recognized as an integral part of the organized instructional-educational process, being included in the curricula of all faculties.

1.2.1. Content of the Physical Education and Sports Program at Bucharest Academy of Economic Studies

In the curricula of all faculties at Bucharest Academy of Economic Studies, the discipline of Physical Education and Sports is included as a mandatory subject in the first and second years, covering the first three or four semesters of the undergraduate program. The class is recognized in the form of practical work, with a duration of 60 minutes per session. Attendance is compulsory for the first and second years, and it carries two credit points per semester, in addition to those assigned to obligatory and optional subjects. During the resit period, students who have not passed the Physical Education and Sports discipline may recover the attendance for a single semester and no more than one class per day. This discipline can be fully recovered. Additionally, if first- and second-year students fail to pass the first semester, they have the opportunity to make up the attendance either during the second semester or the resit period of the same academic year.

¹⁵ A. Bota, S. Teodorescu, *op. cit.*, p. 11.

1.2.2. Forms of Physical Education and Sports Activities

To achieve the objectives set and outlined above, the physical education and sports activities in higher education encompass various *organizational forms*, of which we mention the following:

- ◆ *The practical lessons in physical education and sports* are conducted with first- and second-year students on a weekly basis (one hour per week) over the course of four semesters. These lessons are organized into working groups, either mixed-gender or separated (to ensure an optimal distribution of physical effort), or into groups based on specific sports disciplines within a faculty. The formation of these groups is determined by students' preferences, as well as the availability of infrastructure and material resources. The core structure of the didactic process comprises thirteen sports disciplines, five of which are permanent: basketball, volleyball, fitness, bodybuilding, and aerobic gymnastics. Additionally, mass sports competitions (either as participants or spectators) and hiking activities are integrated into the curriculum. The scheduling of lessons takes place either on the designated free day of the respective faculty or during students' half-days off, thereby ensuring sufficient time for travel and preparation.

The efficient implementation of this system is contingent upon close collaboration between teaching staff, faculty deans, specialized departments, and faculty secretariats.

- ◆ Furthermore, *specialized training sessions* are offered for select sports disciplines, particularly for representative teams, with one training session per week. A small percentage of students (fewer than 10%) have previously engaged in high-performance sports; these students are encouraged and guided to continue their athletic

development within institutional representative teams. These teams, composed of students across all academic levels (Bachelor's Years I, II, III, and Master's), compete in disciplines such as athletics, cheerleading, basketball, football, handball, volleyball, swimming, and tennis. Within this framework, physical education assumes the form of athletic training, allowing high-performing students – under the guidance of specialized sports instructors – to fully develop their potential and participate in prestigious competitions such as the Bucharest University Championship, the Freshman Cup, and other tournaments organized by the institution, as well as in national finals.

- ◆ Beyond structured instruction, students are encouraged to engage in *independent physical exercise* in various forms, including jogging, bodybuilding, fitness training, and hiking. These activities aim to promote optimal health, relaxation, recreation, and the constructive use of leisure time.
- ◆ At the beginning of each academic year or semester, *organizational lessons* are conducted to inform students about the assessment system, the significance of physical education and sports within non-specialized higher education, and the well-documented positive effects of physical activity on the human body.

Competitions and sports tournaments at faculty, academy, and university-center levels are organized under the direct supervision of the faculty members of the Department of Physical Education and Sports at the Bucharest Academy of Economic Studies. Notable competitions include:

- ◆ The “Academica” Cup – Mixed-gender volleyball;
- ◆ The “Economist” Cup – Men’s basketball;
- ◆ The “Dracula” Cup – Mixed-gender basketball;