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**THE IMPACT OF THE PILATES METHOD ON THE MANAGEMENT OF  
SPORTS CENTERS AND PHYSICAL CONDITION**

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## CONCEPTUAL LANDMARKS OF RESEARCH

**The topicality and importance of the approached topic** is determined by the interdisciplinary approach of the Pilates method, a sport activity with international notoriety, which is analysed theoretically and experimentally to finally prove the positive impact it generates on women's health but also on aspects of management of a sports center. The health of women and their lifestyle are of particular importance, and in order to strengthen their health, it is recommended to practice sustained physical activities either independently or in an organized setting in sports centers [15].

The organization of sports activities specific to women brings benefits both to their physical condition and to sports centers that provide participants in activities dedicated mainly to women. The instructor responsible for the specific activities of women aged 30-40 years has the responsibility to take into account the specifics of their daily activities, physical ailments, the degree of physical training specific to each woman, in organizing and selecting the physical exercises used and the degree of difficulty during training.

Women between the ages of 30 and 40 require special attention during their training, with benefits especially for prolonging and maintaining the quality of life, for the formation and consolidation of a healthy lifestyle, as well as for a good mental state [1]. The correct and systematic organization of a woman's physical activity and a healthy lifestyle in this age period can slow down the regression of her physical and mental state [10]. At the same time, the system of strengthening and maintaining health, longevity and professional capacity of the active population are not sufficiently developed in Romania, requiring further development by informing and convincing this category of women to systematically and continuously practice different categories of exercise. [124].

The analysis of the scientific literature on the physical education of the female population, especially those aged between 30 and 40, revealed the following contradictions:

- between the objectives of the state and those of civil society on the biological, psychological and social aspects of an important age group, including the reduced health of modern women;
- between the level of research on the problems of improving the physical condition and the strengthening of the health of the active population regarding the insufficient development of a scientific approach to improve the effectiveness of the physical education of the population, especially women;
- between the need to strengthen and maintain the physical health of women and the insufficient development of methodological and technological support appropriate to the category of women aged between 30 and 40 years.

Based on the revealed contradictions, the problem was identified, which consists in searching, identifying and developing organizational and pedagogical conditions through physical education, by applying Pilates-specific means in a sports center in order to analyse the impact on the physical condition of practitioners and the influence of this discipline on the management of the sports center.

**The aim of the doctoral research** is to study the phenomenon of theoretical justification and experimental verification of the effectiveness of organizational and pedagogical conditions for improving the physical condition of women in the age category between 30 and 40 years by Pilates method. This method is analysed from two perspectives, that of the sports center, which aims to increase notoriety and income, and that of the practitioner, mainly interested in the benefits brought on the general state of health. Thus, the research addresses the two elements in a study with interdisciplinary values, proving based on the research methods used, the positive impact of the Pilates method both on the physical condition of women, but also on the income and clientele of the sports center.

### **Research objectives:**

1. Studying the management concept within sports clubs;
2. Elaboration of a competency model for the manager of a sports center;
3. Analysis of the impact of the Pilates Method on the management and revenues of sports centers;
4. Experimental argumentation and capitalization of the efficiency regarding the improvement of the physical condition of women between the ages of 30 and 40 through Pilates-specific programs [12].

**The novelty and originality of the research** consists in the elaboration of efficient models of programs specific to the Pilates Method, adapted to women aged between 30 and 40 years and the impact of the application of this method within the sports center. The role and place of the Pilates Method in

improving and developing the fitness of women in research was also studied, as well as the impact of this method on the number of participants attending this discipline, on the income, expenses and management of the sports center included in the research [ 1, 2, 6, 9, 25, 26, 27, 30, 32].

**The research topic** consists in developing the organizational and pedagogical conditions of physical education of women aged between 30 and 40 and their implementation through the Pilates Method, as well as experimental verification of the effectiveness of its application on the target group in the sports center under analysis. At the same time, it is considered the possibility of implementing managerial concepts at the level of sports centers, identifying the skills needed for the position of sports manager and evaluating how Pilates discipline, part of the offer of sports services, can impact the managerial objectives of the organization. (number of customers).

**The research hypothesis** assumes that the Pilates method will have a positive effect on the physical condition of women but also on the management of sports centers, provided that the following conditions are met:

1. Practicing the Pilates method contributes to the development of the physical condition of women aged between 30 and 40 years;
2. Pilates Method influences physical condition by improving abdominal strength, developing muscle mobility and elasticity, training and developing balance but also changing the body composition of women practitioners;
3. The success of the sports center depends on the skills of the manager to adapt the offer of services and the content of sports activities to address women aged between 30 and 40 years;
4. The Pilates method influences the management of sports centers, contributing to attracting new clients, retaining existing ones and increasing revenue / turnover.

Based on the research hypothesis, the following **research tasks** were formed:

1. Identifying the management components that influence the financial situation of the sports center;
2. Elaboration of a model of competencies necessary for the sports manager for the center to perform;
3. Identifying the measures needed to be implemented to improve the income and profitability of the sports center based on the results of the analysis of financial statements for the period 2017-2020;
4. Analysis of the theoretical context for the development and implementation of organizational and pedagogical conditions for the development of physical condition of women aged between 30 and 40 years;
5. Development of a methodological support for the physical education of women aged between 30 and 40 years, through the Pilates Method;
6. Design a Pilates exercise plan to improve women's fitness;
7. Verification in the experimental activity of the effectiveness of Pilates exercises on the physical condition of women aged between 30 and 40 years;
8. Questioning Pilates practitioners to get direct feedback on how Pilates exercises affect their physical and mental health.

The following **research methods** were used to solve the tasks [7]:

- Researching the theoretical-conceptual, methodological and practical elements presented in the specialized scientific literature (Literature review);
- Analysis of the economic-financial data of the annual situations registered by the sports club;
- Observation;
- Sociological questioning (questionnaire survey, interview and conversation);
- Experiment method;
- Statistical-mathematical method for processing the collected data;
- Graphic and tabular method.

**The theoretical significance of the research** consists in justifying the organizational and pedagogical conditions for women's physical education, through fitness mechanisms, complex and integrated, to improve health and prevent diseases - Pilates method. The pedagogical model of women's physical education in the fitness process is theoretically grounded, containing the following organizational and pedagogical stages: purpose, objectives and pedagogical conditions of implementation, stages, content of theoretical and practical materials, criteria for monitoring and correcting women's health. The theoretical material accumulated through the results of the experimental works extended and completed the foundations and

general theoretical and methodological approaches of the physical education system and the formation of a healthy lifestyle for the active population, especially for women.

#### **Summary of the thesis sections**

In the *Introduction* it is argued the topicality of the approached topic and the importance of the researched problem. The purpose and objectives of the research are specified, the novelty, the theoretical importance, the applicative value of the paper and the approval of the research results are highlighted.

*In the first chapter of the thesis, “Theoretical and methodological substantiation regarding the impact of the Pilates method on the management of sports centers and physical condition”,* the theoretical, practical and legislative aspects regarding the management of the sports center and the Pilates method are presented in a dual way. determines the need to develop and substantiate the methodology. Thus, the first subchapter is dedicated to the analysis of the management concept, being presented the environment of sports activity management and the particularities of the management applied within a sports center. The second subchapter analyses the scientific literature on the Pilates method as a form of practice, addressing the age peculiarities of women aged between 30 and 40 years.

*The second chapter of the thesis "Methodological determination of how the Pilates method influences the activity of sports centers and the physical condition of practitioners"* deals with the subjects, methods and organization of scientific research. The first section of the chapter presents the methodology to be used, the organization and the stages of the research. The second section of the chapter develops the methods of implementing the concept of management in sports centers. This section will identify the skills needed for a sports manager and will also conduct a case study on the organization of a sports center and the impact that the Pilates method has on its financial situation. The third section of the chapter describes the methodologies and exercises used to determine the benefits of the Pilates method on the physical condition of women between the ages of 30 and 40.

*The third chapter of the thesis “Experimental argumentation of the impact of the Pilates method on the management of sports centers and on the physical condition of practitioners”* includes during two main sections, the analysis of results and data collected through the methodology applied and presented in the previous chapter. The chapter respects the dual structure of the first two chapters, the first subchapter being dedicated to the analysis of results and data on the impact of Pilates on the sports center, and the second subchapter will focus on the results obtained in the experimental phase of Pilates exercises by reference to the condition physics of practitioners.

The "General conclusions and recommendations" highlighted the positive influence of the Pilates method both on the management of sports centers and on the physical condition of clients who choose to practice this discipline. The general conclusions and recommendations formulated and proposed based on the results of the research carried out confirmed the hypotheses and the purpose of the research.

## THESIS CONTENT

### 1. THEORETICAL AND METHODOLOGICAL SUBSTANTIATION REGARDING THE IMPACT OF THE PILATES METHOD ON THE MANAGEMENT OF SPORTS CENTERS AND PHYSICAL CONDITION

Sport must now be seen as a set of specific activities that take place in a certain institutional structure and that develop well-founded human behaviours, with the aim of achieving performance in the conditions of competition with an opponent, an obstacle, with time or on a certain distance, respecting precise rules and norms of development and discipline, respectively the accomplishment of recreational physical activities [3].

The manager of a sports center is a key figure in the organization because his work cannot be evaluated by the way he works himself, but by the way the whole team works. A manager is a member of an organization that leads people, defines work objectives and makes decisions in the "people-purpose" chain of actions. The manager must have the ability to talk to people, to make decisions, verbal and written orders, to conduct business negotiations, to listen carefully to the interlocutor and others.

The importance of management in physical & wellness activities results from the large number of consumers of sports services and the proven effects of these activities on health. Undoubtedly, movement is a necessity, being one of the primary features and one of the conditions of man. It can be seen that from the beginning there was a need to define sport and even to delimit certain areas of the sports phenomenon, depending on the purpose, forms or practitioners.

Management presents the field of sport as an evolutionary component of modern social life, with its own national and international structure, with a specific material base and a large group of specialized technical staff, with organizational structures based on systems, legislative regulations, theoretical principles, national and international institutions and bodies that aim to achieve the training and biological, material and spiritual training of practitioners and participants in sports. The management of the sports field, which in the last decade has known an impressive expansion at international level, both quantitatively and qualitatively, required the discovery, use and adaptation of new methods of management and modernization of sports structures [22].

Today, sport is a specialized and performance-oriented field, and sports activities have become profit-generating elements for many people and organizations. The use of management in this field came as a natural consequence of changing the approach to sport and created opportunities to rationalize and systematize sports activity, based on knowledge and applicability of laws, principles and other components of the management system.

The study of sports management appeared in response to the need to coordinate the efforts of individuals or groups of people to achieve a common goal, a complicated and difficult process due to divergent aspects that are always, through it, transformed into convergent aspects, ensuring mobility of objectives. Thus, sports management helps to control situations, ensuring a permanent and continuous management of the multitude of sports activities, generating efficiency [14].

In defining the functions of management there are a multitude of points of view on their number, name and concrete content. However, most specialists consider the following functions to be essential: planning, organizing, coordinating, training and controlling. The exercise of management functions presents a series of particularities from one organization to another, as well as from one managerial system to another. In each country, management has a number of features determined by the legislative system, cultural elements, traditions, practices and level of managerial education.

The conclusion that can be considered as an axiom for the manager of a sports center is the company's vision based on the belief that the organizational structure, being a dynamic and complex element, requires continuous improvement based on realistic studies based on the concepts of managerial science.

Within the sports center, given that leadership is seen as one of the important elements of control, the manager must emphasize the interdependence between organization and control, by using the delegation of authority throughout the organization and at the level of each department. Delegation of authority is synonymous with decentralization (perhaps that is why it is not always agreed by the bosses who embrace the "unicephalous" system of management), being equally useful and necessary in modern management.

Delegation is useful because it puts team members in a position to have responsibilities in achieving specific goals, and necessary because it relieves the manager of a range of problems and tasks with a smaller scope, providing and the ability to deal with strategic decision making. The delegation is made in most cases at the individual level, but this does not mean that, if the company evolves, the manager will oppose the delegation of authority to a team or a group of individuals specially selected to complete a specific project. Also, within the complex, a peculiarity of the delegation is reciprocity, being a process that involves on the one hand, the manager who ensures that the delegation takes place according to plan, and on the other hand, just as significant, the employee who is offered the opportunity to suggest improvements and new techniques to help understand the delegation process. The manager of any organization performs this process in different stages, the delegation being structured in three different typologies: strategic, change and arrears.

In all current concerns, sports management has become increasingly important in the literature, being perceived as a science or as a technique that achieves a specific goal. The management must reflect the specialized training-educational route and an adaptability capacity according to the concrete circumstances and conditions of the club, without recognizing a mandatory template applicable at this level. Experience shows us that sports management can be different from one country to another through a series of particularities determined by the legislative system, cultural elements, traditions, practices and level of managerial education, and internally by the competitive echelon at which it is located. the club and its strategy or the conditions for applying the managerial functions (socio-economic situation, mentality).

At the level of sports activities, there is a management of the sports club and another, specific to the relationship "coach - athlete", thus highlighting the managerial side of the coach's activity on designing, organizing, leading and evaluating the result obtained by the athlete.

The Pilates method is a toning training system, based mainly on isometric contraction, mental concentration and breathing techniques. Interest in Pilates exercise continues to grow due to the current social trend to promote the beautiful appearance and slim shape of the body. Moreover, Pilates exercises treat the human body and mind as a unitary whole and cultivate them reciprocally and organically to make the body supple and balanced and to strengthen the small muscles, making the body line beautiful. Following the systematic exercise of physical exercises, Pilates contributes to the improvement of the mobility of the spine and the elasticity of the posterior muscles of the thigh, as well as the static and dynamic balance. Pilates is a complex exercise program for the whole body, which tones the muscles from the deepest part of it, and at the same time balances the muscles in order to acquire a correct posture. At the same time, it improves body stability and increases the inherent receptive senses to adjust balance, posture, and facilitates body movements. Moreover, Pilates improves the functional movement, which facilitates the appearance of the appropriate motor response and improves the general well-being of the body [13].

The Pilates method is a complex system of physical exercises that work the body, from the deepest muscles to peripheral function, exercises that involve both the mind and the body and respiratory function. The goal is to achieve muscle balance, strengthening weakened muscles and relaxing contracted muscles. This helps increase control, strength and flexibility of the body, protecting the joints and back [5].

Pilates it is an ideal method for people who want to practice a physical activity for the first time, but also for those who are looking to improve their movements [32]. If we include the Pilates method in everyday life, as an element of routine or if we add it to the healthy habits already practiced, we will get the effect that preventive medicine has, becoming more adaptable to change and more resistant to possible diseases. Pilates can be used as recovery gymnastics, which is why, in case of injuries, operations, accidents, convalescence periods, the exercises will have a healing and recovery function, with fast results.

The novelty of the Pilates method consists in the possibility to be practiced in any activity that we carry out every day, such as: during household activities, when we are behind the wheel, when we walk, when we watch a movie or when we carry a child in our arms. Professional or amateur athletes, dancers or artists in general, musicians, fitness specialists, instructors and physical education teachers will discover in this method a way to improve performance, reducing the risk of possible injuries from intensive training. Although their physical form may, in some cases, be far above normal, the concepts and foundations of the method are the same for everyone, both beginners and professionals. Even the very simple or the most complex exercises will bring important changes in performance. The more important the goal set and the



greater the intensity or time allocated to the activity to be performed, the greater the accuracy with which the exercise is performed and the quality of the movements [19].

The Pilates method consists of over 200 exercises. Each exercise represents the addition of elementary movements, commonly used in the Pilates method. The method simplifies the retention of exercises in several elements that represent the basic movements and body concepts, contributing to the construction of all Pilates exercises, namely [8, 31]: neutral vertebral center; sitting on the shoulder blades; abdomen position; curves of the spine (lumbar, thoracic or cervical); semi-sitting on the shoulder blades; overlapping vertebrae; the bridge; abdominal posture; and the relaxing position. The Pilates exercises and the correct way in which they must be performed are presented in the **Pilates Method Guide - Annex of the doctoral thesis**.

The effects of the Pilates method on the particularities of women aged between 30 and 40 years were analysed in depth through four physical tests, presented in Chapters II and III of this paper. The aim of the study was to identify the characteristics of functional orientation regarding the development of physical qualities and functional status in women aged 30-40 years, taking into account the somatotype [13].

Based on the analysis of the in-depth literature, we can conclude the following:

- Following the identification and analysis of bibliographic sources dealing with research issues, we find the absence of studies or monographs on how Pilates impacts both the managerial aspects of a sports organization and the effects on the physical condition of practitioners, which substantiates the opportunity of scientific analysis the problem in question;

- The analysis of the impact of the Pilates method on the management of sports centers, especially of the effects on income and clientele, can be done only by empirical means;

- The study of the existing specialized literature on the concept of management in sports centers, but also on the Pilates method and its benefits has allowed the issuance of hypotheses and premises of great importance for the topic, and in this regard, the hypotheses argue the need to develop and experimenting with specific tests;

- The study of the specialized literature, the indications of the specialist doctor as a result of the consultation made for each of the participants in our research, allowed us to reflect on some of the causes generating deficiencies of the physical condition. In this sense, it can be stated that except for the peculiarities presented by women aged between 30 and 40 years, multiple causes of mobility deficiencies have been identified, these related to joints, muscles, nerve-muscle-nerve complex and muscle strength;

- According to the literature, the Pilates method has benefits on the physical and mental health of practitioners, women or men, regardless of age and characteristics. As there are no specific studies on our target group, we consider it necessary to experimentally evaluate how Pilates causes improvements in the physical condition of women between the ages of 30 and 40.

## **2. METHODOLOGICAL DETERMINATION OF HOW THE PILATES METHOD INFLUENCES THE ACTIVITY OF SPORTS CENTERS AND THE PHYSICAL CONDITION OF PRACTITIONERS**

Chapter 2 presents the methods, the way of organizing and the stages of conducting the research.

**The experimental research** on the impact of the Pilates method on the management of a sports center and on the physical condition of the practitioners was structured in four stages, each stage having a distinct content and carried out through the research methods previously presented.

*The first stage of the study (2015-2016): consisted in identifying and studying the scientific and methodological literature on Pilates and the management of sports centers and pedagogical and medical literature; the methodological picture of the study was drawn up and developed, methods for studying and solving the tasks of experimental research were selected and established.*

*The second stage of the study (2016-2017):* experimental activities were carried out for the implementation of specialized knowledge and psycho-pedagogical principles aimed at the physical education of women aged 30-40 years through Pilates exercises. During the process, the means, methods and composition of the trainings were adjusted in order to improve the health of the participants; performance and health monitoring were performed. The experimental research consisted of conducting four experiments

with Pilates exercises on a sample of women aged between 30 and 40 years in order to identify the benefits of fitness. Following the application of the tests, the results were collected, analysed, interpreted and conclusions were drawn on the impact of the Pilates method on the study participants.

***The third stage of the study (2017-2018):*** a systematic analysis and generalization of the factual material collected based on the results of experimental research was performed; the main conclusions and practical recommendations were formed. Following the application of the tests on the students, they were questioned in order to validate the results obtained in the experimental phase. At the same time, it was identified the need to develop a Pilates Guide to present the ways to practice and the benefits of health.

***The fourth stage of the study (2019-2020):*** consisted of conducting and quantifying research on the management of sports centers and how Pilates, as part of the offer of sports services, influences revenues, expenses, profit and number of customers at these levels' organizations. A case study was conducted on the management of a sports center through an analysis of the financial statements during 2017-2020, by referring to each discipline in the range of services. At the same time, through the method of the questionnaire, the necessary competencies of a sports center manager were identified and they were presented through a specific model of competencies.

***Organization and stages of the study.*** The development of the four experiments, the application of questionnaires, SWOT analysis and economic data took place in an organized manner in a sports center in Iasi, Romania. The experiments were organized over a period of one year (2016-2017), comprising a varied number of Pilates practitioners aged between 30 and 40 years. Thus, the first three experiments (development of abdominal strength, development of spine mobility and muscle elasticity; development of balance) were carried out with a number of 16 students, while the experiment on improving body composition was attended by 30 women aged between 30 and 40 years. In all situations, the participants had to have a frequency of Pilates sessions 3 times a week, the duration of the session being 50 minutes.

In order to identify as accurately as possible how Pilates exercises lead to improvements in the physical condition of women between the ages of 30 and 40, four different experimental studies have been conducted. The experiments aimed at the level of development and toning of the abdominal muscles, increasing the mobility of the spine in the foreground and developing the elasticity of the posterior muscles of the thigh, improving balance and changing body composition. The tests were designed to include a control group and an experimental group, the results being analysed comparatively. In order to validate the correctness of the data collected and the results obtained from the four tests, the direct feedback of the participants in the Pilates classes was obtained, through a questionnaire.

The level of training of the control group is beginner to environment, without experience and without training in systematic physical education, the environment in which they work is generally sedentary, with office activity.

#### **Methods of implementing the management concept within sports centers**

The manager is the person appointed to lead an economic entity, fulfilling in full or in part the functions of organizing the activity, coordination and training of subordinate staff and control over the proposed objectives. Theoretically, the quality of manager of the sports center does not overlap with the quality of business owner or administrator of the company in the field of sports, but this overlap is often encountered in practice. Sports managers are responsible for addressing ethical issues such as professionalism, equity, legal risk management, personnel issues, team ownership, responsibilities of professional team franchises, and social justice associated with all levels of sport [11, 28, 29].

A competent manager is able to properly organize the duties of employees and monitor the activities carried out in the organization. The professional and managerial skills of a manager include his ability to create the necessary conditions for subordinates and to enable him to exercise his duties. At the same time, the way the sports manager relates to the time resource can have serious implications on how the organization achieves its goals.

The management of an organization is directly influenced by the people with management position, reason for which it must be analysed by direct reporting to the competencies held by the person holding the position of manager. Skills have become a modern tool that helps to efficiently manage human resources. Individuals can be successful in the workplace only if they have the knowledge and skills to use the knowledge mentioned above, but also professional experience, motivation, beliefs, habits and values. All

these elements necessary for the development of the professional activity are included in the broad concept of competences [29].

Competences can be defined as consequences of the concrete experience of an individual, which is proven by the applied use, in practice, of theoretical or practical knowledge. Based on the literature, we can summarize the fact that the motivation, general knowledge, values and views of sports managers support their skills for the management of sports organizations. The competencies of sports managers classified into general and specific competencies, skills and personal characteristics can be divided into three important areas of action: sports, management, research and development.

The competency model is a guide, a working tool, that establishes the specific skills, knowledge and behavioural requirements that allow an employee to successfully perform their job. Competency models define what performance success should look like in an organization, for each job analysed individually. The model is then applied to recruitment practices, talent management, training and performance appraisal.

Currently, there are a multitude of developed competence standards that can be used by organizations, but given the particularities and rules present in each society it is recommended to develop their own competence model. Competency models should be developed taking into account the strategic plans, mission, values, objectives and culture of the organization. In the proposed study, we consider it necessary to consider the advantages of the competence model for both a sports center as a whole and for employees, as well as the stages of developing a competence model.

In order to identify the skills needed for the position of manager of a sports organization, we used the questionnaire as a research method. The research was conducted in 2019 by applying the questionnaire of managers in sports centers in Iasi. The study involved a number of 16 sports center managers [29].

Following the application of the questionnaire and the processing of the answers, we present in Table no. 2.3 competencies (knowledge and skills) necessary for the position of manager within a sports organization, according to the opinion of specialists and professionals in the field of sports management.

	<b>Manager's knowledge</b>	<b>Weight of indicator</b>	<b>Manager skills</b>	<b>Weight of indicator</b>
<b>1</b>	<i>In the field of management</i>	4.23	<i>Strategic vision</i>	4.49
<b>2.</b>	<i>In the strategic management area</i>	4.34	<i>Sustainability to change</i>	4.52
<b>3.</b>	<i>In the field of physical education and sports training</i>	4.50	<i>Suitability</i>	4.17
<b>4.</b>	<i>In the field of property and rights legislation</i>	4.85	<i>Self-confidence</i>	4.95
<b>5.</b>	<i>In the economic field</i>	4.52	<i>Analytical skills</i>	4.19
<b>6.</b>	<i>In the field of financial resources management</i>	4.51	<i>Economic thinking</i>	4.18
<b>7.</b>	<i>In the field of human resources management</i>	4.43	<i>Entrepreneurial ability</i>	4.82
<b>8.</b>	<i>In the field of psychopedagogy</i>	4.18	<i>Creative skills</i>	4.68
<b>9.</b>	<i>In the field of business communication</i>	4.60	<i>Ability to learn</i>	4.70
<b>10.</b>	<i>In the field of managerial decisions</i>	4.83	<i>Stress resistance</i>	4.76
<b>11.</b>	<i>In the field of entrepreneurial communication</i>	4.60	<i>Health</i>	4.51
<b>12.</b>	<i>In the field of innovation management</i>	4.52	<i>Emotional and volitional qualities</i>	4.65
<b>13.</b>	<i>In the field of marketing</i>	4.51	<i>Moral and ethical qualities</i>	4.80
<b>14.</b>	<i>In the field of time</i>	4.71	<i>Conceptual skills</i>	4.67

	<i>management</i>			
15.	<i>In the field of communications</i>	4.56		
16.	<i>In the field of public relations</i>	4.62		
17.	<i>Knowledge of foreign languages</i>		<i>Foreign language skills</i>	4.99
18.	<i>Knowledge of electronic systems</i>	4.53		
19.	<i>Negotiation skills</i>	4.61		

**Table 2.3. Knowledge and skills necessary for the manager of a sports center**

Analysing the results obtained from the application of the questionnaire, we can say that the manager of a sports center needs the following skills: foreign language skills - 4.99; self-confidence - 4.95; entrepreneurial ability - 4.82; moral and ethical qualities - 4.80; stress resistance - 4.76; creative skills - 4.68; conceptual skills - 4.67; emotional and volitional qualities - 4.65; and sustainability in change - 4.52 [29].

At the same time, following the ascertaining study, the knowledge necessary for the sports manager was identified. Thus, in the order of the obtained averages, the manager must have knowledge in the field: property and rights legislation - 4.85; managerial decisions - 4.83; time management - 4.71; public relations - 4.62; negotiations - 4.61; entrepreneurship communication and business communication - 4.60; communications - 4.56; knowledge of modern electronic systems - 4.53 [29].

Following the above, we can conclude that the manager of a sports center through its activities, must promote sports activities carried out within the organization, ensure the efficient functioning of the organization in conditions of market competitiveness, establish responsibilities for subordinate staff and monitor their interactions and behaviour.

In the current social context and the challenges posed by the COVID-19 pandemic, management and managers need to reinvent themselves, as the old methods used to achieve success no longer work. Managers face new challenges, such as sustainable development, extraordinary competition, demanding customers, competent human resources, accelerated technological progress, aspects that determine them to acquire new skills, through continuous improvement. Currently, the classic role of the manager of a sports center, focused on the organization and supervision of specific activities and employees of the organization, is replaced by innovation in the field and an efficient management of human resources.

**Case study on the management of a sports center.** The purpose of this finding study was to perform an analysis on the impact that Pilates sports activity has on the income, expenses and profitability of a sports center in Iasi, Romania. The analysis aimed to identify the contribution of Pilates to the management of the sports club (attracting new customers, retaining existing customers, increasing revenue and profitability). The sports center under analysis began its activity in 2009, having as object of activity the practice of sports activities. During the time analysed in the study, the sports center became an economically stable company, with a consolidated turnover, enjoying notoriety locally.

The following is the case study on the economic evolution of the sports center in 2017-2020 and the impact of Pilates on business, by directly reporting to the evolution of all disciplines in the sports center offering details of income, expenses and business profitability.

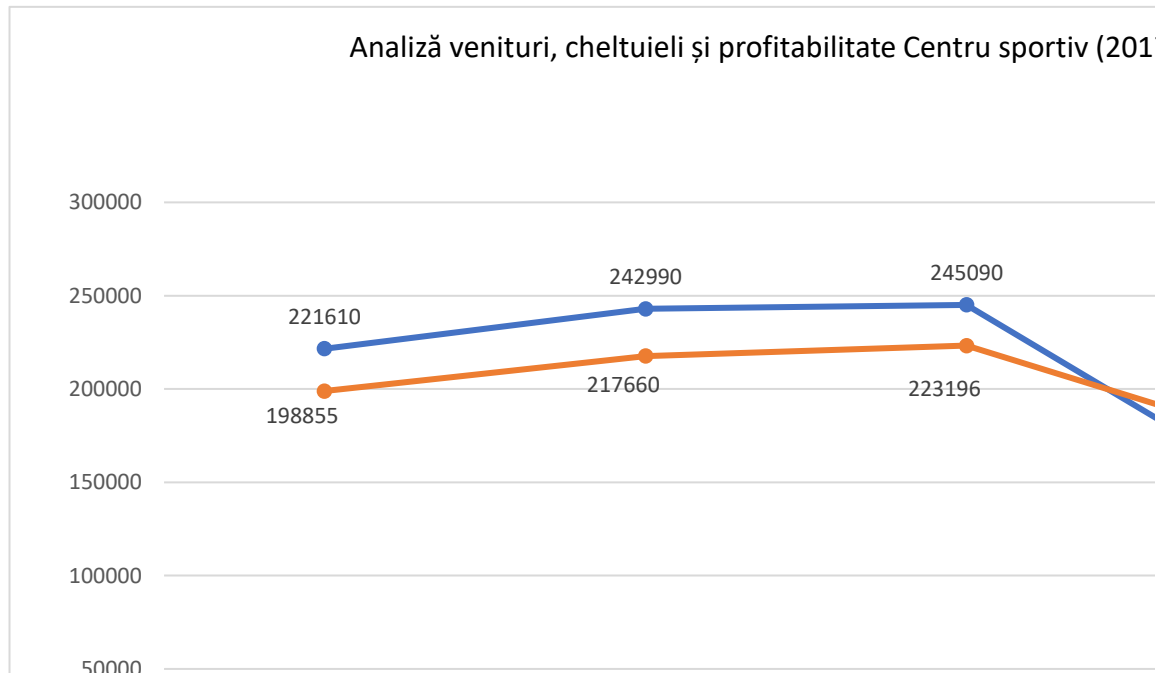
The analysis was performed at a sports center in Iasi County, Romania, which offers four sports: aerobics, pilates, fitness and martial arts. The Pilates activity was introduced in the centre's offer at the beginning of 2017 in order to differentiate the services from other competing gyms. In 2016, the annual revenues of the center were 196,720 lei, the contribution brought by Pilates to the turnover being a significant one, of minimum 10% in the first year and up to minimum 20% in the fourth year, as it is observed in the following analysis.

**Table 2.4. Analysis of the profitability of sports activities within the center in the period 2017-2020, in all disciplines (RON)**

<b>SPORTS CENTER</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>REVENUE (RON)</b>	221.610	242.990	245.090	142.540
<b>EXPENSES * (RON)</b>	198.855	217.660	223.196	170.200**
<b>GROSS PROFIT (RON)</b>	+22.755	+25.330	+21.894	-27.660

\*. The expenses of the sports club include, but are not limited to: personal salary cost (2 instructors, 1 cleaning employee, 1 receptionist, 1 sports center manager), maintenance and service of sports equipment, sanitary equipment, utilities cost (electricity, water, gas natural resources and the internet).

\*\* Expenditures generated in 2020 were considerably higher, a factor determined by the sanitary measures imposed by the authorities to prevent the spread of coronavirus (COVID-19) consisting of masks for staff, disinfected for customers, disinfection of fitness equipment, materials necessary for epidemiological control at the entrance to the sports center.



**Figure 2.3. Graphic representation of the economic situation of the sports center in the period 2017-2020**

Figure 2.2 shows the upward evolution of the sports centre's revenues, correlated with the directly proportional increase of expenditures during 2017-2019. The year 2020 determines a reversal of the favourable evolution, the sports center having a major decrease in revenues and implicitly profitability, fact generated by the coronavirus pandemic that closed the center for 4 months, reduced the number of customers and unplanned increase in material costs sanitary. The financial involution in 2020 being determined by an external factor (pandemic) we expect to be recovered in the coming years given the importance of sports activity for health and measures to prevent the spread of coronavirus adopted internationally.

It is worth mentioning that the introduction of Pilates in the offer of the analysed sports center determined the maintenance of turnover in the context in which new gyms were established nearby, which led to their greater competitiveness and a dispersion of customers. Pilates was an advantage for the business, the discipline not being present in the new sports centers established in the neighbourhood, which determined the retention of the clientele and the maintenance of profitability.

The results of the study conducted for the period 2017-2020 are confirmed by another study on the impact of the Pilates method in the business activities of a sports center for the period 2011-2014, developed and published in 2019 [24]. Following the analysis of the sports center, we conclude by stating that Pilates is an activity that generates considerable revenue (approximately 20-25% of turnover) and can be considered a differentiating element from the competition.

### **Methods to check the improvement of women's fitness through Pilates exercises**

#### **Development of abdominal strength with the help of Pilates programs**

The abdominal muscles are some of the most important being, practically, those that, among other things, make the connection between the upper and lower body. Not coincidentally, in Eastern philosophy,

the area where these muscles are located is the most important (*hara* for the Japanese, *dan tian* for the Chinese).

The abdominal muscles are made up of three muscle groups that have different structure, positioning and roles. All these muscle groups together, ensure the stability, strength and posture of the body. Also, there is no lower or upper abdomen, so it cannot be trained only the lower or upper abdomen, because there is no separate, distinct muscle that is isolated and trained more and harder. Abdominal muscle training will involve the entire muscle from the pectorals to their insertion with the iliac bone area. As such, a well-strengthened abdominal muscle can be a protective fortification for this body area. In this paper, we will highlight ways to improve abdominal muscles by using Pilates exercises [23]. Through the use of Pilates programs, we can achieve better toning of the abdominal muscles.

The test for determining the impact of the Pilates method on the development of abdominal strength consists of 15 trunk lifts performed in 3 series, the positions of the arms being different from one series to another. The starting position is lying down with your knees bent at 90 degrees, your feet on the ground, your feet immobilized by a partner or at the first bar on the fixed ladder.

- The first 5 lifts are performed with arms outstretched so as to touch the knees at each run;
- In the next 5 runs, the arms are crossed at the chest. At each lift the performer must touch his knees with his elbows;
- For the next 5 lifts the performer keeps his hands behind his neck. At each run the tendency is to touch the knees with the elbows.

The 15 lifts will be performed non-stop and as soon as possible. The number of successful repetitions will be entered (0-15). Check the strength of the abdominal muscles.

### **Development of spine mobility and muscle elasticity through Pilates**

The spine is the central segment of the musculoskeletal system. It must support the head and body in space, withstand the forces of gravity, all external forces and protect the spinal cord with its nerve roots. Seen from behind, the column is rectilinear, in profile it describes normal curves called: cervical lordosis, thoracic kyphosis and lumbar lordosis [4, 14, 25].

Also called the spine, the median and posterior axis of the body has an essential role in the musculoskeletal system, both static and dynamic, with different degrees of mobility that vary from one region to another. It is not rectilinear but describes several curves, in frontal and sagittal plane, as a result of the predominant use of one of the upper limbs and the tendency to adapt to the orthostatic position and bipedal walking [25].

The goal is to achieve a muscular balance by strengthening weakened muscles and relaxing the contracted ones. These means help increase control, mobility and flexibility of the body, movements become more effective, helping to reduce back pain, or other ailments, protecting the joints [17, 18].

Through the spine the body has elasticity in movement and if it loses the mobility of the spine reduces the ability of a normal, free movement and increases the risk of back pain [18].

Recent literature describes Pilates as an effective activity, able to improve body balance, due to the stimulation of motor control, especially for the abdominal region with a special focus on breathing, muscle contraction and posture [21]. We assume that by using Pilates programs, you can improve the mobility of the spine in the anterior plane and the elasticity of the posterior muscles of the thigh. The aim of the research is to establish the appropriate structures, requirements and methodology for Pilates sessions. The aim of this experiment is to observe in a certain period of time that the mobility of the spine and the elasticity of the posterior muscles of the thigh improve, following the systematic practice of Pilates exercises and including aerobic effort.

Tests and measurements performed. In order to evaluate the amplitude of the movement in the research conditions, it was necessary to assess these qualities according to objective criteria through measurements expressed in number of repetitions, imbalances and centimetres. For mobility and suppleness, the proposed test measures the mobility of the spine in the anterior plane and the elasticity of the posterior muscles of the thigh.

Methodical indications for the test. From a sitting position: bending the torso forward. To perform the test, you need a gym bench, on which a 50 cm long ruler is placed with a nail. Grade 0 (zero) to the executor and the figure 25 exactly on the edge of the bench.

- Sitting with the lower limbs outstretched, without shoes, the soles will be supported on the vertical side of the bench;

- The torso bends forward in a slow motion, with the arms outstretched forward and close, so that the fingertips slide as far as possible on the ruler of the ruler;

At maximum stretch, hold the position for 3 seconds. It is measured in centimetres and is related to age and sex.

### **The role of the Pilates method in the formation and development of balance**

Currently, the main areas of somatic practice can be classified as part of alternative fields such as health care, psychology, psychophysics, education and dance. The term somatic is generally used to describe a multitude of bodily practices, it is similar to the term which is also the method of the same name, Pilates having similarity in terms of intelligent control of the mind and body.

The most common situation is that of beginners, who in the practice of Pilates exercises use a disproportionately greater force in order to gain freedom, flexibility and motor intelligence. The Pilates technique is an excellent practice for gaining muscle coordination, static and dynamic balance.

The present study aims to demonstrate that even in adulthood, the balance, this utilitarian-applicative motor skill, can be improved. The data from the experiment clearly confirm that this skill can be perfected in adulthood, balance being one of the very important motor skills for humans in general, and for athletes in particular. We assume that by using Pilates programs, you can improve your balance and body stability.

The purpose of the experiment is to establish the appropriate structures, requirements and methodology for Pilates sessions. The aim of the test is to observe over a period of time that balance and body stability are improved, following the systematic practice of Pilates-type exercises and including aerobic exercise.

Tests and measurements performed: In order to evaluate the amplitude of the movement in the research conditions, it was necessary to assess these qualities according to objective criteria, through measurements expressed in number of repetitions, imbalances and centimetres.

Balance test: On the longitudinal axis of the inverted gym bench, the performer sitting on the dexterous leg, bends the free leg and grabs the foot of his foot with the hand on the same side, the free arm raised, which can be used to restore balance.

- It is required to keep the balance for one minute in the position described.

- At each loss of balance, the test is interrupted and a penalty is applied.

After each interruption the subject will be helped to resume the initial position.

The result: add up the number of additional movements to maintain balance (not falls) for one minute.

Example: for 3 moves 3 points will be awarded.

If the subject loses balance 15 times in the first 30 seconds, he is considered unable to perform the test and is interrupted.

### **Changing body composition using the Pilates method**

Body image is a complex psychological experience related to physical appearance, self-perception and attitude that includes perceptual, affective, cognitive and behavioural aspects. Body image is defined as "a person's perception of their physical appearance" [6]. Developing and cultivating a positive body image is considered part of a healthy mental attitude and is crucial to a person's happiness and well-being. Body image is a combination of how we perceive our basic physical aspects and how we react emotionally in certain situations.

In order to confirm what is exposed by the specialized literature, we aim to analyse the impact of the Pilates method on the body composition of women aged between 30 and 40 years. In the research conducted in order to analyse the body composition of women who do Pilates exercises, 30 women participated voluntarily, the average age being  $36.54 \pm 4.32$  years. The women were grouped into two groups, the experimental group ( $n = 20$ ) and the control group ( $n = 10$ ).

Tests and measurements performed: For the women in the experimental group, Pilates exercises were performed for 50 minutes, 3 times a week for 3 months. At the beginning and end of the study, measurements of the weight of the participating women were taken.

Body weight and height: The weight was measured using an electronic scale with a sensitivity of 0.1 kg, while the height was measured by means of a digital height measuring device with a sensitivity of 0.01 cm.

Body composition: To assess body composition, the body mass index (BMI) was calculated using the formula  $\text{weight} / \text{height}^2$  (kg / m<sup>2</sup>).

Methodical instructions for the test: The test used Pilates mattress exercises, which aim to strengthen all the trunk muscles, the muscles around the hips, the dorsal muscles and the pectoral muscles. Thus, in order to perform the experiment, exercises specific to the Pilates method were applied, presented in detail in *Annex no. 2 - Pilates Guide*. The program was completed by stretching exercises on the legs and on the mattress.

### Questionnaire on the impact of Pilates on the physical condition of women

The questionnaire, presented in detail in Annex no. 4, contains 10 questions about how Pilates clients in the sports club feel the benefits of the method on their physical and mental condition. It was applied to 80 women, clients who attend the Pilates sports center, in order to obtain direct feedback on how the sports activity influenced their health, physical condition and mental condition.

**Table 2.13. Clients' answers to the Pilates benefits questionnaire**

No.	Questions	Answer options	Number / percent	
1	How long have you been practicing Pilates?	<input type="radio"/> 1 month	15	18,75
		<input type="radio"/> In 3 months	11	13,75
		<input type="radio"/> In 6 months	28	35
		<input type="radio"/> Over 1 year	26	32,5
2	How many times a week do you practice Pilates?	<input type="radio"/> once a week	19	23,75
		<input type="radio"/> Twice a week	34	42,50
		<input type="radio"/> 3 times a week	27	33,75
		<input type="radio"/> Other frequency: _____	0	0
3	What motivates you to practice Pilates? (Possibility of multiple answer)	<input type="radio"/> Atmosphere in the Pilates room	54	67,50
		<input type="radio"/> Possibility to socialize with other practitioners	37	46,25
		<input type="radio"/> Pilates exercises	79	98,75
		<input type="radio"/> Relaxing music in the Pilates room	12	15
		<input type="radio"/> Other reasons: _____	0	0
4	Which Pilates workout do you find most effective? (Possibility of multiple answer)	<input type="radio"/> Mattress exercises	68	85
		<input type="radio"/> Standing exercises	32	40
		<input type="radio"/> Exercises with auxiliary materials (ball, stick, elastic, circle)	47	58,75
		<input type="radio"/> Pilates exercises	15	18,75
5	What improvements have you found in your Pilates health / fitness? (Possibility of multiple answer)	<input type="radio"/> Better joint flexibility	78	97,50
		<input type="radio"/> Improved muscle elasticity	76	95
		<input type="radio"/> Improving body balance	53	66,25
		<input type="radio"/> Weight loss	14	17,50
		<input type="radio"/> Emotional stability	22	27,50
6	After how long have you been practicing Pilates, have	<input type="radio"/> 1 month	16	20



	you noticed any improvements in your health?	<input type="radio"/> 3 months	13	16,25
		<input type="radio"/> 6 months	40	50
		<input type="radio"/> 1 year	11	13,75
7	What other benefits has Pilates gained from your daily routine? (Possibility of multiple answer)	<input type="radio"/> Adopting a healthy diet	33	41,25
		<input type="radio"/> Adopting a correct / healthy body posture	62	77,50
		<input type="radio"/> Increased appetite for sports activities	55	68,75
		<input type="radio"/> a better mental state	23	28,75
8	What age segment are you in?	<input type="radio"/> Under 25 years	6	7,50
		<input type="radio"/> 25-30 years	7	8,75
		<input type="radio"/> 30-35 year	27	33,75
		<input type="radio"/> 35-40 year	24	30
		<input type="radio"/> 40-50 year	11	13,75
		<input type="radio"/> Over 50 years	5	6,25
9	How satisfied are you with the benefits of Pilates on fitness?	<input type="radio"/> Very satisfied	46	57,50
		<input type="radio"/> Satisfied	31	38,75
		<input type="radio"/> Undecided	3	3,75
		<input type="radio"/> Not at all satisfied	0	0
10	Would you recommend Pilates to your acquaintances?	<input type="radio"/> Yes	79	98,75
		<input type="radio"/> No.	1	1,25

The results obtained from the application of the questionnaire allow us to conclude that the Pilates method has a beneficial effect, significant and noticeable, on the physical condition of women. In particular, women in the 30-40 age group have specific features of the physical and mental condition generated by factors such as aging, sedentary lifestyle or excessive concern for professional or family life. They confirm through the answers to the questionnaire the benefits generated by Pilates practice on physical condition, feeling: better joint flexibility, improved muscle elasticity, improvements in body balance, emotional stability or weight loss.

In a concluding approach, it is highlighted that the Pilates method is a sports activity with obvious benefits on the physical condition of practitioners and has a strong impact on the sports center by increasing customer satisfaction, visibility of activities and, consequently, revenue volume.

Following the results presented during this chapter, it can be concluded:

1. The management of sports centers has industry-specific features, which determines the need to develop a model of competence for the sports manager. The competence model developed based on the methodology contributes to the development of the concept of sports manager and the way in which management is implemented in organizations operating in the sports industry.

2. Sports centers represent complexes of sports activities, the clients being the ones who decide the activity they will practice, depending on their preferences, physical condition or budget. Therefore, it becomes difficult to quantify which sports activity is profitable and which is a differentiating element from other competing sports centers. Through the analysis of the annual financial statements of the sports center subject to analysis, we identified for each discipline the amount of annual revenues recorded.

3. The management of a sports center is a complex activity but managerial performance is often reflected in the turnover or profitability of the company and in the number of customers. The existence of a differentiating element in the offer of sports services, such as Pilates activities, can generate a competitive advantage over other sports centers and, implicitly, the increase of income and clientele.

4. In order to record the applied framework of the research, experiments to identify the impact of Pilates on the physical condition of women in the target group aimed at developing abdominal strength, improving spine mobility and muscle elasticity, developing balance and improving body composition. At the same time, through the questionnaire method, information on the effects on physical condition was obtained, directly from Pilates practitioners.

### **3. EXPERIMENTAL ARGUMENTATION OF THE IMPACT OF THE PILATES METHOD ON THE MANAGEMENT OF SPORTS CENTERS AND ON THE PHYSICAL CONDITION OF PRACTITIONERS**

The paper presents in a pragmatic way the importance of practicing physical exercises through the Pilates method, highlighting its benefits both physically and mentally and spiritually. The Pilates method is based on a few basic principles. Pilates combines a series of exercises that are connected in a specific way with the circulatory system, with the flexibility and strength of areas characteristic of the human body [9]. The routine of the exercises leads the body to a state of harmony, so that the body parts work as a unitary whole. Unlike other physical exercises, the Pilates method does not focus on the amount or how much you need to be required, but they should make you aware that your whole body is working at the same time.

According to the analysis conducted in the study on the management of the sports center, it was found that the Pilates method is an activity with development potential and profit generation. This chapter presents, through four experiments, the benefits to the health of customers and, implicitly, the increase in sales due to this activity.

#### **Discussions on the case study on the economic evolution of the sports center in the period 2017-2020 and the impact of the Pilates method on business**

The results of the study conducted for the period 2017-2020 on the annual financial statements and on the revenues made on each discipline from the service offer of the sports center reveal that the Pilates discipline contributes considerably to the achievement of turnover and customer retention. The fact that the center under analysis is the only one within a radius of about 1km that offers Pilates activities is a competitive advantage over other sports service providers.

Following the analysis of the sports center, we conclude by stating that Pilates is an activity that generates considerable revenue (approximately 20-25% of turnover) and can be considered a differentiating element from the competition. As the resulting figures show, it can be seen that the interest given to clients attending this discipline has borne fruit, as well as the diversification of training methods applied, tools and equipment used, and last but not least the choice of a qualified and specialized Pilates instructor, represented defining elements in the increasing popularity of this discipline and implicitly of the revenues for the sports center. Although, in the first phase, Pilates can leave the impression of an activity devoid of vitality and dynamism, in depth, the exercises require joint mobility and muscle elasticity as well as static and dynamic balance. The multitude of accessories used in the method positively influenced the popularity and visibility of the sports center. The need for sports centers to include Pilates in the range of services stems from the fact that it has become a highly sought-after sport among young people, but especially among the elderly, the benefits presented in this research are the basis for increasing awareness its.

#### **Improving physical condition through Pilates exercises**

In the following we present the results of experimental studies performed on the sample of women aged between 30 and 40 years to test how Pilates influences the physical condition. Thus, starting from the hypothesis that Pilates exercises have a positive effect on the physical condition of women, through the four experimental tests we managed to obtain confirmation of the benefits to physical and mental health.

#### **Test results on the development of abdominal muscle strength using Pilates programs**

The results of the test for the development of the strength of the abdominal muscles according to age (expressed in number of lifts).

<b>MARK</b>	<b>AGE SEGMENT 30-35 years</b>	<b>AGE SEGMENT 35-40 years</b>
Very good	15	15
Good	14	14
Medium	13	13
Weak	11	6



**Figure 3.1. Test I.** Graphical representation of the interpretation of the results in the abdominal muscle strength test

**Table 3.2. Test I. Statistical-mathematical interpretation when testing the strength of the abdominal muscles:**

No	Statistical indicators	Initial testing	Final testing
1.	X (arithmetic mean)	8.625	11.875
2.	Mo (module)	9	10
3.	Me (median)	9	12.5
4.	S (standard deviation)	$\pm 2.777$	$\pm 3.117$
5.	C.V. (coefficient of variability)	32.19%	26.24%

The data collected and then interpreted statistically-mathematically were tabulated creating a synthetic image of the main values considered. By interpreting and analysing the data, we can highlight the following aspects:

- In the experimental group, the arithmetic mean at the initial test is 8,625 repetitions, while at the final test it is 11,875 repetitions, the progress being 3.25 repetitions;
- In the experimental group, values of 9 repetitions were obtained at the initial testing and 12.5 repetitions at the final testing, the progress being 3.5 repetitions;
- Comparing the results obtained in the 2 tests it can be seen that in the final test the values are higher while observing an improvement, the experimental group having a better degree of homogeneity in the final test [23].

From the point of view of practical applications for muscle toning programs, we must consider as a benchmark the characteristics of muscle contraction. As an activity, in the opinion of most specialists, the contraction is analysed under three categories:

- isometric contraction - in which the internal tension increases without changing the length of the muscle fibre;
- isotonic contraction - in which the length of the muscle fibre changes producing joint movements, the muscle tension being quasi-constant during the movement, and the muscular force decreases along the way;
- isokinetic contraction - which is a dynamic contraction in which the speed is regulated by the resistance, so that it is permanently proportional to the developed force, so the resistance follows the variations of the fibre length.

Muscle strength is the willingness to perform an effort through exercise and muscle activity over a longer period of time, or the ability to sustain a contraction. Muscle strength is the basic availability indispensable to the recovery process, and can become more important than the actual strength [25]. Usually, the muscular endurance test is done with 15 - 40% of the maximum force or with the number of possible repetitions without continuous loading.

Both the coordination exercises and the programs of which they are part must respect the principles of grading their difficulty. These principles refer to the planes, axes, directions of movement and number of segments that perform those movements. To these are added some recommendations.

Following the application of Pilates programs as an independent variable to the experiment group, the following conclusions can be drawn:

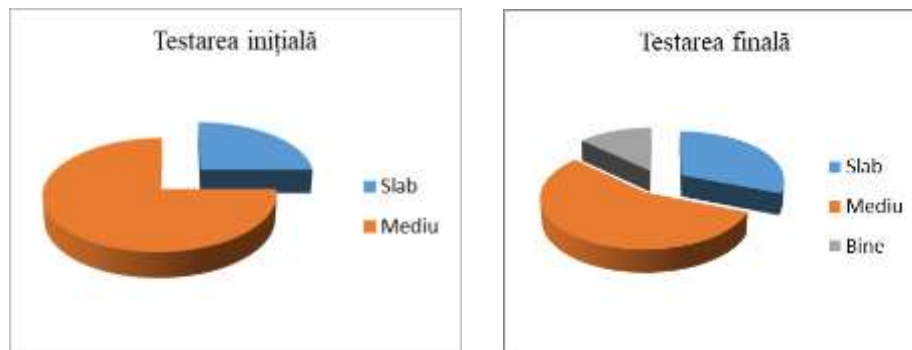
Applying the independent variable, it was found that the height (height) did not change because the ages included in the experiment had completed their growth process, but we cannot say the same about weight that has made significant progress, possibly influenced by diet.

There was also a significant improvement in the strength indices at the level of the scapular girdle and upper limbs, the abdominal strength indices and the motor memory capacity compared to the same indices of the experiment group.

### Test results on the development of spine mobility and muscle elasticity through the Pilates method

**The results of the mobility and elasticity test, by age**

MARK	AGE SEGMENT 30-35 de ani	AGE SEGMENT 35-40 de ani
Very well	41 cm	39 cm
Good	36 cm	35 cm
Medium	31 cm	31 cm
Weak	25 cm	25 cm



**Figure 3.3. Test II. Graphical representation of the interpretation of the results of the mobility and elasticity test**

**Table 3.4. Test II. Statistical-mathematical interpretation in testing mobility and flexibility**

No.	Statistical indicators	Initial testing	Final testing
1	X (arithmetic mean)	26.75	30.25
2	Mo (module)	31	25
3	Me (median)	27	30
4	S (standard deviation)	±4.932	±4.219
5	C.V. (coefficient of variability)	18.43%	13.94%

Interpreting and analysing the data, we can point out that the degree of elasticity of the posterior muscles of the thigh has been considerably improved, and thus clients can perform some exercises that previously they could not do at full capacity. Also, following the exercises for improving the mobility of the spine in the previous plan, there were benefits regarding the correctness and ease of execution of Pilates-specific means but also the usual movements, used daily. Speaking about the amplitude of movement in the

sense of increasing joint mobility, the following clarification is required: in an open kinematic chain, as also found in gymnastics, the amplitude of movement of each segment in space must be analysed, taking into account the mobility of adjacent segments. which articulates.

In order to be able to carry out the research of the amplitude of the movement in the mentioned conditions, it was imposed the necessity of appreciating this quality according to objective criteria, by measurements expressed in centimetres. In the experimental group, the arithmetic mean at the initial test is 26.75 cm, while at the final test it is 30.25 cm, the progress being 3.5 cm. In the experimental group, values between 27 cm were obtained in the initial test and 30 cm in the final test, the progress being 3 cm. Comparing the obtained results it can be seen that the values of the experimental group have a better homogeneity.

The progress made is primarily due to working with a wide variety of means in the experimental class and the development of mobility in all its forms.

Measurements performed during the experiment led to the following findings:

- Good mobility is quite rare and it is a strictly individual aspect, both as a native manifestation and as a further development;
- The most common cases are those in which the individual has an early tendency towards mobility that can manifest itself differently at the level of different joints;
- Extreme cases, those with pronounced native stiffness and those with joint hyperlaxity, do not give the expected yield in a preparation period [27].

It is known and proven that Pilates exercises achieve superior final results on the mobility test. The same happened in the present experiment, in which the final results of the mobility test were superior to the initial ones. This allows us to state with certainty that Pilates programs have contributed to the achievement of body aesthetics and to the improvement of the physical condition of the practitioners, the hypothesis of the paper being thus confirmed.

### **Test results on the formation and development of balance through the Pilates method**

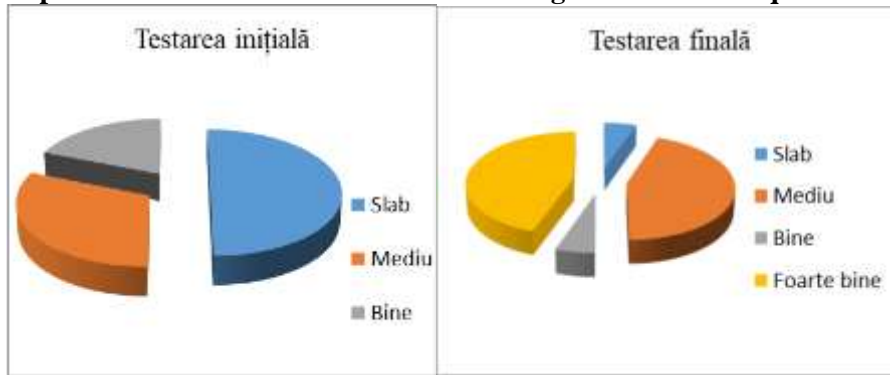
#### **Interpretation of balance test results by age**

<b>Mark</b>	<b>AGE SEGMENT</b>	
	<b>30-35 years</b>	<b>35-40 years</b>
Very good	0 imbalances	0 imbalances
Good	1 imbalance	1 imbalance
Medium	2 imbalances	3 imbalances
Weak	5 imbalances	6 imbalances

**Table 3.6. Test III. Statistical-mathematical interpretation for balance testing**

<b>No.</b>	<b>Statistical indicators</b>	<b>Initial testing</b>	<b>Final testing</b>
1.	X (arithmetic mean)	3.375	1.875
2.	Mo (module)	3	2
3.	Me (median)	3	2
4.	S (standard deviation)	±1.087	±0.718
5.	C.V. (coefficient of variability)	32.20%	28.29%

### Graphical representation of the initial and final average values in the equilibrium test



In the experimental group, the arithmetic mean at the initial test is 3,375 cm, while at the final test it is 1,875 cm, the progress being 1.5 cm. In the experimental group, values of 3 imbalances in the initial test and 2 imbalances in the final test were obtained, the progress being 1 unbalance. Comparing the results obtained by these tests it can be seen that at the final test the values are lower while observing an improvement in balance. The experimental group having a better degree of homogeneity at the final test [26].

From the data presented both in tabular and graphical form it can be concluded that motor skills and balance can be improved in adulthood only if a well-defined training plan is followed. The development of a sense of balance and orientation in space results in an increase in the level of general training. Improving the balance can be achieved with a minimum of material equipment (gym benches, wooden beams, etc.), no special equipment is required, the condition that this utilitarian-applicative motor skill can be educated, is that the body attitude during balance exercises is a correct one, an important role also having the application paths.

Functional movement refers to the physical ability to assume an effective posture by properly coordinating mobility and stability while performing a basic movement model. To achieve this, it is necessary to ensure enough factors such as core stability and range of motion.

Physical stability, which ensures control of the body in a balanced way, means the activation of the muscles in the core of the body. These exercises have multiple positive valences and beneficial effects manifested both physically and mentally.

It is known and proven that Pilates type exercises achieve superior final results on the balance test. This was also the case in the present experiment, in which the final results of the equilibrium test were superior to the initial ones, due to an appropriate dosage.

#### Test results on the effects of Pilates exercises on body composition

**Table 1.** Arithmetic means of age and height with standard deviation values belonging to the experimental and control group

variables	Experimental group (N=20)	Control group (N=10)
Age (years)	34.83±5.24	35.38±4.62
Body height (cm)	163±4.82	161±4.93

**Table 2.** Body weight (kg) and body mass index (kg / m<sup>2</sup>), pre-test (X ± SS) and post-test (X ± SS) results of the women who participated in the research in the experimental group and in the group Control.

variables	Experimental group (N=20)				Control group (N=10)			
	Pre-Test	Post-Test	t	p	Pre-test	Post-test	t	p
Body weight (kg)	67.13±9.72	65.64±9.49	3.28	0.00*	66.60±7.43	66.42±11.19	0.12	0.90
BMI (kg / m <sup>2</sup> )	25.15±3.78	24.59±3.71	3.35	0.00*	25.63±2.86	25.60±4.64	0.05	0.96

\*p < 0.01

As can be seen in Table 2, there is a significant difference between body weight and pre-test and post-test BMI values in women to whom the Pilates exercise program was applied ( $p < 0.01$ ). While the pre-test value of body weight belonging to women who did Pilates exercises was  $67.13 \pm 9.72$ , the post-test value was lower,  $65.64 \pm 9.49$ . The pre-test value of BMI in Pilates women was shown to be  $25.15 \pm 3.78$ , while the post-test value decreased to  $24.59 \pm 3.35$ . A decrease in both mean body weight and BMI was observed in women included in the experimental group. Furthermore, no significant difference was identified between pre-test and post-test body weight and BMI values in women in the control / control group.

The test results revealed a significant difference between body weight and pre-test and post-test BMI (body mass index) values in women who followed the Pilates training scheme in the test. At the same time, a decrease in both the average body weight and the BMI value was observed in women included in the experimental group. No significant difference was identified between body weight and pre-test and post-test BMI values of women in the control / control group. The test results confirm the hypothesis that Pilates exercises have a positive effect on body weight and BMI.

Following the results presented during this chapter, it can be concluded:

- The experimental programs designed and applied led to the achievement of the objectives and to the confirmation of the research hypotheses.
- The efficient management of the sports center can make the difference between the success or failure of the sports organization. If the sports manager has the knowledge and skills established in the competence model, the sports center will be more efficient, both in terms of organization and function, but also in terms of financial results.
- The inclusion of Pilates activities in the offer of services of the sports center contributes to attracting new customers and maintaining existing customers and, implicitly, to increasing the company's revenues.
- The Pilates exercise programs used in the tests acted in different directions of the development of physical condition (development of abdominal strength, improvement of spine mobility and muscle elasticity, development of balance, improvement of body composition), and the end result is that Pilates practice contributes to undoubtedly to improve the physical condition of women aged between 30 and 40 years.
- By applying the four experiments in the research, it is observed at the end, the evaluation of muscle tone represented by the value of test indices, demonstrating significant increases for: toning the abdominal muscles, mobility of the spine in the foreground and elasticity of the posterior thigh muscles, considerable improvement static and dynamic balance, as well as the improvement of the body composition, confirming the validation of the research hypotheses, taking place significant adaptive changes, at the level of the targeted muscle groups.
- The results of the questionnaire applied to Pilates practitioners confirm the benefits felt at the level of physical and mental health and validate the results obtained in the experimental stage.

## GENERAL CONCLUSIONS AND RECOMMENDATIONS

The results of the theoretical and applied research obtained allow us to formulate the following conclusions:

1. A review of the Pilates literature has confirmed that no scientifically substantiated research has been conducted to date on the impact of Pilates on the physical condition of women aged 30 to 40, in particular on the Pilates effects on abdominal strength, balance, mobility of the spine and muscle elasticity, but also in terms of body composition. There is no study on how Pilates can influence the management of a sports center through changes in the amount of income and expenses but also in the number of clients.

2. The analysis of the age peculiarities of women aged 30-40 from a motor, physiological and psychological point of view allowed us to find that special attention must be paid to maintaining and improving the physical condition of women, the Pilates method representing the optimal environment for development of effective motor activities in order to achieve this goal.

3. The application of managerial concepts within the activities of sports centers acts in favour of all persons involved - business owners, employees, customers. The management of the sports center can identify sports activities that are differentiating elements from the competition and that both determine the attraction of new customers and increase the income of the organization. The effective management of a sports organization depends largely on the skills held by the person holding the position of Sports Manager. Therefore, the emphasis must be on notions of leadership, employee motivation and organizational culture.

Following the analysis on the financial statements of the sports center in the period 2017-2020, we conclude by stating that Pilates is an activity that generates considerable revenue to it (approximately 20-25% of turnover) and can be considered a differentiating element from the competition.

4. The impact of Pilates exercises on physical condition was analysed by in-depth study of the scientific literature and subsequently tested experimentally on the target group chosen in the research - women aged 30 to 40 years. The tests applied in the experimental phase - the test on the development of abdominal strength, the test on the development of balance, the test on improving the mobility of the spine and muscle elasticity but also the test on changing body composition, demonstrated by objective means the beneficial effects of Pilates on the sample. women included in the research. Subsequently, the beneficial effects were confirmed and validated by a different research method, the data being obtained directly from the clients of the sports center who attend Pilates training.

The results of the test on the development of abdominal muscle strength, performed on a sample of 16 women aged between 30 and 40 years, showed us that in the case of the experimental group there are improvements in abdominal muscle strength as a result of Pilates exercises, media arithmetic in the initial test being 8,625 repetitions, while in the final test it is 11,875 repetitions, the progress being 3.25 repetitions. In the experiment, the median value of the experimental group recorded values of 9 repetitions at the initial test and 12.5 repetitions at the final test, the progress being 3.5 repetitions. Given the results collected and interpreted, we can see that the Pilates method can contribute to the development of abdominal strength in women aged between 30 and 40 years.

The results of the test on the development of spine mobility and muscle elasticity by Pilates method, performed on a sample of 16 women aged between 30 and 40 years, showed that the participants in the experiment group obtained median values of 27 cm, at the initial test and 30 cm at the final test, the progress being 3 cm. The progress made is primarily due to working with a wide variety of means in the experimental class and the development of mobility in all its forms. Thus, comparing the results obtained, it can be seen that the values of the experiment group confirm that the Pilates method improves the physical condition of women by developing spine mobility and muscle elasticity.

The results of the balance test, performed on a sample of 16 women aged between 30 and 40 years, showed that in the experimental group, the arithmetic mean at the initial test is 3.375 cm, while at the final test is 1.875 cm, the progress being 1.5 cm. The median value recorded in the experimental group was 3 imbalances in the initial test and 2 imbalances in the final test, the progress being 1 imbalance. Comparing the results obtained by these tests, it can be seen that at the final test the values are lower, resulting in an improvement in the balance of women who participated in the experiment.



The results of the test on the change in body composition performed on a sample of 30 women aged between 30 and 40 years, showed that while the pre-test value of body weight belonging to women exercising Pilates was  $67.13 \pm 9.72$ , the post-test value was lower,  $65.64 \pm 9.49$ . The pre-test value of BMI in Pilates women was shown to be  $25.15 \pm 3.78$ , while the post-test value decreased to  $24.59 \pm 3.35$ . A decrease in both mean body weight and BMI was observed in women included in the experimental group. Furthermore, no significant difference was identified between pre-test and post-test body weight and BMI values in women in the control / control group. The test results revealed a significant difference between body weight and pre-test and post-test BMI (body mass index) values in women who followed the Pilates training scheme in the test. At the same time, a decrease in both the average body weight and the BMI value was observed in women included in the experimental group. No significant difference was identified between body weight and pre-test and post-test BMI values of women in the control / control group. The test results confirm the hypothesis that Pilates exercises have a positive effect on body weight and BMI.

The results of the sociological research carried out on a number of 80 women who attend the activities within the sports center highlighted the improvements observed by the participants in the study on their health / fitness condition after practicing Pilates. According to the statistical analysis of the answers, 97.5% of the respondents claim that they noticed an improvement in joint flexibility, 95% an improved muscle elasticity, 66.25% an improvement in body balance, 27.5% an improved emotional stability and 17, 5% weight loss.

5. Pilates is a sport preferred by women between the ages of 30 and 40 both for the visible benefits on their physical and mental health but also for other characteristics such as: exercises with a low risk of injury, group activity and the opportunity to socialize, engaging music and diversity of exercises. Pilates activities should be part of the range of services of any sports center or wellness club, being a trend-setting discipline that has the potential to influence customer retention and the viability of the sports organization.

**The results obtained that contribute to solving the important scientific problem** in the thesis consist in the scientific and methodological substantiation of the fact that Pilates activities are a differentiating element on the sports services market, beneficially impacting both the physical condition of women between 30 and 40 years, as well as the management objectives of the sports centers, respectively the increase of the number of clients and of the obtained incomes.

Following the research undertaken and the results of the research, the following aspects and recommendations emerge:

1. Following the analysis of the impact of the Pilates method on the management of sports centers but also as a result of developing a competency model for the sports manager, we consider it appropriate to initiate certified courses for the occupation of "Sports Manager" for in-depth training of people working in this domain. Participants in such a course could acquire the theoretical and practical knowledge needed to implement management concepts at the level of sports organizations, which would later influence the results of sports centers and set higher standards for the quality of services provided.

2. Promoting and using the Pilates Guide in sports centers can increase interest in Pilates, highlighting the benefits it brings to the health of practitioners and, indirectly, improving the revenue and number of clients at the level of the sports center;

3. Having demonstrated the positive impact that Pilates has on the management and revenue of sports centers, this sport should be promoted especially among women aged between 30 and 40 years being the most appropriate clientele sample and on which they have been demonstrated beneficial effects on health.

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## PARTICIPATION IN SCIENTIFIC CONFERENCES

1. **Conferința Națională Fairhap “I fair play and happiness through sports”** din 23 noiembrie 2018, în orașul Iași, România, cu lucrarea: “*Dezvoltarea Forței Abdominale Cu Ajutorul Programelor Pilates*”/„*Development Of Abdominal Power With The Help Of Pilates Programs*”.
2. **International Scientific Congress, “Sport. Olympism. Health”**, 19-21 Septembrie 2019, Chișinău, Republic of Moldova, cu lucrarea: “*Rolul Metodei Pilates în formarea în formarea și dezvoltarea echilibrului*”.
3. **Conferința Științifică Internațională „Dimensiuni etice și sociale în administrație publică și drept”**, eveniment organizat de Facultatea de Drept și Științe Administrative a Universității Ștefan cel Mare Suceava și asociat cu Research Center and Humanistic Science Lumen din Iași, 26-27 noiembrie 2020, Suceava, cu lucrarea “*Legal and Ethical Implications of Personal Data Processing within Sports Centres*”.

## ADNOTARE

Nica Irene Teodora

„Impactul metodei Pilates asupra managementului centrelor sportive și condiției fizice”  
Teză de doctor în științe pedagogice. Chișinău, 2021

**Structura tezei:** introducere, 3 capitole, concluzii generale și recomandări, bibliografie – 243 surse, 118 pagini, 5 anexe, 26 figuri, 16 tabele. Rezultatele obținute sunt publicate în 8 articole științifice și prezentate în cadrul a 3 conferințe științifice.

**Cuvinte-cheie:** management, Pilates, centru sportiv, echilibrul corpului, compoziție corporală, coloana vertebrală, mușchii coapsei, forța abdominală.

**Scopul cercetării** constă în studierea fenomenului de justificare teoretică și verificare experimentală a eficacității condițiilor organizatorice și pedagogice pentru îmbunătățirea condiției fizice a femeilor din categoria de vârstă cuprinsă între 30 și 40 de ani prin metoda Pilates. Această metodă este analizată din două perspective, cea a centrului sportiv, care urmărește creșterea notorietății și a veniturilor, și cea a practicantului, interesat cu precădere de beneficiile aduse asupra stării generale de sănătate. Astfel, cercetarea abordează cele două elemente într-un studiu cu valențe interdisciplinare, dovedind pe baza metodelor de cercetare folosite, impactul pozitiv al metodei Pilates atât asupra condiției fizice a femeilor, dar și asupra veniturilor și clientelei centrului sportiv.

### **Obiectivele cercetării:**

1. Studiul conceptului de management în cadrul cluburilor sportive;
2. Elaborarea unui model de competențe pentru managerul unui centru sportiv;
3. Analiza impactului Metodei Pilates asupra managementului și veniturilor centrelor sportive;
4. Argumentarea experimentală și valorificarea eficienței privind îmbunătățirea condiției fizice ale femeilor cu vârsta cuprinsă între 30 și 40 ani prin programe specifice metodei Pilates.

**Noutatea și originalitatea cercetării** constă în tratarea unei teme neabordate anterior de către literatura de specialitate prin abordarea conceptelor de management și Pilates într-un studiu cu valențe interdisciplinare, dovedind pe baza metodelor de cercetare folosite, impactul pozitiv al metodei Pilates atât asupra condiției fizice a femeilor, dar și asupra veniturilor și clientelei centrului sportiv.

**Problema științifică importantă soluționată** rezidă în elaborarea ghidului teoretico-practic (exerciții de tip Pilates), în selectarea, organizarea, fundamentarea teoretică și experimentală a conținuturilor generatoare de strategii personalizate pentru femeile cu vârsta cuprinsă între 30 și 40 de ani.

**Semnificația teoretică.** O importanță deosebită este acordată consolidării și menținerii sănătății precum și formării unui stil de viață sănătos pentru femeile cu vârste cuprinse între 30 și 40 de ani. Metoda Pilates poate constitui o modalitate eficientă de a îmbunătăți condiția fizică a femeii, fiind probat pe parcursul prezentei lucrări impactul pozitiv pe care această disciplină îl poate avea asupra dezvoltării forței abdominale, echilibrului, compoziției corporale și îmbunătățirii mobilității coloanei vertebrale și a elasticității musculare. Organizarea corectă și sistematică a activității fizice a femeii și un stil de viață sănătos în această perioadă de vârstă pot încetini regresia stării fizice și psihice a corpului acesteia. În același timp, componenta managerială a centrelor sportive din țară nu acordă importanță adaptării ofertelor de servicii pentru a pune la dispoziția femeilor cu vârsta între 30 și 40 de ani activități personalizate, element lipsă care poate impacta negativ bugetul de venituri al organizației.

**Valoarea aplicativă** a cercetării este dată de posibilitățile multiple de aplicare și implementare în managementul centrelor sportive a antrenamentelor de Pilates, ce pot contribui deopotrivă la creșterea satisfacției clienților care vor resimți beneficiile supra condiției fizice, dar și la dezvoltarea organizației prin creșterea cifrei de afaceri și a numărului de clienți.

**Implementarea rezultatelor cercetării științifice.** Rezultatele obținute au fost verificate și constituie îmbunătățiri considerabile în ceea ce privește starea de sănătate și condiția fizică a femeilor cuprinse în experiment, determinate de implementarea celor patru categorii de exerciții de tip Pilates.

## АННОТАЦИЯ

### Ника Ирене Теодора

«Влияние метода пилатеса на управление спортивными центрами и физическое состояние»  
Докторская диссертация в области педагогических наук. Кишинев, 2021г.

**Структура диссертации:** введение, 3 главы, общие выводы и рекомендации, библиография - 243 источников, 118 страниц, 5 приложений, 26 рисунков, 16 таблицы. Полученные результаты были опубликованы в 8 научных статьях, и две другие статьи были защищены на 3 научных конференциях.

**Ключевые слова:** управление, Пилатес, спортивный центр, равновесие тела, состав тела, позвоночник, мышцы бедра, сила живота.

**Цель исследования** - изучить феномен теоретического обоснования и экспериментальной проверки эффективности организационно-педагогических условий физического воспитания женщин 30-40 лет методом пилатеса. Этот метод анализируется с двух точек зрения: спортивного центра, цель которого - повысить известность и доход, и практикующего специалиста, который в основном заинтересован в пользе, приносимой для общего состояния здоровья. Таким образом, исследование рассматривает два элемента в междисциплинарном исследовании, доказывая на основе использованных методов исследования положительное влияние метода пилатеса как на физическое состояние женщин, так и на доход и клиентуру спортивного центра.

#### **Цели исследования:**

1. Изучение концепции управления в спортивных центрах;
2. Разработка модели структуры компетенций для спортивных менеджеров;
3. Анализ влияния метода пилатеса на управление и доходы спортивных центров;
4. Экспериментальное обоснование эффективности улучшения физического состояния женщин в возрасте от 30 до 40 лет с помощью специальных программ пилатеса.

**Новизна и оригинальность исследования** заключаются в анализе темы, ранее не освещавшейся в научной литературе, путем подхода к концепциям менеджмента и пилатеса в исследовании с междисциплинарными элементами, доказывающих на основе использованных методов исследования положительное влияние пилатеса на физическое состояние женщин, а также доход и клиентура спортивного центра.

**Решенная важная научная проблема** заключается в разработке теоретико-практического руководства (упражнения пилатеса), в выборе, организации, теоретическом и экспериментальном обосновании содержания, генерирующего индивидуальные стратегии для женщин в возрасте от 30 до 40 лет.

**Теоретическое значение.** Особое внимание следует уделять укреплению и поддержанию здоровья, а также формированию здорового образа жизни у женщин в возрасте от 30 до 40 лет. Метод пилатеса может быть эффективным способом улучшения физического состояния женщины, поскольку доказано положительное влияние этого метода на развитие силы живота, равновесия, композиции тела, а также на улучшение подвижности позвоночника и эластичности мышц. Правильная и систематическая организация физической активности женщины и здоровый образ жизни в этом возрасте могут замедлить регресс физического и психического состояния ее организма. В то же время управленческий компонент спортивных центров в стране не придает значения адаптации предложений спортивных услуг для предоставления женщинам в возрасте от 30 до 40 лет индивидуальной деятельности, что может негативно повлиять на доходный бюджет организации.

**Практическая ценность исследования** Прикладная ценность исследования представлена широкими возможностями применения и внедрения занятий пилатесом в управлении спортивными центрами, что может способствовать как повышению удовлетворенности клиентов, которые почувствуют преимущества своего физического состояния, так и развитию организации за счет увеличения оборота и количества клиентов.

**Внедрение научных результатов.** Полученные результаты были проверены и представляют собой значительные улучшения с точки зрения здоровья и физической формы женщин в эксперименте, определяемые выполнением четырех категорий упражнений пилатеса.

## ANNOTATION

Nica Irene Teodora

“The impact of the Pilates method on the management of sports centers and physical condition”  
Doctoral thesis in pedagogical sciences. Chişinău, 2021

**Structure of the thesis:** introduction, 3 chapters, general conclusions and recommendations, bibliography - 243 sources, 118 pages, 5 annexes, 26 figures, 16 tables. The obtained results were published in 8 scientific articles and presented in 3 scientific conferences.

**Keywords:** management, Pilates, sports center, body balance, body composition, spine, thigh muscles, abdominal strength.

**The purpose of the research** is to study the phenomenon of theoretical justification and experimental verification of the effectiveness of the organizational and pedagogical conditions for the physical education of women between 30 and 40 years old through the Pilates method. This method is analyzed from two perspectives, that of the sports center, which aims to increase notoriety and income, and that of the practitioner, mainly interested in the benefits brought on the general state of health. Thus, the research addresses the two elements in an interdisciplinary study, proving based on the research methods used, the positive impact of the Pilates method both on the physical condition of women, but also on the income and clientele of the sports center.

### **Research objectives:**

1. Study of the management concept within sports centers;
2. Development of a competence structure model for the sport managers;
3. Analysis of the impact of the Pilates Method on the management and revenues of sports centers;
4. Experimental argumentation on the effectiveness of improving the physical condition of women aged between 30 and 40 years through Pilates-specific programs.

**The novelty and originality of the research** consist in the analysis of a topic not previously addressed by the scientific literature by approaching the concepts of management and Pilates in a study with interdisciplinary elements, proving based on the research methods used, the positive impact of Pilates on the physical condition of women, but also on the income and clientele of the sports center.

**The important scientific problem solved** lies in the elaboration of the theoretical-practical guide (Pilates exercises), in the selection, organization, theoretical and experimental substantiation of the contents generating personalized strategies for women aged between 30 and 40 years.

**Theoretical significance.** Particular importance should be given to strengthening and maintaining health as well as the formation of a healthy lifestyle for women between the ages of 30 and 40. The Pilates method can be an effective way to improve a woman's physical condition, being proved the positive impact this can have on developing abdominal strength, balance, body composition, and improving spinal mobility and muscle elasticity. The correct and systematic organization of a woman's physical activity and a healthy lifestyle in this period of age can slow down the regression of the physical and mental state of her body. At the same time, the managerial component of sports centers in the country does not give importance to adapting the offers of sports services to provide women between 30 and 40 years with personalized activities, a lack that can negatively impact the income budget of the organization.

**The applicative value of the research** is represented by the wide possibilities of application and implementation of the Pilates classes in the management of sports centers, which can contribute both to increase customer satisfaction who will feel the benefits on the physical condition, but also to the development of the organization by increasing turnover and number of customers.

**Implementation of scientific results.** The results obtained were verified and represent considerable improvements in terms of health and fitness of women in the experiment, determined by the implementation of the four categories of Pilates exercises.

**NICA Irene Teodora**

**THE IMPACT OF THE PILATES METHOD ON THE MANAGEMENT OF  
SPORTS CENTERS AND PHYSICAL CONDITION**

**Specialty: 533.04. Physical education, sport, kinetotherapy and recreation**

**Summary of PhD thesis in pedagogical sciences**

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