

Use of computer technologies in physical education of women of the first mature age

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Purpose: the improvement of process of physical education of women of the first mature age by means of Pilates with use of information technologies.

Material & Methods: the experience of development and deployment of computer technologies in the process of physical education of women of mature age was systematized by means of the analysis of scientific and methodical and special literature and the best pedagogical and coach's practices, which is presented in mass media. The ways of application of computer programs were revealed, and the computer program "Pilates" was developed by means of programming in the system Visual Basic.

Results: the computer program "Pilates", which consists of directory, settlement and recreational blocks, is offered for the purpose of improvement of the process of physical education of women of the first mature age by means of Pilates and increase in their motivation to classes by physical exercises.

Conclusions: it is revealed that application of the computer programs has the positive effect in practice of physical education of women of the first mature age. The computer program "Pilates" is submitted.

Keywords: women, mature age, Pilates, computer program, introduction, physical education.

Introduction

Life of modern women of the first mature age, which covers the aged period from 21 till 35 years old, is often very saturated. Women usually establish family, give birth to children, receive profession and move on career steps during this period. All changes in the social status are followed by the achievement of peak of manifestation of physical capacities of their organism and gradual decrease in indicators of physical preparedness. And only the concern about own health, respect for the principles of healthy lifestyle and the optimum motive mode allows to slow down start of involution processes of organism of women. Health-improving fitness is represented adequate means of preservation and strengthening physical health of women of the first mature age.

Modern specialists of physical education try to resolve the issue of involvement of women to classes by health-improving fitness by the development and the deployment of innovative types of physical activity, perspective programs and means of training, technologies and techniques, which are directed to their stimulation to active lifestyle.

The analysis of the last researches and publications leads up interest of experts problems of computerization of the sphere of physical education of different groups of the population [13] and development of computer fitness-programs for women [5; 9]. According to authors, the creation of an automated fitness-instructor will allow each woman to adhere to the principles of healthy lifestyle without additional material expenses [2].

Systematizing operating time of predecessors, V. G. Arefyev allocates the following types of computer programs of health-improving appointment: the training programs are aimed at

training of specialists on health-improving physical culture; technical that provide the computer equipment of trainers or fitness centers; diagnostic which represent the automated systems of diagnostics of physical state; programs of management and control of physical condition or development of motive qualities of those who are engaged; programming of classes of health-improving orientation and improving which tasks is the creation of personal fitness-programs [1, p. 34].

D. Yu. Lutsenko, in turn, recommended to use the personal information system "Fitness for women", which is developed on the basis of technology of databases, in the course of the organization of work of fitness-club for the purpose of tracking of dynamics of changes of indicators of physical preparedness of women [8].

As a result of the conducted research, O. S. Gubareva developed the computer program "Fitness Centre" which application allows to model classes taking into account interests and the level of preparedness of participants of classes [3, p. 13].

It is offered N. V. Zinchenko the program of fitness class, which gives the chance to define somatotype of women and according to it to gather additionally rational parameters of exercise stresses for classes of classical aerobics and step-aerobics, founding the expediency of use of computer technologies for differentiation and individualization of programs, which are used in the system of health-improving fitness. The efficiency of the computer program is provided by the following blocks of the menu of the main interface: "Office of fitness testing", "Hall of trainings", "Library" and "Diary of self-checking" by the beliefs of the author [4].

O. Yu. Lyadska submitted the computer program "Fitball training" which includes such sections as "Personal data", "Level

of physical preparedness”, “Physical development”, “Level of health”, “Results”, and allows to find the dynamics of level of health, physical development and physical preparedness of women, on completion of the research work, which is directed to the increase in efficiency of the training process at classes by fitball with women of the first mature age [9, p. 10].

There are certificates on expansion of opportunities of realization of modern health-improving technologies in the training process of women of the first mature age, its representation in the form of the closed control system thanks to the automated control system for the training process in health-improving fitness on the basis of the software product «PER-FECTBODY» [6, p. 35].

We also paid attention to the research of Zh. Sotnyk at the review of scientifically-methodical materials, in which it is proved that it is necessary to carry out monitoring of their physical condition, to establish efficiency of training programs by operating control by separate indicators of physical preparedness at classes by shaping with women of the first mature age, and also to apply the system of shaping which includes at itself the complex of computer and video technologies, such as “shaping-classic”, “shaping-pro”, “shaping-youth”. The author focuses the attention that complexes of three levels of complexity are shown to the monitor at the same time when using these technologies on the screen [10, p. 289].

During studying of Internet resources, we found information on the chargeable addition “Fitness for women: training and exercises from Sport.com” what combines three main units: ready programs of trainings for users with different levels of training, creation of the individual program on the basis of the purposes and the output data and the automated selection of exercises with the number of approaches set by the user. At the same time each exercise is provided with the video, the description and the audio-instruction, and the tempo of execution of exercises can be regulated independently depending on health.

The position of E. A. Zeitler was given interesting to us at the synthesis of data of the literature, according to which the youth in which structure of free time considerable part is occupied by entertainments with the use of computer technologies needs to be stimulated to classes by physical exercises also due to use of IT. As a result of the conducted research, the author offered the automated fitness instructor, who represents multipurpose web addition, which allows users to receive the program of trainings, made on the basis of individual indicators of health of the person [14]. We are convinced that this approach concerns also women of the first mature age who are also inclined to passive leisure by computer entertainments.

Besides, it is necessary to prefer as the sparing mode of loadings and actions directed to injury prevention, considering aggravation of symptoms of health of women of the reproductive age [11], planning the process of physical education of women of this category. Such approach provides classes according to the technique of Pilates.

However, we didn't find such, which are directed to classes by Pilates with women of the mature age, from between the presented computer technologies, which are developed for health-improving fitness classes with women of the first mature age. Thus, we incline to think of need of the development

and the deployment of the computer program Pilates which application will provide optimization of the motive regime of women of the first mature age and will increase their motivation to health-improving fitness classes.

Communication of the research with scientific programs, plans, subjects

The work is performed on the subject of the research work of the chair of health, fitness and recreation of NUPESU, “Theoretic-methodical principles of formation of the system of health-improving fitness”; state registration number is 0106U010787.

The purpose of the research:

the improvement of process of physical education of women of the first mature age by means of Pilates with the use of information technologies.

We put the following *tasks* during the research: to finish the relevance of introduction of computer programs in the process of physical education of women of the first mature age and to develop the computer program “Pilates”.

Material and Methods of the research

Studying, analysis and generalization, scientifically-methodical and special literature and the best pedagogical practices concerning computerization of the process of physical education, in particular, of women of the first mature age were applied during the research. The programming method by means of objectively focused programming languages in the system Visual Basic 6.0 was applied for the development of the computer program “Pilates”. As the independent choice by the woman of complex of physical exercises by means of the computer program provided the accounting of her physical condition and compliance of body weight of the woman to length of her body, we have applied the method of assessment of level of physical condition on the basis of the index of physical condition and the method of assessment of physical development of women on the basis of the index of Quetelet.

Results of the research and their discussion

Investigating the ways of improvement of the process of physical education by means of Pilates, we considered interest of women of the first mature age in computer technologies and their distribution in life.

Besides, we took into account that computer programs for independent occupations improving fitness which allow operating the process of study and training are of special interest, to take part in drawing up complexes of the corresponding exercises and their modification [8].

When developing the computer program, we paid attention to the experts according to which when developing complexes of physical exercises, first of all, it should be taken into account the level of physical condition of women of the first mature age.

Besides, developing the computer fitness-program, we assumed that women, attending class three times for week, in other time, 1–2 times for week, will be independently engaged

in house conditions. But, if the woman did not owe opportunity to visit trainings, she can also make up for lost time and execute set of exercises considering its LPC and likings.

Therefore, we developed the computer program “Pilates” as a result of the conducted research, by means of the objectively focused the programming languages Microsoft Visual Basic 6.0. The purpose of the computer program was interest of women by Pilates and expansion of destiny of independence of women in the course of training. It is necessary to distinguish the involvement of women of the first mature age to health-improving classes, their expansion from the main tasks, basic concerning improving training, optimization of physical activity, and, in turn, increase in level, their physical condition.

Information, settlement, sports and program blocks, and activates work of the program of 10 managing directors of buttons is contained in the structure of the computer program.

The expansion of theoretical base of women concerning influence according to Pilates on physical condition of women of the reproductive age, the illumination of questions about the popularity reasons of Pilates in physical education of women of the first mature age, the message for women of information on versions of Pilates and features of their application, and also the presentation of certificates about the principles of Pilates are the tasks of **the information block**. Besides, the information block contains information on the author of the program and the instruction to its practical use.

It should be noted possibility of assessment by women of the level of their physical condition and physical development thanks to calculation of indexes of Quetelet and indexes of physical condition on the basis of entrance data among the main tasks of **the settlement block**. Really, the existence of knowledge of the woman of excess body weight or low level of physical condition can become releaser for the reevaluation of values of the woman towards the domination of category “Health” in the system of its basic values. Let’s note that the calculation of indexes provides the program code in which the settlement formulas executed by the standard technique and their interpretation are registered (pic. 1).

```

Public x As Single
Public y As Single
Public v As Single
Dim f As Long
Dim MyText As String
Dim AllMyText As String
Dim Password As String
Private Sub Command1_Click()
    x = Val(TextBox("Введіть Вашу масу тіла у кг"))
    y = Val(TextBox("Введіть Ваш зріст у см"))
    v = Round((x / y ^ 2 * 10000), 2)
    If v < 18.5 Then
        MsgBox "Індекс Кетле = " & v & ". У Вас дефіцит маси тіла."
    ElseIf v > 18.5 And v < 25 Then
        MsgBox "Індекс Кетле = " & v & ". У Вас нормальна маса тіла."
    Else
        MsgBox "Індекс Кетле = " & v & ". У Вас надлишкова маса тіла."
    End If
End Sub
    
```

Fig. 1. Calculation of index of Quetelet and its interpretation (the part of the program code of the program “Pilates”)

The tasks of the development of the classes complex are united, considering the output data and tastes of the woman

in the course of realization of **the sports-program block**, considering theoretical bases of the organization of improving and recreational physical activity and dispensing of loadings [12]. Each complex, which enters this block, contains preparatory, main and final parts. But, the main part of classes begins with the aerobic component lasting 7–10 minutes, then the transition to 15–20-minutes to the block of power exercises, in which big groups of muscles are involved, and then – to stretching lasting 10–15 minutes, occurs. The final part of classes traditionally provides the performance of exercises on renewal and relaxation. It is necessary to notice that depending on mood of the woman and her wishes, by means of the computer program, she can select the complex with equipment or without it (pic. 2).

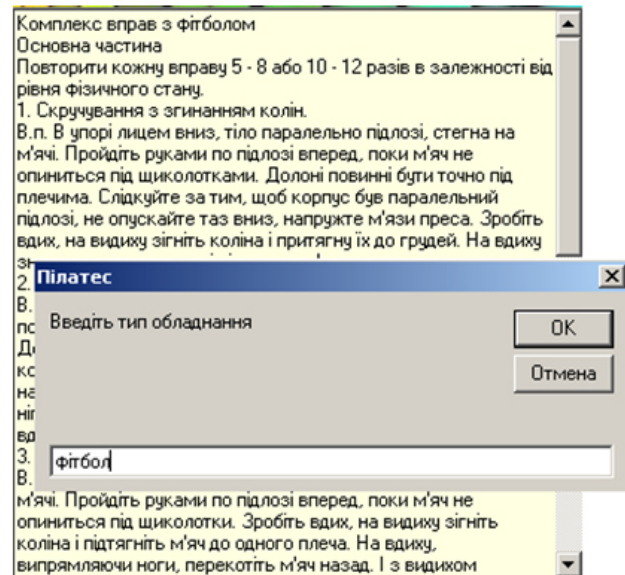


Fig. 2. The selection of the training program of fitball in the program “Pilates”

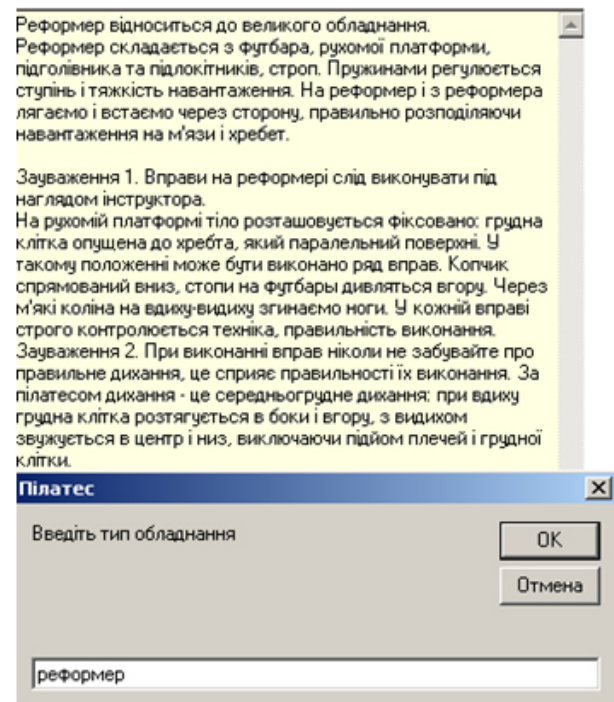


Fig. 3. The selection of the training program with Reformer in the program “Pilates”

The data on type of this equipment, its structure and methodical recommendations to classes and the remark that sets of exercises need to be carried out strictly under the supervision of the instructor will appear in the information window at the performance by the woman of request for obtaining the program of classes with the big equipment (pic. 3).

Should be noted that the window "Complex in condition of the development" comes up at the introduction of the name of the equipment with which complexes are not provided for the development or are not ready yet, and also at the incorrect introduction of the name.

Conclusions

The development of computer programs of health-improving appointment promotes the improvement of physical education of women of the first mature age.

The is offered by us computer program "Pilates" is aimed at the increase in motivation of women of the reproductive age

to classes by Pilates and creations of opportunities for their independent classes near classes under the leadership of the fitness- instructor.

The woman owes opportunity to expand theoretical knowledge of the system of Pilates, to find out the level of the physical development and physical condition, to receive the complex of physical exercises taking into account physical condition and wishes concerning the equipment by means of the computer program "Pilates".

We consider that the use of innovative means of physical education has the positive influence on the motivational sphere of women of the reproductive age, and, in the long term, on their physical condition.

Prospects of the subsequent researches consist in the establishment of efficiency of use of technology of health-improving training of women of the first mature age according to the technique of Pilates with the use of the computer program "Pilates".

Conflict of interests. The author declares that there is no conflict of interests.

Financing sources. This article didn't get the financial support from the state, public or commercial organization.

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Received: 01.07.2016.

Published: 31.08.2016.

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