PROFILE OF THE PRACTITIONERS OF AEROBIC EXERCISES IN THE CAMPUS OF THE FEDERAL UNIVERSITY OF VIÇOSA - MG

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ABSTRACT

Introduction: This study’s goal was to outline the profile of practitioners of aerobic exercises in the campus of the Federal University of Viçosa - MG - Brazil. Materials and Methods: It was used a descriptive transversal action, randomly evaluating 50 men with an average age of 41.7 ± 5.4 years-old (30 to 50 years-old), through a questionnaire specifically formulated for that purpose. The statistical analysis was composed of descriptive data, through the distribution of percentage averages and standard deviation of the answers. Results: The main results were: 58% of individuals had the residence located on the suburbs of Viçosa; the weekly frequency of exercise of 78% of the sample ranged between three to five sessions; 49% of the practitioners selected walk as exercise; the duration of related training session for 44% of the individuals was around 60 min; the usual shift of the practice of exercises, chosen by 66%, was the night; and 52% practiced aerobic exercises for more than two years with the goals improvement of health (26%), improvement in physical fitness (22%) and weight loss with 16%. Discussion: Based on the results it is possible to conclude that the profile is characterized by residents of the suburbs, with regular practice of physical activity, preferably opting for walking during the night, taking as objective the improvement of health.

KEYWORDS

Motor Activity, Exercise, Aerobic Exercise.

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RESUMO

Introdução: O objetivo deste estudo foi traçar o perfil dos praticantes de exercícios aeróbicos no campus da Universidade Federal de Viçosa - MG. Materiais e Métodos: Utilizou-se uma ação descritiva transversal, sendo avaliados de forma aleatória 50 homens com idade média de 41,7 ± 5,4 anos (30 a 50 anos), por meio de um questionário específico formulado para tal objetivo. O tratamento estatístico constituiu-se da análise descritiva dos dados, através da distribuição percentual das médias e desvio padrão das respostas. Resultados: Os principais resultados foram: 58% dos indivíduos residiam na periferia de Viçosa; a frequência semanal de exercício de 78% da amostra oscilou entre três e cinco sessões; a intensidade predominante foi a caminhada, com 49%; a duração da sessão de treino, relatada por 44% dos sujeitos, ficou em torno de 60 min; o turno habitual para a prática de exercícios, escolhido por 66%, foi o noturno; e 52% praticavam exercícios aeróbicos há mais de dois anos, com os objetivos de melhora da saúde (26%), do condicionamento físico (22%) e emagrecimento (16%). Discussão: Com base nos resultados, é possível concluir que o perfil se caracteriza por moradores da periferia, com prática regular de exercícios, que optam preferencialmente pela caminhada no período da noite, com o objetivo de melhorar a saúde.

PALAVRAS-CHAVE
Atividade Motora, Exercício, Exercício Aeróbico.

INTRODUCTION

The sedentary lifestyle is considered one of the major cardiovascular risk factors. In Brazil, it is estimated that 83.5% of the population is sedentary, while only 7.8% practice regular physical activities twice a week. In Minas Gerais - Brazil, it is estimated that 79.2% of the population is considered sedentary.

In face of this scenario, it is extremely important to practice regular physical activities because they promote the reduction of hypokinesia, which generates a reduction in risk factors and, consequently, the protection against the emergence of cardiovascular diseases which are currently considered the main causes of death, morbidity and disability in Western developed countries.

The aerobic exercises are usually the physical activities most recommended by health professionals, especially the walk, the jog and the running, for being of easy execution and without restriction to almost all persons, if properly oriented.

The campus of the Federal University of Viçosa - MG - Brazil (UFV) is a privileged urban space for the practice of aerobic activities. The practitioners who use this space, in most cases, have no professional guidance of a teacher of Physical Education and freely select the intensity of training, an attitude that can generate some risks to health and safety.

Despite the large number of people who practice the aerobic exercises, are not found in the literature studies...
with information on the profile of these practitioners, which could provide better direction for the prescription or the creation of policies to promote health through the practice of physical activities. In Viçosa, the work of Cruz & Giannichi\(^5\) addressed this issue. However, after almost ten years, it is necessary to identify the current status of the practitioners.

Studies with these characteristics help the development of public policies to improve the conditions of practice of physical exercises. Thus, the objective of this study was to delineate the profile of practitioners of aerobic exercises in the campus of UFV.

**MATERIALS AND METHODS**

This study was approved by the ethics committee from the UFV (protocol n.45/2007) and respects the laws for research on human beings according to the 196/96 Resolution.

To delineate the profile of practitioners of aerobic exercises, a questionnaire was prepared, which was applied as an interview to a portion of the population of practitioners of aerobic exercises in the campus of UFV.

This study had a descriptive transversal design, in which were randomly selected male 50 individuals, according to the following inclusion criteria: regular practice of aerobic exercises in the campus of UFV for at least two months and having no professional guidance. The non inclusion in at least one of these prerequisites is configured as the exclusion factor. The data were collected between October 2005 and March 2006.

In order to reach the stage of the questionnaire, three stages were carried out:

1\(^{st}\) Registration: During two weeks occurred the registration of the male individuals who practiced walking for pleasure in the campus of UFV, totaling 300 people.

2\(^{nd}\) Selection of the sample: Among all the registered individuals, were pre-selected all individuals with age range compatible with the present study (n = 100). From the practitioners who fit the required age range, were selected after telephone contact, all that voluntarily agreed to participate in this study (n = 50).

Anthropometric assessment and application of the questionnaire: The evaluation was performed at the Human Performance Laboratory (LAPEH) from the Physical Education Department of UFV. It was measured body weight (kg), height (cm) and waist (cm) and hip (cm) circumference.

The cut limits used for the Bray index and body mass index (BMI) were recommended by the World Health Organization\(^6\), and the ones of waist and hip index (ICQ) were suggested by Gray\(^7\).

The procedures for collection of anthropometric data followed the methodological guidelines of Lohman et al.\(^8\).

Then, the questionnaire was applied to delineate the profile of these practitioners (Image 1). This questionnaire allowed to obtain the following information: location of residence; weekly frequency of exercise; intensity; duration; usual shift of practice; time of practice; objective of the exercise practice; practice of other physical activities; hydration; use of diets; ingestion of alcoholic beverages; and realization of electrocardiographic, ergometric and blood exams.

The statistic used was the descriptive analysis, through the average and standard deviation and identification of the percentage of answers.

### RESULTS

The demographic variables of the participants in this study are shown in Table 1. The data from the questionnaire will be presented in the order previously shown in the Materials and Methods item.

The percentage distributions for the location of the residences of individuals practitioners of aerobic exercises in UFV are presented in Graphic 1. The percentage distribution of the weekly frequency of exercise of individuals, is in Graphic 2.

The intensity of exercises reported by practitioners in the UFV campus levels is presented in percentage levels in Graphic 1.

**Table 1 - Demographic data of the 50 male participants of aerobic exercises**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Average ± SD (min - max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>age (years)</td>
<td>41.7 ± 5.4 (30.0 a 50.0)</td>
</tr>
<tr>
<td>height (m)</td>
<td>1.73 ± 0.1 (1.57 a 1.90)</td>
</tr>
<tr>
<td>weight (kg)</td>
<td>76.7 ± 8.8 (53.5 a 102.0)</td>
</tr>
<tr>
<td>BMI (kg·m(^{-2}))</td>
<td>25.6 ± 2.6 (19.3 a 34.9)</td>
</tr>
<tr>
<td>AC (cm)</td>
<td>92.5 ± 7.8 (72.0 a 112.0)</td>
</tr>
<tr>
<td>WHR</td>
<td>0.91 ± 0.06 (0.80 a 1.05)</td>
</tr>
</tbody>
</table>

sd: standard deviation; min: minimum values; max: maximum values; BMI: body mass index; AC: abdominal circumference; WHR: waist-hip relation.

Graphic 1 - Percentage distribution of the residence’s location.
Graphic 3. The percentage distribution about the duration of training sessions is in Graphic 4.

The distributions related to the usual shifts of practice of aerobic exercises by individuals are found in Graphic 5. In Graphic 6 are presented the percentages from the time of practice of exercise from individuals in this study.

When asked about the realization of other physical activities to complement the training program, 60% of the assessed reported not to practice any other type and only 36% said that do practice other physical activities. Among these other types related, are reported the court and field sports, with 40%, followed by weight training (20%), swimming (16%), aerobic gymnastics (16%) and dances and martial arts (4% each).

The objectives informed by practitioners to justify the entry and maintenance of a program of aerobic activities in UFV are shown in Graphic 7.

82% of the subjects reported not having the tradition of hydrating during physical activity. When analyzed by age range, there was a tendency of crescent increase in the percentage of negative answers in relation to the advancement of age. There was elevation of 22% in the group comprehended in the age range of 30 to 34 years-old in relation to the one of 45 to 50 years-old.

When questioned about the realization of diets, 80% said not to do any type of diet. As occurred in relation to hydration, the diet, when analyzed by age range, showed increasing trend in the percentage of negative answers with the advancement of age: the elevation was 20% in the group comprised in the age range of 30 to 34 years-old, compared with the one of 45 to 50 years-old. The ingestion of alcoholic beverages is made by 82% of the individuals following the same trend of increase in the percentage of negative for ingestion with the advancement of age. When analyzed by age range, there was an increase of 18% in the group of 30 to 34 years-old compared to the one of 45 to 50 years-old.

A total of 86% of practitioners of aerobic exercises on the UFV campus reported having done electrocardiogram. From these, 40% did it after more than a year ago. It was recorded that 70% of the individuals said to have performed ergometric test and 57% of these did it after more than a year ago. 98% of the practitioners reported
DISCUSSION

To delineate the profile of practitioners of aerobic exercises in the campus of UFV, it was verified the location of residence, being noted in this study that most of the individuals lived on the suburbs of the city (Graphic 1). This result can be explained by the fact that the city of Viçosa is intended for commerce and housing for students from the Federal University of Viçosa. In a similar study, conducted by Cruz & Giannichi it was observed that the majority (61.4%) of the walking practitioners in UFV also came from the suburbs of the city; so this profile remained unchanged.

One of the limitations of this study was the non-questioning of the mode of locomotion of these people from their homes to the UFV campus, because the people who cover this path by walking could be getting greater benefits than those that come by car, bike or public transport. As for the rural population it is not present, possibly by the difficulty of transportation to the campus. Thus, it is expected that the typical work activities from this population supplement the daily energy expenditure.

Regarding the weekly practice of exercise, the majority (Graphic 2) presented a weekly frequency from three to five days, which is in accordance with the recommendations of the American College of Sports and Medicine (ACSM) which proposes the performance of aerobic exercises with moderate intensity at least for 30 minutes, five times a week, or a minimum of 20 minutes, three times a week at a vigorous intensity.

When analyzing the distribution of the weekly frequency by age range, it is observed that the individuals grouped in age range from 40 to 44 years-old prefer the aerobic exercise, with a frequency of three sessions per week. The ones included in the age group 45 to 50 years-old are the ones that practice them the most, with a frequency of five sessions per week.

These results can be explained by the availability of time for the practice of physical activities, since the younger age groups are at the height of the productive stage, which results in a shorter time spent in the practice of physical activity. The higher frequency in the older population could be due to growing public concern with regard to health and the benefits promoted by physical exercises.

In a work with weight training practitioners in Belo Horizonte, Domingues & Marins showed the high weekly frequency of 61% who held their training activity five or more times per week. This seems to suggest that the weight training work offers more adhesion in relation to the exercise in open area. However, it should be noted that the work in gym, with economic cost to the practitioner, is also a motivational factor for its adhesion.

As for the intensity of the practice of the exercises, the majority (Graphic 3) claimed to practice walking. By adding the percentages of the three intensities, it is verified that they go beyond 100%; this is due to the fact that some individuals told that practice both the jog and walk, or walk and running, or jog and running, during the same training session.

When analyzed by age range, it is verified that most part of those who walk is in the age group of 45 to 50 years-old, which features a care in relation to health, because the rate of injuries caused by walk is low, also being a more pleasant intensity, providing more time for adhesion to the physical activity.

The prevalence of people opting to walk in this study was well above the work performed by Murakawa in 3,457 individuals, being 2,634 women, in which it was observed that 35.88% of women and 29.40% of men prefer to walk in relation to other physical activities. However, the benefits to health and physical aptitude may be limited due to the low intensity of walking, since the increase

Graphic 6 - Percentages related to time of practice of exercises

Graphic 7 - Percentages of the objectives reported by the practitioners of aerobic exercises
of loads is essential for adaptation and the consequent improvement in physical fitness to occur.

Several studies show the beneficial effects coming from the practice of aerobic activities such as walk, jog and/or running. Among these are the hypotensor effect\(^{12}\), change in the lipid profile\(^{13}\), reduction of risk factors and cardiovascular diseases\(^{13}\) and diabetes control\(^{14}\).

However, 64% of the evaluated individuals perform physical activities in the intensities recommended by the ACSM\(^{9}\) since exercises like jogging and running can be classified as moderate and vigorous activities, respectively. Complementing these data, it is verified the realization of complementary physical activities by the evaluated individuals, thus increasing the weekly energetic expenditure spent in these activities, which in most cases are composed of a strong aerobic component.

When analyzing the duration of the training session, it was found that 80% of the individuals fulfill the recommendations proposed by the guidelines, which recommend 30 min to 60 min of training in each session\(^{5,11}\). However, 20% reported to practice more than 60 minutes of exercises. This, depending on the intensity and state of health of the subject who performs the physical activity associated with lack of guidance, can cause damage to health.

The time devoted to aerobic work, observed in this study was lower than that reported by Domingues & Marins\(^{16}\) in a group of weight training practitioners. It was observed that 58.5% from a total of 200 interviewees performed their training with a time equal or superior to 60 min. This difference may be caused by the type of physical dynamics between the exercises analyzed. As for the study of Cruz & Giannich\(^{9}\), conducted in a population of 430 practitioners, it was reported that 86.5% of women held the walk training with duration equal or superior to 60 min, while men accounted for 66.1%, value close to that found in this study.

Most interviewees practice physical activity during the night (Graphic 5), due to be the shift in which many people leave work and use to perform the exercises. However, 20% reported practice in the afternoon, a fact that must be viewed with considerable attention, because, depending on time of year and the time chosen for the practice, the heat can be very intense, allowing the emergence of a hydroelectrolytic imbalance state, leading to dehydration and modifying the hemodynamic effects of the body\(^{16}\).

It was noted that 82% of individuals did not hydrated themselves during physical activity and the vast majority (58%) of these were in the 40 to 50 years-old range. However, as previously verified, the individuals in this age range were the ones that most presented a weekly frequency of training of five sessions and duration of, at least, 60 min.

It is recommended that during the physical exercise there is constant hydration. Strategies must be adopted before, during and after the exercises, at hydration intervals of 10 min to 15 min, in which will be ingested between 200 ml and 250 ml of water, or values of 2 ml to 3 ml per kilogram of body weight\(^{17}\).

Works on the prevalence of hydration in athletes have shown that they have a much bigger of hydration during exercise, since only 2.6% of triathletes\(^{16}\), 4% of university athletes\(^{18}\) and 3% of judo practitioners\(^{19}\) do not have the habit to hydrate themselves, while in this study these values are close to 80%. So, that means a serious error of conduct, either by lack of knowledge or prejudice.

A solution would be the installation of communitarian drinking fountains in certain areas of the UFV campus, as occurs in the park of the city of Brasilia. The provision of drinking, along with policies to promote health through physical activity, with appropriate guidelines on the practice of physical activity, would allow an improvement of this scenario.

It was found a high prevalence of the evaluated individuals exercising for more than two years (Graphic 6). The biggest prevalence of this period lies in the 45 to 50 years-old age range due to increased health care. The regular practice of aerobic exercises is recommended to improve cardiovascular function and help in the prevention and control of obesity and related diseases, which include cardiovascular disease and diabetes mellitus\(^{20,21}\).

Increasing the level of physical activity in the population, particularly in sedentary, has been considered a health public policy\(^{22,23}\).

When asked about the objectives of the practice of aerobic exercises, the majority reported to be the improvement of health, followed by physical conditioning and weight loss (Graphic 7). By adding the percentages of all exposed objectives, they exceeded the 100%. This occurred because many individuals claimed to have several goals. These results indicate an important educational and cultural factor, because the evaluated population clearly shows the concern about the health issue rather than aesthetics.

When analyzed by age range, the individuals in the 45 to 50 years-old range were the most reported having as objective health, weight loss, stress relief and following medical recommendation. However, the leisure option was the least indicated.

The positive results of the evaluated group, as for the concern with health, are still superior to those presented by Domingues & Marins\(^{16}\) in which regular practitioners of weight training in Belo Horizonte that corresponded to 60.5%. Furthermore, Luz et al.\(^{24}\) showed contradictory results to those observed in this study: 53% of subjects per-
forming physical activities with the objective of improving the aesthetics, followed by improvement in physical conditioning and aptitude, with 22%, and health, with 17%.

From the 50 individuals that composed the sample, 80% reported not doing any kind of diet, but 82% consume alcoholic beverages. A limitation of this study was the impossibility of conducting a dietary survey on quantity.

A possible inadequate nutrition may have interfered negatively in obtaining the benefits reported by practitioners, as changes in lifestyle should include not only the practice of physical activities, but also changes in alimentary habits. Therefore, monitoring and nutritional guidance are extremely important.

It is suggested that before entering a program of regular physical activity, the individuals should be subject to a diagnostic evaluation performed by appropriately trained health care professionals, as a teacher of Physical Education, a doctor and a nutritionist.

Based on the results, it is possible to conclude that the practitioners of aerobic activities in the campus of UFV are residents of the suburbs, practice the exercises regularly, preferably opt for walking during the night and have as main objective the improvement of health. Most practitioners did some type of medical examination before starting the training.

It was also observed that the majority of the evaluated individuals are fulfilling the recommendations of physical activity for health, at least in relation to weekly frequency, intensity, duration and regularity of the practice of exercises.

REFERENCES


Submitted: 02/13/09 - Accepted: 06/03/09
SURVEY'S QUESTIONNAIRE

**name: ________________________________________________ age: ________________________

1) Location of residence?
( ) Center
( ) Suburbs (neighborhoods)
( ) Rural

( ) between 6 and 12 months
( ) more than 1 year
( ) more than 2 years
( ) does not know

2) Weekly frequency of walk?
( ) 1 time
( ) 2 times
( ) 3 times
( ) 4 times
( ) 5 times
( ) 6 times
( ) 7 times
( ) irregular

7) Objective of walk practice?
( ) leisure
( ) stress relief
( ) medical advice
( ) physical conditioning
( ) health
( ) weight loss
( ) fad
( ) companion
( ) does not know

3) Intensity of practice?
( ) walk
( ) jog
( ) running

8) Do you practice other physical activity besides the walk?
( ) yes
( ) no

4) Duration of practice?
( ) < 30 min
( ) 30 min
( ) 40 min
( ) 45 min
( ) 60 min
( ) 1h 15 min
( ) 1h 30 min
( ) 2h
( ) does not know

9) Which one(s)?
( ) general gymnastics
( ) aerobic activity
( ) weight training
( ) swimming
( ) water gymnastics
( ) dances
( ) court/field sports
( ) combat sports

5) Usual shift of the walk practice?
( ) morning
( ) afternoon
( ) night
( ) irregular

10) Do you have the habit of hydrating yourself during the walk or running?
( ) yes
( ) no

6) For how long do you practice?
( ) less than 1 month
( ) between 2 and 6 months

11) Do you have any type of cardiovascular disease?
( ) yes
( ) no
12) Do you have the habit of practicing physical activity with accessory that promotes sweating?
( ) yes
( ) no

13) Which?
( ) many clothes
( ) plastic surrounding the body
( ) others __________________________

14) Do you make use of any type of diet?
( ) yes
( ) no

15) Do you use alcoholic beverages?
( ) yes
( ) no

16) Do you have professional guidance for the walk practice?
( ) yes
( ) no

17) Who guides?
( ) doctor
( ) personal trainer
( ) Physical Education teacher
( ) others __________________________

18) Have you ever done any electrocardiogram exam?
( ) yes
( ) no

19) How long ago?
( ) less than 6 months
( ) more than 6 months
( ) more than 1 year
( ) does not remember

20) Have you ever done any ergometric test?
( ) yes
( ) no

21) How long ago?
( ) less than 6 months
( ) more than 6 months
( ) more than 1 year
( ) does not remember

22) Have you done any blood test for the doses of glyce- mia, cholesterol and total blood count?
( ) yes
( ) no

23) How long ago?
( ) less than 6 months
( ) more than 6 months
( ) more than 1 year
( ) does not remember

24) Já teve alguma lesão ortopédica decorrente da prática da caminhada ou corrida?
( ) yes
( ) no
which: ____________________________

25) How long ago?
( ) less than 6 months
( ) more than 6 months
( ) more than 1 year
( ) does not remember