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Original Article

Pre-participation clinical exams in regular street runners

Realização dos exames pré-participação da corrida de rua em praticantes regulares da modalidade

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ABSTRACT

Introduction: Outdoor exercises like running have shown increased participant adherence. **Objective:** To evaluate the use of pre-participation health evaluation in street runners. **Methods:** One hundred subjects of both genders (18 to 80 years) answered a structured questionnaire. A descriptive statistic was used along with the odds ratio calculation between different genders (male versus female) and health systems (public versus private care). **Results:** Around 52% of the interviewees were female. Regarding the pre-participation examination, 61% have not performed this procedure. Regarding the type of health care, those who had private health care performed more the pre-participation evaluation (47.5% of the total) when compared to those who had the public health care (25.6% of the total). Regarding the gender, 59.6% of the women performed pre-participation evaluation versus only 18.8% from the men. **Conclusion:** The pre-participation examination still needs to be better absorbed by street running practitioners.

Key-words: Health systems, Medical care, Running.

RESUMO

Introdução: Os exercícios realizados ao ar livre têm apresentado aumento dos adeptos. **Objetivo:** Avaliar a utilização do exame pré-participação em corredores de rua. **Métodos:** Cem sujeitos de ambos os gêneros (18 a 80 anos) responderam um questionário estruturado. Foi utilizada uma estatística descritiva e calculou-se as razões de chance (odds ratio) para os diferentes gêneros (masculino versus feminino) e para os tipos de sistema de saúde (público versus privado). **Resultados:** Dos entrevistados, 52% foram do sexo feminino. Em relação ao exame pré-participação, 61% não realizaram este procedimento. Os indivíduos que tinham plano de saúde realizaram mais (47,5% do total) a avaliação pré-participação quando comparados com os que não tinham plano de assistência médica (25,6% do total). Em relação ao gênero, 59,6% das mulheres realizaram avaliação pré-participação, enquanto homens apenas 18,8%. **Conclusão:** A realização do exame pré-participação ainda precisa ser melhor absorvida pelos praticantes de corrida de rua.

Palavras-chave: Sistemas de saúde, Cuidados médicos, Corrida.

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Introduction

According to the American College of Sports Medicine (ACSM), one of the reasons for the increase in individuals' adherence to different physical modalities is the improvement of physical fitness [1-3]. Exercises performed outdoors have shown an important increase in acceptability among new enthusiasts of physical activities [4] due to the low cost and high accessibility. Among them, street running has stood out, being today one of the most practiced sports in the world [5]. The number of street racing competitions has also shown a significant yearly progression [6].

However, even without having assertive records about the number of street runners in Brazil, the Paulista Athletics Federation (FPA-2015) [6] estimates that in a period of a decade (2005-2015) there was an increase of more than 147 % of street running races (from 168 to 415 races) and a total number of participants progression of approximately 245% (from 209.501 to 724.130 individuals) in the official races held by this federation. Also, according to these data from FPA-2015, about 62% of the participants were men [6].

According to Running USA, in 2019, the number of race registrants in the USA was 17.6 million. According to the institution, distances of 5k (5000m), 10k (10000m), and 21k (21.097.5 km, half marathon) are the most practiced. However, 5k had the highest number of practitioners (8.9 million) [7]. In addition, in Finland, the number of street racing events tripled between 1979 and 2010 [8]. And in Greece, the number of participants in races increased from 13.576 to 68.999 between the years 2006 and 2012 [9]. Finally, the number of participants in marathons (42.195 km) is also expressive [10], with high numbers of race completion in 2016 (507.600) [12]. Additionally, another distance like the half marathon race events, are also increasing in popularity [11]. Recently, the number of participants (at all levels) was significantly high in Boston, New York, Chicago, London, Berlin, and Paris marathons [13,14].

Street races have good accessibility for enthusiasts of different age groups and have significant popularity throughout the world [15,16]. However, regular running has since been shown to promote positive health effects [17], such as weight reduction [18], increased bone mineral content [19], cardiorespiratory [20], and cardiovascular function [21], among others. More specifically for cardiovascular function, we can highlight the increase in peripheral vascularization [22], the cardiac efficiency enhancement, with the reduction in resting heart rate [23] and the reduction in systemic blood pressure [23,24].

Such adaptations work as a cardioprotective mechanism and decrease the risk of death associated with the cardiac apparatus [20,25,26], making the street running an important ally in health promotion today. Additionally, running for five to 10 minutes a day, even at speeds below 10km/h, is associated with reduced mortality from all causes and the onset of cardiovascular disease [27-29]. However, every candidate for exercise must undergo a medical examination to detect risk factors, signs, and symptoms suggestive of cardiovascular, pulmonary, metabolic, or locomotor system diseases [30-32].

Concerning public health assistance, the Unified Health System (SUS) has been representing advances and achievements in the health of all Brazilians in the last 30 years, especially in the population's right to have a health care service [33]. This service should help inform men and women who exercise to assess their health conditions to start these practices. If it is part of its assumptions such as health promotion and protection, the presence of SUS in the assessment and monitorization should be occurring, at least among those runners who do not have access to private

health care [33].

However, even with the general consensus on the importance of the Physical Activity Readiness Questionnaire (PAR-Q) application when starting an exercise routine, given the importance of a medical evaluation, specifically in running, previous studies indicate that the majority of men are not concerned with the necessary care to enter a regular exercise routine. This data shows this population at a higher risk among regular exercise enthusiasts [34,35]. Given this scenario, the aim of the present study was to evaluate the preventive use of health services by street runners.

Methods

Sample

One hundred street racers of both genders, aging between 18 and 80 years old were asked to answer the questionnaire. For inclusion criteria, a minimum of six months was determined in regular running practice (2 to 3 times a week). Individuals who answered the questionnaire in an incomplete and/or inaccurate manner (evaluated by two researchers) were excluded. Data collection was carried out in Petrópolis city/RJ on Avenida Barão do Rio Branco, an avenue reserved for outdoor activities on Sundays. Data collection took place on two Sundays between 9am and 11am and all interviews were conducted before the individual training performance, in order to avoid possible bias in the results due to fatigue or even resulting stress derived from the run. All participants received a detailed explanation of all the procedures, conduct, and objectives of the present study.

Data collection and research ethics

The tool used was composed of 11 closed questions (structured questionnaire). All study participants received and signed a free and informed consent form, according to resolution 466/12 of the Brazilian National Health and Research Council. This study met the standards for researching human beings, Resolution 196/96, of the Brazilian National Health Council (1996) and the Helsinki Resolution (WMA, 2008), having been approved by the Ethics and Research Committee of Serra dos Órgãos Educational Foundation (FESO), under the protocol of 44183015.0.0000.5247.

Statistical analysis

For data analysis, a descriptive statistic was performed. Odds ratios were calculated for different genders (male versus female) and both types of health care systems (public versus private). A 95% confidence interval was considered and the Graph Prism software, version 8.0.1, was used to apply the statistics.

Results

Among the street runners interviewed on the two study weekends, 100 answered the questionnaire, 52% of whom were female. The most prevalent age group was 30 to 49 years, also representing 52% (24 men and 28 women) of the respondents' age group. For a better outline of the age groups, they were divided by decades and are shown in table I.

Table I - Street runners distribution by age groups.

Age range	Mens	Women
18-19 years	_____*	3
20-29 years	9	13
30-39 years	9	18
40-49 years	15	10
50-59 years	3	5
60-69 years	1	1
70-79 years	2	1

* No men in this age group were selected by the present study.

Concerning pre-participation assessment, 61% of respondents did not perform this procedure. Among individuals who had health insurance, 47.5% underwent pre-participation medical assessment (29 of 61 respondents with health insurance), while in the group of those who did not have health plan, this frequency dropped to 25.6% (10 respondents). We observed with these data a 2.65-fold odds ratio [CI: 0.4 -2.3] higher for an individual with a health insurance to carry out a pre-participation assessment when compared to an individual without a health plan.

Regarding gender, 59.6% of women underwent pre-participation assessment while only 18.8% of men underwent this procedure. Thus, we found an odds ratio of 6.43 times higher [CI: 0.4 - 2.5] for a woman to have performed a pre-participation assessment when compared to a man in the studied sample.

Eighty eight percent of the runners related no health problems. Among those who reported having some underlying disease (12% of the sample), we observed a frequency of 58.3% of individuals with systemic arterial hypertension, 8.3% with diabetes mellitus, and 33.4% who declared other conditions.

The most frequent exams among the respondents who underwent pre-participation assessment were the electrocardiogram (ECG), performed by 89.7% of the interviewees, followed by blood tests, stress tests, and blood pressure measurement with 71.7%, 58.9%, and 33.3%, respectively. About 38% of the street runners interviewed stated to perform an annual medical evaluation. Of these runners, 30% are over 35 years of age. Regarding the identification of symptoms during running, 15% of respondents reported their occurrence, the most common symptom being dizziness, followed by lack of oxygen (4%), chest pain and arrhythmia (2%), and fainting (1%).

Discussion

The aim of this study was to evaluate the preventive use of health services by street runners. We observed that only 39% of the street runners interviewed underwent some type of clinical pre-participation assessment. In addition to this low frequency in exam adherence, we found that private health system users had a 2.65 times higher chance of performing a pre-participation exam when compared to public health system users.

These data suggest that, although consolidated in our country, the Unified Health System still faces challenges such as difficulties in accessing health actions and services. According to Sousa and Costa [32], these conjuncture dilemmas chal-

lenge health managers and need to be assumed as responsibilities for achieving the desired public health service.

According to Paim and Teixeira [35], more than the insufficiency and instability of public funding for health, management problems persist, especially with regard to health facilities such as hospitals and primary care services. According to these authors, the Unified Health System could be a great example of democratic public policy, but citizens have paid a high rate of mistreatment and dehumanization when they depend on these services. Also, with regard to public health management, some important aspects are underestimated or poorly managed, such as action planning, internal coordination, communication, among other factors that compromise whole management, and consequently, negative results are evident [35].

Corroborating this scenario, Souza and Costa [32] states that the integration of actions provides continuity of care and care for users with different levels of social classes, which must be regulated by service providers. However, this integration does not occur, either due to the lack of interest of those who work, due to difficulties imposed by the units and, also, for a series of reasons that leave the population without the attention and continuity of basic treatment. Our findings are in line with these positions, as possibly the difficulties in the public health sector may have an influence on the significance of individuals without health plans having neglected the necessary examinations prior to the practice of street running, of these, only 25.6% performed a pre-participation assessment.

Another significant aspect related to the pre-participation assessment was the difference between genders since the women interviewed had a 6.43 times greater chance of carrying out the pre-participation assessment than the men. Data related to public health services point out differences existing between men and women in health services are considered as characteristics of the cultural dimension in being a man and being a woman [36]. There is a recognition by professionals that the demand for public health services by men is small, and some explanations are outlined.

These reveal the traditional conceptual closeness of man as closer to culture and woman to nature, indicating the incorporation of social structures of distinction between the sexes [37]. In general, studies relating men and women to health care are scarce, however, Stoutenberg et al. [38] present in his study relevant questions for health, in both genders, in different sectors, private or public, thus demonstrating a change in the associated paradigms. However, the results of the present study suggest that women are prevalent in having greater care and health care. There are some assumptions about the lower use of primary care services by men, the first being the observation of common sense that basic health units are services almost exclusively for women, children and the elderly. Another point to be considered concerns the male identity related to their socialization process.

According to Figueiredo [34], this identity would be associated with the devaluation of self-care and the incipient concern with health. Another issue considered is the idea that men prefer to use other health services, such as pharmacies or emergency rooms, which would respond more objectively to their demands. In these places, men would be treated more quickly and be able to easily expose their problems [29].

Alves et al. [39] also observed that preventive practices, for various reasons, are not usually part of male daily life. These researchers also concluded that the male public was not the focus of the health teams' activities, the lower demand for health services by them may be due to being "invisible", about assistance in Primary Health Care services. We can conclude with these questions, in line with Machin et al. [36],

which although envisioned, it is still out of the reach of PHC services to expand the understanding of men as concrete and particular subjects, who are more vulnerable than women in basic health care.

Conclusion

Pre-participation cardiological assessment is of paramount importance for all individuals who practice physical exercise, especially street running. Above all, the present investigation found that this evaluation still needs to be better absorbed by street runners. The present study can serve to raise awareness of this population for the performance of pre-participation exams periodically by runners to prevent different physiological disorders, and for the positive responses, monitorization provided by regular running.

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Potential conflict of interest
No conflicts of interest with potential potential for this article have been reported.

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Authors' contributions
Conception and design of the research: Silva DJ and Pestana CLS. Data collection: Silva DJ. Analysis and interpretation of the data: Sant'Ana LO, Senna GW and Scudese E. Writing of the manuscript: Silva DJ, Sant'Ana LO and Oliveira CO. Critical review of the manuscript for important intellectual content: Senna GW, Oliveira CO and Pestana CLS.

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