

A PREVALENCE STUDY OF WALKING IN WOMEN FROM SANTA CATARINA STATE ACCORDING TO AGE GROUP

A PRÁTICA DA CAMINHADA EM MULHERES DO ESTADO DE SANTA CATARINA DE ACORDO COM A FAIXA ETÁRIA: UM ESTUDO DE PREVALÊNCIA

Paulo André Medeiros de Oliveira¹, Leonessa Boing¹, Jéssica Moratelli¹, Jóris Pazin¹ and Adriana Coutinho de Azevedo Guimarães

¹Universidade do Estado de Santa Catarina, Florianópolis-SC, Brasil.

ABSTRACT

This cross-sectional study aimed to investigate the prevalence of age-related walking in women from the state of Santa Catarina. The sample consisted of 2,716 women (32.97±10.9 years old) from eight cities in the state of Santa Catarina (Blumenau, Chapecó, Criciúma, Florianópolis, Itajaí, Joinville, Lages, and São José). Physical activity was evaluated using the short version of the IPAQ. The sample was divided into three age groups (20-32, 33-45, and 46-59 years). Approximately 68.8% of the women met the physical activity recommendations, especially those aged 46-59 years. Regarding the prevalence of walking, 61% of the women performed it for more than 30 minutes per day. A positive association was found between age and physical activity, and women from Florianópolis, Itajaí and Lages were more likely to meet the recommendations. In conclusion, most of the participants walk for more than 30 minutes per day, regardless of age, a fact that contributes to meeting the recommendations on physical activity for health.

Keywords: Physical activity. Women. Walking. Health. Age groups.

RESUMO

A caminhada é um dos tipos de atividade física mais praticada em adultos, e pode trazer benefícios aos seus praticantes. Este estudo transversal objetivou investigar a prevalência da prática da caminhada relacionada com a idade em mulheres do estado de Santa Catarina, em uma amostra de 2716 mulheres (32,97±10,9 anos), de oito cidades do estado de Santa Catarina (Blumenau, Chapecó, Criciúma, Florianópolis, Itajaí, Joinville, Lages e São José). Avaliou-se a atividade física pelo IPAQ – versão curta. A amostra foi dividida em três grupos etários (20-32 anos; 33-45 anos e 46-59 anos). Aproximadamente 68,8% das mulheres atendem às recomendações quanto à prática de atividade física, destacando-se as de 46-59 anos. Quanto à prevalência da prática de caminhada, 61,0% realizaram acima de 30 minutos por dia. Apontou-se associação positiva entre idade e atividade física, bem como maiores chances das mulheres de Florianópolis, Itajaí, e Lages atenderem às recomendações. Conclui-se que a maioria das participantes do estado de Santa Catarina realiza acima de 30 minutos diários de caminhada, independentemente da faixa etária, contribuindo para o cumprimento das recomendações quanto a saúde, relacionadas à prática de atividade física.

Palavras-chave: Atividade motora. Caminhada. Mulheres. Saúde. Grupos etários.

Introduction

Walking is one of the most common physical activities performed by the adult population¹⁻³, especially by women during leisure time^{4,5}. Analysis of data from individuals physically active in the transport domain, comparing Brazilian capitals, showed a slightly higher female participation compared to males⁶. Women tend to be more involved in physical activities related to domestic tasks than men, such as going to the market, pharmacy and bakery or shopping at the mall which include active transport⁷, contributing to increase participation in this modality.

The activity of walking is associated with the maintenance and improvement of basic health conditions⁸, especially because it is a simple physical activity. Walking as a leisure-time physical activity has also been suggested to be associated with lower medication costs and total expenses⁹. Moreover, if performed regularly and within the recommended levels, walking can assist in the control of weight and blood pressure, improve mental health and

mood, and reduce the risk of cardiovascular diseases, type 2 diabetes and some types of cancer^{1,10}.

Studies conducted in the United States indicate that walking is the most prevalent activity among women aged 40 years and older, regardless of race and socioeconomic level^{2,11}. In Brazil, walking is the most common activity in both men and women, with 27.9% of men performing it as a leisure-time physical activity, while this number reaches approximately 61.0% among women⁵. Similar results have been reported in a North American study in which walking was the most prevalent physical activity⁴. Other studies have found results that indicate walking as the most prevalent type of physical activity in São Paulo¹² and in Pelotas¹³.

However, no studies on the prevalence of walking are available for the state of Santa Catarina. In view of the need to verify this activity in this state, the aim of the present study was to investigate the prevalence of age-related walking in women from the state of Santa Catarina.

Methods

Study design and participants

This was a cross-sectional study that used a convenience sample of women aged 20 to 59 years living in cities of Santa Catarina with more than 150,000 inhabitants according to the last census¹⁴: Blumenau, Chapecó, Criciúma, Florianópolis, Itajaí, Joinville, Lages, and São José. Although non-probability sampling was performed, the sample size was calculated according to Barbetta¹⁵ based on a population of 705,577 women aged 20 to 59 years from the selected cities, corresponding to 97,497 from Blumenau; 55,665 from Chapecó; 51,606 from Criciúma; 136,558 from Florianópolis; 93,262 from Itajaí; 157,177 from Joinville; 46,087 from Lages, and 67,725 from São José. The estimated sample size was 400 women per city. At the end of data collection, 2,716 women participated in the study.

Procedures

The data were collected from March 2012 to August 2013. The women were invited to participate in the study voluntarily by contact of the researchers with employers or service providers in education, health, justice, religion and insurance, as well as housewives, in the selected cities. To cover a large number of the population of women between the age of 20 and 59 years, data collection was performed by e-mail (sent to the participants in the study) and in loco (streets, offices, shops, shopping centers, beaches, churches). A total of 4,356 questionnaires (face-to-face and online) were distributed and 2,716 were returned correctly filled out. All women signed the free informed consent form. When the data were collected online, the women answered a specific question about agreeing to participate in the study.

The study was approved by the Ethics Committee on Research Involving Humans of Universidade do Estado de Santa Catarina on 2 March 2012 (Protocol 214/2011).

Instruments

A self-administered questionnaire was used to investigate personal characteristics, including age, education level, marital status, number of children, and weight and height (self-reported) for calculating the body mass index (BMI, weight/height²). The BMI (weight status) was classified using the protocol of the World Health Organization¹⁰, which establishes the following cut-off points: underweight (BMI < 18.5); normal weight (BMI 18.5-24.9); overweight (BMI 25.0-29.9); obesity (BMI > 30.0). For analysis of the results, the categories were regrouped as follows: normal weight – underweight and normal weight; excess weight:

overweight and obesity. These variables were self-reported because of the difficulty in collecting the data, similar to the study of Oliveira et al.¹⁶.

The Brazil 2010 socioeconomic classification standard of the Brazilian Association for Population Studies (ABEP in the Portuguese acronym)¹⁷ was used for socioeconomic classification, which is considered the main instrument of dividing the population according to its purchasing power. This instrument classifies the population into socioeconomic classes (A, B, C, D, and E) by converting the sum of points attributed to the education level of the woman studied and the number of consumer goods in the household¹⁷.

The data about physical activity level were collected using the short version of the self-administered International Physical Activity Questionnaire (IPAQ)¹⁸. For the assessment of habitual physical activity, the number of times that each subject had performed at least 10 continuous minutes of walking, moderate physical activity and vigorous physical activity in the last week in the work, domestic, leisure, recreational and sports domain was determined. For statistical purposes, the subjects were divided as follows: those that did not meet the recommendations (insufficiently active) and those that met the recommendations (active + very active).

Statistical analysis

Statistical analysis was performed using the Statistical Package for the Social Sciences 20.0 program (SPSS). The mean, standard deviation and percentage were calculated for descriptive statistics. The chi-squared test was used to compare the personal characteristics of the women, physical activity level and prevalence of walking between age groups. Binary logistic regression analysis was performed to estimate crude and adjusted odds ratios between physical activity levels, i.e., those who met the recommendations (dependent variable/outcome) and the demographic variables age group, education level, socioeconomic status, marital status, city and BMI (independent variables). The results obtained in the crude analysis were used to select the variables for adjusted analysis, in which all independent variables with $p \leq 0.20$ in crude binary regression analysis were selected for the adjusted binary regression model¹⁹.

Results

Table 1 shows the characteristics of the participants according to age group. Most women lived with a partner (54.2%), except for the group of younger women ($p < 0.001$), had complete higher education (55.1%) ($p < 0.001$), and lived in Florianópolis and São José (14.7% and 14.3%, respectively). Regarding weight status, most women were classified as normal weight (61.9%). A higher prevalence of excess weight was observed in the group of older women (57.1%) ($p < 0.001$). Furthermore, most women belonged to the upper socioeconomic stratum (73.4%), with no significant difference.

Table 1. Characteristics of the women according to age group. Santa Catarina, 2012-2013 (n=2,716)

<i>Variable (%)</i>	<i>Total</i>	<i>20 to 32 years (n=1,532)</i>	<i>33 to 45 years (n=703)</i>	<i>46 to 59 years (n=481)</i>	<i>p value</i>
<i>Education level</i>					
Elementary school	11.1	4.9	14.0	26.3	<0.001*
High school	33.9	41.9	23.4	23.5	
Higher education	55.1	53.1	62.6	50.2	
<i>Marital status</i>					
With a partner	54.2	41.5	72.1	67.8	<0.001*
Without a partner	45.8	58.5	27.9	32.2	
<i>Weight status</i>					
Normal weight	61.9	70.5	56.4	42.9	<0.001*
Excess weight	38.1	29.5	43.6	57.1	
<i>Socioeconomic stratum</i>					
High	73.4	73.0	75.2	72.1	0.298
Middle	26.2	26.4	24.8	27.4	
Low	0.4	0.5	--	0.4	
<i>City</i>					
Criciúma	11.7	12.1	13.2	8.3	<0.001*
Itajaí	12.3	8.9	14.2	20.6	
Blumenau	9.2	8.9	10.8	8.1	
Joinville	12.9	11.8	11.7	18.3	
Chapecó	12.4	13.1	11.7	11.4	
Lages	12.3	14.9	9.2	8.3	
Florianópolis	14.7	12.1	20.9	14.1	
São José	14.3	18.2	8.3	10.8	

Note: Chi-squared test. *p<0.001

Source: The authors

As can be seen in Figure 1, most women met the physical activity recommendations. The chi-squared test revealed a significant difference between age groups ($p=0.031$), especially for those aged 46 to 59 years (73.5%). Regarding the activity of walking illustrated in Figure 2, most women walked more than 30 minutes per day (61.0%) and no significant difference was observed between age groups.

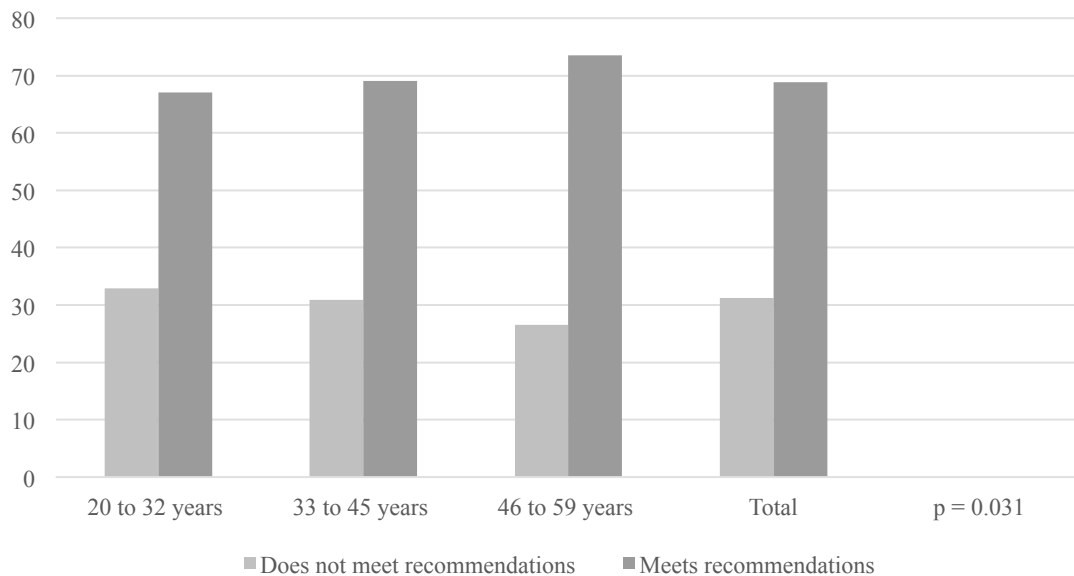


Figure 1. Physical activity level of the women participating in the study according to age group

Source: The authors

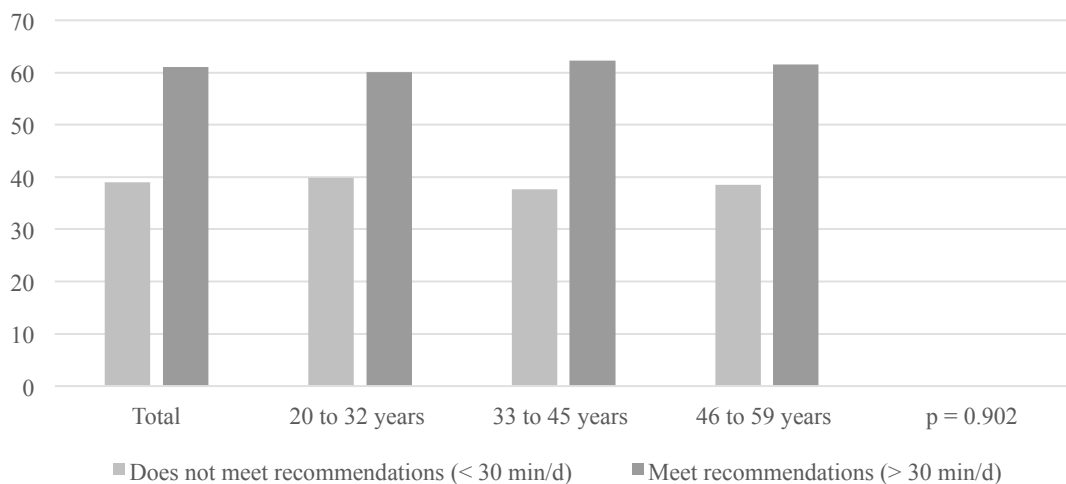


Figure 2. Prevalence of walking in women participating in the study according to age group

Source: The authors

Table 3 shows the odds ratios for meeting physical activity recommendations among women obtained by binary logistic regression analysis. With respect to age group, younger women (20-32 years) were 29% less likely to meet the recommendations when compared to older women (46-59 years). Regarding the city of origin using Chapecó as a reference, women from Florianópolis, Itajaí, Lages and Joinville were, respectively, 2.14 (95%CI = 1.53-3.00), 1.482 (95%CI = 1.053-2.086), 1.496 (95%CI = 1.067-2.096) and 1.469 times (95%CI = 1.058-2.041) more likely to meet the recommendations, while those from Criciúma had 41.0% lower odds of meeting the recommendations than those from Chapecó.

Table 3. Crude and adjusted odds ratios for meeting physical activity recommendations among the women studied. Santa Catarina. 2012-2013 (n = 2,716)

Variable	Physical activity level		Physical activity level	
	Crude OR (95%CI)	* p	Adjusted OR (95%CI)	**p
<i>Age group</i>		0.031		0.019
20-32 years	0.736 (0.585-0.926)		0.710(0.554-0.910)	
33-45 years	0.807 (0.623-1.045)		0.846 (0.645-1.108)	
46-59 years	Reference		Reference	
<i>Weight status</i>		0.067		0.189
Normal weight	1.168 (0.989-1.378)		1.128 (0.943-1.349)	
Excess weight	Reference		Reference	
<i>Marital status</i>		0.157		0.101
With a partner	0.889 (0.756-1.046)		0.861 (0.720-1.030)	
Without a partner	Reference		Reference	
<i>City</i>		0.000		0.000
Florianópolis	2.271 (1.634-3.157)		2.146 (1.534-3.002)	
São José	1.267 (0.930-1.724)		1.252 (0.915-1.713)	
Itajaí	1.498 (1.082-2.074)		1.482 (1.053-2.086)	
Blumenau	1.099 (0.782-1.544)		1.124 (0.791-1.598)	
Criciúma	0.627 (0.459-0.856)		0.588 (0.424-0.815)	
Lages	1.374 (0.998-1.892)		1.496 (1.067-2.096)	
Joinville	1.556 (1.126-2.150)		1.469 (1.058-2.041)	
Chapecó	Reference		Reference	

Note: OR = odds ratio

Source: The authors

Discussion

Physical inactivity is a major health challenge because of its association with the incidence of chronic diseases²⁰. In Brazil, more than 13% of deaths that occurred in 2008 were attributed to physical inactivity²¹. Global physical activity recommendations suggest that an individual should accumulate at least 150 minutes of moderate physical activity per week to be considered sufficiently active or 75 minutes of vigorous physical activity, or even a combination of both¹⁰. Positive results were obtained in the present study in which most women were classified as active/very active, meeting the recommendations proposed by the World Health Organization.

The factors associated with physical activity in each domain (leisure, work, domestic tasks, and transport) are different²². In this respect, walking is the preferred leisure-time activity of women as several studies reported a higher prevalence of this modality among women^{4,5,23}. These findings seem to be related to the greater health concern of women who seek an easily accessible physical activity²⁴. Corroborating the literature, most participants in the present study met the physical activity recommendations by means of walking (>30 minutes per day), regardless of age. The present sample consisted of women from the state of

Santa Catarina, located in the southern region of Brazil, and similar results have been reported in other studies conducted in the same region^{13,25}.

It should be noted that walking is also used in other physical activity domains, including as a means of transportation. The prevalence of active transport is high in countries such as Germany and The Netherlands²⁴, a fact that substantially contributes to meeting physical activity recommendations. In Brazil, on the other hand, the prevalence of people active in the transport domain is still low⁶, a fact that might be directly related to environmental factors such as infrastructure and public safety since paved and lighted streets and sidewalks, parks and bike lanes, together with a good perception of safety, encourage active transport²⁶.

The results of the present study indicate that the participants from Joinville, Lages, Itajaí and Florianópolis are more likely to meet physical activity recommendations when compared to those from the other cities studied. In the former, differentiated spaces such as walking and running routes, bike lanes and health clubs, as well as municipal parks that allow physical activity through ecological and hiking trails, are made available to the population. In summary, people who live in places near sites, public or private, that favor physical activity are more likely to be active in the leisure domain^{26,27}.

The prevalence of physical activity was lower among women of the younger age groups (20-32 and 33-45 years) compared to older women (46-59 years), in agreement with the results reported by Zanchetta et al.²⁸. This difference can be attributed to the age factor since older women are in the transition phase of exiting the labor market to retirement^{29,30}, an event that reduces sedentary behaviors and increases the frequency of walking²⁵.

The main limitation of this study was the fact that physical activity level was evaluated based on self-reported data, which could lead to overestimation of this activity, mainly because it is considered ideal³¹. In addition, the instrument used evaluates the total amount of generally activities, excluding the possibility of analysis in different domains such as active transport, domestic tasks, leisure and work. Since probability sampling was performed, the results cannot be extrapolated to the whole female population of the state of Santa Catarina. Another limitation of the study was the application of the questionnaire online and face-to-face. However, the questionnaire was self-administered in both types of application without interference from the researcher, which could minimize this bias.

Conclusions

More than half the women aged 20 to 59 years from eight cities in the state of Santa Catarina chose walking as the type of physical activity, performing this activity more than 30 minutes per day, a finding that suggests a major contribution of this modality to total physical activity level. Therefore, further studies that address walking in the different physical activity domains are necessary in order to encourage specific public policies for each of them considering the needs of the population.

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Author address: Leonessa Boing, Rua General Estilac Leal, bl B, apto 105, Coqueiros. Florianópolis – SC, Brasil. CEP 88080760.
email: leonessaboing@gmail.com