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Prevalence and sociodemographic correlates of all domains of physical activity in Brazilian adults

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ABSTRACT

Objective. To estimate the prevalence and sociodemographic indicators associated with physical inactivity in leisure, commuting, work, and household in adults in Florianopolis, Brazil.

Methods. Population-based cross-sectional study was conducted from September 2009 to January 2010, with adults between 20 to 59 years of age (n = 1720). Sociodemographic indicators and physical inactivity in each domain were assessed by a validated questionnaire, applied through face-to-face interviews.

Results. The prevalence of physical inactivity in each domain was: leisure (52.5%); commuting (50.4%); work (80.9%); and household (57.6%). Women were 27% more inactive in leisure, while men were significantly more inactive at commuting and household ($p<0.001$). Older adults were more inactive in leisure ($p = 0.04$) and commuting ($p = 0.05$). Physical inactivity in leisure was higher in black adults and those who living with a partner and with lower educational level and lower income. In commuting, those living with a partner and who had higher income were more inactive. Physical inactivity at work was higher in white or brown adults, who had higher educational level and higher income. Physical inactivity in household was found to be higher in adults with higher educational level and higher income.

Conclusions. Sociodemographic indicators presented different associations with physical inactivity in each domain.

Introduction

Attention to promoting physical activity in different domains (leisure, commuting, work, and household) is very recent and is stressed in recommendations proposed by international agencies (Haskell et al., 2007; World Health Organization, 2010).

Population-based research on this matter, especially in low and middle-income countries, is scarce and focuses on the investigation of leisure, where there is evidence of greater benefits to health (Autenrieth et al., 2011). Although vigorous physical activity at work may bring some damage to health (Andersen et al., 2012), physical activity in different domains can also contribute to significant reduction in mortality (Autenrieth et al., 2011; Samitz et al., 2011). In addition, it is relevant to consider the different domains of physical activities in low and middle-income countries because commuting and work activities still important for total physical activity in the general population (Trinh et al., 2008).

The objective of this study was to estimate the prevalence and sociodemographic indicators associated with physical inactivity in leisure, commuting, work, and household, in adults from Florianopolis, Brazil.

Method

The study named "EpiFloripa" was a population-based cross-sectional research aimed to investigate health and quality of life in a representative

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sample of adults from 20 to 59 years old, living in Florianopolis, the capital of the State of Santa Catarina, Brazil.

The sampling process was performed in two phases. Initially, 60 of the 420 census sectors of Florianopolis were drawn. The number of households in each one of the census sectors was updated. Then 18 households were selected in each of the sectors, aiming to reach the expected size of the sample (n = 2016).

Data collection was undertaken by trained interviewers from September 2009 to January 2010. Personal Digital Assistant was used to apply face-to-face interviews.

Physical inactivity in different domains (leisure, commuting, work, and household) was evaluated by the physical activity section of the questionnaire of the Surveillance System of Protective and Risk Factors for Chronic Diseases by Telephone Survey, that presented satisfactory reliability and accuracy (Monteiro et al., 2008). Physical inactivity in each domain was defined as no participation in any physical activity in the domain. Despite the possible influence of unemployment on daily commuting, it was not considered in the analysis of such domain.

Sociodemographic indicators evaluated were: gender, age, race (self-reported by the participant), current marital status, educational level and *per capita* family income, categorized as showed in Table 1.

Statistical analysis

The statistical package Stata version 11.0 was used. Sampling weights and complex sample were considered using the "svy" command. Descriptive statistic included prevalence and confidence interval of 95% (95%CI). Wald tests for heterogeneity and for linear trend were used for nominal and ordinal variables, respectively. Poisson regression was used to obtain unadjusted and adjusted prevalence ratio (PR) and 95%CI. In the analysis model, demographic and social variables were included in the distal and proximal level, respectively. Stepwise selection strategy and a critical level of $p \leq 0.20$ for permanence in the model were used to control confounders.

The Ethics Committee for Research on Human Beings of the Federal University of Santa Catarina, Brazil, approved this research (document number 351/08).

Results

From the 2016 eligible individuals, 1720 (85.3%) were interviewed. The majority were women (55.3%) and 33.4% of the participants were aged from 20 to 29 years old.

Prevalence of physical inactivity in each domain was: leisure 52.5% (95%CI: 48.2; 56.7); commuting 50.4% (95%CI: 46.0; 54.8), work 80.9% (95%CI: 77.8; 84.0), and household 57.6% (95%CI: 53.5; 61.7).

Table 1 shows prevalence and unadjusted analysis of physical inactivity in each domain. In the leisure domain, women, older and black participants, those living with a partner, presenting lower level of education and *per capita* family income had higher probability of physical inactivity. Regarding commuting, men, older participants, those living with a

Table 1
Prevalence and unadjusted analysis of physical inactivity in each domain among adults. Florianopolis, Brazil, 2010.

Variable	Physical inactivity															
	Leisure				Commuting				Work				Household			
	n	%[a]	PR (95%CI)[b]	p	n	%[a]	PR (95%CI)[b]	p	n	%[a]	PR (95%CI)[b]	p	n	%[a]	PR (95%CI)[b]	p
Gender				<0.001[c]				<0.001[c]				0.95[c]				<0.001[c]
Male	354	45.5	1.00		395	56.9	1.00		523	81.0	1.00		600	79.0	1.00	
Female	558	58.1	1.28 (1.13; 1.43)		343	44.5	0.78 (0.69; 0.89)		546	80.9	0.99 (0.95; 1.05)		380	40.4	0.51 (0.45; 0.59)	
Age (years)				0.003[d]				0.006[d]				0.96[d]				0.33[d]
20–29	252	45.9	1.00		220	42.4	1.00		352	80.5	1.00		311	56.1	1.00	
30–39	216	56.2	1.22 (1.08; 1.39)		196	56.3	1.33 (1.09; 1.61)		276	82.3	1.02 (0.95; 1.11)		225	58.4	1.04 (0.91; 1.19)	
40–49	243	54.8	1.19 (1.05; 1.36)		190	51.7	1.22 (1.01; 1.46)		272	80.1	0.99 (0.93; 1.06)		236	54.9	0.98 (0.85; 1.13)	
50–59	201	56.6	1.23 (1.07; 1.42)		132	58.1	1.37 (1.12; 1.68)		169	80.9	1.01 (0.93; 1.09)		208	63.1	1.12 (0.96; 1.32)	
Skin color (self-determined)				0.003[c]				0.16[c]				0.02[c]				0.19[c]
White	751	51.3	1.00		632	51.9	1.00		903	81.7	1.00		835	58.5	1.00	
Brown	82	55.6	1.08 (0.91; 1.29)		62	44.7	0.86 (0.71; 1.05)		98	80.9	0,99 (0.91; 1.08)		85	58.6	1.00 (0.88; 1.15)	
Black	58	67.2	1.31 (1.13; 1.52)		32	43.3	0.83 (0.60; 1.17)		43	62.7	0.77 (0.64; 0.92)		39	46.1	0.79 (0.61; 1.02)	
Current marital status				0.006[c]				0.002[c]				0.67[c]				0.93[c]
Without a partner	331	47.2	1.00		267	44.0	1.00		436	81.4	1.00		388	57.4	1.00	
With a partner	581	56.0	1.14 (1.03; 1.26)		471	55.0	1.25 (1.09; 1.43)		633	80.5	0.99 (0.94; 1.04)		592	57.7	1.00 (0.91; 1.10)	
Educational level (years)				<0.001[d]				0.29[d]				<0.001[d]				<0.001[d]
≤4	129	82.9	2.15 (1.89; 2.45)		51	50.7	0.96 (0.74; 1.24)		55	58.9	0.66 (0.54; 0.82)		81	54.3	0.83 (0.71; 0.98)	
5–8	167	68.4	1.77 (1.54; 2.04)		92	46.6	0.88 (0.69; 1.11)		114	62.1	0.70 (0.62; 0.79)		116	47.7	0.73 (0.64; 0.84)	
9–11	319	57.2	1.48 (1.32; 1.66)		229	47.7	0.90 (0.78; 1.03)		352	80.8	0.91 (0.85; 0.98)		300	52.5	0.81 (0.72; 0.90)	
≥12	296	38.6	1.00		365	53.1	1.00		547	88.6	1.00		483	65.2	1.00	
Per capita family income (quartile)				<0.001[d]				<0.001[d]				<0.001[d]				<0.001[d]
1° (poorest)	343	67.9	1.82 (1.56; 2.14)		164	40.3	0.65 (0.54; 0.78)		253	68.7	0.75 (0.68; 0.83)		253	51.0	0.69 (0.61; 0.77)	
2°	185	54.6	1.47 (1.24; 1.74)		135	47.5	0.77 (0.63; 0.94)		214	83.0	0.91 (0.84; 0.98)		171	50.9	0.68 (0.58; 0.80)	
3°	209	49.8	1.34 (1.12; 1.59)		193	52.6	0.85 (0.75; 0.96)		266	80.3	0.88 (0.82; 0.93)		223	53.6	0.72 (0.63; 0.83)	
4° (wealthiest)	160	37.2	1.00		238	62.0	1.00		315	91.7	1.00		316	74.4	1.00	

[a] Percentage in the weighted sample.
[b] Prevalence ratio (PR) and confidence intervals of 95% (95%CI) in the weighted sample.
[c] Wald test for heterogeneity.
[d] Wald test for linear trend.