Obesity and lifestyle risk factors among health professionals in three brazilian cities

Obesidad y factores de riesgo del estilo de vida en profesionales de salud de tres ciudades brasileras

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ABSTRACT

Aims: to describe the prevalence of overweight, obesity and lifestyle factors among health professionals from three Brazilian cities. **Methods:** in addition to a questionnaire containing the FIT and PAR-Q test, the WHOQOL and the Epworth Sleepiness Scale, we also estimated the body mass index and waist circumference of 44 health professionals. **Results:** 30% of the sample were overweight or had sleeping problems. 29% of the employees had little leisure oportunities. About 12% of the sample had arterial hypertension. **Conclusion**: there was a significantly relationship between affective problems and being a women. The frequency of obesity and its co-morbidities was higher in women than in men.

Key words: sleep deprivation, sedentary lifestyle, obesity, abdominal obesity, waist circumference

RESUMEN

Objetivos: verificar la prevalencia de sobrepeso y obesidad y el estilo de vida entre los profesionales de la salud de tres ciudades brasileñas. **Métodos:** además de la evaluación del FIT y PAR-Q prueba, el WHOQOL y la Escala de Somnolencia de Epworth, también se calculó el índice de masa corporal y la circunferencia de la cadera de 44 profesionales de la salud. **Resultados:** el 30% de la muestra tenía sobrepeso o problemas para dormir; 29% de los empleados tenían poco tiempo libre; alrededor del 12% de la muestra tenía hipertensión arterial. **Conclusión**: las mujeres eran más propensas a desarrollar problemas afectivos y tenían mayor riesgo de obesidad y sus comorbilidades.

Palabras clave: privación del sueño, estilo de vida sedentario, obesidad, obesidad abdominal, circunferencia de la cadera

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INTRODUCTION

In USA, the prevalence of obesity among adults is 33.8%, and the overall prevalence of being overweight and obese is 68%. It is 72.3% among men, and 64.1% among women (1). In Brazil, the prevalence of adult excessive body weight is 47% for men and 39% for women, and obesity prevalence reached 11% for both genders (2). Stroke prevalence among the middle-aged United States population has tripled over the past two decades, which is attributed to obesity and metabolic syndrome (3). Obesity has been also implicated with other important co-morbidities, such as hypertension, stroke, type 2 diabetes, mellitus, metabolic syndrome, chronic kidney disease, and some types of cancer (3-7).

The objective of this work is to evaluate being overweight and obesity and its associated factors among a representative sample of health professionals from "Vale do Araguaia", Brazil.

METHODOLOGY

We developed a descriptive, transversal study in three Brazilian municipalities: Aragarças, Barra do Garças, and Pontal do Araguaia. The sample was comprised of 44 health professionals from 13 basic health units known as "Estratégias de Saúde da Família (ESFs)" from B. Garças, 4 ESFs units from Aragarças, and 2 ESFs units from Pontal do Araguaia. From a total of 68 health professionals, 44 (64.7%) agreed to be part of the study.

The choice of ESFs was not causal since those health units should develop curative as well as preventive activities for the population they attend.

The inclusion criterion was health professionals who agreed to engage into the research. Those people who did not agree to join the study were excluded.

Beyond some lifestyle factors (alcohol, drinking, smoking) the questionnaire also included the Fitness Test (8), the PAR-Q (9), and the Epworth Sleepness Scale (10). The instrument also included one question regarding the influence of physical pain on daily activities, and one question on frequency of affective problems, both of them belong to the WHOQOL questionnaire (11).

The PAR-Q test is a validated scale, which measures the person's willingness to engage in physical activities without medical supervision.

The FIT test is a scientifically recognized method to estimate physical activity level of an individual. People who scored 59 points or less in the FIT test were considered physically inactive (sedentary behavior) and those who reached 60 points or more were defined as having a physically active life.

In the Epworth Sleepiness Scale, subjects with 0 to 8 points were considered to have adequate sleep whereas the quality of sleep of people with 9 to 16 points was deemed moderately affected; and those who reached 17 to 24 points were considered to have a very disturbed sleep.

For characterization of overweight and obesity, the body mass index (BMI = body mass (in kg)/height2 [in meters]) and the waist circumference (measured at the mean point between the last rib and the iliac crest) were measured with anthropometric tape (Sanny, model SN-4010, USA) and weight scale (Tanita, model TBF551, Japan).

For women, waist circumference cut-off values were 80cm and 88cm for increased cardio-metabolic risk and higher cardio-metabolic risk, whereas 94cm and 102cm were the cut-off values for male gender (1-5).

The measures were individually taken in a reserved room of the each health unit, preserving the privacy of each study participant. The study was conducted during August and October 2009.

All participants received adequate information regarding the study's procedures and signed the free and clear terms. The ethical committee on research of the "Hospital Universitário Júlio Müller" approved the Study Protocol (Protocol no. 665/CEP-HUJM/09).

RESULTS

Female, single, and non-smoking individuals comprised the majority of the sample. Near 64%

were nursing professionals and 32% were community health agents. Other socioeconomic and epidemiologic characteristics are summarized in Table 1.

Variable	n	%
Chronic diseases		
Diabetes		
No	44	100
Yes	0	
High blood cholesterol		
No	37	84.10
Yes	2	4.54
Don't know	5	11.36
Hypertension		
No	38	86.36
Yes	5	11.36
Don't know	1	2.28
Drinking		
Never	17	38.64
Some days/week	27	61.36
Gender		
Female	41	93.18
Male	3	6.82
Education		
Undergraduate	19	43.17
High school	21	47.73
Fundamental	4	9.1
Marital status		
Divorced	5	11.36
Married	16	36.36
Single	23	52.28
Profession		
Physician	2	4.54
Nurse	28	63.63
Community health agent	14	31.83
Smoking		
No	38	86.36
Yes	6	13.64

Table 1. Epidemiologic characterization of among health professionals from the "Vale do Araguaia", Brazil

Among this sample of health professionals, only 34% of people had been sleeping at least 8 hours per night, whereas 57% had slept up to 7 hours, and 9% slept five hours or less. The Epworth sleeping scale revealed that 70% of the sample had presented adequate sleeping, but 30% had moderate to severe sleeping problems.

In relation to alcohol and tobacco use, 86% had never smoked, however 61% of the sample were used to drinking few days per week.

The majority of health professionals were satisfied with their own health condition (75%), although physical pain considerably affected 20% of the subjects.

Regarding leisure-time opportunities, 29% had scarce chance to engage in leisure activities, whereas 50% had some opportunities, and the remaining had greater time for leisure activities.

A quarter of the sample was not satisfied with themselves, and 62% of the health workers were not satisfied with their personal relationships. According to the frequency of negative affective feelings, 68% were sometimes affected, and 13.6% were frequently affected.

Being overweight was observed among 30% of the employees and obesity was observed in 13% of the sample. Considering waist circumference values among women, 11% had increased values (WC>80cm), and 36% had exceptionally increased values (WC>88cm). All men had waist circumferences lower than 94cm.

Considering physical fitness levels and physical activity readiness, 82% were considered to have poor physical activity level (Table 2).

Physical activity level (FIT test)	N	%
Insufficient	36	82
Regular	8	18
PAR- Q		
Ready to engage on physical activities	26	59
Need previous medical examination	18	41

Table 2. Fitness test and PAR-Q among health professionals from the "Vale do Araguaia", Brazil

DISCUSSION

In this study, 82% of health professionals were not physically active. In this regard, a study with professionals from a hemodynamic nursing team reported higher level of stress (100%), hyperlipidemia (85%), sedentary behavior (69%) and hypertension (61%) (12). Another study also reported a higher prevalence of sedentary behavior among a sample of nursing university professors (53.3%) (13).

Yet considering physical health, 41% of the sample has at least one serious medical problem, which contraindicates engagement in physical activities.

In this study, only 34% of health professionals slept at least 8 hours per night. In another study with nursing teachers, 63.4% of the sample slept less than six hours per night (13). In both studies, health professionals suffer from insomnia and sleeping problems, which have been associated to, increased risk of general mortality, acute myocardial infarction, type II diabetes mellitus, hypertension, obesity, and metabolic syndrome (14-18). In a recent study regarding stress and sleeping among Brazilian Police officers from Barra do Garças, Legal Amazon, it was reported that officers took an average of 6 hours per night and one third of that population was frequently affected by insomnia (19). In the same study, almost 10% of the Police officers were involved in working accidents because of sleeping problems.

In this study physical pain affected 20% of the health workers. This result was similar to that found among workers from a great food supplier company in São Paulo (SP), Brazil (20). A Brazilian study conducted with workers from the State University of Londrina, Parana State, reported a prevalence chronic pain of 52.2% for men and 69.2% for women (21). Another study, with 540 health workers from 10 primary health care units of the partnership of Israel Albert Einstein Hospital reported prevalence of musculoskeletal pain of 56.57% and 38.24% for women and men, respectively (22). A Japanese study reported a similar high prevalence of chronic low back pain for both genders (62.8% and 63.1% for men and women, respectively) (23).

In the present study 68% of the health workers were sometimes affected by negative affective feelings, and 13.6% were frequently struck by those feelings. This was in accordance with international studies (24-26). However, the frequency of affective problems found in the present study was higher than that reported in a study regarding university students from nocturnal courses in São Paulo (SP), Brazil (27). Anxiety, depression and sleeping disorders potentially increase the risk of cardiovascular disease and all-cause of mortality (26). Depression has also been found related to increased risk of diabetes (28). The meta-analysis performed by Knol et al. (29) has found that depression increased by 37% the risk of diabetes mellitus.

In a study with 207 health professionals from basic units of the public health system in Teresina, PI, Brazil the prevalence of excessive body weight was 53.72% (30). Other study with nursing workers from Rio de Janeiro, Brazil, revealed that 55% of the sample was considered overweight and 35% had increased waist circumference values (31) in comparison with the current study, the occurrence of excessive body weight was lower (43%). Regarding waist circumference, 36% of women had increased values, which did not occur among men. Data from NHANES revealed that women are particularly exposed to an increased risk of stroke since obesity and/or excessive waist circumference has tripled the risk of stroke among women (3). Excessive body mass index was also implicated in increased risk for endometrial cancer.

CONCLUSIONS

A relative fraction of the health professionals had little leisure time opportunities and suffered from pain, affective problems or insomnia. Those conditions can increase the risk of overweight and obesity and their co-morbidities.

CONFLICT OF INTEREST

None.

REFERENCES

1. Flegal KM, Carroll MD, Ogden CL, Curtin LR. Prevalence and trends in obesity among US adults, 1999-2008. JAMA 2010; 303(3):235-41.
2. Gigante DP, Moura EC, Sardinha LMV. Prevalence of overweight and obesity and associated factors, Brazil, 2006. Rev Saude Publica 2009; 43(suppl.2):83-9.
3. Towfighi A, Zheng L, Ovbiagele weight of the obesity epidemic. Rising stroke rates among middle-aged women in the United States. Stroke 2010; 41:1371-5.
4. Marcial JM, Altieri PI, Banchs H, Escobales N, Crespo M. Metabolic syndrome among Puerto Ricans and other Hispanic populations. P R Health Sci J 2011; 30:145-51.
5. Ferrari CKB. Metabolic syndrome and obesity: Epidemiology and prevention by physical activity and exercise. J Exerc Sci Fit 2008; 6(2):87-96.
6. Charneco E, Ortiz AP, Venegas-Ríos HL, Romaguera J, Umpierre S. Clinic-based case-control study of the association between body mass index and endometrial cancer in Puerto Rican women. P R Health Sci J 2010; 29(3):272-8.
7. Valocikova I, Valocik G, Kristofova B, Druzbacka L. Obesity paradox and chronic kidney disease. Bratisl Lek Listy 2011;112(7):402-6.
8. Kasari D. Effects of exercise and fitness on serum lipids in college women. [Master's Dissertation], University of Montana, 1976.
9. Shephard RJ. PAR-Q, Canadian home fitness test and exercise screening alternatives. Sports Med 1988; 5(3):185-95.
10. Johns MW. A new method for measuring daytime sleepiness: the Epworth Sleepiness Scale. Sleep 1991; 14(6): 540-5.
11. Fleck MPA, Louzada S, Xavier M et al. Application of the Portuguese version of the abbreviated instrument of quality life WHOQOL-bref. Rev Saude Publica 2000; 34(2):178-83.
12. Santos MB dos, Passos JP, Pereira CA, Santos PG dos, Prata GP, Rodrigues MNG. Cardiovascular risk profile of a team of nursing in hemodynamic unit. Rev Pesq Cuid Fund 2010; 2(4):1343-52.
13. Alves FG, Nakashima LMA, Klein GFS. Fatores de risco para hipertensão arterial sistêmica em docentes do curso de enfermagem de uma universidade privada da cidade de Sao Paulo. Saude Coletiva 2010; 7(42):179-82.
14. Tamakoshi A, Ohno Y. Self-reported sleep duration as a predictor of all-cause mortality: results from the JACC study, Japan. Sleep 2004; 27:51-54.
15. Taheri S. The link between short sleep duration and obesity: we should recommend more sleep to prevent obesity. Arch. Dis. Child 2006; 91:881-4.
16. Liu Y, Tanaka H. Overtime work, insufficient sleep, and risk of non-fatal acute myocardial infarction in Japanese men. Occup Environm Med 2002; 59: 447-51.
17. Suka M, Yoshida K, Sugimori H. Persistant insomnia is a predictor of hypertension in Japanese male workers. J Occup Health 2003; 45: 344-50.
18. Hall MH, Muldoon MF, Jennings JR, Buysse DJ, Flory JD, Manuck SB. Self-reported sleep duration is associated with the metabolic syndrome in midlife adults. Sleep 2008; 31:635-43.
19. França EL, Silva NA, Lunardi RR, Honorio-França AC, Ferrari CK. Shift work is a source of stress among Military Police in Amazon, Brazil. Neurosciences 2011; 16(4):384-6.
20. Ferrari CKB, Guimaraes CF, Honorio-França AC, França EL. Health and quality of life among workers from a great food supplier company in São Paulo (SP), Brazil. Middle-East J Scient Res 2011; 7(4):543-9.
21. Kreling MCGD, da Cruz DALM, Pimenta CAM. Prevalence of chronic pain in adult workers. Rev Bras Enferm 2006; 59:509-13.
22. Da Costa EDGMM, Arias AJ, de Oliveira SM, Nichols OC. Prevalence of musculoskeletal pain syndromes in primary healthcare unit workers. Einstein 2007; 5:37-43.
23. Otani T, Iwasaki M, Ohta A et al. Low back pain and smoking prevalence in a community sample in Japan. J Occup Health 2002; 44:207-13.
24. Maier W, Gänsicke M, Gater R, Rezaki M, Tiemens B, Floranzano-Urzúa R Gender differences in the prevalence of depression: a survey in primary care. J Affect Dis 2003; 53:241-52.
25. Averina M, Nilssen O, Brenn T, Brox J, Arkhipovsky VL, Kalinin AG. Social and lifestyle determinants of depression, anxiety, sleeping disorders, and self-evaluated quality of life in Russia- a population-based study in Arkhangelsk. Soc Psychiatr Psychiatr Epidemiol 2005; 40:511-8.
26. Inaba A, Thoits PA, Ueno K, Gove WR, Evenson RJ, M Sloan. Depression in the United States and Japan:

gender, marital status, and SES patterns. Soc Sci Med 2005; 61:2280-92.

27. Ferrari CKB, Ferreira RF. Quality of life and exposition to unhealthy lifestyle risk factors of nocturnal university students from a greater metropolitan city. J Biol Environ Sci 2011; 5(15):129-34.

28. Kawakami N, Takatsuka N, Shimizu H, Ishibashi H. Depressive symptoms and occurrence of type 2 diabetes mellitus among Japanese men. Diabet Care 1999; 22:1071-6.

29. Know MJ, Twisk JWR, Beekman ATF, Heine RJ, Snoek FJ, Pouwer F. Depression as a risk factor for the onset of type 2 diabetes mellitus. A meta-analysis. Diabetologia 2006; 49:837-45.

30. Sousa RMRP, Sobral DP, Paz SMRS, Martins MCC. Overweight and obesity prevalence in employees of healthcare units in Teresina, Piauí, Brazil. Rev Nutr 2007; 20(5):473-82.

31. Vilarinho RMF, Lisboa MTL. Diabetes mellitus: fatores de risco em trabalhadores de enfermagem. Acta Paul Enferm 2010; 23(4):557-61.