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ELDERLY WOMEN'S LIFE STYLES AND LEVELS OF PHYSICAL ACTIVITY: A PILOT STUDY

Estilos de vida em idosas e níveis de atividade física: um estudo piloto

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RESUMO

O Questionário Internacional de Atividade Física (IPAQ) é uma medida padronizada para estimar a prática habitual de atividades físicas. A finalidade deste estudo piloto foi analisar as diferenças entre dez praticantes regulares de ginásio ($68,60 \pm 3,57$ anos de idade) e dez estudantes de uma Universidade Sénior sem atividade física formal (grupo informal) ($71,30 \pm 5,54$ anos de idade). Os resultados mostraram que o dispêndio energético não depende unicamente da atividade física regular e controlada num centro de Fitness, e que a atividade motora funcional, como o transporte ativo e as atividades domésticas e de jardim, resultou em gastos energéticos semelhantes. Sugere-se que programas que combinem dispêndio energético e atividades motoras de vida diária são uma boa solução para a valorização da qualidade de vida e uma alternativa a práticas de Fitness mais padronizadas.

ABSTRACT

The International Physical Activity Questionnaire (IPAQ) is a standardized measure to estimate habitual practice of physical activities. Because of the specificity of different elderly's life styles, and, consequently, modes of physical activity, the purpose of this pilot study was to analyze differences among ten regular gym practitioners (fitness group) (68,60±3,57 years of age) and ten Senior University students without gym practice (informal group) (71,30±5,54 years of age). The results showed that energy expenditure doesn't depend solely on regular and controlled physical activity at a Fitness center, and that functional motor activity, as daily life active transportation and domestic and garden activities, resulted in similar energy expenditure. It's suggested that programs combining energy expenditure and daily life motor activities is a good solution for quality of life enhancement, and an alternative to more standardized fitness practices.

Keywords: Elderly, Life Styles, IPAQ, Physical Activity

1 INTRODUCTION

Life style refers to a distinctive mode of living, embodying patterns that develop and emerge from the dynamics of patterns of life (Lazer, 1963). The detection of segments of a population with common characteristics, through the identification of their patterns of life, allow us to better understand them and to reveal how they can be acted upon, through communication and marketing; relating them to a certain conceived service, by a people-oriented approach (Plummer, 1974).

Physical activity is defined as any bodily movement produced by the skeletal muscles that results in energy expenditure (Caspersen, Powell, & Christenson, 1985). Older adults are generally less physically active than young adults (DiPietro, Williamson, Caspersen, & Eaker, 1993; Westerterp, 2000). Physical activities of low intensity are the most common among older adults (e.g., walking, gardening) (Schoenborn, Adams, Barnes, Vickerie, & Schiller, 2004). Greater energy expenditure in walking and climbing stairs is associated with increased longevity; however light activities are unassociated with mortality rates (Lee & Paffenbarger, 2000).

The International Physical Activity Questionnaire (IPAQ) is used as a standardized measure to estimate habitual practice of physical activities of populations from different countries and socio-cultural contexts (Craig et al., 2003). Two-forms of the IPAQ have been developed: a short and a long version, both of which involve 7-day recall of physical activity. The long form provides an evaluation of daily physical activities, based on the time spent walking, doing moderate intensity and vigorous-intensity activity in the following domains: at work; relative to modes transportation; in domestic and gardening activities; and, in leisure-related activities.

Long form IPAQ questionnaire for self-evaluation revealed that there is an age-related decline in the physical activity level from young-old women (60-69 years) to old-old women (70-80 years); moderate physical activity is dominant and accounts for almost half the energy consumed regardless of one's age category (Pantelić et al., 2012). Both physically active and sedentary elderly can have good level of physical activity; however, regular physically active elderly may have a better quality of life (Silva, Goulart, Lanferdini, Marcon, & Dias, 2012).

Because of the specificity of different elderly's life styles, and, consequently, modes of physical activity, the purpose of this pilot study was to analyze differences among Portuguese female elderly, involved or not in regular and controlled physical activity.

2 METHODS

The sample was composed by 20 elderly females (69,95±4,74 years of age), ten of them are regular gym practitioners (fitness group) (68,60±3,57 years of age) and the remaining ten are Senior University students without gym practice (informal group) (71,30±5,54 years of age), from a medium-sized city of Portugal. Inclusion criteria were: i) without detected neurodegenerative problems; ii) with autonomous daily life, iii) with more than 65 years old. Informed consent was obtained. To estimate level of physical activity, the IPAQ long version was applied, through individual interview (Benedetti, Antunes, Rodriguez-Añez, Mazo, & Petroski, 2007; Benedetti, Mazo, & Barros, 2004; Mazo & Benedetti, 2010). The metabolic equivalent task (MET) was calculated for each domain separately (work-related, transportation, housework/gardening and leisure-time activity), and for the last week. The calculation of MET values, MET-minutes week, and categorical scores of levels of physical activity was made in agreement with official IPAQ guidelines (Committee et al., 2005; Mazo & Benedetti, 2010).

Statistical analysis was performed using IBM-SPSS, version 22.0. The Shapiro-Wilk test was used to estimate normal distribution. Due to non-normal data distribution and to the small size of the groups, non-parametric Mann-Whitney test (Z) and the Qui-square test for two independent samples (χ^2) were used for comparison between groups. Statistical significance was set at 0,05, two-tailed. Effect size r and probability of concordance ($p_{a>b}$) were estimated (Field, 2013; Grissom & Kim, 2012). Median and interquartile range are presented, according to official IPAQ guidelines (Committee et al., 2005).

3 RESULTS

In terms of age, there was no significant difference between the groups ($Z=1,180$, $p=0,238$, $r=0,26$).

As expected Fitness group (FG) had significantly more energy expenditure than Informal group (IG) in IPAQ's domain D activities. However, IG had significantly more energy expenditure than FG in IPAQ's domain B activities. Additionally, there was no significant difference between FG and IG in the total estimated energy expenditure (Table 1). Comparisons based on level of activity confirmed significant differences just mentioned, and also revealed that IG was significantly more vigorous than FG in IPAQ's domain C activities (Table 1).

Table 1

Group (Fitness, Informal) descriptive statistics (mean±standard deviation), between groups comparison (Z , p), effect size (r), and probability of concordance ($p_{a>b}$) per IPAQ's domains (MET values and Total) and per level of activity (χ^2 , p).

IPAQ's Domains	Fitness Group	Informal Group	Z , p	r	$p_{a>b}$	χ^2 , p
A (work)	711,9±1187,0	705,8±807,1	0,848, ns	0,19	0,605	2,619, ns
B (active transportation)	186,5±175,0	948,2±845,0	2,209, *	0,49	0,790	8,571, 0,01**
C (domestic & garden)	2398,5±1667,6	3762,0±1845,8	1,361, ns	0,30	0,680	5,051, 0,05*
D (leisure-time)	1442,7±1764,1	331,4±313,6	2,728, **	0,61	0,860	7,378, 0,05*
Total (A+B+C+D)	4739,6±3053,2	5747,3±2356,0	1,134, ns	0,25	0,650	-
E (sitting)	199,7±54,4	229,7±111,5	0,230, ns	0,05	0,530	-

Notes: *** $p<0,001$; ** $p<0,01$; * $p<0,05$

Table 2

Median and interquartile range, per group (Fitness, Informal) and per IPAQ's domains.

IPAQ's Domains	Group	Median	Interquartile range
A (work)	Fitness	0,00	1874,25
	Informal	431,25	1331,25
B (active transportation)	Fitness	165,00	334,13
	Informal	823,50	1296,00
C (domestic & garden)	Fitness	2398,50	2013,75
	Informal	4050,00	5640,00
D (leisure-time)	Fitness	1442,70	745,25
	Informal	353,60	558,00
E (sitting)	Fitness	180,00	64,29
	Informal	205,71	117,86

Effect size estimations reinforce the magnitude of statistical differences found among groups, through MET values estimations; and, higher probability concordances are in accordance with statistical differences found among groups, through level of activity estimations; particularly, for IPAQ's domains B and D (Table 1).

Consequently, statistical results support the fact that in these two samples of female elderly energy expenditure is related with each group life style, with the IG spending significantly more energy at home and active transportation, like cycling ($Z=30,0$, $p<0,05$, $r=0,40$, both for last week and hours per day), whereas FG does it on moderate leisure-time activities ($Z=21,5$, $p<0,05$, $r=0,51$). Results also reveal that different life styles can allow similar energy expenditure, as it was estimated through IPAQ's domains.

4 DISCUSSION

The present study was undertaken to examine the effect of female elderly's life style in terms of physical activity, on daily and weekly energy expenditure. Physical activity was estimated through individual interviews, with IPAQ long version. The results showed that energy expenditure doesn't depend solely on regular and controlled physical activity at a Fitness center, and that functional motor activity, as daily life tasks and recreational motor activities, resulted in similar energy expenditure. Because functional activities are meaningful for elderly daily life, and because elderly exposed to exercise training programs showed no effect on total daily physical activity, due to compensations in non-training physical activity (Goran & Poehlman, 1992; Meijer, Westerterp, & Verstappen, 1999), is suggested that programs combining energy expenditure and daily life motor activities is a good alternative to more standardized fitness practices.

5 CONCLUSION

Elderly's informal practice, like sidewalking, gardening, shopping, housecleaning, belong to their daily routines, it's functional, takes place in their personal and social ambient, and request as much energy expenditure as they spent when involved in formal Fitness activities. So, elderly's life styles can be considered as a way to reach this niche of clients, if fitness (personal) trainers evolve to a people-oriented approach. Adapting fitness methods and technics to elderly's daily motor practices, energy consumption and movement ergonomics will be enhanced, and injuries and falls will be prevented. In the definition of quality of life, physical wellbeing (health, fitness, and physical safety) is assumed as a main factor, followed by material wellbeing (quality of the living environment, transport, neighborhood, security, and stability or tenure...), social wellbeing (interpersonal relationships within their family or household life, or with friends and acquaintances, and community activities...), development and activity (as use of skills and functional activities in leisure, housework...), and emotional wellbeing (mood, satisfaction, or fulfilment...) (Felce & Perry, 1995). So, Fitness professional intervention based on an elderly-oriented approach, would

preserve and enrich elderly's life style and quality of life; opening a new area of professional intervention for Fitness trainers. Because this pilot study was made with small female samples, further data on this questionnaire, with larger sample sizes, and the inclusion of male participants are needed, namely, due to heteronormativity related with domestic tasks and leisure activities (e.g., Caspersen, Pereira, Curran, et al., 2000).

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