

Is physical activity of medical personnel a role model for their patients

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Abstract

Introduction and objective. Sedentary lifestyle and other health behaviors such as smoking or alcohol consumption are well documented risk factors of several diseases. Numerous works by doctors and other healthcare professionals have been dedicated to the study of smoking and alcohol consumption. In contrast, the prevalence of physical activity of doctors or other medical personnel, who are well positioned to provide physical activity counseling to patients, remains almost unknown. Most studies were focused on male physicians and used a small total sample from one hospital. To study the situation in Warsaw, data on a random sample of medical personnel was analyzed in order to determine the prevalence of sport (both competitive and non-competitive leisure sport activity) and physical activity.

Methods. The participants were a random sample of Warsaw medical doctors, nurses, and other medical personnel (764 persons). Data was collected face-to-face in November 2008 by well trained interviewers. The respondents were asked about their participation in competitive sport or non-competitive leisure sport activities during the previous year. The short, last seven days, Polish version of International Physical Activity Questionnaire (IPAQ) was used for the assessment of physical activity level.

Results. In the whole sample, the prevalence in competitive sport was low but significantly higher among men, but there were no significant differences between genders in division for different professional groups. Men more often took part in non-competitive leisure sport activities. A high level of physical activity was a rare characteristic for the majority of studied men and women (10.9 and 13.5%, respectively). A low level of physical activity was dominant among men and women (44.0 and 49.6% respectively). Independent risk factors of low physical activity were: not participating in sport or leisure sport activities (OR [95% CI] 3.70; 1.64-8.33 and 2.08; 1.37-.23 for men and women, respectively), being employed in an Out-patient Clinic (OR 2.86; 1.54-5.28 and 2.03; 1.42-2.90), overweight (only for men – OR 1.91; 1.10-3.31), and working as a doctor (for both men and women – 1.43; 1.05-1.94).

Conclusion. All kinds of healthcare workers in Warsaw reported low physical activity, which could influence their physical activity counseling.

Key words

level of physical activity, medical personnel, IPAQ

INTRODUCTION

Sedentary lifestyle and other health behaviors such as smoking or alcohol consumption are well documented risk factors of several diseases [1, 2, 3, 4, 5]. Health behaviors among physicians have been suggested as an important marker of how harmful lifestyle behaviors are perceived in a country [6]. Numerous works have been dedicated to study smoking and alcohol consumption among doctors and other healthcare professionals [7, 8, 9, 10, 11, 12, 13, 14, 15]. During the last two decades, the prevalence of smoking among physicians has decreased and now is less than 20% [9, 10, 11, 12]. A reverse pattern was observed for alcohol consumption, and in some countries the prevalence is very high among physicians [10, 13, 14]. By contrast, the prevalence of physical activity of doctors or other medical staff, who are well positioned to provide physical activity counseling to patients, remains almost unknown. Most

studies have focused on male physicians, or included a small number of women physicians, and used only a small total sample from one hospital [16, 17, 18, 19, 20]. Other studies have analyzed how the health affairs and personal physical activity of doctors or medical students influenced exercise counselling. For a recent review see Lobelo et al. [21].

Objective. The aims of this study were: 1) evaluation of the prevalence of competitive and non-competitive sport activities among a random sample of Warsaw medical staff of both genders, and 2) measurement of the level of their physical activity.

METHODS

Sample and study design. The participants of the study were a random sample of 764 Warsaw medical doctors (186 men and 157 women), nurses (276 women), and other medical personnel – lab and x-ray technicians (54 men and 91 women). The sample was selected in two steps. Three hospitals and ten urban out-patient clinics were selected by use of tables

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of random numbers. A random 20% of medical staff in hospitals or all employees present at work during two days of interviewer's visit in out-patient urban clinics were included into sample. Data was collected face-to-face in November 2008 by well trained interviewers. The respondents were asked about their participation in competitive sport or non-competitive leisure sport activities during the past year. The short, last seven days, Polish version of International Physical Activity Questionnaire (IPAQ) was used for the assessment of physical activity level. This version of the IPAQ has been shown to have acceptable test-retest reliability and criterion-related validity in a 12-country evaluation study [22]. The presented study was approved by the Ethics Committee at the Josef Pilsudski University of Physical Education.

Definitions. Competitive sport participation: being a member of any sports club, taking part in training and competition during the past year.

Noncompetitive sport leisure activities: participation in any sport during free time at least once a week, five months a year.

Physical activity categories based on the IPAQ scoring [23]:

Low – no activity reported, or some activity is reported but insufficient to meet moderate or high categories.

Moderate – 3 or more days of vigorous activity for at least 20 min. per day, or 5 days or more of moderate intensity activity, or walking for at least 30 min. per day, or 5 or more days of any combination of walking, moderate or vigorous intensity activities achieving a minimum of 600 MET min-week⁻¹

High – 3 or more days of vigorous activities accumulating at least 1,500 MET min-week⁻¹, or 7 or more days of any combination of walking, moderate or vigorous activities achieving a minimum of 3,000 MET min-week⁻¹

Statistical analyses. Data entry and analyses were undertaken using SPSS 14.0 software package. Continuous variable (age) is presented as mean values ± standard deviation, while categorical variables are presented as absolute and relative frequencies. The chi square test was applied to compare frequencies between groups. For the purpose of establishing which factors were potentially related to low physical activity, the odds ratios (OR) and its 95% confidence intervals (95% CI) were analyzed. In order to identify independent risk factors, multiple logistic regression was applied.

Table 1. Basic characteristic of studied group

		Physicians		Nurses		Other medical personnel					
		Men		Women		Men		Women			
		n	%	n	%	n	%	n	%		
Average age ± SD		42.5±10.9		40.6±12.3		40.8±9.0		39.6±10.9		40.4±12.0	
Marital status	Married	145	78.0	86	54.8	193	69.9	36	66.7	54	59.3
	Single	38	20.4	71	45.2	81	29.3	18	33.3	35	38.5
Education	University degree	186	100	157	100	31	11.2	14	25.9	23	25.3
	Other	-	-	-	-	244	88.4	40	74.1	68	74.7
BMI	Underweight (<20)	-	-	26	16.6	39	14.1	1	1.9	13	14.3
	Norma (20.0-24.9)	74	39.8	102	65.0	147	53.3	25	46.3	56	61.5
	Overweight (25.0-29.9)	97	52.2	23	14.6	63	22.8	24	44.4	17	18.7
	Obesity (30.0-39.9)	14	7.5	4	2.6	21	7.6	4	7.4	4	4.4

RESULTS

Basic characteristics of the groups are shown in Table 1. The average age of the participants was between 39.6-42.5, but the differences between groups were not significant (Tab. 1). There were significantly more married men than women among physicians and other medical staff. The majority of nurses and other medical staff finished only high school, but attended courses allowing them to work in their profession. Overweight and obesity were significantly more common among the studied men than women (Tab. 1).

In the whole sample, the prevalence of competitive sport was low, but significantly higher among men; there were no significant differences between genders in division for different professional groups (Tab. 2). Also, men took more often part in non-competitive leisure sport activities. Nurses participated in non-competitive sport leisure activities most seldom, and the differences between them and other studied women were statistically significant (Tab. 2).

The high level of physical activity was a rare characteristic for the majority of the studied men and women (Tab. 3). The highest percentage of the above-mentioned level was

Table 2. Prevalence of sport among medical personnel

Group	Sex	Competitive sport		Leisure sport activities	
Physicians	Men	21	11.3	77	49.0
	Women	8	5.1	46	37.0 ^c
Nurses	Women	6	2.2	49	22.7
Other medical personnel	Men	6	11.1	14	35.9
	Women	2	2.2	23	33.0 ^c

^a Men vs women p<0.001, ^c Women physicians and other medical personnel vs nurses p<0.05

Table 3. Level of physical activity

Level of physical activity	Physicians		Nurses		Other medical personnel					
	Men (n = 185)		Women (n = 147)		Women (n = 269)		Men (n = 53)		Women (n = 88)	
	n	%	n	%	n	%	n	%	n	%
High	18	9.7	13	8.8	48	17.8 ^b	8	15.1	7	8.0
Moderate	69	37.3	59	40.1	115	42.8	25	47.2	40	45.5
Low	98	53.0 ^a	75	51.0 ^c	106	39.4	20	37.7	41	46.6

^a Men: physicians vs other medical personnel (p<0.05),

^b Women: nurses vs other medical personnel (p<0.05),

^c Women: physicians vs nurses (p<0.05)

observed among nurses. The low level of physical activity was typical for doctors (53.0% men and 51.0% women). The percentage of nurses and women from the group of other medical personnel with low level of physical activity was similar, whereas among men from the latter group there were 10% fewer subjects with a lower than moderate level of physical activity (Tab. 3).

The average total weekly energy expenditure of all the respondents was 1,265.9±1,550.1 MET-min week⁻¹ (including doctors – 1,043.3±1,133.4, nurses – 1,568.2±1,945.7, and other medical personnel – 1,196; 7±1,432.4). In the physical activity value category, according to the levels of intensity, measured in MET min-week⁻¹, men undertook an intensive effort, on average 2.2±1.2 times a week. The average energy expenditure caused by such an effort among men was 757.3±923.2 MET-min week⁻¹ (among doctors – 764.0±814.8, and other medical personnel – 731.1±1290.7 MET-min week⁻¹). Women undertook intensive efforts more frequently, namely, 2.7±1.7 times a week. Respectively, the weekly energy expenditure among women was 1242.4±823.7 MET-min week⁻¹ (including doctors – 1303.1±1882.9, nurses – 489.0±446.3, and other medical personnel – 1181.8±1418.7 MET-min week⁻¹).

Men undertook a moderate effort, on average 2.6±1.8, and women 3.4±1.9 times a week. The weekly energy expenditure for moderate effort among men was 424.8±517.3 MET-min week⁻¹ (among doctors – 372.6±331.1, and other medical personnel – 577.7±843.8 MET-min week⁻¹), and among women, 594.9±667.4 MET-min week⁻¹ (among doctors – 636.5±858.6, nurses – 580.7±582.0, and other medical personnel – 576.3±592.5). Men walked on average 4.1±2.3 times a week.

The weekly energy expenditure of walking for men was 694.1±954.6 MET-min week⁻¹ (among doctors – 581.4±582.8, and other medical personnel – 1025.3±1575.6 MET min-week⁻¹). Women walked on average 4.8±2.1 times a week. The weekly energy expenditure of walking for women was 945.2±1493.4 MET-min week⁻¹ (among doctors – 567.0±502.1, nurses – 1221.1±1858.9, and other medical personnel – 677.2±1007.8).

Table 4 shows the odds ratio for factors related to low physical activity. Men belonging to the group of low physical activity, in the crude analysis were more likely to be overweight, employed in an out-patient clinic and not

Table 4. The odds ratio value (OR) and its 95% confidence intervals (95% CI) for the factors potentially related to low physical activity

Factor	OR [95% CI]		
	Male	Female	All
Gender ¹	---	---	1.26 [0.93-1.77]
Overweight ²	2.18 [1.29-3.69]*	1.12 [0.76-1.68]	1.48 [1.10-2.00]*
Age < 35 years ²	0.69 [0.42-1.15]	0.70 [0.50-0.99]*	0.69 [0.52-0.92]*
Age > 55 years ²	1.07 [0.53-2.15]	1.66 [0.95-2.91]	1.43 [0.93-2.21]
Marital status ³	1.32 [0.73-2.41]	1.11 [0.78-1.60]	1.13 [0.83-1.53]
Education level ⁴	1.63 [0.81-3.24]	1.09 [0.77-1.54]	1.25 [0.94-1.67]
Employer ⁵	2.97 [1.65-5.35]*	2.08 [1.47-2.96]*	2.31 [1.72-3.10]*
Physician profession ²	1.79 [0.96-3.32]	1.47 [1.01-2.14]*	1.57 [1.17-2.09]*
Nurse profession ²	---	0.64 [0.45-0.91]*	---
Sport or recreation activity ²	0.25 [0.12-0.54]*	0.46 [0.30-0.71]*	0.41 [0.28-0.58]*

¹ males vs females; ² vs the others; ³ singles vs the others; ⁴ university degree vs the others; ⁵ out-patient clinic vs hospital; * differs significantly p< 0.05

participating in sport or leisure sport activities. Women who also belonged to the low physical activity group, similar to men, were more likely to be employed in out-patient clinics and did not take part in sport or leisure sport activities, and additionally worked as doctors and nurses.

Independent risk factors (Tab. 5) of low physical activity were: not participating in sport or leisure sport activities (OR [95% CI] 3.70; 1.64-8.33 and 2.08; 1.37-3.23 for men and women respectively), being employed in an out – patient clinic (OR 2.86; 1.54-5.28 and 2.03; 1.42-2.90), being overweight (only for men – OR 1.91; 1.10-3.31), and working as a doctor (for both men and women – 1.43; 1.05-1.94).

Table 5. The independent factors significantly related to low physical activity

Factor	OR [95% CI]		
	Man	Women	All
No competitive or leisure sport activity ¹	3.70 [1.64-8.33]	2.08 [1.37-3.23]	2.56 [1.72-3.70]
Employer ²	2.86 [1.54-5.28]	2.03 [1.42-2.923]	2.09 [1.54-2.84]
Overweigh ¹	1.91 [1.10-3.31]	---	---
Physician profession ¹	---	---	1.43 [1.05-1.94]

¹ vs the others; ² out-patient clinic vs hospital

DISCUSSION

The World Health Organization (WHO) has reported that smoking, alcohol consumption, and lack of physical activity are three out of ten major causes of mortality in developed countries. WHO also states that promotion of physical activity is an important public health objective [2, 24]. The health behaviours of some professional groups could serve as a good example for the general population. Healthcare workers are such a group who ought to council appropriate health behaviors. It is known that the personal physical activity of physicians influences to some degree their exercise counseling [21].

Numerous papers have been dedicated to the study of the prevalence of smoking and alcohol consumption among medical personnel [7, 8, 9, 10, 11, 12, 13, 14, 15]. In contrary to smoking and drinking, research on the physical activity of physicians is rare. Moreover, most such studies concentrated on male physicians and included a sample from only one hospital [16, 17, 18, 19, 20, 25, 28, 30, 31].

In the presented study, the level of physical activity of not only doctors of both genders but also nurses and other medical personnel was analyzed. The sample consisted of randomly chosen Warsaw medical staff, both from hospitals and urban out-patient clinics. In the whole group, a low level of physical activity dominated, and was especially evident among physicians. The factors independently related to low physical activity level were: no sport or leisure sport activity, being an employee of an urban out-patient clinic, being overweight, and working as a doctor. The relation between physical activity and obesity or no sport or leisure sport activity is obvious. The risk of low physical activity among doctors is a consequence of their being overworked, due to the fact that in Poland physicians more often than other healthcare employees work in two or three hospitals or other clinics. It is also known that working in an out-patient clinics consumes more time than working in hospitals. The study

shows that physical activity of Warsaw medical personnel cannot be a model for their patients, and probably influences negatively their counseling.

Previous research has also indicated the low physical activity of physicians. In 1992, Bortz studied health behavior among physicians from Palo Alto Medical Clinic (California, USA) and showed that 96% of men and 82% of women doctors exercised regularly. However, the definition of regular exercises was not given [25]. In other papers quoted by Bortz, physical activity was reported between 40 – 95% of the studied US physician population. In the only large research conducted so far on women physicians, any kind of performed exercises was observed on the level of 95.6%. However, intensive exercises, such as biking, swimming or running, were reported only by approximately 25 – 30% [26]. In another study from the USA, the prevalence of 30 minutes or more exercises at least twice a week among physicians and medical trainees was 69.7% [27]. Among 616 physicians employed in the Faculty of Medicine at Ain Shams University, Cairo, Egypt, 84% were sedentary (no or irregular physical activity) [28]. In Canada, physicians did not fulfill the guideline recommended by the American College of Sports Medicine and American Heart Association, which was 30 minutes or more of moderate or vigorous exercises daily [29]. The use of pedometers in recent years enabled to state that physicians do not meet the guideline of 10,000 steps per day [30, 31].

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