Original Article

Study Frequency of Hypertension and Obesity and their Relationship with Lifestyle Factors (Nutritional Habits, Physical Activity, Cigarette Consumption) in Ardabil City Physicians, 2012–13

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ABSTRACT

Background and Objective: Few studies have been done on lifestyle of Iranian physicians. As physicians have important role in health promotion, the main goal of the study was to assess the lifestyle of this influential group. **Materials and Methods:** A cross-sectional descriptive study was conducted on lifestyle of all registered physicians of Ardabil hospitals, Iran, 2012–13. In this research, 225 physicians were selected, by using simple random sampling. Demographic and lifestyle data were obtained by self-report using standard questionnaires, physical activity by official Iranian short-version of the international physical activity questionnaire, and dietary intake by food frequency questionnaire. Weight and height was performed according to standard protocols by using standardized and zero calibrated instruments. Data were analyzed by inferential statistics using Statistical Package for the Social Sciences.16 software. **Results:** Findings showed that 8% of participants were hypertensive, 21.3% smoker, 40%–47% inactive, 51.1% overweight, and 18.2% obese. There was a significant relationship between blood pressure and self-reported lifestyle habits ($P < 0.05$). And 70.7% of males and 74.1% of females had regular 10-min walking each day and moderate activity of males was significantly higher than females ($P < 0.05$). Food frequency weekly consumption of overweight and obese physicians were significantly higher than normal weight physicians ($P < 0.05$). **Conclusion**: Few doctors follow a healthy lifestyle; this may have a negative effect on society attitude about health.

Keywords: Diet, health behaviors, lifestyle, physicians

Introduction

Lifestyle is a recognizable behavioral pattern stemming in interaction between personal characteristics of an individual and his/her life circumstances which reflects social values, attitudes, and activities of a person or group.[1] Health care providers, such as doctors, nurses, dietitians, and administrators have significant effect in primary prevention, because they serve as health role

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models to others.[2] Health care staffs, specifically the physicians can play a major role in promoting a healthy lifestyle in general public, if they practice healthy habits themselves.[3] Physicians' personal lifestyles, habits, and health behaviors have been shown that have positive effect on their patients.[4] In addition, health behaviors of physicians are important markers which can reflect on public health.[5] Little is known about Iranian physicians' lifestyles in Ardabil. The main aim of this study was to assess the physicians' lifestyle in order to formulate policies, to promote overall well-being in community.

Materials and Methods

Participants

This cross-sectional descriptive study was carried out in Ardabil, a province in Iran during 2012–13. All physicians were invited to take part in this study and have received required information about sample collection. Of all registered doctors in Medical Council of Ardabil city about 800 persons, after calculated the exact sample size by statistical methods, 239 healthy physicians from private clinics and teaching hospitals in Ardabil city were selected by using simple random sampling technique. Informed written consent was taken by each participant. Demographic and lifestyle data were obtained by standardized questionnaires. Unhealthy physicians and incomplete questionnaire were excluded from the study, therefore after excluding 14 questionnaires and 225 subjects [117 (52%) males and 108 (48%) females] entered in this study. The study before start was approved by Medical Ethical Committee of the Ardabil University of Medical Sciences. The questionnaires used were standardized and their validity and reliability has been established in domestic and foreign studies.

Anthropometric and blood pressure measurements

Anthropometric factors including measurement of weight and height was performed according to standard protocols by using standardized and zero calibrated instruments. Height and weight were measured without shoes by trained research assistants. Height was measured in meters and weight was measured to the nearest 0.1 kg using portable Soehnle digital scales with a range of 0. 200 kg. In this study, BMI (body mass index) the most widely accepted indicator of obesity was used. BMI was calculated using dividing weight in kilograms by the square of height in meters. BMI between 25 and 29.9 is considered overweight and BMI of 30 or higher is considered obese. Blood pressure (BP) was measured (with alpk2 sphygmomanometer, Japan) (after 10 minutes comfortable resting of participants, in duplicate and seated position according to a standard protocol; the average of two measures of the first and fifth Korotkoff phase was recorded as final systolic blood pressure (SBP) and diastolic blood pressure (DBP), respectively).[5] Individuals with SBP 140 mmHg and DBP 90 mmHg were considered hypertensive and other individuals is in normal range.

Physical activity and food habit assessment

Physical activity was assessed using the office al Iranian short-version of the international physical activity questionnaire (IPAQ) which is available at www.ipaq.ki.se. The short form of IPAQ used in our study had seven items, providing information on time spent on walking, vigorous-intensity, moderate-intensity physical activities, and sedentary activity during the previous 7 days.[6] Data were analyzed according to the guidelines of IPAQ. The metabolic equivalent of task minutes per week for each of walking, moderate-intensity, and vigorous-intensity activities were calculated as follows: walking = (3.3 ~ walking min ~ walking days); moderate activity = (4.0 ~ moderate activity min ~ moderate activity days); vigorous activity = (8.0 ~ vigorous activity min ~ vigorous activity days). Furthermore, sufficient vigorous activity was computed on the basis of 3 or more days of vigorous-intensity activity of at least 20 min/day. Likewise, sufficient moderate-intensity and walking activities were computed based on 5 or more days of moderate-intensity activity and walking of at least 30 minutes per day. Physical activity levels were also classified into three categories: inactive, minimally active, and health-enhancing physically active, according to the scoring system provided by IPAQ. Food habits and usual dietary intake was assessed using a 56-item food frequency questionnaire. Data analyzed in Statistical Package for the Social Sciences .16 software. The Student's t-test and paired sample t-test were used to compare the means in independent groups and paired groups, respectively. Descriptive statistics are presented as mean ± standard deviation. To evaluate differences between groups, the chi-square test was implemented.

Results

Of 225 cases, 67.6% (152) were general and 32.4% (73) were specialists. Of all hypertensive cases, 66.7% were male, 61.1% were specialist, and 44.4% have non-normal BMI. The prevalence of hypertensive in specialist was significantly higher than general doctors. [Table 1] The mean age of medical doctors was 43.51 ± 7.35 years old (45.41 ± 8.34 in males and 41.49 ± 5.48 in females). Mean SBP and DBP of participant was 121.8 / 79.1 mmHg. About 8% (18) of medical doctors were hypertensive. The prevalence of hypertension in male and female was 10.3% and 5.5%, respectively. There was no significant relationship between sex and hypertension (P = 0.18). Surprisingly prevalence of hypertension in specialists of medical doctors was higher than general practitioners (15.1% vs 4.6%) (P < 0.009). An increasing in BP was observed among 66. 75-year-old. Other results showed

that 7 (40%) of hypertensive practitioners and 180 (80%) of all practitioners was aware of their hypertension and about 64.4% (145) of individuals were previously measured their BP under standard conditions (twice every 15 min in a relaxed state). Smoking habits were observed in 21.3% of subjects. Number of cigarettes smoked per day with males was significantly higher than females (34.5% vs 7.3) ($P < 0.001$). The results showed that most of cases with higher SBP were in age groups 46–55 with 122 ± 7.5 and most of cases with DBP were in age group 46–55 with 79 ± 4.5. The rate of SBP significantly different in all age groups but the rate of DBP is similar in all age groups [Table 2]. There was statistical significant relation between age groups and BP based on chi-square test. About 115 (51.1%) and 41 (18.2%) of subjects were overweight and obese, respectively. And, there was no significant difference in obesity rate between age groups and both sexes based on chi-square test. Also other results showed that 70.7% of male practitioners and 74.1% of female practitioners had regular 10-min walking each day, moderate activity of males was significantly higher than females, and severe activity of females was significantly higher than males ($P < 0.05$) [Table 3]. There was no significant difference in mean scores of metabolic equivalent of task -minutes/week for walking between both sexes. The prevalence of physical inactivity in males and females was 47.4% and 38.6%, respectively. Just one-fifth of medical doctors had vigorous physical activity for at least 20 min, 3 days a week. Food frequency consumption of bread types, rice, macaroni, pies, biscuit, liquid fat, red meat, cream, butter, nuts, and sausage per week in overweight physicians were significantly more than normal weight physicians ($P < 0.05$), and food frequency consumption of coffee intake per week in hypertensive subjects was significantly higher than normotensive subjects ($P < 0.05$) [Table 4]. The rate of inactivity rate in specialist with 46.6% was more than general practitioner [Table 5].

Discussion

Our findings showed that 8% of medical doctors were hypertensive, 21.3% smoker, 44% inactive, 51.1% overweight, and 18.2% obese, which all of these parameters are risks for health statues. Study of Bazargan *et al*.[7] demonstrated that focus on creating healthy lifestyles of physicians specially controlling cardiovascular risk factors can benefit general population. In other words, physicians with impaired physical and mental health can have a direct impact on patient health care and safety.[8] Our data showed that about 70% of participants were overweight and obese which not similar to study by Santos and Sichieri.[9] Results of these studies are demonstrated that overweight and obesity are common problem of Ardabil community and, as mentioned earlier, physicians can impact on public health. Other studies are showing that high BMI[10] and smoking[11] are associated with increased hypertension too. Also we found that, overall; about 50% of our samples had a normal BMI regardless of their gender, which, this was similar to the finding of the previous studies.

In our study, similar to studies in developing countries, the prevalence of overweight and obesity was higher in high level education groups.[12] As improved physician health has been linked to more frequent and successful counseling with patients about lifestyle behaviors; therefore, they should be encouraged to have a healthy lifestyle, unfortunately our study expands physician's

Table 1: The prevalence of hypertension by exposure variables

Hypertension / Exposure variables		+		-		*P* value
		n	%	*n*	%	
Sex	Male	12	66.7	104	50.2	0.18
	female	6	33.3	103	49.8	
Specialty	General practioner	7	38.9	145	70	0.007
	specialists	11	61.1	62	30	
BMI	normal	10	55.6	146	70.5	0.18
	Non-normal	8	44.4	61	29.5	

All values are mean ± standard deviation. BMI = body mass index

Table 2: Means of systolic and diastolic blood pressure by age group

Blood pressure / Age groups (years,n)	Systolic	*P* value	Diastolic	*P* value
26–35 (n = 110)	116 ± 7.3	0.04	76 ± 6.1	0.15
36–45 (n = 80)	118.1 ± 7.1		78 ± 4.8	
46–55 (n = 29)	122 ± 7.5		79 ± 4.5	
56–65 (n = 6)	117 ± 5.8		73.3 ± 5.8	

Table 3: Total means scores for all walking, moderate and vigorous physical activities by MET-minutes/week

	Walking			Moderate activity			Severe activity			Total Physical activity		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
Median	594.00	280.5	478.5	510.00	1425.0	1020.00	0	0	0	1080	1656	1425.0
P value	0.002			<.0001						<0.0001		
Mean	658.7 (± 425.7)	531.3 (± 543.6)	594.9 (± 489.4)	728.3 (± 695.1)	1862.4 (± 1546.9)	1274.2 (± 1308.6)	56.3 (± 313.6)	301.7 (± 651.3)	174.3 (± 518.6)	1451.8 (± 1128.06)	2687.85 (± 2321)	2050.4 (± 1906.2)
P value	0.07			<.0001			<.0001			<.0001		

MET = Metabolic equivalent of task

Table 4: The mean intake of food frequency status per week in medical doctors

Food groups	General practitioner	Specialist	*P* value	Hypertensive	Normotensive	*P* value	Normal weight	overweight	*P* value
Milk	5.3 ± 2.7	5.6 ± 2	0.42	5.8 ± 2.3	5.4 ± 2.6	0.5	5.3 ± 2.6	5.5 ± 2.5	0.6
Yogurt	8.5 ± 2.9	4.9 ± 3.3	0.001	6.5 ± 2.9	7.4 ± 3.5	0.2	6 ± 4.2	7.9 ± 3	0.01
Bread types	13.7 ± 3.9	12± 3.9	0.003	12 ± 2.6	13.2 ± 4.1	0.18	12.1 ± 3.3	13.6 ± 4.2	0.01
Rice	9 ± 3.4	8.5 ± 2.6	0.2	9.5 ± 3	8.8 ± 3.2	0.3	6.9 ± 2.5	9.7 ± 3	0.01
Corn	0.08 ± 0.32	0.02 ± 0.08	0.16	0.04 ± 0.16	0.06 ± 0.27	0.74	0.09 ± 0.37	0.05 ± 0.2	0.26
Macaroni	2.8 ± 1.5	2.4 ± 1	0.04	2.5 ± 0.98	2.7 ±1.4	0.6	2.1 ± 0.97	3 ± 1.46	0.01
Pies	2.6 ± 2.1	2.4 ± 1.8	0.5	1.8 ± 1.3	2.6 ± 2.1	0.09	0.56 ± 0.51	3.4 ± 1.8	0.01
Biscuits	4.2 ± 3.7	3.2 ± 3.1	0.020	4.1 ± 3	3.8 ± 3.6	0.7	2.6 ± 1.8	4.7 ± 3.5	0.02
Barely	0.13 ± 0.05	0.06 ± 0.01	0.059	0.11 ± 0.03	0.12 ± 0.04	0.70	0.12 ± 0.4	0.11 ± 0.04	0.8
Unsaturated fat	7.6 ± 2.1	7.1 ± 1.6	0.13	7.3 ± 1.1	7.5 ± 2	0.8	6.6 ± 1.3	7.8 ± 2.1	0.01
Butter	2.8 ± 2.4	2 ± 1.9	0.01	2.2 ± 2	2.6 ± 2.3	0.4	1.4 ± 0.8	3.3 ±2.2	0.01
Liver	0.51 ± 0.44	1.4 ± 0.55	0.4	0.35 ± 0.3	0.95 ± 0.49	0.5	0.6 ± 0.34	1 ± 0.54	0.13
Egg	4.9 ± 1.9	4.2± 2.2	0.01	12.6 ± 5.4	14.4 ± 6.3	0.3	4.4 ± 2.1	4.9 ± 2	0.13
Cheese	4.7 ± 3.2	5.7 ± 2	0.01	5 ± 2.9	5 ± 3	0.9	6 ± 2.2	4.6 ± 3.1	0.02
Fruits	1.45 ± 0.78	0.84 ± 0.21	0.002	1 ± 0.43	1.34 ± 0.6	0.5	1.4 ± 0.7	1.2 ± 1.5	0.5
Poultry	5.2 ± 1.9	4.2 ± 2.1	0.001	5 ± 1.6	4.9 ± 2.1	0.7	4.5 ± 2	5.1 ± 2	0.055
Nuts	4.7 ± 4.1	4.5 ± 3.4	0.7	5.4 ± 4.7	4.6 ± 3.8	0.34	2.3 ± 2.1	5.7 ± 3.9	0.01
Sausage	1.7 ± 1.3	2 ± 1.8	0.01	1.8 ± 1.4	1.8 ± 1.5	0.07	0.64 ± 0.6	2 ± 1.9	0.01
Tea	13.9 ± 6.7	15 ± 5.1	0.2	12.6 ± 5.4	14.4 ± 6.3	0.4	13.7 ± 7.1	14.5 ± 5.8	0.07
Coffee	2.4 ± 2.4	2 ± 1.1	0.01	5.1 ± 2	2.5 ± 1.7	0.01	2.4 ± 1.9	2.7 ± 2	0.06
Vegetables	3.2 ± 1.8	3.9 ± 1.7	0.3	4.6 ± 3.2	4.9 ± 2.9	0.3	5.1 ± 2.5	3.9 ± 1.9	0.04
Redmeat	2.9 ± 1.1	3.1 ± 1.5	0.6	4.7 ± 3.9	4.4 ±4.1	0.8	4.9 ± 2.8	3.9 ± 2.1	0.03
Cream and creamy cheese	4.3 ± 4.2	2.8 ± 2.5	0.04	4.1 ± 3.8	3.9 ± 3.6	0.8	1 ± 0.8	4.9 ±4.1	0.01

Table 5: Physical activity profile of Ardabil's medical doctors

Activity category	Total	Males	Females	Type of physician	
				General practitioner	Specialist
Inactive*	43.1%	47.4%	38.6%	41.4%	46.6%
Minimally active**	35.6%	37.9%	33%	34.9%	37.0%
Active***	21.3%	14.7%	28.4%	23.7%	16.4%
P value			0.33	0.47	

Chi-square = 5.536, Degrees of Freedom = 2, two-sided level of significance = 0.062
* Not meeting criteria for minimally active or active.
** Meeting any of the following conditions: [1] participating in 3 or more days of vigorous-intensity activity for at least 20 min per day, or [2] participating in 5 or more days of moderate-intensity activity or walking for at least 30 min per day, or [3] participating in 5 or more days of any combination of walking, moderate-intensity or vigorous-intensity activities achieving a minimum of at least 600 MET-min per week.
*** Meeting either of the following criteria[1]:vigorous-intensity activity on at least 3 days achieving at least 1500 MET-min per week, or [2] taking part in 7 or more days of any combination of walking, moderate-intensity or vigorous- intensity activities achieving a minimum of at least 3000 MET-min per week.

weak lifestyle and health behaviors and also obesity in Ardabil city. Also food frequency consumption of high carbohydrate (i.e., bread types, rice, macaroni, pies, biscuit, liquid fat, red meat), high-energy (such as cream, butter, nuts, and sausage) per week in overweight physicians were significantly more than normal weight physicians, and these results are consistent with similar studies among adults.[13-14] We found that increased eating frequency of coffee intake per week in hypertensive subjects was significantly higher than normotensive subjects. Similar to our finding, some studies have found a relationship between coffee intake and BP,[15-16] whereas other investigations showed no positive or negative associations between hypertension and coffee drinking.[17]

Conclusion

Coffee intake, smoking, low activity were risk factor for overweighting and obesity in physicians, while most of physicians emphasis on importance of healthy behaviors, few of them follow health lifestyle, and this factor can have a negative effect on society attitude about health. There was not any limitation in carrying out this study, only some of physicians tend to complete the questionnaires and we must replace them by new samples. Because importance of lifestyle and quality of life studies between doctors and all health workers, doing more future studies about these themes is essential.

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Conflicts of interest

There are no conflicts of interest.

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