Physical activity profile among patients attending family medicine clinics in western Saudi Arabia

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ABSTRACT

الأهداف: التعرف على مدى انتشار النشاط البدني والعوامل المرتبطة به بين المرضى المراجعين لعيادات طب الأسرة – مستشفيات القوات المسلحة – الطائف – المملكة العربية السعودية.

الطريقة: تم إجراء دراسة مسحية باستخدام استبيان من خلال مقابلة أجريت بشكل عشوائي مع 329 من المرضى الذكور و الإناث المراجعين لعيادات طب الأسرة – مستشفيات القوات المسلحة – الطائف – المملكة العربية السعودية، وقد تم إجراء الدراسة خلال الفترة من ديسمبر 2005 إلى يناير 2006م.

النتائج: أظهرت هذه الدراسة أن 54% من المشاركين لديهم نشاط بدني، من بينهم 27.7% يمارسون نشاط بدني قوي، بينما 72.3% يمارسون نشاط بدني متوسط، وباستخدام التحليل الإحصائي متعدد المتغيرات وجد أن عوامل العمر، والمهنة، والمشكلات الصحية المزمنة، والخوف من الانتقاد كانت ذات دلالة إحصائية مرتبطة بضعف ممارسة النشاط البدني.

خاتمة: يحتاج المرضى باعتبارهم الهدف الرئيسي للخدمات الصحية إلى الدعم والاهتمام بتثقيفهم وتوفير وسائل ممارسة النشاط البدني، بالإضافة إلى أهمية وجود سياسات وطنية لتشجيع الحياة النشطة والتخلص من عادات الكسل ومما لاشك فيه فإن العاملين في الرعاية الصحية يجب أن يقوموا بدور رئيسي في تطبيق هذه السياسات.

Objectives: To provide a current estimate of the prevalence and determining factors associated with physical activity among patients attending family medicine clinics in western Saudi Arabia.

Methods: A cross-sectional study was conducted using an interview-administered questionnaire completed by 329 randomly selected adult Saudi male and female patients attending family medicine clinics at the Armed Forces Hospitals, Taif, Saudi Arabia. The study was conducted from December 2005 to January 2006.

Results: Approximately 54% of the participants were physically active, of whom 27.7% were practicing vigorous physical activities, and 72.3% were practicing moderate physical activities. Multivariate analysis showed that age, occupation, chronic health problems, and fear of criticism were significantly associated with practicing physical activity.

Conclusions: Patients, as targets of health services need support and provision of facilities for appropriate understanding and practicing of physical activity. A national policy that encourages active living and discourages sedentary habits is also needed, and health care providers should play an important role in this policy.

Saudi Med J 2010; Vol. 31 (4): 428-433

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Received 6th January 2010. Accepted 23rd February 2010.

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Several previous studies around the world addressed physical activity from different aspects. In the United States, overall 45% of adults (48% of men and 43% of women) were reported as physically active during nonworking hours, and less than 16% of adults (15% of men and 17% of women) reported no moderate or vigorous activity in a usual week.[1] Morrow and Blair[2] studied physical activity related information from the national random telephone survey of 2002 American households in 48 contiguous states to determine whether American adults know which traditional and lifestyle physical activities affect health, and whether this knowledge is a function of gender, ethnicity, education, or age. Respondents were aware of traditional physical activities (mean = 94%) and less aware of specific exercise guidelines (mean = 68%), and lifestyle physical

activities (mean = 77%) that can result in a health benefit. Knowledge was not related to physical activity behavior sufficient for a health benefit and only slightly related to ethnicity, education, and age. They concluded that physical activity knowledge alone is not sufficient to elicit a behavior. A study conducted to assess physical activity patterns among Irish adults revealed that men were approximately twice as active in work and recreational activity as women, but women were 3 times more active in household tasks.[3] In 2000, Vaz and Bharathi[4] studied 401 educated, employed, middle-class Indians (193 males, 208 females) between the ages of 25-58 years to describe their physical activity profiles and knowledge of benefits of exercise and constraints in achieving it. Women were significantly more active than men, largely due to enhanced household activity, which was not offset by the higher leisure time-related exercise of males, and over 50% were unaware of the benefits of exercise in preventing heart disease. Lack of time (men 53.4%, women 68.3%) and lack of motivation (men 26.4%, women 28.4%) were the most-often cited reasons for being unable to achieve "ideal" exercise goals. The type of exercise is dependent on the physical goals and should be conducive towards these goals (for example, maintain good health, fat loss, build muscle mass).[5] In a Portuguese study, youngest, normal weighted, single, non-drinking subjects and non-smoking males were more likely to be physically active. In both men and women, there was a clear effect of education on the type of physical activity.[6] Al-Refaee and Al-Hazzaa[7] studied the pattern and determinants of physical activity among 1333 Saudi adult males living in Riyadh. They found that 53.5% of them were totally physically inactive, 27.5% were irregularly active, and only 19% of the entire sample was active on a regular basis. A curvilinear relationship was found between age and inactivity, with the middle age group the least active. Physical inactivity determinants include being married, working in private sectors, working more than one shift, lower education level, and having only one day off during the week. This study revealed that time constraints seemed to be the major contributing factor to inactivity, while maintaining health, and losing weight were the most important reason for being physically active among Saudi males. Rasheed[8] conducted a case control study to examine the theorized differences for eating and exercise behavior among the obese and non-obese women from an urban health center in Saudi Arabia. Perceptions regarding actual and ideal body size were also determined. Most of the study population (75%) was either not exercising at all or doing so infrequently, a feature expected in the middle and lower social class group of women in this region. Researchers raised the issue that lifestyles have changed dramatically. With ever-increasing advances in technology, people all over the world have become physically less active. The most prevalent diseases we suffer from today, namely, heart disease, stroke, cancer, are related to lifestyles, of which physical activity is a major part.[1,5] Results of Méndez-Hernández et al's study[9] indicated that both leisure-time and workplace physical activity among Mexican health workers at different intensity levels, including low-intensity significantly reduced the risk of metabolic syndrome. Other epidemiological studies have demonstrated that moderate-vigorous daily physical activity prevents both the incidence of chronic diseases and premature death.[10,11] Although many know that exercising will reduce the risk of disease and illness, the thought of exercise can still be overwhelming. Myths that contribute to an inactive lifestyle are that exercise has to be difficult, it has to hurt, and lots of it has to be undertaken to be beneficial.[5] However, in spite of the importance of physical activity as a preventive measure for many common health problems, health benefits of moderate-intensity physical activities, especially everyday activities, and the large number of studies that were carried out regarding physical activity patterns and determinants, those carried out in Saudi Arabia are still lacking, especially among military personnel and their families who attend general health or family health clinics. Military personnel are supposed to be physically active compared to the general population, but their physical profile has not been assessed in previous studies despite the ultimate importance of physical activity for readiness among soldiers. Reflection of physically active militants on their families has not also been assessed. Moreover, assessment of factors that determine physical inactivity is essential for designing physical activity promotion programs. This study was carried out to provide a current estimate of the prevalence of physical activity among military personnel and their families attending family medicine clinics in western Saudi Arabia, and to determine the major contributing factors for being physically active among the studied population.

Methods. The Armed Forces Hospitals in Taif, Kingdom of Saudi Arabia consist of 4 hospitals and include 9 family medicine clinics with approximately 3000 patients seen per month at these clinics. All patients (military personnel and their dependents) attending family medicine clinics at Taif Armed Forces Hospitals during the study period from 3rd December 2005 until the end of January 2006 were included. Non-Saudi patients and those less than 15 years of age were excluded. Consent for participation was obtained orally. The purpose of the study was explained to all patients, who were assured that their participation

was voluntarily, they could quit at any time, and that information would be kept confidentially and if they refused to participate, their health care would not be affected. A cross-sectional study design was performed. The sample size comprising 329 patients was calculated using Epi Info program version 6, assuming 19% prevalence of physical activity in Saudi Arabia based on results of Al-Refaee and Al-Hazza.[7] Acceptable limits of 4% at 95% confidence interval was applied. Based on sample size calculation, 350 patients were asked to participate, and only 21 patients refused or could not complete the interview. Data were collected using a pre-designed questionnaire that included the following items: 1) demographic characteristics (for example, gender, age, marital status, occupation, and educational level), 2) type of physical activity practiced (based on the International Physical Activity Questionnaires [IPAQ] - short form 5), 3) preferred physical activities, 4) health problems, and 5) barriers for physical activity practice. The IPAQ is a valid and reliable tool that is available in different languages including Arabic.[12] The IPAQ (short form) assesses physical activity undertaken across a comprehensive set of domains including: a) leisure time physical activity, b) domestic and gardening (yard) activities, c) work-related physical activity, d) transport-related physical activity. The specific types of activities that are assessed using IPAQ are walking, moderate-intensity activities, and vigorous-intensity activities. Vigorous activities are those making the person breathe much harder than normal and may include heavy lifting, digging, aerobics, or fast bicycling. Moderate physical activities include those making the person breathe somewhat harder than normal and may include carrying light loads, bicycling at a regular pace, or doubles tennis. Walking is treated as a separate item. According to IPAQ, participants were divided into 3 main categories: 1) Low: This is the lowest level of physical activity. Those individuals do not meet criteria for categories 2 or 3 and are considered inactive; 2) Moderate: Any of the following 3 criteria, a) 3 or more days of vigorous activity of at least 20 minutes per day OR b) 5 or more days of moderate-intensity activity or walking of at least 30 minutes per day OR c) 5 or more days of any combination of walking, moderate-intensity or vigorous intensity activities; 3) High: Any one of the following 2 criteria, a) Vigorous-intensity activity on at least 3 days OR b) 7 or more days of any combination of walking, moderate-intensity or vigorous intensity activities.[12] Categorical indicators were assessed during data analysis. The questionnaires were completed through direct interview with the patients. All interviews were conducted by one interviewer to minimize interviewer bias. Patients were selected using the systematic random sampling technique (every third patient) among those who attend the family medicine clinics. Patients were asked to voluntarily participate in the study and if they refused the next available patient was chosen. The local ethics committee, at the Joint Program of Family and Community medicine, Jeddah, and Taif Armed Forces Hospitals approved the study. Confidentiality and anonymity were preserved and noted all the way through different steps of the study. A Pilot study was conducted on 20 randomly selected patients at the family medicine clinic, Al-Hada Hospital and modifications on the questionnaire were carried out.

Data were collected and verified by hand then coded before entry. It was entered into the Statistical Package for Social Sciences Version 13 (SPSS Inc, Chicago, IL, USA) by the double entry method to decrease data entry error. Data were analyzed using X^2 (Chi square) test for non-continuous variables. Odds ratio and 95% Confidence Interval (CI) were used to assess determinants of physical activity. A p-value <0.05 was used to determine significance.

Results. The total number of patients who completed the questionnaire was 329 and their mean (±SD) age was 43.16 (±9.33) years with a range of 23-56 years. One hundred and ninety of the participants (57.8%) were males and most of them (80%) were married. More than 50% were not employed and 25.5% were illiterates. Approximately half of the participants

Table 1 - Demographic characteristics associated with physical inactivity among the studied participants.

Demographic characteristics	Physical activity		OR	95% CI
	Active (n=177)	Inactive (n=152)		
	n (%)			
Gender				
Male	103 (54)	87 (46)	1.00	
Female	74 (53)	65 (47)	1.04	0.65-1.65
Age-groups (years)				
<50	138 (58.2)	99 (41.8)	1.00	
>=50	39 (42)	53 (58)	1.89	1.13-3.18
Marital status				
Married	139 (54)	120 (46)	1.03	0.58-1.80
Single	38 (54)	32 (46)	1.00	
Occupation				
No job	82 (47)	94 (53)	1.85	1.13-3.05
Employed	76 (61.8)	47 (38.2)	1.00	-
Student	19 (63)	11 (37)	0.94	0.38-2.30
Level of education				
Illiterate	36 (43)	48 (57)	1.68	0.84-3.35
Primary / Intermediate	65 (55.6)	52 (44.4)	1.01	0.53-1.91
Secondary	37 (64)	21 (36)	0.71	0.33-1.55
University	39 (56)	31 (44)	1.00	-

OR - odds ratio, CI - confidence intervals

177 (53.8%) were physically active (**Table 1**). Among them, 49 (27.7%) were practicing vigorous physical activities, while 128 (72.3%) were practicing moderate physical activities. No statistical significant association was detected between gender, marital status, or level of education, and physical activity. Participants more than 50 years old were significantly more likely to be physically inactive compared to those less than 50 years old. Participants who reported they have no job were significantly more likely to be physically inactive compared to those who are employed (**Table 1**). Less than half of patients with diabetes, hypertension, and obesity were physically active. However, diabetes was the only reported health problem that had significant association with physical inactivity. Among smokers, 13 (65%) were physically active (**Table 2**). Participants who reported the health status and fear of criticism as barriers against practicing physical activity were statistically significantly higher among the inactive compared to the active group. However, no significant differences were reported between both groups regarding lack of time and unavailability of suitable place for practice (**Table 3**). Most of both physically active and inactive participants prefer walking as a means of physical activity. **Figure 1** illustrates the preferred physical activities among participants. Reasons for practicing physical activities as reported by the participants include health maintenance, weight loss, fun, and medical advice, meanwhile, none of them had significant effect on physical activity.

Table 2 - Health problems among physically active and inactive participants.

Health problems	Physical activity		*P*-value
	Active (n=177)	Inactive (n=152)	
	n (%)		
Diabetes	29 (43)	39 (57)	0.038
Hypertension	22 (44)	28 (56)	0.13
Obesity	37 (46)	43 (54)	0.12
Smoking	13 (65)	7 (35)	0.30

Table 3 - Barriers against physical activity

Barriers	Physical activity		*P*-value
	Active (n=177)	Inactive (n=152)	
	n (%)		
No time	95 (53.7)	70 (46.1)	0.16
No place	59 (33.3)	51(33.6)	0.96
Health status	38 (21.5)	50 (32.9)	0.02
Fear of criticism	0	7 (4.6)	0.004

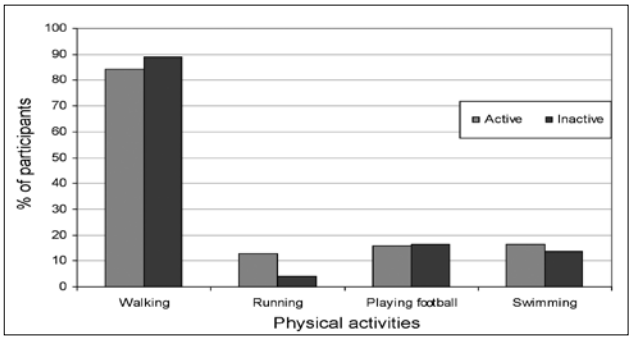

Figure 1 - Types of preferred physical activities among the studied participants.

Discussion. The current study showed that almost half of Saudi patients attending family medicine clinics in the Taif region are physically active. This figure is lower compared to other studies conducted among similar age groups in the USA (77%),[13] Finland (84%), Australia (74%), and Canada (57%).[14] However, this prevalence is higher than those in Bahrain (13%).[15] Other studies carried out in Saudi Arabia showed lower prevalence of physical activity among patients. In Riyadh city, the prevalence was 19%,[7] and in Dammam it was 15%.[8] Moreover, the prevalence of physical activity among primary health care physicians in Riyadh city was 23.5%,[16] which is still lower than the current findings. The relatively higher percentage of physical activity among patients attending family medicine clinics at Taif Armed Forces Hospitals than other studies conducted in Saudi Arabia and Bahrain may be attributed to the characteristics of the studied group who are mainly military personnel or their close families, thus, they are potentially more active or more aware of physical activity importance than the general population. The second explanation is the good weather, which is much better most of the year in Taif compared to Riyadh, Dammam, or Bahrain so people are encouraged to perform more outdoor activities. No significant deference was found between men and women regarding physical activity compared to urban Indians,[4] where women were significantly more active than men. Saudi Arabian culture does not allow women to undertake outdoor physical activities, and related facilities for women are lacking. Patients more than 50 years old are significantly less active than those below 50 years old. This finding may be attributed to 2 main reasons: the health status of older participants, which may render them from performing exercises, and to the

finding that most of the old participants may be retired or not working. This may explain the pattern of physical activity among the studied participants, which is more related to physical work activity not planned regular exercise activity. Simultaneously, our study revealed that students (middle aged) and participants with no job are less active than those who are governmental or non-governmental employees. Al-Refaee and Al-Hazaa[7] reported a curvilinear relationship between age and inactivity among Saudi patients in Riyadh, with the middle age group least active. Most of the middle aged group were students, and they spend most of their time indoors for studying, playing games, watching TV, or other sedentary habits,[17] in addition to the hot environment, which is not encouraging for outdoor activities. Moreover, indoor physical activity clubs are relatively expensive and not available especially for females who are lacking alternative kinds of exercising even in schools. In Canada[18] and Finland[19] similar curvilinear trends between physical activity and age were found. In Canada and Finland, older people may have enough time to exercise, facilities are available, and the general cultural, and environmental factors are encouraging. In the current study, marital status is not associated with physical activity revealing that physical activity among the studied population is more work-related. University educated participants are more physically active compared to lower education levels. This is in accordance with Al-Refaee and Al-Hazzaa,[7] and data from the USA National Health Interview survey.[20]

The type of physical activity that was preferred by the participants was walking, which is consistent with Al-Refaee and Al-Hazza,[7] who found walking is the exercise most practiced by the active group (70%), and with Al-Shahri and Al-Almaei[16] who showed that walking was the activity most practiced by physicians (70%). Although running, playing football, and swimming were reported by a small percentage of the participants as the preferred type of activity, playing football, and swimming were equally preferred by both the active and inactive groups and running was significantly lower among the inactive patients. Playing football and swimming provide more fun and reflect the importance of encouragement through peers, however running requires more active participants.

Among those with associated chronic conditions (diabetes, hypertension, obesity, and smoking), inactive patients were slightly higher than the active group, however, the difference was significant only among diabetics. Research on physical activity[21-23] revealed that inactivity appears to be a far more important risk factor than was previously estimated, and it is estimated that 35% of diabetes related deaths in the USA were due to sedentary living habits. Obesity often coexists with diabetes and is presumed to multiplicatively increase the risk of mortal events in diabetic individuals who are obese. Both obesity and diabetes are contributing to the sedentary habits among diabetics.[3,24] Similar results were reported by Al-Refaee and Al-Hazzaa,[7] where the percentage of obesity appeared slightly higher among inactive (18%) than among active (13%) groups, though the difference was not significant.

Although this study was carried out among patients, limited time was ranked first among barriers against physical activity by both active and inactive groups, followed by lack of facilities and lastly the health status. Similarly, Al-Refaee and Al-Hazza[7] found time constraint as the major factor contributing to inactivity, then lack of facility, followed by health conditions. According to Vaz and Bharathi's study,[4] lack of time, and lack of motivation were the most important reasons for being unable to achieve ideal exercise goals. It was interesting to note that 5% of the inactive patients were afraid of being embarrassed if they exercise, which reflects some cultural conceptions that might still exist about those who exercise.

Some of the limitations of our study include the fact that the questionnaire assessments of physical activity are subject to recall bias and typically overestimate amounts of physical activity. Furthermore, self-reported physical activity does not provide accurate estimates of absolute amounts of activity (kilocalories per day). However, these instruments are useful for certain study populations and they have been validated to identify differences in the physical activity levels of populations. Since our study uses cross-sectional data, it is not possible to fully determine the direction of causality. The current findings may not represent the general population in Saudi Arabia because of the characteristics of the study group who are military workers and families and may be more physically active because of the nature of their work or availability of facilities for practicing exercises. However, the current study is a trial to understand the pattern and determinants of physical activity among patients attending family medicine clinics in Taif, Saudi Arabia. It revealed that major efforts are required to encourage, facilitate, and educate our patients and the community as a whole regarding the ultimate importance of exercise and being physically active. A healthy lifestyle is an active one. As well as planned exercise (30 minutes 3 times a week) everyone should also incorporate activity into his day-to-day life. Physical activity is not just for fun, it is essential for controlling chronic diseases and for health promotion and wellbeing.

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