Life Style of Diabetic Patients Attending Marj Al Hamam Public Medical Center in Jordan

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Abstract: A study in Jordan, Amman, (Marj Al Hamam) government health center was structured to determine the life style practices among group of diabetic patients attending the center monthly. A total of 294 respondents completed the survey questionnaire, 276 were type 2 while 18 were type 1.Results indicated that the prcentage of current smokers was more among type one (44.40%), than type 2(22.50%) while the percentage of physically active respondents didn't differ much among both types of diabetes (38.90% type 2, 38.9% type 1). Those who were physically active were in the age group 40-49, while those who led sedentary life style were in age group <40. The Percentage of male smokers was more than females. Males were physically active more than females 49.00%:26.60%) Regarding educational status, diabetics who had high educational level (university) were current smokers (32.70%) withno statistical significance while those with college level were leading active physical activity mainly walking 45.5 with no statistical significance.

INTRODUCTION

Diabetes Mellitus (DM) refers to group of metabolic disorders that are characterized by the presence of hyperglycemia. Diabetes is the result of interaction of genetics, environmental, and life style pattern. The metabolic abnormalities in diabetes affect almost every organ in the body and are associated with harmful consequences.[1]

Type 1 diabetes is the form of the disease due primarily to β-cell destruction resulting in the absolute dependence on insulin therapy. Most studies support the view that insulin resistance precede insulin secretory defect, and diabetes develops only if insulin secretion becomes

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inadequate. Type 2 DM has a strong genetic component, though the genes that predispose to this disorder are yet to be identified. Moreover it is clear that the disease is polygenic and multifactorial.[2]

Sedentary behavior is an important risk factor for chronic disease morbidity and morality in aging. However, there is a limited amount of information on the type and amount of activity needed to promote optimal health and function in older people.[3] There is encouraging evidence that moderate levels of physical activity may provide protection from certain chronic diseases. Thus, regular participation ie. 30 minutes\day on most days of the week in activities of moderate intensity (such as walking, climbing stairs, biking, or yard work\gardening) should be encouraged in older people. This increase accumulated daily energy expenditure which maintain muscular strength, but may not be of sufficient intensity for improving fitness. Exercise and other forms of physical activity are known to provide a myriad of specific physiologic and psychosocial benefits in older people [4,5,6]

The depantmentset a goal to increase to at least 30% the proportion of people aged 18 and older who engage in moderate physical activity for at least 30 min\day." In 1999. The usde partment of health and human serrices reported that the prevelance of adults (specifically aged 65 and older) with no reported activity was 51%.Consequently.

Level of leisure-time activity appears to vary by gender and race among adults in the United States.[7] Women are less likely than men to report regular leisure time physical activity.[8] and the lowest activity levels typically are reported among women of Hispanic or African American descent.[9.10] Results from several studies.[9.11] showed a strong positive correlation between years of educational attainment and level of habitual physical activity in both men and women particularly

with regard to the prevalence of regular (I.e.≥20 minutes or more per session ≥3 times \wk) and regular\ intense (i.e≥60%) maximal aerobic capacity activity. All studies reported that the participation varied substantially by race, income, and education level, with African American women at every age the least likely to participate in these recommended levels of physical activity.

A Longitudinal Study.[12] suggests that exercise–related weekly energy expenditure is significantly lower in higher age groups than in younger groups especially among the most fit members of this healthy cohort age 20-87 years, Time spent in activities such as transportation, socializing, entertainment, sports, and walking for leisure (men only) also showed cross-sectional decreases among age groups .

Walking is the most prevalent activity reported among adults of all socio demographic strata in the United States.[9,11,13] Following walking, running, team sports and weight lifting are more common activities among younger men while participation in aerobics is more prevalent among younger women.[14]

The most prevalent activities among older adults tend to be lower intensity (but sustained) activities such as walking, yard work\ gardening golf.[15] and bicycling. Physical activity is a complex behavior and is often difficult to describe.Components of total activity involve walk or house hold activity and transportation, one can reasonably assume that energy spent in work and house hold tasks as well as in transportation, has progressively declined over the years with increasing automation.

The decline in overall physical activity has tremendous public health implication for older people, since there is increasing evidence that the health effects of physical activity are linked specifically to the total amount of kilo calorie expenditures or activity time accrued per

day or week, rather than the actual duration or intensity of the exercise bout. Heredity or genetic predisposition, is an important component of physical fitness as functional capacity.[16] which contributes substantially to physical activity level in older people.[17,18]

Regarding psycho social factors self motivation has consistently correlated with physical activity level in several adult populations.[19,20]

Self efficacy, or confidence in one's abilities, is a factor strongly associated with both the adoption and adherence to physical activity among adolescents.[21,22] younger aduits and esoecially older adults.[23,24]

Regarding health hazards of smoking, it causes a substantial increase in risk for both macro vascular and micro vascular disease.[25] It is an independent risk factor for all cause mortality, due largely to cardio vascular disease. There is a dose-response relationship between current smoking status and risk of coronary disease in women with diabetes. The risk returns to baseline in those who had stopped smoking for>10 years. The risk of mortality in diabetic women also increase with the number of cigarettes smoked per day (for 1-14 days) > 35 cig. day and / decrease substantially 10 years after quitting smoking.

Smoking is associated with increase in the serum concentrations of total cholesterol and very low density lipoprotein cholesterol, a decease in serum high density lipoprotein cholesterol concentrations, and a greater degree of insulin resistance.[26]

Smoking is independently associated with an increase in urinary albumin excretion and non proliferative retinopathy. The degree of albuminuria falls to the level of non smokers if smoking is discontinued. Smokers with either type 1 or type 2 diabetes are at increased risk for neuropathy, an effect that persist after

adjusting for glycemic control.[27] It is also associated with an increased risk of end-stage renal disease and with decreased survival once dialysis is commenced.[28.29]

Lastly, patients with type 1 diabetes who smoke have higher plasma concentrations of inter cellular adhesion molecule 1.The risk for diabetic patients who smoke remains high for several years after they quit and is related to the overall duration of smoking. As a result, patients with diabetes should be encouraged to quit smoking as soon as possible. Worldwide currently 9.8 % of the population lives with diabetes and is expected to rise to 11.5 % within 20 years.[30]

According to the IDF, five out of the top ten countries with the highest prevalence of diabetes are in the Middle East: United Arab Emirates (19.5%) Saudi Arabia (16.7%), Bahrain (15.2%), Kuwait (14.4%) and Oman (13.1%). In Jordan the picture of diabetes is alarming. According to the 2007 BRFS, 13% of the population were affected by DM, 15% with IFG. Diabetes is the Fifth leading cause of death (7.2%) of the total deaths in jordon Diabetes afflicts 16 % of Jordanian citizens over the age of 18; In addition, about 12.3% had impaired fasting glucose. Adequate glycaemic control has been shown to be associated with reduction of micro vascular complications.[31]

Lifestyle was originally coined by Austrian psychologist Alfred Adler in 1929. The current broader sense of the word dates from 1961.[32] In sociology, a lifestyle is the way a person lives. A lifestyle is a characteristic bundle of behaviors that makes sense to both others and oneself in a given time and place, including social relations, consumption, entertainment, and dress. The behaviors and practices within lifestyles are a mixture of habits, conventional ways of doing things, and reasoned actions. A lifestyle typically also reflects an individual's attitudes, values or worldview. Therefore, a lifestyle is a means

of forging a sense of self and to create cultural symbols that resonate with personal identity. Not all aspects of a lifestyle are entirely voluntaristic. Surrounding social and technical systems can constrain the lifestyle choices available to the individual and the symbols she/he is able to project to others and self. The lines between personal identity and the everyday doings that signal a particular lifestyle become blurred in modern society.[32] For example, "green lifestyle" means holding beliefs and engaging in activities that consume fewer resources and produce less harmful waste (i.e. a smaller carbon footprint), and deriving a sense of self from holding these beliefs and engaging in these activities. Some commentators argue that, in modernity, the cornerstone of lifestyle construction is consumption behavior, which offers the possibility to create and further individualize the self with different products or services that signal different ways of life.[33]

The aim of this study is to describe the lifestyles of diabetic patients who attend Marj AL Hamam health Center in Jordan.

METHODS

Study design

A descriptive cross sectional study.

Target Population

Patients with types 1 and 2 diabetes who visited Marj Al-Hamam Health Center between January 2008 and December 2008. All patients who were registered in the center records, regardless of their insurance and met the inclusion criteria were included in this study. The inclusion criteria was according to WHO and American Diabetes Association classification.[34] All patients (294) who have visited the Public Center of Marj Al-Hamam duning 2008, accepted and filled out the distributed questionnaire.

Operational definition of variable

(1) Age in years**:** Group 1 (< 40), group 2 (40–49), group 3 (50-59), group 4 (> 60).

(2) Gender: Group 1 (Male), Group 2 (Female).

(3) Educational Status**:** Group 1 (Illiterate), Group 2 (Elementary), Group 3 (Preparatory level), Group 4 (Secondary level), Group 5 (College), Group 6 (University).

(4) Occupation: Group 1 (Public sector), Group 2 (Private sector), Group 3 (Retired), Group 4 (House Wife), Group 5 (Others).

(5) Type of Diabetes**:**(Type 1) , (Type 2).

(6) life style: Smoking status. Physical activity.

Study Questions

The current study aimed to know the lifestyles of adults and aged who are affected by certain chronic diseases, who visited the public medical centers, and their relation with some variables, through responding to the following questions:

1. What is the pattern of life style among diabetic patients?

2. Is there any statistical significant difference at the level of (0.05) between lifestyles of smoking that are followed by the patients due to age and gender variables?

3. Are there statistical significant differences at the level of (0.05) in prevalent life style of physical activity among diabetic patients due to age and gender variables?

4. Is there significant differences at the level of significance (0.05) in life style of smoking among diabetic patents due to education status and occupation levels?

5. Are there significant differences at level of significance (0.05) in lifestyle of physical activity among diabetes patients according to occupation and education status?

Data Collection Tools

The present study is based on routinely available data for patients receiving care from the center. Data was gathered from patient using a structured questionnaire

administered by the researchers. The questionnaire gathered information on socio-demographic variables including level of education, occupation, smoking status, and physical activity mainly walking.

Statistical design

Data were entered into computer using the SPSS software. Frequencies were obtained for categorical variables .The chi square test was used to assess statistical significance for difference of categorical variables .The purpose was to identify any variable which was related to the two main aspects of life style studied, in particular smoking and physical activity.

Table 1 Distribution of diabetic patients according to demographic variables

Factor	Group	Frequency	Percent
Age	Less Than 40	21	7.1
	40-49	40	13.6
	50-59	79	26.9
	60 And More	154	52.4
Gender	Male	151	51.4
	Female	143	48.6
Education	Illiterate	39	13.3
	Elementary	55	18.7
	Preparatory	46	15.6
	Secondary	69	23.5
	College	33	11.2
	University	52	17.7
Occupation	Public Sector	18	6.1
	Private Sector	47	16
	Retired	55	18.7
	House Wife	129	43.9
	Others	45	15.3
Type of Diabetes	Type 1	18	6.1
	Type 2	276	93.9
Smoking	Current Smoker	70	23.8
	Non Smoker	163	55.4
	Ex Smoker	61	20.7
Physical Activity	Walking	112	38.1
	Non Walker	182	61.9

n=294

RESULTS

Table 1 shows that the highest numbers of patients were >60 years old [154 (52.4%], patients (50-59 years old) came secondly, (26.9%), Followed by (40-49 years old) patients it (13.6%) and <40 years old ones (7.1%). Regarding gender, 51.42 of parients were males while 48.62 of them were jemales.

The table shows also that 23.5% of the patients had secondary education 18.7% of them had elementary education, and 17.7% were university graduate. In addition 15.6% and 11.22 of the epatients were preparatory and college greduates, respectively, whereas, 13.3% of them were illiterate.

For occupation, most of the patients were house Wifes (43.9%), followed by retired (18.7%), Private Sectors (16.0%), then Others (15.3%), and finally Public Sectors (6.1%).

Mareover 93.92 of them suffered from type2 diabetes mellitus while 16.1% suffered from tyoe 1 .Also, more than half of them (55.4%) were Non-Smokers 23.8% were Current Smokers and 90.7% were Ex-Smokers Concerning their physical Activity most of the highest the patients were was None-Walkers (61.9%) and 38.1% practiced walking.

Table 2 Distribution of diabetic patients according their life style (smoking and Physical activity)

Variables	Levels	Type of diabetes				Total	
		type 1		type 2			
		Freq	Perc%.	Freq	Perc.%	Freq	Perc.%
Smoking	Current smoker	8	44.40	62	22.50	70	23.80
	Non smoker	9	50	154	55.80	163	55.40
	Ex smoker	1	5.60	60	21.70	61	20.70
Total		18	100	276	100	294	100
Physical activity	Walking	7	38.90	105	38.00	112	38.10
	Non walking	11	61.10	171	62.00	182	61.90
Total		18	100	276	100	294	100

Table 2 indicates that the highest percentage among diabetic patients were non smokers (55.40%), while that of smokers was 23.80% with the lowest percentage was for ex smokers (20.70%). Results also show that 50% of type 1 diabetics were non smokers while 44.40% and 5.60% of them were smokers, and ex smokers respectively. The percentage of non smokers among type 2 diabetics were

55.80% while that of smokers and ex smokers were 22.50% and 21.70%, respectively. Regarding physical activity 61.90% of the patients led sedentary life style while 38.10% of them were physically active. Results showed also that 61.10% of Type 1 diabetics led sedentary life style while 38.90% were physically active and 62.0% of Type 2 diabetics led sedentary life style while 38% were physically active.

Table 3 Distribution of smokes and non-smokers diabetic patients according to age and gender

Variables	levels	Smoking						Sig.
		current smoker		non smoker		ex smoker		
		freq	Perc.%	freq	Perc%.	Freq	Perc%	
Age	less than 40	9	42.90	8	38.10	4	19.00	0.048*
	40-49	11	27.50	26	65.00	3	7.50	
	50-59	16	20.30	49	62.00	14	17.70	
	60 and more	34	22.10	80	51.90	40	26.00	
Total		70	23.80	163	55.40	61	20.70	
gender	male	51	33.80	52	34.40	48	31.80	0.001*
	female	19	13.30	111	77.60	13	9.10	
Total		70	23.80	163	55.40	61	20.70	

*significant of P< 0.05

Table 3 shows that smokers, non smokers and ex-smokers' patients differed significantly acconding to patient's age distcibution (P=0.04).

Reselts also showed that male patients were significantly higher cunent and ex smokers than female ones (P=0.001)

Table (4) Distribution of physically active diabetic patients acccording to age and gender

Variables	levels	physical activity				Sig.
		Walking		non walking		
		freq	Perc.%	freq	Perc%.	
Age	less than 40	7	33.30	14	66.70	0.956
	40-49	16	40.00	24	60.00	
	50-59	31	39.20	48	60.80	
	60 and more	58	37.70	96	62.30	
Total		112	38.10	182	61.90	
gender	male	74	49.00	77	51.00	0.001*
	female	38	26.60	105	73.40	
Total		112	38.10	182	61.90	

*significant at P<0.05.

Table 4 inidicates that Atotal of 40% of the age group 40-49 were leading active life, whereas .66.70% were not walking in the age group less than40. Results also showed that males (49.00%) were engaged in physical activity more than females (26.60%), moreover, the percentaye of females who were not walking were 73.40% which was higher than that of males who were not walking (51.00%). The difference between males and females for physical activity was statistically significant at the level of significance 0.001 in the sense that there is a difference between diabetic patients and physical activity according to their gender.

Table (5) Distribution of smokers and non smokers according to education status and occupation levels

Variables	levels	Smoking						Sig.
		current smoker		non smoker		Ex smoker		
		Freq	Perc.%	freq	Perc%.	Freq	Perc.%	
Education	illiterate	6	15.40	26	66.70	7	17.90	0.184
	elementary	16	29.10	30	54.50	9	16.40	
	preparatory	12	26.10	29	63.00	5	10.90	
	secondary	12	17.40	38	55.10	19	27.50	
	college	7	21.20	19	57.60	7	21.20	
	university	17	32.70	21	40.40	14	26.90	
Total		70	23.80	163	55.40	61	20.70	
Occupation	public sector	10	55.60	5	27.80	3	16.70	0.000*
	private sector	22	46.80	15	31.90	10	21.30	
	retired	12	21.80	22	40.00	21	38.20	
	house wife	13	10.10	103	79.80	13	10.10	
	others	13	28.90	18	40.00	14	31.10	
Total		70	23.80	163	55.40	61	20.70	

*siginificant at P<0.05

Table 5 shows that the highest percentage of current smokers (32.70%) was for university graduate patients. Following were elementary patients (29.10%). on the other hand, the lowest percentage (15.40%) was for the illiterate group. The later group was the most in terms of non-smoking practices (66.70%) followed by preparatory educated patients (63.00%). The least percentge was 40.40%. For universilty greduate patients. Results also indicated that 27.50% of secondary educated patients were ex-smokers, followed by those with academic qualifications (university) with a percentage of 26.90%. The leost percent of (10.90%) was for those having preparatory ediucation. No statistical significance at P value (0.05) was recorded for smoking among diabetic patients. having different educational levels, 55.6% however smoking differned statiista-cally among diabctic patients with different accupations (P=0.000).

Table (6) Distribution of physically active diabetic patients according to education status and occupation

Variables	levels	physical activity				Sig.
		Walking		non walking		
		freq	Perc.	freq	Perc.	
Education	illiterate	13	33.30	26	66.70	0.565
	elementary	16	29.10	39	70.90	
	preparatory	17	37.00	29	63.00	
	secondary	29	42.00	40	58.00	
	college	15	45.50	18	54.50	
	university	22	42.30	30	57.70	
Total		112	38.10	182	61.90	
Occupation	public sector	8	44.40	10	55.60	0.009*
	private sector	22	46.80	25	53.20	
	retired	26	47.30	29	52.70	
	house wife	34	26.40	95	73.60	
	others	22	48.90	23	51.10	
Total		112	38.10	182	61.90	

*significant at P<0.05

Table (6) shows the relation between the physical activity and the levels of education. Almost half (45.5%) of the patients that were leading active physical life (walking) were college graduates, 66.7% whereas 70.90%. of the non-walking patients had dementary eduction. In the mean time 47.30%. of the walk
ing patients were retired while 73.60% of the non-walking patients were house wifes. Phyical a ctivity different significantly

among diabetic patients having different ocupations (P=0.009).

DISCUSSION:

This study provides information on the life style of diabetic patients attending one of the public medical centers in Amman namely Marj Al Hamam. It is an area located in Amman with around 90.000 population. The study included males and females attending the center of various levels of occupation and education and

various age groups. Findings of the study are important in determining the current life style of diabetic patients in the center, and draw the attention of clinicians to possible interventions that may be useful in improving patient, care.

Studies showed that the most prevalent activities among older adults tend to be lower intensity (but sustained) activities such as walking. This is shows as 38.90% of type 1 diabetics were physically active. Whele 61.10% were not, also 62.00% of type 2 diabetics were leading sedentary life style.(Table 2) the present study found that 40% in the age group 40-49 were walking while 66.7% in the age group <40 were not. This did not agree with longitudinal study of slofan *et al.,*(1998) which suggested that exercise related weekly energy expenditure is significantly lower in higher age groups than in younger age groups especially among the most fit members of this healthy cohort age 20-87 years.[12]

Females significantly showed the lowest percentage in physical activity 26.60% (table 4) which agreed with Dipietro (1996) where he found that women are less likely to report regular leisure time physical activity.[8]

In oddition, 45.50% of patients with college level of education led active physical activity which was not statistically significant but it agreed with the results of several studies, which showed strong positive correlation between years of educational attainment and level of habitual physical activity in both men and women particularly with regard to the prevalence of regular (>20 minutes or more per session for >3 times /week) and regular/ intense ie. 60% maximal aerobic capacity activity.[9,11]

Other studies reported that participation varied substantially by race, income and educational level, with African American women at every age the least likely to participate in these recommended levels of physical activity.

Females in the present study, particularly housewives were significantly leading sedentary life style which correlates with the above mentioned studies. (Table 6).

The study also showed that the percentage of non smokers was higher among both types of diabetics, but current smokers percentage was significantly higher in the age group less than 40. Additionally Ex smokers were higher in the age group 60and more which may be explained by the fact that these patients had other complications that necessitated quilting smoking. (Table 3).

Regarding Current smokers they were significantly higher among males (33.80%), but were insignificantly higher among those with university level of education (Table 3 and 5). This agrees with a survey in the United States which found that the prevalence of cigarettes smoking was higher among diabetic patients than non diabetic subjects, even after adjusting for age, gender, race and educational level. The survey found also that over 25% of newly diagnosed diabetic patients were smokers.[35]

CONCLUSION:

Chronic diseases have a great detrimental impact on the life of patients. Life style modification is a major element in control.

The percentage of smokers was in age group <40, almost 33% had university degree and 46.80% were working in the private sector. Males exceeded those of females. Also the highest percentage of non-smokes was in the age group 40 - 49

Results showed that the elderly group 50 – 59 led sedentary life style (about 61%) which is alarmingly high. Moreoer, females housewives had the highest percentage in leading sedentary life style.

RECOMMENDATIONS:

Decision makers should focus their efforts towards national guidelines to improve life style among diabetic patients

(house wives) which will affect the control

and management of this devastating

disease.

A large scale national study is also

recommended to study various aspects of

life style.

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