

Physical fitness and lifestyle behaviors among type2 diabetes Persons over 50 years old

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Abstract:

This study aimed to compare physical fitness and lifestyle behaviors among type2 diabetes subjects over the age of 50 years old, The sample consisted of (20) subjects,

They were divided into two groups : group A included (10) type2 diabetes subjects who were regularly participants in physical activities in fitness classes, and group B included (10) type2 diabetes subjects who were not participants in physical activities. A lifestyle behaviors questionnaire was used to measure the lifestyle behaviors for both groups, the questionnaire Included phrases related to : (Exercise and positive health practices, dietary habits, smoking habits, preventive health measures and amount of sleep) . In addition, to physical fitness tests: (strength endurance of the abdominal muscles, maximum strength of the hand muscles, and flexibility). The results revealed that the lifestyle behaviors in type2 diabetes persons in group A who were participating in physical activities was more healthy than group B who were non-participants, in conclusion ,participation in physical activities contributes to a better healthy lifestyle behaviors including regular exercise, regular dietary habits, not smoking and an adequate amount of sleep.

Keywords: Physical Fitness , Life style, Diabetes type 2 .

Introduction:

There has been a worldwide escalation in the prevalence of diabetes mellitus in the past decades (Collaboration NCDRF,2016). Today diabetes is a major public health concern around the world. The number of individuals living with diabetes mellitus is projected to reach 592 million by 2035 (Guariguata et al. 2014)., Diabetes mellitus has become one of the most alarming public health .issues among all nations, including Jordan

It is well established that unhealthy lifestyle choices may worsen the condition of type 2 diabetes (Heyward and Gibson, 2014). Insufficient physical activity, low consumption of vegetables, high salt intake and smoking are associated with poor glycemic control, exacerbating the development of both macro- and micro vascular complications (Sliwinska and Milnerowicz, 2017&Mohan et al.,2013)

The evidence also shows that unhealthy behaviors often coexist within an individual (Poortinga,2007).For example, a German study reported that 66% of drinkers had at least one other unhealthy behavior, and 75% of smokers reported coexisting physical inactivity and/or an unhealthy diet (Schneider, et al.,2009). Another study in England found that over 70% of adults who participate in one of the unhealthy behaviors also engaged in the others. Additionally, compared with the simple sum of the separate effects, the combination of unhealthy behaviors is usually linked to a higher increased risk of mortality (Poortinga, 2007). Therefore, it is essential to know whether we can identify subgroups with similar behaviors in individuals with type 2 diabetes so that interventions can be better .tailored and targeted

Lifestyle behavior modification is a cornerstone for self-management of type 2 diabetes (American Diabetes Association, 2011). Important components of self-management include maintaining a healthy diet, participating in regular physical activity, achieving and maintaining a healthy body weight, limiting alcohol intake, and not/quitting smoking. Because the complexity of diabetes management requires that health professionals work collaboratively with their patients

(Siminerio,2008), self-management support has become a critical element for effective diabetes self-management.

Evidence from diabetic studies, however, indicates that lifestyle behaviors are often separately studied (Jakicic, et al. 2010). Little is known about how these behaviors co-vary in populations with diabetes. Accordingly, the current study aimed to (1) explore the patterns of modifiable lifestyle behaviors (physical activity, sedentariness, diet, smoking and drinking) and (2) identifying a full understanding of how the lifestyle behaviors cluster and whether typical risk subgroups can be identified on that basis could provide valuable and useful information to plan intervention strategies for individuals with diabetes.

This study aimed to compare physical fitness and lifestyle behaviors among type 2 diabetes persons participants and non-participants in physical activities.

Method:

Participants:

The sample consisted of (20) type2 diabetes persons over the age of 50 years (10) persons were regularly involved in physical activities in fitness classes, and (10) type2 diabetes persons over the age of 50 years were do not involved in physical activities, the characteristics of the participants are described in Table 1.

Table 1. General characteristics of the participants

Group	High (cm)	Weigh(kg)	Age (y)
A - participants of physical activities(n=10)	174± 25	71.2 ± 3.5	55.6 ± 5.2
B - Non- participants of physical activities (n=10)	173± 7.3	72.5 ± 4.1	52.3 ± 3.6

Procedures and Tools:

After being fully informed of the purposes of the study and giving their consent, the participants were asked to complete a lifestyle behaviors questionnaire. Inclusion criteria were : Exercise and positive health practices, dietary habits, smoking habits, preventive health measures and amount of sleep. A five-level Likert for frequency was used to assess each item: always (5), often (4), sometimes (3), rarely (2) and never (1). The lifestyle behaviors questionnaire's reliability coefficient has been calculated through measuring the internal consistency for each factor using the Cronbach's Alpha, the questionnaire showed good levels of reliability with a total number of (0.78).

Physical fitness test was used in the study To measure : (strength endurance of the abdominal muscles (sit-ups), maximum strength of the hand (Hand grip), and flexibility (sit and reach). And for data analysis SPSS 18.0 was used for data analysis, descriptive statistics were used for the general characteristics and independent two-sample t-test was used to compare physical fitness and lifestyle behaviors.

Results:

This study aimed to compare physical fitness and lifestyle behaviors among type2 diabetes subjects over the age of 50 years old. The results of this study are :

Table 2. Comparison between participants and non- participants in physical fitness activities measurements

	Group	M	SD	t. Test	Sig
sit-ups	A- participants of physical activities (n=10)	30.5	5.6	4.56	0.0*
	B - Non- participants of physical activities(n=10)	20.3	4.3		
Hand grip	A- participants of physical activities(n=10)	45.6	6.3	2.43	0.02*

	B - Non- participants of physical activities(n=10)	39.6	4.6		
sit and reach	A - participants of physical activities(n=10)	13.5	4.3	2.46	0.02*
	B - Non- participants of physical activities(n=10)	8.6	4.6		

Table 2. shows a significant differences between participants and non - participants in physical activities, the results in all physical fitness measurements were in favor of the participants of physical activities group.

Comparison of lifestyle behaviors between participants and non- participants of regularly physical activities are described in Table 3.

Table 3. Comparison of lifestyle behaviors between participants and non- participants in physical activities

Domain	Group	M	SD	t. Test	Sig
Exercise and positive health practices	A - participants of physical activities(n=10)	4.3	0.4	3.85	0.0*
	B - Non- participants of physical activities(n=10)	3.1	0.9		
Dietary habits	A - participants of physical activities(n=10)	3.6	0.9	1.2	0.6
	B - Non- participants of physical activities(n=10)	3.45	1.2		
Smoking	A- participants of physical	4.1	0.9	2.67	0.0*

	activities(n=10)				
	B - Non - participants of physical activities(n=10)	2.9	1.1		
Preventive health measures	A - participants of physical activities(n=10)	3.6	0.5	0.9	0.7
	B- Non - participants of physical activities(n=10)	3.9	0.8		
Amount of sleep	A - participants of physical activities(n=10)	4.3	0.4	3.85	0.0*
	B - Non - participants of physical activities(n=10)	3.1	0.9		

Table 3. shows a significant differences between participants and non - participants of physical activities in lifestyle behaviors in (Exercise and positive health practices, smoking and an adequate amount of sleep) the measurements results were in favor of the participants of physical activities group. There were no significant differences non in life style behaviors (Dietary habits and preventive health measures) between the two groups.

Discussion:

This study conducted a comparison between two groups of people over 50 years old with type2 diabetes (participants and non- participants in physical activities) , The comparison was in physical fitness level which was measured by a test consists of (strength endurance of the abdominal muscles, maximum strength of the hand muscles, and flexibility), and in lifestyle behaviors which includes (Exercise and positive health practices, dietary habits, smoking, preventive health measures and the amount of sleep)

The results of this study measurements showed that lifestyle behaviors in (Exercise and positive health practices, smoking and an adequate amount of sleep) were in favor of the participants of physical

activities group. The researcher believes that physical activity may indirectly influence health behaviors such as smoking, stress management, risk taking, lack of sleep and others, this is consistent with Steven et al,(1995) who noted in their studies that physical activities indirectly influence health by acting through other behaviors, such as smoking or overeating. If these indirect effects can be documented, the relationships are of importance not only to epidemiologic research, but also to health education and health promotion program. It is well established that more active individuals weigh less than those who are not active (woo et al.,1982).

Physical fitness is negatively associated with smoking in multivariate analyses (Leon et al.,1981), whether this is indirectly due to an association of exercise or physical activity and smoking or, whether smoking decreases treadmill test performance cannot be determined. Folsom et al.,(1987) report a negative association between a metabolic by product of smoking and reported leisure-time physical activity .

There are some important relationships between sleep and exercise that have been appreciated throughout antiquity, as more scientific knowledge has been gained about sleep, more links between sleep and physical activity have been postulated over and above the general and much-discussed notions that exercise is good for sleep (Youngstedt, 2005).

There is also a growing body of evidence that the links between sleep, physical activity and the prevalence of obesity are more complicated than were previously believed. For example, a short, not a long, sleep length has been found to be associated with an increased risk of obesity (Cizza et al.,2005). It is generally thought that exercise constitutes a non-pharmacologic behavior which promotes sleep, and so regular bouts of physical activity are recommended as therapy for individuals who are having difficulty in sleeping (Gilbert et al., 2004).

The result of this study also revealed that there were no significant differences in life style behaviors (Dietary habits and preventive health measures) between the two groups, whereas, Langlie (1979) Confirmed that individuals with higher levels of physical activity may be more likely to use preventive health services. Langlie found that the more active adults drawn from a random community survey are also more likely to obtain dental checkups and maintain their immunizations .Williams and Wechsler (1972) report that more active individuals are more likely to obtain medical and dental checkup and active individuals may be more likely to engage in some preventive health behaviors.

The effect of physical activities on the incidence of certain diseases is established and it appears that these effects are produced through both direct and indirect mechanisms (Siscovick et al,1985and Lee,2013)

Conclusion:

The lifestyle behaviors in type2 diabetes persons who were participating in physical activities was more healthy than non-participants, Participation in physical activities contributes to a better healthy lifestyle behaviors including regular exercise, not smoking and an adequate amount of sleep.

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