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Prevalence and determinants of physical activity among adult patients attending primary health care centers in Makkah Almokarramah, Saudi Arabia 2018

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ABSTRACT

Background: Physical activity can be defined as any movement of the body that requires energy expenditure. This includes any motion you do through the day excluding sitting still or lying down. For example, walking to class, taking the stairs, mowing the lawn, and even cleaning your house can be considered physical activity. Exercise is a type of physical activity but not every physical activity is exercise. Exercise is a planned, structured, and repetitive activity for improving or maintains physical fitness. Physical inactivity is recognized as one of the leading risk factor for mortality around the world that leads to an estimated 3.2 million deaths globally. Saudi Arabia has undergone a drastic change in life style and eating habits. Burden of life style related diseases such as

diabetes, coronary artery diseases and hypertension has increased and these diseases are associated with physical inactivity. These diseases have become the principal cause of morbidity and mortality in Saudi Arabia. *Aim of this study*: To describe the prevalence and factors associated with physical activity among adult patients who attend primary health care centers in Makkah city, Saudi Arabia. *Methodology:* Cross sectional design will be adopted. The study will be conducted in Makkah city, Saudi Arabia. The present study was conducted at primary health care centers In Makkah city, Cluster sampling technique was be applied on the three main sectors inside Makkah city (alzahir, alka'akiah, and ala'adl). Systematic random sampling was be adopted to select persons .The sample (385) from adult patients aged18 years and above who will attend primary health care (PHC) centers. *Results*: the response rate was (100%) participants, majority of participants are male were (69.00%) while female's was (31.00%). The majority of our participants were at overweight and obese (51.0%), a significant relation between BMI and Physical activities *Conclusion:* Physical activity likely has a greater role in promoting health in disease populations than previously thought and may confer substantial reductions in disease burden Primary health care centers in Makkah should be active and able to provide health advice and behaviour to their patients. There will a strong intention to increase physical activity among physically inactive primary care physicians (PHCPs). *Recommendations:* The priority for variables classified as consistently associated with physical exercise should be to apply these findings to improving interventions. The no modifiable demographic variables suggest subgroups of relatively inactive adult people that need to be targeted for special intervention programs. Subgroups at risk for being inactive include adult and children developed to change these variables through education, family programs, or environmental and policy change. Future research could examine prospectively whether increases in physical activity in unhealthy disease adults lead to a healthier status.

Keywords: Prevalence, Determinants, Physical Activity, Adult, Patients, Primary Health Care Centers, Saudi Arabia

1. INTRODUCTION

World Health Organization (WHO) estimates the prevalence of physical inactivity among Saudi youngsters, youth and adults are measure 57%, 71% and 80%, severally. WHO stresses that promotion of physical activity ought to be a vital public health objective (Banday *et al.*, 2015). Physical activity (PA) may be a term describes body movements created by the body skeletal muscles and generate energy that used higher than the baseline level. It includes a good vary of routine daily activities, moderate and vigorous exercise and sports (Ewles, 2005). PA is an essential component in maintaining a healthy life (Elsawy and Higgins, 2010). Lack of active often physical activity attributes to multiple health hazards that impact adults like stroke, heart disease, diabetes, Alzheimer un wellness, osteoporosis, cancer, depression, and overweight (Haskell *et al.*, 2007). Overweight and obesity are measure currently a world epidemic, with over one in 5 individuals qualifying as over weighty worldwide. These conditions are measure in the middle of excessive rates of non-communicable diseases (NCDs) associated with overweight, like type 2 diabetes mellitus, hypertension, and cardiovascular diseases (De Nicola *et al.*, 2015). Interventions targeting the environment are measure required so as to market larger health through healthy feeding selections and increased physical activity or exercise to avoid Overweight and obesity (Forbes *et al.*, 2015).

It has been suggested to introduce physical exercise as a fundamental component of health promotion programs for the general population (Watson, 2005). Saudi Arabia that has become more and more westernized over the past few decades currently has one in all the increased prevalence rates of overweight and obesity, even in youngsters. This puts the population at risk for redoubled rates of NCD mortality. competitor cultures is part responsible, because the combination of continuous ancient Saudi cultural practices, fashionable cultural changes, and economic prosperity and inactivity and absent of the physical activity has created an obesogenic setting that promotes unhealthy, inactive lifestyles, and weight gain (Alghafri *et al.*, 2017). The American Heart Association (AHA) recommends "at least one hundred fifty minutes per week of moderate intensity aerobic activity or seventy five minutes of vigorous activity for optimum health. Clinical observe tips establish a considerable therapeutic role for physical activity in coronary cardiovascular disease, peripheral vascular un wellness, hypertension, obesity, elevated cholesterol, osteoporosis, pulmonary disease, claudication, chronic obstructive, and osteoarthritis (Haskell *et al.*, 2007). With increasing evidence available on the importance of physical activity within the management of sort a pair of polygenic disease, there has been a rise in technology-based interventions. The effective medical aid for several chronic diseases (Connelly *et al.*, 2013).

Clinical practice guidelines determine a considerable therapeutic role for physical activity in exercise enhances health and well-being of individual through up the bone quality, strengthening body muscles, increasing the capability of circulatory system, and reducing anxiety and depression (Farrell *et al.*, 1998; Warburton *et al.*, 2006). The benefits of standard physical activity in older adults are intensive. As noted within the adult recommendation, regular physical activity reduces risk of cardiovascular disease, thromboembolic stroke, hypertension, type 2 diabetes mellitus, osteoporosis, obesity, colon cancer, breast cancer, anxiety, and

depression. Of specific importance to older adults, there's substantial proof that physical activity reduces risk of falls and injuries from falls, prevents or mitigates practical limitations (Nelson *et al.*, 2007). Also low levels of physical activity and bigger tendency to inactive life vogue are determined among previous studies applied in Saudi Arabia that has adverse impacts on the overall population within the type of increase rates of DM, obesity, and cardiovascular diseases (Al-Hazzaa, 2002; Al-Baghli *et al.*, 2008).

Al-Zalabani and colleagues (2015) applied a cross-sectional national survey to determine the degree of physical activity and its socio-demographic correlates within the Saudi population. The Global Physical Activity form (GPAQ) version of 2.0 was utilised for knowledge assortment. The prevalence of physical inactivity was 66.6%. It absolutely was higher in females than males (72.9% versus 60.1%). The prevalence of time off physical inactivity was 87.9%. Also, it absolutely was higher in females than males (90.2% versus 85.6%). The central and northern regions report the very best prevalence of no physical activity at work, leisure and transportation (Al-Zalabani *et al.*, 2015). Nikniaz and colleagues (2017) carried out a study to spot the socio-demographic and style determinants for physical activity among urban and residential area adults. The Persian type of International Physical Activity form utilized for evaluating physical activity level. The results of the study disclosed that 28.47% of the respondents were inactive, 27.96% were minimally active, and 43.55% had health-enhancing physical activity. Residents of residential area areas and normal-weight adults ($P < 0.001$) were considerably a lot of doubtless to participate in an exceedingly high intense physical activity. Compared with girls, men had considerably higher odds of being physically active. As compared with residents of sub urban areas, residents of urban areas were considerably had lower odds of being physically active (Nikniaz *et al.*, 2017).

Rationale

Physical activity has several physical and mental health beneficial impacts. On the other hand, physical inactivity ranked the 4th contributing factor for global mortality (AboZaid et al., 2010). Physical activity has an important role in preventing many chronic disease, including diabetes, hypertension, and cardiac diseases. Despite this public health importance of physical activity, there are few studies investigating its profile among general population, particularly in Makkah. The researcher is an athletic person and had a personal experience in losing weight through changing life style and practicing regular physical activity.

Aim of the study

To describe the prevalence and factors associated with physical activity among adult patients who attend primary health care centers in Makkah city, Saudi Arabia.

Objectives

1. To determine the prevalence of physical activity and its levels among adult patients attending primary health care centers in Makkah city, Saudi Arabia throughout the study period, 2018.
2. To identify factors associated with physical inactivity among adult patients attending primary health care centers in Makkah city, Saudi Arabia throughout the study period, 2018.
3. To determine the barriers for practicing physical activity among adult patients attending primary health care centers in Makkah city, Saudi Arabia throughout the study period, 2018.

2. METHODOLOGY

Study design

Cross sectional design will be adopted.

Study area

The study will be conducted in Makkah city, Saudi Arabia. It is a holy city located in Western Region of the Kingdom of Saudi Arabia with an estimated population of more than two million. In Makkah city, there are 82 primary health care centers, belonging to Ministry of Health (MOH) distributed over 7 sectors; three are inside Makkah and four outside Makkah. The study will be carried out in the three sectors inside Makkah city (Alka'akiya, Alzaher, Ala'adl).

Study population

The study population will consist of adult patient's aged 18 years and above who will attend primary health care (PHC) centers in Makkah city throughout the period of the study and accept to participate in the study by signing an informed consent.

Inclusion criteria

•Adults (18 years and above) who attend PHC centers in Makkah city
•Both genders.
•All nationalities.

Exclusion criteria

•Those aged below 18.
•Those refuse to sign the informed consent
•Those who attend to primary health care belong to outside Makkah sectors

Sample size

The study population scheduled for research 3 health centers and the average number of undecided during the last three months is 27000 Person and therefore was used the equation of Steven K. Thompson with type one error (significant level) 5% and confidence level 95% and power of test 90% a d we found the smallest sample size we can depend on 379 person. We select 390 people sufficient to detect the prevalence of physical activity.

Sampling technique

Cluster sampling technique will be applied on the three main sectors inside Makkah city (alzahir, alka'akiah, and ala'adl). From each sector, one PHC center will be chosen by a simple random technique. Thus, three centers will be selected. The sample size will be distributed over the three centers proportional to the total number of population in each sector. Then, this sample will be equally distributed between male and females in each center. Systematic random sampling will be adopted to select persons (sampling interval will be changed according to the total number of persons attend each center).

Data collection tool

Self-administered questionnaire will be used for data collection. It consisted of three parts: The first part contains questions about socio-demographic characteristics of the participants (age, gender, marital status, educational level, job, smoking history, history of chronic diseases). The weight and height measurements will be collected by trained nurses. The second part inquired about participants` physical activity. The short form of the International Physical Activity Questionnaire (IPAQ) that provide common instrument to estimate the level of physical activity has been utilized in this regard (Craig *et al.*, 2003). The IPAQ short version estimates how much health enhancing physical activity, including daily life activities and exercise, the person has undertaken over the previous 7 days. The questionnaires were distributed to all participants. The reliability and validity of the questionnaire were tested across 12 countries (14 sites) in 2000 (Booth, 2000). The findings suggest that it has acceptable tool for use in many settings and in different languages, and is suitable for use in regional, national and international monitoring and surveillance system and for use in research projects and public health program planning and evaluation (Ainsworth *et al.*, 2006).

The IPAQ included questions about physical activity of 3 intensities (vigorous physical activity, moderate physical activity, and walking). The physicians had to estimate how many days (frequency) he/she was physically active and the average time (duration) that he/she spent being physically active on these days. IPAQ classify the subjects to three categorical (ordinal) level based on intensity, duration and the frequency of the physical activity (Ainsworth *et al.*, 1993).

Category 1 is the lowest level of physical activity. Those individuals who not meet criteria for categories 2 or 3 are considered low/ inactive; category 2 is moderate if any one of the following 3 criteria:

- 3 or more days of vigorous activity of at least 20 minutes per day
- 5 or more days of moderate-intensity activity or walking of at least 30 minutes per day
- 5 or more days of any combination of walking, moderate-intensity or vigorous intensity activities achieving a minimum of at least 600 MET-min/week

Category 3 is high if any one of the following 2 criteria:

- Vigorous-intensity activity on at least 3 days and accumulating at least 1500 MET-minutes/week
- 7 or more days of any combination of walking, moderate-intensity or vigorous

The third part of the questionnaire inquires about barriers for being physically active (12 items) as well as reasons for being physically active (7 items). Respondents who had low physical activity were asked to mention the barriers for being physically active while those who had moderate or high physical activity were asked to mention the reasons for that. A 5-likert scale was used in this part of the questionnaire ranged between strongly agree "1" to strongly disagree"5"

Body mass index (BMI) will be calculated and classified according to WHO criteria into:
Underweight (BMI <15.8 kg/m^2)
Normal (BMI 18.5–24.9 kg/ m^2)
Overweight (BMI 25–29.9 kg/m^2)
Obesity (BMI ≥ 30 kg/m^2)

Data collection technique

The researcher will distribute the self-administered questionnaire to the target population in waiting area during working hours. Care was taken to not disturb the work in the primary health care center. The researcher will be assisted by medical interns in male side and a trained nurse in female side to distribute and collecting the questionnaires soon after encounter. The data will be verified by hand then coded and entered to a personal computer.

Variables

a. Dependent: Level of physical activity
b. Independent: Age, Gender, Marital status, Educational level, Job, Smoking history, History of chronic diseases

Data entry and analysis

The statistical Package for Social Sciences (SPSS) software version 22.0 will be used for data entry and analysis. Descriptive statistics (e.g. frequency, percentage, mean, range, standard deviation) and analytic statistics using appropriate statistical tests, according to the collected data will be applied. P-values <0.05 will be considered as statistically significant.

Pilot study

The questionnaire will be first tested in a pilot study group of 40 participants (about 10%), selected from one primary health care center of the selected four, whose results will be excluded from the final research. The aim of the pilot study will be to test for the comprehensibility of the questionnaire as well as to estimate the time needed to fill in the questionnaire and feasibility of the methods.

3. RESULT

Table 1 shows the distribution of Socio-demographic data in study group regarding (Gender, age, amrita status, education, Occupation, Income)

Table 1 distribution of Socio-demographic data (Gender, age, amrita status, education, Occupation, Income)

	N	%
Gender		
Male	276	69.00
Female	124	31.00
Age		
Less than 25	32	8.00
25-30years	48	12.00
30-35years	76	19.00
35-40years	80	20.00
40-45years	80	20.00
45-50years	40	10.00
55-60years	32	8.00
More than 65years	12	3.00
Marital status		
Married	244	61.00
Single	156	39.00
Education		
Illiterate	48	12.00

Primary certificate	76	19.00
Middle School certificate	64	16.00
Secondary certificate	58	14.51
diploma	40	10.00
BA	80	20.00
Postgraduate	32	8.00
Occupation		
Yes	300	75.00
No	100	25.00
Income		
Non	76	19.00
Less than 3000SR	44	11.00
3000-10000SR	168	42.00
More than 10000SR	112	28.00

Gender: The majority of participants are male were (69.00%) while female's was (31.00%) of participants.

Age: In our study, showed that the majority of participants (20.0%) were within the age group (30-40) and (40-45) years, while the age group (30-35) year was represented (19%) but the participants within the age group (25-30) were 12% of participants, while the age more than 65 years was (3%).

Marital status: The majority of participants are married were (61.00%) while single was (39.00%) of participants.

Level of education: The majority of our participants were at BA were constitutes (20%). The most illustrative finding was in the primary certificate participants were constitutes (19%) and middle school certificate were constituted (16%) but postgraduate (8%).

Occupation: In our study, work participants constituted (75%) of our study. While not work is (25%) of our study.

Income level: In our study, income level range with (3000-10000 SR) of participants constituted (42%) of our study. While income level range with more than (10000SR) were (28%) but non income were (19%).

Table 2 shows the distribution of Socio-demographic data in study group regarding (BMI, chronic disease, smoking).

Table 2 distribution of Socio-demographic data (BMI, chronic disease, smoking)

	N	**%**
BMI		
Underweight	76	19.00
Normal	120	30.00
Overweight	100	25.00
Obese	104	26.00
Chronic disease		
No	284	71.00
Yes	116	29.00
Smoking		
Non	260	65.00
Yes	140	35.00

BMI: The majority of our participants were at overweight and obese (51.0%). Participants was normal weight (30.00%) while Overweight was (25 %) and obese (26.00%) but the underweight (19%).

Chronic disease: The majority of our participants no chronic disease were (71%) while were the answer yes they have chronic disease (29.0%).

Smoking: The majority of our participant's answers were non-smoker (65%) while smoker was (35.0 %.)

Table 3 and figure 1shows the distribution of all the vigorous activities that you did in the last 7 days.

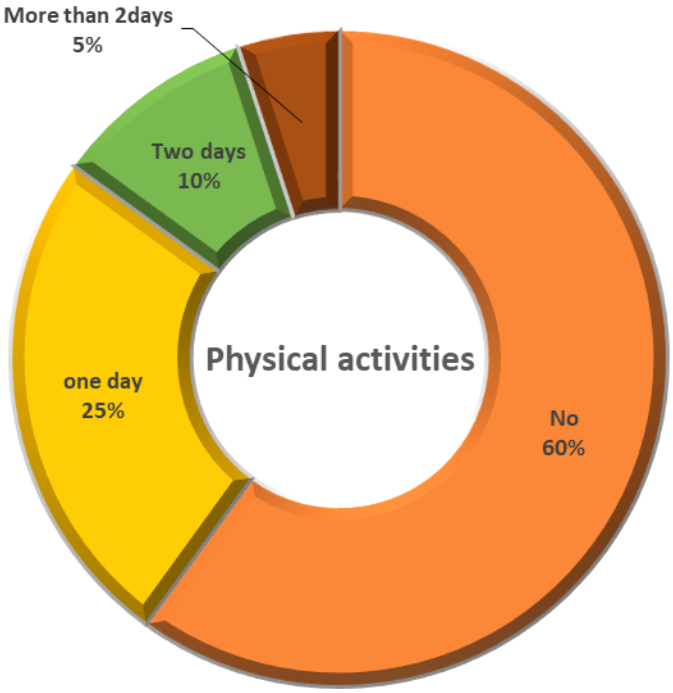

Figure 1 Pie chart for Physical activity

Table 3 distribution of all the vigorous activities

	N	%
During the last 7 days, on how many days did you do vigorous physical activities like heavy lifting, digging, aerobics, or fast bicycling?		
No	240	60%
one day	100	25%
Two days	40	10%
More than 2days	20	5%
How much time did you usually spend doing vigorous physical activities on one of those days?		
Range (hours)	1.5-4.5	
Mean±SD (hours)	3.021±1.15	
During the last 7 days, on how many days did you do moderate physical Activities like carrying light loads, bicycling at a regular pace , or doubles tennis? Do not include walking.		
No	100	25%
one day	80	20%
Two days	148	37%
More than 2days	72	18%
How much time did you usually spend doing moderate physical activities on one of those days?		
Range (hours)	1-3.	
Mean±SD (hours)	1.88±0.888	

During the last 7 days, on how many days did you walk for at least 10 minutes?		
No	60	15%
one day	80	20%
Two days	160	40%
More than 2days	100	25%
How much time did you usually spend walking on one of those days?		
Range (hours)	0.25-1.5	
Mean±SD (hours)	0.455±0.115	
During the last 7 days, how much time did you spend sitting on a week day?		
Range (hours)	30-50	
Mean±SD (hours)	40.289±11.873	

During the last 7 days, on how many days did you do vigorous physical activities like heavy lifting, digging, aerobics, or fast bicycling? The majority of participants answer" No" not do vigorous physical activities was (60%) while one day do vigorous physical activities were (25%) and do vigorous physical activities two days were (10%) but the do vigorous physical activities more than 2 days was (5%). How much time did you usually spend doing vigorous physical activities on one of those days: The participants answer you usually spend doing vigorous physical activities Range (hours) (1.5-4.5) while Mean± SD (hours) (3.021±1.15). During the last 7 days, on how many days did you do moderate physical Activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.The majority of participants answer did you do moderate physical Activities was (37%) while NO did you do moderate physical Activities were (25%) and more than 2dayes were (18%) but the do you do moderate physical Activities (20%). How much time did you usually spend doing moderate physical activities on one of those days: The participants answer you usually spend doing moderate physical activities Range (hours) (1-3) while Mean± SD (hours) (1.88±0.888). During the last 7 days, on how many days did you walk for at least 10 minutes: The majority of participant's answer two days walk for at least 10 minutes was (40%) while walk for at least 10 minutes more than 2dayes were (25%) while walk for at least 10 minutes one day were (20%) but NO walk for at least 10 minutes were (15 %). How much time did you usually spend walking on one of those days: The participants usually spend doing walking on one of those days Range (hours) (0.25-1.5) while Mean± SD (hours) (0.455±0.115). During the last 7 days, how much time did you spend sitting on a week day: The participants usually time did you spend sitting Range (hours) (30-50) while Mean± SD (hours) (40.289±11.873).

Table 4 shows the distribution of the entire Perceived barrier to do physical activities (Exercise milieu sub-scale).

Table 4 distribution of Perceived barrier to do physical activities (Exercise milieu sub-scale)

Items		**Exercise milieu sub-scale**					**% of agreement**	**Chi-square**	
		Strongly agree	**agree**	**Don't know**	**disagree**	**Strongly disagree**		**X^2**	**P-value**
Places for me to exercise are too far away	N	60	80	32	56	172	50	146.800	<0.001*
	%	15.00%	20.00%	8.00%	14.00%	43.00%			
I am too embarrassed to exercise	N	140	60	80	52	68	67.6	61.600	<0.001*
	%	35.00%	15.00%	20.00%	13.00%	17.00%			
It costs too much money to exercise	N	36	68	48	40	208	44.2	263.600	<0.001*
	%	9.00%	17.00%	12.00%	10.00%	52.00%			
Exercise facilities do not have convenient schedules for me	N	8	8	32	112	240	31.6	491.200	<0.001*
	%	2.00%	2.00%	8.00%	28.00%	60.00%			
I think people in	N	0	8	24	104	264	28.8	411.520	<0.001*

exercise clothes look funny	%	0.00%	2.00%	6.00%	26.00%	66.00%			
There are too few places for me to exercise	N	8	20	32	64	276	31	622.000	<0.001*
	%	2.00%	5.00%	8.00%	16.00%	69.00%			

The testing tool included 6 objective questions about the barrier of prevent you to do physical activities according to the (Exercise milieu sub-scale) the questions had answers limited to Strong agree, agree or Don't know, disagree, Strong disagree, these questions were analyzed using the percentage of agreement and Chi square (X^2) analysis and (P-value). All questions had high percentage of agreement about your questions number (1, 2, 3) (50%, 67%, 44.2%). Places for me to exercise are too far away: In our study the majority of our participants were noticed in agree was (20%) while strong disagree percentage were (43.0%). with a statistically significant (<0.001) and the Chi square (146.800) and % of agreement (50%). I am too embarrassed to exercise: Show that is a significant relation between embarrassed to exercise and exercise milieu sub-scale where p-value <0.001 and Chi square (61.600) and % of agreement (67.6%). It costs too much money to exercise: Show that is a significant relation between costs much money to exercise and Exercise milieu sub-scale where p-value <0.001 and Chi square (263.600) and % of agreement (44.2%). Exercise facilities do not have convenient schedules for me: Show that is a significant relation between not has convenient schedules for me and Exercise milieu sub-scale where p-value <0.001 and Chi square (491.200) and % of agreement (31.6%). I think people in exercise clothes look funny: Show that is a significant relation between exercise clothes look funny for me and Exercise milieu sub-scale where p-value <0.001 and Chi square (411.520) and % of agreement (28.8%). There are too few places for me to exercise: Show that is a significant relation between few places for me to exercise and Exercise milieu sub-scale where p-value <0.001 and Chi square (622.000) and % of agreement (31.0%).

Table 5 shows the distribution of the entire Perceived barrier to do physical activities (Time expenditure sub-scale). The testing tool included 3 objective questions about the barrier of prevent you to do physical activities according to the (Time expenditure sub-scale) questions had answers limited to Strong agree, agree or Don't know, disagree, Strong disagree, these questions were analyzed using the percentage of agreement and Chi square (X2) analysis and (P-value).

Table 5 distribution of the entire Perceived barrier to do physical activities (Time expenditure sub-scale)

Items		**Time expenditure sub-scale**					**% of agreement**	**Chi-square**	
		Strongly agree	**agree**	**Don't know**	**disagree**	**Strongly disagree**		**X^2**	**P-value**
Exercising takes too much time	N	120	100	32	88	60	66.6	59.600	<0.001*
	%	30.00%	25.00%	8.00%	22.00%	15.00%			
Exercise takes too much time family relations	N	160	84	100	20	36	75.6	154.400	<0.001*
	%	40.00%	21.00%	25.00%	5.00%	9.00%			
Exercise takes too much time from my family responsibilities	N	240	60	44	36	20	83.2	410.400	<0.001*
	%	60.00%	15.00%	11.00%	9.00%	5.00%			

Exercising takes too much time: Show that is a significant relation between exercising takes much time and Time expenditure sub-scale where p-value <0.001 and Chi square (59.600) and % of agreement (66.6%). *Exercise takes too much time family relations*: Show that is a significant relation between exercising takes much time family relations and Time expenditure sub-scale where p-value <0.001 and Chi square (154.400) and % of agreement (75.6%). *Exercise takes too much time from my family responsibilities*: Show that is a significant relation between exercising takes much time family responsibilities and Time expenditure sub-scale where p-value <0.001 and Chi square (410.400) and % of agreement (83.2%).

Table 6 shows the distribution of the entire Perceived barrier to do physical activities (Physical exertion sub-scale). The testing tool included 3 objective questions about the barrier of prevent you to do physical activities according to the (Physical exertion

sub-scale) the questions had answers limited to Strong agree, agree or Don't know, disagree, Strong disagree, these questions were analyzed using the percentage of agreement and Chi square (X2) analysis and (P-value).

Table 6 distribution of the entire Perceived barrier to do physical activities (Physical exertion sub-scale)

Items		Physical exertion sub-scale					% of agreement	Chi-square	
		Strongly agree	agree	Don't know	disagree	Strongly disagree		X^2	P-value
Exercise tires me	N	260	48	8	20	64	81	530.800	<0.001*
	%	65.00%	12.00%	2.00%	5.00%	16.00%			
I am fatigued by exercise	N	208	84	60	20	28	81.2	288.800	<0.001*
	%	52.00%	21.00%	15.00%	5.00%	7.00%			
Exercise is hard work for me	N	180	120	20	72	8	79.6	255.600	<0.001*
	%	45.00%	30.00%	5.00%	18.00%	2.00%			

Exercise tires me: Show that is a significant relation between exercising tires me and Physical exertion sub-scale where p-value <0.001 and Chi square (530.800) and % of agreement (81.0%). *I am fatigued by exercise*: Show that is a significant relation between I am fatigued by exercise and Physical exertion sub-scale where p-value <0.001 and Chi square (288.800) and % of agreement (81.2%). *Exercise is hard work for me*: Show that is a significant relation between exercising is hard work for me and Physical exertion sub-scale where p-value <0.001 and Chi square (255.600) and % of agreement (79.6%).

Table 7 shows the distribution of the entire Perceived barrier to do physical activities (Family discouragement sub-scale). The testing tool included 2 objective questions about the barrier of prevent you to do physical activities according to the (Family discouragement sub-scale) the questions had answers limited to Strong agree, agree or Don't know, disagree, Strong disagree, these questions were analyzed using the percentage of agreement and Chi square (X2) analysis and (P-value).

Table 7 distribution of the entire Perceived barrier to do physical activities (Family discouragement sub-scale)

Items		Family discouragement sub-scale					% of agreement	Chi-square	
		Strongly agree	agree	Don't know	disagree	Strongly disagree		X^2	P-value
My spouse (or significant other) does not encourage exercising	N	300	44	32	20	4	90.8	767.200	<0.001*
	%	75.00%	11.00%	8.00%	5.00%	1.00%			
My family members do not encourage me to exercising	N	272	60	40	20	8	88.4	595.600	<0.001*
	%	68.00%	15.00%	10.00%	5.00%	2.00%			

My spouse (or significant other) does not encourage exercising: Show that is a significant relation between does not encourage exercising and Family discouragement sub-scale where p-value <0.001 and Chi square (767.200) and % of agreement (90.8%). *My family members do not encourage me to exercising*: Show that is a significant relation between family members does not encourage me to exercising and Family discouragement sub-scale where p-value <0.001 and Chi square (767.200) and % of agreement (88.4%).

Table 8 and figure 2(1-6) shows the distribution of Socio-demographic data in study group regarding (Gender, age, Marita status, education, Occupation, Income) Physical activities.

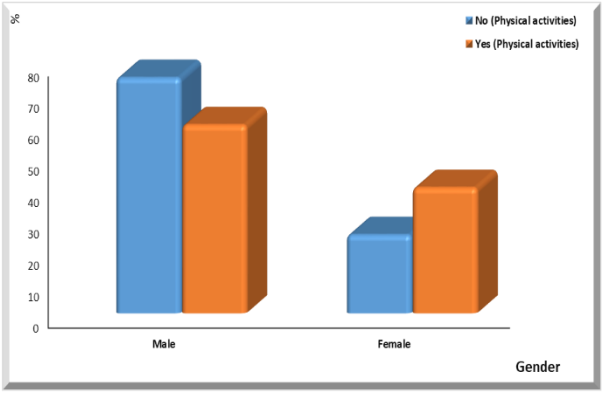

Figure (2-1) Relation between Gender and Physical activities

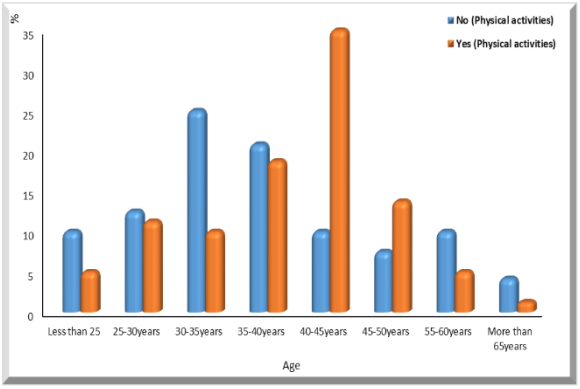

Figure (2-2) Relation between Gender and Physical activities

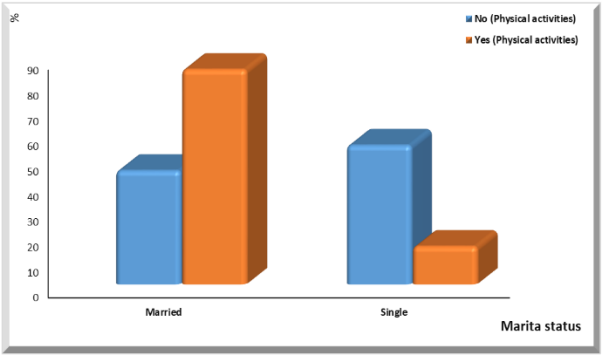

Figure (2-3) Relation between Gender and Physical activities

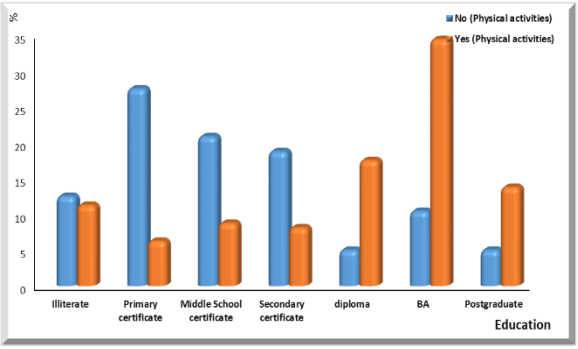

Figure (2-4) Relation between Gender and Physical activities

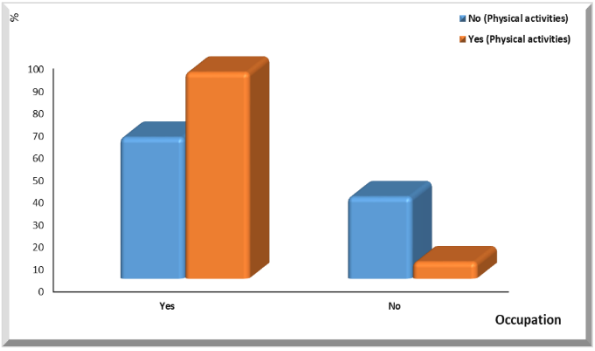

Figure (2-5) Relation between Gender and Physical activities

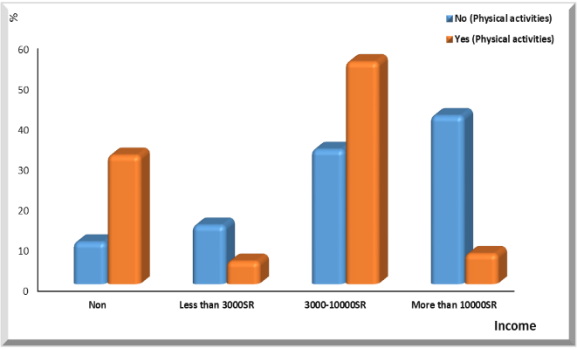

Figure (2-6) Relation between Gender and Physical activities

Table 8 distribution of Socio-demographic data in study group regarding (Gender, age, Marita status, education, Occupation, Income) Physical activities

		Physical activities						Chi-square	
		No		Yes		Total			
		N	%	N	%	N	%	X^2	P-value
Gender	Male	180	75.00	96	60.00	276	69.00	10.098	0.001*
	Female	60	25.00	64	40.00	124	31.00		
Age	Less than 25	24	10.00	8	5.00	32	8.00	54.174	<0.001*
	25-30years	30	12.50	18	11.25	48	12.00		

	30-35years	60	25.00	16	10.00	76	19.00		
	35-40years	50	20.83	30	18.75	80	20.00		
	40-45years	24	10.00	56	35.00	80	20.00		
	45-50years	18	7.50	22	13.75	40	10.00		
	55-60years	24	10.00	8	5.00	32	8.00		
	More than 65years	10	4.17	2	1.25	12	3.00		
Marital status	Married	108	45.00	136	85.00	244	61.00	64.565	<0.001*
	Single	132	55.00	24	15.00	156	39.00		
Education	Illiterate	30	12.50	18	11.25	48	12.00	90.374	<0.001*
	Primary certificate	66	27.50	10	6.25	76	19.00		
	Middle School certificate	50	20.83	14	8.75	64	16.00		
	Secondary certificate	45	18.75	13	8.13	58	14.51		
	diploma	12	5.00	28	17.50	40	10.00		
	BA	25	10.42	55	34.38	80	20.00		
	Postgraduate	12	5.00	22	13.75	34	8.00		
Occupation	Yes	152	63.33	148	92.50	300	75.00	43.556	<0.001*
	No	88	36.67	12	7.50	100	25.00		
Income	Non	25	10.42	51	31.88	76	19.00	81.023	<0.001*
	Less than 3000SR	35	14.58	9	5.63	44	11.00		
	3000-10000SR	80	33.33	88	55.00	168	42.00		
	More than 10000SR	100	41.67	12	7.50	112	28.00		

Gender: Show that is a significant relation between gender and Physical activities where p-value <0.001 and Chi square (10.098) and The majority of participants are male answer NO physical activities were (75.00%) while answer YES were (60) while female's answer NO physical activities were (25.00%) while answer YES were (40.00%).

Age: Show that is a significant relation between age and Physical activities where p-value <0.001 and Chi square (54.174) and The majority of participants are age 30-35years answer NO physical activities were (25.00%) while age 40-45years answer YES were (35%).

Marital status: Show that is a significant relation between Marital status and Physical activities where p-value <0.001 and Chi square (64.565) and the majority of participants are married answer YES physical activities were (85.00%).

Level of education: Show that is a significant relation between Level of education and Physical activities where p-value <0.001 and Chi square (90.374). *Occupation*: Show that is a significant relation between Occupation and Physical activities where p-value <0.001 and Chi square (43.556) in our study, work participants answer YES do physical activities (92.50%). *Income level*: Show that is a significant relation between income and Physical activities where p-value <0.001 and Chi square (Show that is a significant relation between Occupation and Physical activities where p-value <0.001 and Chi square (43.556) in our study, work participants answer YES do physical activities (92.50%).

Table 9 shows the distribution of Socio-demographic data in study group (BMI, chronic disease, smoking) regarding Physical activities. *BMI:* Show that is a significant relation between BMI and Physical activities where p-value <0.001 and Chi square (49.135).

Chronic disease: Show that is a significant relation between Chronic disease and Physical activities where p-value <0.001 and Chi square (46.754). *Smoking:* Show that is a significant relation between Smoking and Physical activities where p-value <0.001 and Chi square (133.516).

Table 9 distribution of Socio-demographic data in study group (BMI, chronic disease, smoking) regarding Physical activities

		Physical activities						Chi-square	
		No		Yes		Total			
		N	%	N	%	N	%	X^2	P-value
BMI	Underweight	52	21.67	24	15.00	76	19.00	49.135	<0.001*
	Normal	96	40.00	24	15.00	120	30.00		
	Overweight	55	22.92	45	28.13	100	25.00		
	Obese	37	15.42	67	41.88	104	26.00		
Chronic disease	No	140	58.33	144	90.00	284	71.00	46.754	<0.001*
	Yes	100	41.67	16	10.00	116	29.00		
Smoking	Non	210	87.50	50	31.25	260	65.00	133.516	<0.001*
	Yes	30	12.50	110	68.75	140	35.00		

4. DISCUSSION

The current study confirmed the presence of low physical activity prevalence among the Saudi population. In several of the examined studies during this study, physical activity prevalence among Saudi adults was outlined as any movement of the body that needs energy "At least 150 minutes per week of moderate intensity aerobic activity or 75 minutes of vigorous activity for optimum health (warburton et al., 2006). Studies have shown the benefits of regular physical activity in preventing diseases and promoting health. Benefits of physical activity include the prevention of hypertension, stroke, Heart disease, type II diabetes mellitus, hypercholesterolemia and obesity (Nelson *et al.*, 2007). Our participants with no chronic disease were (71%).

In 1995 the Centers for Disease Control and Prevention (CDC) and the American College of Sports Medicine (ACSM) published a preventive recommendation that "Every US adult should accumulate 30 minutes or more of moderate-intensity physical activity on most, preferably all, days of the week". In our study the majority of participants answer" No" not do vigorous physical activities was (60%) while one day do vigorous physical activities were (25%) and do vigorous physical activities two days were (10%) but the do vigorous physical activities more than 2 days was (5%). Among Saudi adults, the most important reason for being physically active was to maintain health or to lose weight, while time constraint and lack of space or facilities seem to be the major factors for not being physically active. The Perceived barrier to do physical activities, also, the strong agree about too embarrassed exercise was (35.00%). Strong agrees about exercising takes much time family relations were (40.00%).

This systematic review is considered as comprehensive review in Makkah at Saudi Arabia, covering Prevalence and Determinants of Physical Activity among Adult Patients, reasons for based on the number of published papers in this systematic review, it is clearly apparent research in Saudi Arabia has grown substantially over the past decade. In western Saudi Arabia, students from the Health Colleges at King Khalid University indicated were time limitation, followed by lack of suitable sport places, lack of social support (from family and friends). In our study lack of motivation, and finally lack of sport skills also Perceived barrier to do physical activities. In addition, among patients attending primary care clinic, the major barriers in our study were said to be lack of resources, especially among low-income people, while strong agree about exercising tires me was (65.00%) and lack strong agree about I am fatigued by exercise was (52.00%), also major barriers Family discouragement. But in our study show that is a significant relation between age, gender, Occupation, Income level, and Physical activities where p-value <0.001 also Show that is a significant relation between BMI, Chronic disease, Smoking and Physical activities.

5. CONCLUSION

Technology-based interventions to promote physical activity are effective; using further methods to promote participant adherence is associated with greater benefit. Further research should look into strategies to enhance adherence and sustainability in order to increase the effectiveness of technology-based physical activity intervention care. It is recommended that a national policy encouraging active living and discouraging inactivity be established. Health-care providers have an important role in promoting and adopting healthy lifestyle habits among all Saudi people. Virtually all older adults should be physically active. In addition, a Saudi adult people with medical conditions should engage in physical activity in the manner that reduces risk of developing other chronic diseases.

Abbreviations

Physical activity	(PA)
The American Heart Association	(AHA)
The Global Physical Activity Questionnaire	(GPAQ)
International Physical Activity Questionnaire	(IPAQ)
Metabolic Equivalents of Task	(MET)
The Canadian Health Measures Survey	(CHMS)
Polish-Norwegian Study	(PONS)
Ministry of Health	(MOH)
Primary health care	(PHC)
Body mass index	(BMI)
The statistical Package for Social Sciences	(SPSS)

Ethical consideration

The researcher will fulfill all the required official approvals prior to study conduction. Official approval from administration of public health, sector supervisor, and primary health care director will be conducted.

Informed Consent

Verbal consent to participate in the study will be asked for each participant. All participants will have the right not to participate in the study or to withdraw from it prior to completion. The researcher will explain the purpose to all respondents. Confidentiality and privacy will be guaranteed for all participants throughout all steps of the research.

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Conflict of Interest

The authors declare that they have no conflict of interest.

Data and materials availability

All data associated with this study are present in the paper.

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