

Cardiovascular Risk Factors Screening, Physical Activity Among Dubai Population, Prevalence and Some Associated Factors

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Abstract

Regular practicing of physical activity considered to be one of the easiest and cost effective ways of improving and maintaining health and avoiding diseases like Diabetes mellitus, cardiovascular diseases, obesity and others. *Objectives*: to study the prevalence of physical activities among Dubai population and the effect of some associated factors, it is also aiming to assess the knowledge, practice, attitudes of Dubai population. *Methodology*: a cross sectional survey has been carried out upon representative random sample of adult Dubai population age rang (18-65) years, the sample was identified from schools, universities, primary health care centers visitors, governmental offices , commercial Malls and house hold families, sample size was estimated by using epi info soft ware, it was 2226 individuals of different age, sex, income, social class. The questionnaire covered variety of domains like socio-demographic data, Knowledge, attitudes, practice. Importance of physical activities, and reasons of avoidances. *Results*: the study reveals that about 23.6% of the total sample showed good knowledge about the importance of physical activity and 86.6% showed positive attitude towards practicing physical activities, the study showed that about 34.6% of the total sample are practicing physical activity regularly (prevalence rate among Dubai adult population), the study showed that practicing of physical activity is significantly higher among emirates in comparison with expatriates, highly educated individuals (university and above), and high income people(10000 ED and above), the study showed that the main reasons behind non practicing physical activity were lack of time 47.3%, tiredness and exhaustion 20.1%. un- availability of suitable places 17.3%,. multiple logistic regression analysis revealed significant affect of four factors on practicing physical activities in Dubai, e.g. Nationality odds ratio was 1.49 among Emirates compared to expatriates, Educational level, odds ratio was 2.00 among higher education compared with low education (primary school). Awareness and knowledge factor Odds Ratio 3.49 and income factor showed higher practicing of physical activity among individuals with high income (10000 and above) compared to low income individuals less than 10000 ED. *Recommendations*: The study recommend establishing national public health program to approach physical activity problem and developing effective strategies to deal with the causes stand behind this problem like, the time management, offering more facilities, increasing awareness and creating incentive system.

Keywords

Screening, Cardiovascular Risk, Physical Activity, Dubai Population

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1. Introduction

Leisure physical activities and recreational practices has

utmost importance in the present era, it is no longer a community interested in providing physical activity as much interest in providing the best ways to invest, and each community develop its own approach, where it notes that the

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experiences of practicing physical activities vary depending on the cultures of individuals and communities (1). The practice of regular physical activity is one of the best and easiest ways to improve and maintain health and avoid or reduce the incidence of certain diseases such as diabetes, obesity, cardiovascular diseases and others (2). Physical activity was defined as the amount of energy utilized by the individual on daily or weekly basis, resulting from the muscles activity to sustain vital life and keep the body functioning healthy. Physical activity classified on the basis of moderate intensity by 30 minutes for five days per week and high intensity by 20 minutes two to three days a week. (3) the result of recent research conducted both in north America and Europe revealed significant reductions in the level of practicing physical activities which occurs after the age of 12 years continue until the age of 18 years, specifically among female gender Data available from health survey, collected from different parts of the world, showed striking image, where the proportion of adults of low or semi low- physical activity between 60% and 85% in all parts of the globe. (3) the practice of physical activity among young people in various parts of the world is declining, especially in poor urban areas as it was estimated that less than one third of youth people only engaged in physical activities 56% male and 36% females in North America and Canada (5). The results of the research on the level of physical activity and health among young Saudi made it clear that the rate of physical inactivity is quite high at the age of 13 years and it reaches its peak at adulthood time, which increased from 54% at the age of 7 years and reach to 71% at the age of 23, also high rates of obesity (6). The national health survey on health indicators and patterns of life, which was conducted in the United Arab Emirates in 2000 survey, showed that 49.4% of the UAE population living Sedentary, and only 20.6% are people with higher physical activity level (7). The pattern of sedentary life is a major underlying cause of death, disease, and disability. About two million deaths can be attributed to the lack of physical activity. The preliminary results of a study conducted by the WHO on the risk factors (potential exposure to risk), that the pattern of sedentary life is one of the ten leading causes of death and disability in the world. And increases the lack of physical activity of all causes of death, also doubles the risk of exposure to the risk of cardiovascular disease and type II diabetes (diabetes), and obesity. It also increases the likelihood of exposure to the risk of disease, colon cancer and breast cancer, high blood pressure, lipid disorders, osteoporosis, depression, and anxiety. (8and 9).

2. Objectives

1. To assess the level of information and attitudes towards

physical activity and its importance for health

2. To study the prevalence of physical activity among residents in Dubai.

3. To study the effect of some associated factors on physical activity among residents in Dubai.

- Social and demographic factors: Age - Sex - Nationality - educational level - social status - the status of work and monthly income

3. Materials and Methods

3.1. Study Design

A cross section survey among Dubai population has been carried out

3.2. Study Setting

Dubai from February to April 2009

3.3. Target Population

Adult population of Dubai (18-65) years old.

3.4. Sample Size

Sample size was estimated by "EPI-INFO -" 6.04 "" 33% prevalence of physical activity (7), 2% accuracy and 95% limits of confidence ,and had reached the mimum sample size required is 2119 Individuals

3.5. Sample Design

Stratified random sample used, samples from two sides of the city (Diera and Bur Dubai was considered, participants were collected from primary health care centers visitors, affiliated schools, and universities, families and visitors for shopping malls, households until the sample completed

3.6. Data Collection

Tool of Data collection:

A questionnaire has been developed, tested and used for data collection by direct interview

Content of questionnaire included four levels about:

1. questions on Socio-demographic data, age, sex, educational level, social status
2. Questions on the knowledge and benefits of physical activity, 4 question on the benefits of physical activity and diseases which can be avoided by physical activity.
3. Questions on the Attitude towards physical activity, included 6 question on relation of physical activity with time, weight, Diabetes mellitus and stress

4. Questions on the practice of physical activities Diseases that can be avoided by physical activity number of times the practice of physical activity per week including 4 questions on frequency and intensity of practicing physical activity.

Physical activity has been categorized according to WHO criteria into the following groups:

1. Physically inactive: not practicing physical activity at all or less than 150 minutes per week.
2. Physically active (practicing different type of physical activities like rapid walking, lifting heavy weights less than 20 kg , etc for at least 150 minutes per week or more
3. vigorous physical activity (running , swimming, aerobics or lifting heavy weights more than 20 kg for 20 minutes three times per week.

3.7. Statistical Analysis

- The data were analyzed using the Statistical Package for Social Sciences SPSS "13"

- The use of stability coefficient Cronbach Alfa and Guttman to test the consistency of information and to identify trends.- factor analysis statistical tool was used to test the reliability of the questionnaire - Chi square was used to study the relationship between physical activity and demographic characteristics, information and trends

- Multiple logistic regression statistical test was used to study the factors affecting the physical activity (dependent factor is the practice of physical activity and non- dependant factors are age, sex, nationality, social status, educational level, monthly income, the level of information and trends. - Statistical significant level used was 95% and P value was less than 0.05.

3.8. Ethical Issue

Has been Considered to the best and participants consent obtained.

4. Results

The study sample included 2226 participants, 56.1% of males and 43.9% female, ages ranged between 18-65 years and mean age of (28.27) years, and they form (Emirates)more than half of the respondents (56.9%), about (35.4%) have a university level of education / Graduate while the percentage of uneducated or those with primary education (27.9%). About (47.1%) were singles and (46.8%) married, as related to the work they study showed two-thirds of participants are workers (63.7%). Cronbach test for internal consistency was 0.73 and manner Guttman indivisible descriptive questions-

odd and even 0.78. Reliability by test Factorial analysis as interpreted by four factors: the amount of variability was only 2%, and thus were found over the appropriate tool for the application. The study revealed that (92.5%) of participants have good knowledge about the importance of physical activity in relation to health and diseases as in table (2). About 93% of the sample did not realize all the benefits of physical activity. Data available from health survey and activity and 6.7% have full knowledge, more than half of the respondents (59.8%) had insufficient information about the diseases that can be avoided by physical activity, while only 31.9% had given a complete answer concerning the disease. About 42.2% of the participants showed adequate knowledge about minimum requirements of physical activity per week. It was observed that out of the total sample 67.3% have a medium level and 23.7% had a good level of information as observed from Table (3) shows the attitude of the participants towards physical activity, the tendency has been positive for the importance of physical activity to 78.6%, and attitude of the participants towards the importance of physical activity in maintaining ideal weight, and release tension, and a the importance of physical activity even when the lack of time and overloaded of responsibilities has been a positive attitude with 77.4%, 57.5% and 77.3% respectively. According to the table (4), the relationship between physical activity and demographic characteristics, shows that participants who more practicing of physical activity are , more than 20 - less than 30 years, followed by 35 - less than 50 years (35.5%, 33.8%, respectively), while was lowest at the age of 50-65 years (25.9%), but these differences did not statistically significant $P < 0.05$. The study pointed out that the practice of physical activity have been observed at a higher rate among males than females but no statistical significant difference (35.6%, 32.5%, respectively) and observed that the Emirates are exercising more than non-Emirates in terms of statistically significant (39.8% and 30.1% respectively, chi square = 22.79 $P < 0.05$. and in reference to of educational level, it was found that the highest percentage of physical activity among university graduates / people with high graduate (41.1%) while the lowest was for the uneducated or those with primary education (26.8%) the difference was statistically significant (chi square = 32.11 $P < 0.05$. For martial status it was found that the highest percentage of physical activity among married couples (36.9%), followed by divorced and singles (33% and 32%, respectively) without statistically significant value. The study pointed out there is no difference statistically significant between the practice of physical activity in individuals working and not working (34.7% and 33.6%, respectively) and concerning monthly income physical activity increased with higher monthly income participant in comparison with low, reaching 40.7% for individuals who have a monthly income of 20.000 dirham

and lowest percentage of persons with a monthly income of less than AED 5000 or (5000 - 10000) AED (32.7% and 29.9% respectively) which was statistically significant difference (chi square = 12.20 significance level less from 05 and 0). concerning the relationship between the level of information and physical activity Table (5) shows the highest rate of physical activity were showed among those with good level of information about physical activity (49.7%) compared to those who have average or poor (30.5%, 21.9% respectively) and this difference was statistically significant (chi square = 78.90 significance level less than 0. 05) Regarding the relationship between attitudes and practice of physical activity (Table 6) the results show that individuals with a positive attitude have highest percentage of practicing exercises compared to those with neutral or negative attitude (35% and 29.6% and 27.3% respectively), but this difference did not prove to be statistically significant. The study revealed the existence of four major factors affecting physical activity, nationality, where the odds ratio was among non- emirates 1.49 compared to the n emirates, level of education, where the individuals with primary education is about twice the lack of physical activity, the Knowledge and information level as individuals with low information are at risk of 3.49 in comparison with high knowledge people in practicing physical activity, finally the monthly income when it is less than less than 10.000 Dirham. The study pointed to the existence of statistically significant relationship between the extent to which individuals perceive their health and physical activity, explained by table (8). About 37.7% among persons who reported practicing of physical activity have realized better health, 26.7% in excellent health comparing to those who did not engage in physical activity (34.2% and 15.8% respectively), this relationship is a statistically significant. (Chi quare = 60.80, significance level less than 5 0.0) About the participant's perception of physical activity, about 77.2% of the participants recognized its importance and impacts.

Table (1). Distribution of study populatio0n according to demographic data.

Demographic Data	Frequency N=2226	Percentage
Age (years)		
Less than 20	471	21.7
-20	1405	64.7
-35	237	10.9
50-65	58	2.7
Standard Deviation ± Mean	8.42±28.27	
Sex		
Male	1249	56.1
Female	977	43.9
Citizenship		
National	960	43.1
Non National	1266	56.9
Marital Status		
Single	1048	47.1
Married	1041	46.8

Demographic Data	Frequency N=2226	Percentage
Divorce	106	4.8
Widow	31	1.3
Educational Level		
Uneducated/Primary	619	27.9
Elementary	359	16.1
Secondary	459	20.6
University/ Higher Education	789	35.4
Work Status		
Not Working	807	36.3
Working	1419	63.7
Monthly Income (AED)		
Less than 5000	510	26.4
-5000	344	17.8
-10000	547	28.3
-15000	175	9.0
+20000	359	18.5

Table (2). Distribution of study sample according to the information about physical activity.

Physical Activity Information	Frequency N=2226	Percentage
Physical Activity useful for Health:		
Wrong Answer	166	7.5
Wright Answer	2060	92.5
Benefits of Physical Activity:		
Wrong Answer	5	0.2
Incomplete Wright Answer	2071	93.0
Complete Write Answer	150	6.7
Diseases that can be avoided by doing Physical Activity:		
Wrong Answer	184	8.3
Incomplete Wright Answer	1331	59.8
Complete Write Answer	711	31.9
The number of days/week that you should do physical activity to keep you healthy:		
Wrong Answer	1287	57.8
Wright Answer	939	42.2

Table (3). Distribution of study sample according to the attitudes towards physical activities.

Physical Activity Determinants	Agree	Not Sure	Not Agree
Do you think physical activity not important and loose your time	169	307	1750
Do you think physical activity help in reducing weight and keep you shape well?	7.6	13.8	78.6
Do you think if you don't do physical activity you will be in risk for heart problems	1722	48	96
Do you think if you don't do physical activity you will be in risk for diabetic disease	77.4	18.3	4.3
From your point of view physical activity help in reducing stress or help in adapt the stress	1375	723	128
From your point of view physical activity important even if you don't have the time or other responsibilities.	61.8	32.5	5.8
	1370	712	144
	61.5	32.0	6.5
	1679	457	90
	75.5	20.5	4.0
	1720	363	143
	77.3	16.3	6.4

Table (4). Distribution of study sample according to practicing of physical activity by demographic variables.

Demographic Data	Practicing physical activity		Total N=2226	Significant Test
	No	Yes		
	N=1463	N=763		
Age(Years)				
Less than 20	314	157	471	
	66.7	33.3	100.0	
-20	906	499	1405	CHI Square= 2.89
	64.5	35.5	100.0	
-35	157	80	237	
	66.2	33.8	100.0	
50-65	43	15	58	
	74.1	25.9	100.0	
Sex				
Male	804	445	1249	CHI Square= 2.31
	64.4	35.6	100.0	
Female	659	318	977	
	67.5	32.5	100.0	
Nationality				
National	578	382	960	CHI Square= *22.79
	60.2	39.8	100.0	
Non National	885	381	1266	
	69.9	30.1	100.0	
Marital Status				
Single	713	335	1048	CHI Square= 6.09
	68.0	32.0	100.0	
Married	657	384	1041	
	63.1	36.9	100.0	
Divorce	71	35	106	
	67.0	33	100.0	
Widow	22	9	31	
	71.0	29	100.0	
Educational Level				
Uneducated/Primary	453	166	619	CHI Square= 32.11*
	73.2	26.8	100.0	
Elementary	235	124	359	
	65.5	34.5	100.0	
Secondary	310	149	459	
	67.5	32.5	100.0	
University/ Higher Education	465	324	789	
	58.9	41.1	100.0	

Table 4. Continue.

Work Status				
Working	536	271	807	CHI Square=0.27
	66.4	33.6	100.0	
Not Working	972	492	1419	
	65.3	34.7	100.0	
Monthly Income				
Less than 5000	343	167	510	CHI Square= *12.20
	67.3	32.7	100.0	
-5000	241	103	344	
	70.1	29.9	100.0	
-10000	341	206	547	
	62.3	37.7	100.0	
-15000	108	67	175	
	61.7	38.3	100.0	
+20000	213	146	359	
	59.3	40.7	100.0	

* Missing Data foe 291 P value <0.05

Table (5). Distribution according information and practice.

The Information level about physical activity	Physical Activity Practicing		Total
	No	Yes	
Weak	157	44	201
	78.1	21.9	100.0
Medium	1041	457	1498
	69.5	30.5	100.0
Good	265	262	527
	50.3	49.7	100.0
Total	1463	763	2226
	65.7	34.3	100.0

*Chi square =78.9 P value <0.05

Table (6). Distribution of study sample according to Attitudes and practice.

The level Toward physical activity	Physical Activity Practicing		Total
	No	Yes	
Negative	8	3	11
	77.2	27.3	100.0
Neutral	202	85	287
	70.4	29.6	100.0
Positive	1253	675	1928
	65.0	35.0	100.0
Total	1463	763	2226
	65.7	34.3	100.0

• Chi square 3.47 P value >0.05

Table (7). Multiple Logistic regression for factors affecting physical activity.

Independent Variables	Regression Coefficient	Odds Ratio	CI 95% Minim.-Maxim.
Nationality	0.397	1.49	1.84-1.20
The Educational Level			
Primary/Elementary/Secondary	0.308	1.36	1.71-1.08
	0.660	1.94	2.49-1.50
The Information Level			
Middle	0.741	2.10	2.62-1.68
Weak	1.249	3.49	5.32-2.29
Monthly Income			
10000	0.082-	0.922	1.23-0.69
Less than 10000	0.248	1.28	1.0-1.70
Less than 15000			

Table (8). Distribution according to recognizing effect of physical activity on Health.

Physical Activity Practice	Health Perception Level					Total
	Excellent	Very Good	Good	Acceptable	Weak	
No	219	475	409	246	39	1388
	15.8	34.2	29.5	17.7	2.8	100.0
Yes	201	284	185	70	14	754
	26.7	37.7	24.5	9.2	1.8	100.0
Total	420	759	594	316	53	2142
	19.6	35.4	27.7	14.8	2.5	100.0

• no answer for 84 about recognizing effect of physical activity on Health
 • Chi Square =60.80 ,P value <0.05

5. Discussions

This study has been carried out to identify the prevalence rate of physical activity among Dubai population and to identify

the most important determinants of physical activity in the emirates of Dubai, where the study showed that the level of the prevalence rate of practicing of physical activity, as defined by WHO criteria among general population of the was a rate of (34.3%) which is almost equal to one third of Dubai population, which can be explained by immersion of population in the management of development projects as a result of the rapid developmental processes witnessed by this emirate, it is low in comparison with the study conducted in Vietnam (2001-2004) (13), which showed higher rates of exercise, reaching up to 44% and another study in Brazil showed exercise up to 49% (14) and the EU countries ranged from 91% in Finland to a minimum 40% in Portugal (15), while physical activities among Americans are up to 45% among, about 43% of women and 48% among men (16). In A similar and other study conducted in the United Arab Emirates (the National Health Survey 2000) showed that about 49.3% of the population living physical inactive lifestyle (sedentary life style) and only 20.6% of population doing higher physical activity level (5), similar to results a study in Saudi Arabia by Mohammed Al-Hazza showed that most children and adolescents in Saudi Arabia do not practice the minimum required for physical activity (16) and an other study by same researcher showed that 78% of adults are physically inactive (17).

The study showed that the level of knowledge among a study population on the importance of physical activity was low in general, good answers was 23.7% only, while other responses ranged between medium and weak which indicates that real need to work on this aspect in the future and also reflects the that the majority of the public has knowledge within and intermediate levels, this result is in similar with the result concluded by Emirates national survey 2000 (5). With regard to the assessment of attitudes toward physical activity among study population, the study showed that 86.6% of the study population showed positive attitude which reflects significantly on their healthy behavior, yet the level of the actual practice of physical activity among study population stay low which indicate the need for identifying the real determinants in a step to be managed for further improvements. The study highlighted the possible reasons behind the non-practicing physical activity by the study population and found that was the most important factors are lack of time 47.3% which indicate the need to work with the government channels to develop regulations and legislations to manage this issue, then fatigue and stress factor, and lack of appropriate places, absence of encouragement, high costs and depressed mood, which is fully consistent with the study carried out in Armenia, which referred to the statistically significance effect of age, sex, educational level, income level factors (18, 17) which also showed in UAE national

survey (5) Thus, drawing attention to these factors are extremely important in each intervention program to improve physical activity practicing among general population. With respect to age, the study shows that the age group of 20-35 is the highest prevalence of physical activity level of 36% in contrast to the age group 50-65 years as the lowest category of physical activity, This is consistent with the one that studies conducted in the UAE and Saudi Arabia (18,5,17) According to the sex variable, both males and females are almost showed similar prevalence rates in practicing physical activity, on the contrary with other study in Vietnam (13), where women have demonstrated superiority in numbers of males in physical activity level of 65% to 49%, while the study conducted in Emirates showed that females engaged less in physical activity than males (5) A research conducted in the United States of America showed about 63% of all workers do not engage in physical activity at work place and sitting for a long time (20.19) which is in similar with the results of this study that shows 65.3% of workers not doing any sort of exercise at work place When assessing the effect of some associated factors with by applying multiple logistic regression analysis, it has been shown that odds ratio was statistically significant with the factors of nationality, low educational level, level of information and monthly income, and this result is consistent with the findings of the study in Brazil (14) but differ from the study of Vietnam (13) as factors of –smoking and non working women were of the of the most important reasons for non-exercise physical activity in addition to monthly income and higher education factor was one of the determinants in other study.

6. Conclusion

The research found that about two third of Dubai's population are living a sedentary lifestyle, mainly due to lack of time required for practicing regular physical activity as the most important reason as well as other reasons such as non-availability of suitable places and increased costs of sports activities, in spite of low prevalence rate of practicing physical activities among Dubai population the majority of the study population revealed positive attitudes towards physical activity and showed a high understanding of its importance and impacts on individuals and population health.

Recommendations

The study recommends the following:

1. the importance of developing a national physical activity program to approach the phenomenon of lack of physical activity among community individuals and to explore effective strategies to deal with the reasons for reluctance to

paucity of time, lack of adequate places and the costs of sports activities and others.

2. Providing adequate and suitable sports venues that encourage the practice of physical activity and sports in Dubai.

3. The need to provide educational interventions about the importance of physical activity for health promotion.

4. Upgrading physical education curricula at schools and universities to improve and change practice, attitude and knowledge about Physical activities.

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