

Physical Activity and Health Status amongst Kuwaiti Adults A survey Study in Kuwait

Dr. Heyam R. Mohammed

College of Education
Kuwait University

Raja H. Tayeh

University of Nabraska,
U.S.A

Elizabeth A. Mohammad

Co-researcher
Kuwait

Dr. Hasan M. Ashkanani

College of Basic Education
PAAET - Kuwait

ABSTRACT

This study aims to explore among, self-beliefs about physical activity, weight, and self-perceived health status Kuwaiti adults who are physically active.

A cross-sectional survey was administered to a random sample of 1010 adults in Kuwait City (n = 376 male, n = 634 female) aged ≥ 20 years in the fall of 200 . Participants responded to 43- survey questions regarding physical activity, weight, and self-perceived health status.

The prevalence of adult physical inactivity was 87.1%. There was a high rate of the sample who were overweight ($BMI > 25 \text{ Kg/m}^2$), 66.3% male, and 69.0% female, some of these were obese ($BMI > 30 \text{ Kg/m}^2$), 9.4% male and 6.9% female obese. However, there was a low rate of underweight people in the sample ($BMI < 18.5 \text{ Kg/m}^2$) 6.1% male and 8.4% female. Males reported higher self-perceived health status, smoking and had a higher educational attainment. The study showed a positive belief towards physical activity among those who regularly take part in physical activity.

The existence of physical inactivity, weight problems and poor physical health status were prominent correlates of physical inactivity.

There are serious weight issues among Kuwaiti adults. Further research should focus on the relationship between self-perceived weight and physical inactivity.

Introduction

Many experts have indicated the importance of thinking about the quality of health and exercise to improve the quality of lives through life-long practice of even moderate exercise (CDC, 2008, & USDA, 2008). Lack of physical activity is an important factor in poor health-related fitness. Lack of activity increases risk of disease and early death (US Department of Health and Human Services, 1996, 2002). Obesity and overweight are increasing in rich and poor nations around the world, and this effect is likely to have staggering health consequences (Al Aynsley et al., 2007).

Physical inactivity has become a serious problem in the whole world (World Health Organization, WHO, 2003). It has been recognized that exercising nowadays is not as easy as before because of time consuming "Fact-paced time". People have no time to exercise because they are "on the run" or "on the go" and they also do not have time for the recommended thirty minute (30min) exercise of a moderate intensity (Salvatore, Grana, & Swell, 2002).

Physical activity has been defined as "bodily movement produced by skeletal muscles that results in energy expenditure" (Casperson, Powell, & Christenson, 1985, p. 126). There is no argument about the importance of physical activity having significant health benefits, and even modest increases in energy expenditure can have health-enhancing effects.

Regular physical activity significantly reduces the risk of coronary heart disease (British Heart Foundation, 2008, & US Department of Health and Human Services, 2008), and decreases the risk of high blood pressure (both systolic and diastolic value), and diabetes (Hu Jousilahti; Barengo; Qiao; Lakka, & Tuomilehto, 2005, Press, Freestone, George, 2003;& US Department of Health and Human Services, 2008). It also helps to control weight and contributes to improving blood cholesterol and glucose levels (Press, Freestone, George, 2003& Hu et al., 2005). Physical activity reduces the risk of osteoporosis, obesity and some of the effects of aging (Ferrari, 2007). In addition to all of the above, exercise contributes to mental well-being, helps treat depression, relieve stress and anxiety, and increases energy and endurance (USA Department of Health and Human Services, 1996; James, 2001; Hwang, Glass, & Molter, 1999; American Academy of Family Physician, 2003).

Even though people know the importance of physical activity, most

adults and children lead relatively sedentary lifestyles and are not active enough to realize the importance and benefits of exercise in relation to their health (WHO,2003). People of all ages benefit from moderate physical activity, such as walking, taking stairs, and moderate to vigorous yard or housework and other activities such as jogging, cycling, and aerobics are also beneficial to health (USA Department of Health and Human Services, 1996;James, 2001; U.S Department of Health and Human Services, 2008).

It was recorded by the American Public Health Association (2005), that Kuwait has the highest obesity level in the world compared to other countries, 75% were obese. A study of American Public Health Association (2005), showed that childhood obesity is on a rise, which is the result of unhealthy eating habits and other high fat content food consumed by the Kuwaiti community of all age groups (Al-Orifan; Bader; Se'adah; Khada; Al-Kordi; & Abas 2007).

A study by Bayoumi & Moussa, (1985) in Kuwait showed that the prevalence of obesity among young males was 15.5% and 16.8% among young females aged between 6-9 years old. Al-Mousa, and Parkash (2000) found that pre-school children aged between (0-5) years were obese, 4.7% for males and 6.7% of females and the proportion increases in school children aged between (6-9) years old, 8.1% of male and 8.8% of females, where for those children aged 10-13 years the obesity raised to be 36.8 for males and 35.9 for females. Another study of by showed that 22% of children aged between 6-17 years old were overweight; (Eid, 1986).

The study of Al-Isa, (1997a), indicated that from the time when the first Shipment of oil from Kuwait in 1946, many changes occurred regarding lifestyle, for example nutritional practice and physical activity particularly in the years between 1980-1981 and 1993-1994. Al-Isa (1997 a&b) said that, Kuwaiti men have more sedentary lives nowadays, which has transformed their lives into what's called "Super-affluent society": with a rapid modernization where they live a luxurious and wealthy life. For all what was indicated above, the prevalent of obesity has been on a rise especially in affluent societies and in societies undergoing modernization.

In a study by Moussa et al. (1999), it was shown that Kuwaiti female children are overweight expressed by the significant of Body Mass Index (BMI). Lack of exercise is one of the important issues for weight problems and poor health. The prevalence of obesity among

Kuwaiti children is on a rise and one of the main reasons for this is the lack of physical activity. Another study (Kocoglu et al., 2003) indicated that parental influences appear to affect children's behavior regarding diet and physical activity.

Despite the proven benefits of physical activity, it has been shown that obesity among adults in Kuwait is on a rise (Al-Orifan *et al.*, 2007). As shown in the study of Abulla Arouj, Al-Nakhi, & Al-Moussa, (1998), the prevalence of obesity for males was 32.9% for 20-39 year old and 35.9% for 40-59 years olds. Females' obesity was 41.5% for 20-39, 53.9% for 40-50, and 48.3% for 60 years old and above. In another study by Kuwait Annual Nutrition Surveillance (2005), it was found that 41.0% adults were overweight and 33.9% of adult males were obese. In another study conducted by Al-Kandari (2006), it was found that 32.7% females were overweight and 41.0% of females were obese.

These studies have concluded that those children will continue to be obese in the future and will have related health problems later on in their adult life. A solution for this increasing problem of obesity needs to be sought in order to reduce the future health problems associated with this condition and to improve the health of the Kuwaiti people as a whole.

Problem statement

The problem faced by researchers and practitioners in Kuwait is that there have been limited prospective studies investigating physical activity, health status and physical self-perceptions in adult Kuwaitis'. The lack of data available can lead to misconceptions about the perceived health status of the Kuwaiti people and a lack of support programs to reduce the levels of obesity amongst Kuwaitis. The more data that becomes available about Kuwaiti people, then the more likely it is for solutions to be found to benefit Kuwaiti people and reduce later health problems that they might face, which will also reduce government spending on preventable health problems faced by Kuwaitis as a result of being overweight.

To find an effective way around such barriers, a sample of 1010 persons was selected to investigate Kuwaitis physical activity, self-beliefs physical activity, weight, and self-perceived health status by using a questionnaire carefully developed on a review of the available literature, interviews and discussions with young people and adults in Kuwait.

Aim of the study

The study aims to investigate Kuwaitis' physical activity, and Health Status. To accomplish this aim, two additional specific aims have been formulated:

- To assess the association between physical activity and health status.
- To investigate the relation between BMI and health status.

Hypotheses

- There is a positive correlation between physical activity and higher self-perceived health status.
- There are significant difference that can be attributed to gender, weight status, and health status.
- There is a significant difference in self-beliefs between physically active and physically inactive participants.

Importance of the study

A literature review of on health promotion programs reveals that exercise has fundamental physical and psychological advantages for adult people and it might be one of the most important interventions for the encouragement of obtaining a healthy lifestyle. For that reason, the aim of this study is to investigate Kuwaitis physical activity, self-beliefs physical activity, weight, and self-perceived health status. Furthermore, the results of the research might show where medical intervention is necessary in order to improve the health status of Kuwaiti adults. The study aims to determine the health benefits of exercise. The results from this study can be taken into account when planning future health promotion programs for the Kuwaiti adults.

Methods and procedures:

Subjects: The survey was carried out in November 2006 on a randomly selected 1200 sample population living in State of Kuwait State; from different places "Salmiya, Mishrif, Shuwaikh, Al-Ahmadi; mainly, Coffee shops and malls. Other samples were found at the Mishrif, Salmiya, al- Ahmadi side-walk. Samples were asked to answer the questionnaire and return it to on site.

One thousand and ten (1010) questionnaires were returned.

(n = 376 male, n = 634 female). Participants answered 43- survey questions regarding physical activity, weight, and self-perceived health status.

Table 1: Demographic Characteristics by Sex, Social Status, and Education Level

Characteristic	N	%	Mean	SD
Sex				
Male	376	37.2	2.00	.000
Female	634	62.8	1.00	.000
Social Status				
Single	544	53.9	1.67	.469
Married	405	40.1	1.56	.497
Divorce	47	4.7	1.68	.491
Widow	14	1.4	1.86	.363
Education level				
Elementart	14	1.4	1.57	.514
Middle school	97	9.6	1.45	.500
High school	2498	24.7	1.52	.501
College or university	650	64.4	1.70	.460

Methods: To explore the beliefs and knowledge regarding health and physical activity, and self-perceived physical ability among Kuwaitis, a questionnaire was developed based on a careful review of the available literature, interviews and discussions with young people and adults in Kuwait. The initial questionnaire was pilot tested with 35 volunteers in Kuwait City. Revisions to the questionnaire were based on their feedback and on discussions and review by a panel of experts from the College of Education. The final version of the questionnaire contained 37 questions and 7 beliefs statements. Knowledge, health status and physical activity were self- reported by the participants.

Weight status was determined from self-reported height in meters and weight in kilograms. Body Mass Index (BMI), were calculated according to the following formula: weight/height^2 (BMI; kg/m^2). Healthy weight was defined as (BMI; $18.5\text{-}24.9\text{kg/m}^2$), underweight

was defined as ($BMI; > 18.5 \text{ kg/m}^2$), overweight was defined as ($BMI; 25.0-29.9 \text{ kg/m}^2$), and obesity ($BMI > 30 \text{ Kg/m}^2$). This classification was based on adults aged > 20 years old.

Statistical analysis: All survey data was coded and responses statistically analyzed using the Statistical Package of Social Science SPSS for windows (version 12.0, 2004).

Descriptive statistics, Pearson's correlation coefficient and independent t-test were conducted to determine significant difference at the 0.05 alpha levels between the mean belief scale scores. The analysis of variance procedure was used to determine relationships among variables (considered statistically significant at $p < 0.05$).

Results

Demographic description of survey respondents: The participants' gender was 376 males (37.2%) and 634 females (62.8%). The majority (69.5%) of participants' were between the age of 20 and 29 years old. The mean age 27.1 years ($S=8.1$): median age was 24 years ranging from 20 to 64 years. A 53.1 percent of subjects' were college graduate or postgraduate; (12.6%) males and (40.5%) of females. A 24.7% of both genders were high school graduates, and 1.4% of males and females were illiterate. Approximately half of the participants' were single (54.1%) and 39.8% were married.

Table 2: Demographic Characteristics by Gender

Characteristic	Females		Male		Total	
	No.	%	No.	%	No.	%
Age						
18-24	373	58.8%	173	46.0%	546	54.1%
25-44	232	36.6%	181	48.1%	413	40.9%
45-64	29	4.6%	21	5.6%	50	4.9%
≥ 64	0	0%	1	0.3%	1	0.1%
Total	634	100.0%	376	100.0%	1010	100.0%
Education						
< 12	52	8.2%	59	15.6%	111	10.9%
12	129	20.3%	120	31.9%	249	24.7%
> 12	453	71.5%	197	52.5%	650	64.4%
Total	634	100.0%	376	100.0%	1010	100.0%

Con/Table 2: Demographic Characteristics by Gender

Characteristic	Females		Male		Total	
	No.	%	No.	%	No.	%
Martial Status						
Single	367	57.9%	177	47.1%	544	53.9%
Married	226	35.6%	179	47.6%	405	40.1%
Divorce	29	4.6%	18	4.8%	47	4.6%
Widow	12	1.9%	2	0.5%	14	1.4%
Total	634	100.0%	376	100.0%	1010	100.0%

Physical activity: The percentage of participants who reported 30 minutes of “moderate intensity” physical activity daily was 12.7 percent ($n = 129$). The majority of them ($n = 107$) who reported 30 minutes “moderate intensity” physical activity daily were young adult between the age of 20 and 29 years old. The difference between males and females reporting 30 minutes “moderate intensity” physical activity daily physical activity was statistically significant ($p = 0.000$). A total of 7.7 percent of males reported using anabolic steroids to enhance their physical performance. Females did not report anabolic steroid usage. An 81.3 percent ($n = 105$) of both genders reported 30 minutes of moderate intensity physical activity daily were smokers.

Physical inactivity: Physically inactive adults were (87.1%). Most of them complained of back pain and arthritic pain amongst males and females. Fifty-three percent of physically inactive adults were diabetic, there was no statistically significant difference in mean by gender ($p = 0.14$). The majority of physically inactive adults (79.9%) reported no knowledge of their actual health status. (55%) of physical inactivity reported they would rather watch TV or sleep rather than walk. Approximately fifty-nine percent of all participants reported the important of physical activity, but of having no time for regular daily physical activity.

Body Mass Index: A total of ($n = 249$) males (66.3%) and ($n = 437$) females (69.0%) were classified as overweight.

Table 3: Body Mass Index (BMI) Determined Weight Category by Gender

Weight (BMI)	Females		Male		Total	
	n	%	n	%	N	%
Underweight	53	8.4%	23	6.1%	76	7.5%
Healthy weight	84	13.2%	78	20.7%	162	16.1%
Overweight	437	69.0%	249	66.3%	686	67.9%
Obese	60	9.4%	26	6.9%	86	8.5%
Total	634	100.0%	376	100.0%	1010	100.0%

The prevalence of adult physical inactivity was 87.1%. High rate of overweight (BMI > 25 Kg/m²), 66.3% male, and 69.0% female, obesity (BMI > 30 Kg/m²), 16.9% male and 19.4% female obese. Low rate of underweight (BMI < 18.5 Kg/m²) 6.1% male and 8.4% female. There was a statistically significant difference in mean BMI ($p = 0.001$) by gender.

The existences of physical inactivity, overweight and physical health status were prominent correlates of physical inactivity, $r = 0.124$, $P < 0.05$. There was no statistically significant difference by education ($p = 0.055$).

The percentage of overweight participants who reported arthritis pain was ($n = 509$) 50.3 %, followed by back pain ($n=491$) 48.6 %. The difference between females and males reporting complaining of arthritis and back pain was not statistically significant ($p = 0.143$). A total of ($n=341$) 33.7 % participants were smokers. The difference between male and females reporting smoking behavior was statistically significant ($p = .003$). A total of 5.7 % of the males and 1.1 percent of females were anabolic steroid users. Participants' Self-reported health status and health risk behavior are presented in Table (3).

Table 4: Self-Reported Health Status and Risk Behavior of Adult Kuwaitis by BMI of The total Population

	Underweight		Healthy weight		Overweight		Obese	
	Male n = 23 %	Female n = 53 %	Male n = 78 %	Female n = 84 %	Male n = 249 %	Female n = 437 %	Male n = 26 %	Female n = 60 %
Health Problem	0	1	3	11	5	8	10	1
Heart Disease		(1.9)	(3.8)	(13.1)	(2.0)	(1.8)	(38.5)	(1.7)
Hypertension	0	2	12	17	74	125	21	19
		(3.8)	(15.4)	(20.2)	(29.7)	(28.6)	(80.8)	(31.7)
Diabetic	0	0	6	14	157	252	11	43
		(0.0)	(7.7)	(16.7)	(63.1)	(57.7)	(42.3)	(71.7)
High Cholesterol	0	1	2	9	103	87	8	21
		(1.9)	(2.6)	(10.7)	(41.4)	(19.9)	(30.8)	(35.0)
Respiratory problem	0	1	3	10	61	55	18	31
		(1.9)	(3.8)	(11.9)	(24.5)	(12.6)	(69.2)	(51.7)
Health Complain	1	4	11	25	138	266	24	41
Arthritis pain	(4.4)	(7.5)	(14.1)	(29.8)	(55.4)	(60.9)	(92.3)	(68.3)
Back pain	4	14	15	28	158	217	22	33
	(17.3)	(26.4)	(19.2)	(33.3)	(63.5)	(49.7)	(84.6)	(55.0)
Risk Behavior	14	10	42	9	131	97	22	16
Smoking	(60.8)	(18.8)	(53.8)	(10.7)	(52.6)	(22.2)	(84.6)	(26.7)
Taking steroid	1	2	10	3	39	6	7	0
	(4.4)	(3.8)	(12.8)	(3.5)	(15.7)	(1.4%)	(26.9)	(0.0)

Self-beliefs of physical activity: There was a statistically significant difference between beliefs scores of both males and females who are physically active and who are physically inactive. Across both genders, the mean score of physically inactive scored lower than the mean score of physically active. The physically active participants were more likely to strongly believe these statements about the benefits of regular physical activity. Table 3 presents participants beliefs about physical activity and inactivity.

Physically active males' believe that exercising regularly burns fat and makes them feel happy. Physically active females believe that

exercising regularly will improve their heart performance, burn fat, enhance their body flexibility, improve their brain function, and farm better muscles. Participants were asked to describe their general health and physical fitness. A total of eighty-nine percent of the males and fifty-seven percent of the females perceived their health excellence and claimed to be physically fit.

Table 4: Beliefs about Physical Activity

	Physically Active		Physically inactive		T
	M	SD	M	SD	
Male					
Physical Activity improv improves heart performing	1.66	.731	1.54	.725	1.043
Exercise burn fat	1.26	.488	1.15	.572	1.174*
Physical Activity enhances body flexibility	1.43	.777	1.31	.654	0.641
Physical activity improves brain function	1.43	.542	1.30	.713	0.771
Exercise forms better muscles system	1.34	.522	1.25	.599	0.641
Makes feel happy and satisfied	1.43	.580	1.32	.784	2.191*
Regular exercise prevents developing many diseases	1.64	.764	1.35	.887	1.070
Female					
Physical Activity improves heart performing	1.68	.550	1.50	.745	2.688*
Exercise burns fat	1.39	.453	1.23	.642	2.718*
Physical Activity enhances body flexibility	1.44	.463	1.30	.611	2.277*
Physical activity improves brain function	1.49	.502	1.34	.690	2.366*
Exercise forms better muscles system	1.46	.530	1.35	.651	1.601*
Makes feel happy and satisfied	1.65	.689	1.50	.769	1.806
Regular exercise prevents developing many diseases	1.75	.707	1.52	1.08	2.484

Notes: Scale = 1 =strongly disagree, 2 =disagree, 3 =neither disagree nor agree, 4 = agree, 5 =strongly agree

*P < .05 after Levine's posttest with Welch's adjustment

Discussion

The study results showed that obesity and overweight are increasing in our adult population. This may be due to reasons such as lack of health knowledge, cultural and environmental factors, and luxury life or as said, they do not have time for exercise. Also the availability of fast food is rapidly increasing in this society and the younger population do not realize the consequences to their long-term health of constantly eating foods packed with such a high fat and calorie content. A study of Al-Isa 1997a & 1997b showed that people who have a high body mass index and were shown to be obese due to sedentary lifestyle and luxury, supported our study. The study illustrated that half of the samples were inactive (87.1%) and prefer watching TV or sleeping rather than exercising and that's probably due to sedentary life style and luxury such as "maid, remote control, computers, car.." or health problems such as back pain, heart diseases and other where many studies are supporting exercise for healthy life style (USA Department of Health and Human Services, 1996, 2002).

Exercise as shown in many studies has very important effects on weight. In our study more than half of our samples were shown to be overweight and obese which may prove that the intake of food or inactive lifestyle is exceeding the output of the person. Eating more and exercising less or due to lack of information of how to lose weight correctly in scientific way to keep the body healthier could be the reason for this.

Regular physical activity is an important behavior for people's health. To promote and maintain health, all healthy adults need to engage in moderate-intensity aerobic physical activity for a minimum of 30 min.d⁻¹ on 5 d.wk⁻¹ or vigorous-intensity aerobic activity for a minimum of 20 min.d⁻¹ on 3 d.wk⁻¹ (American Heart Association, 2007)

US Department of Health and Human Services (2008) explained the health benefits of Physical activity such as reducing the risk of adverse health outcomes, and focus in disease prevention, lifespan approach, making individualized health goals. They explained the relationship between physical activity and health including, lower risk, of early death, coronary heart disease, stroke, high blood pressure, adverse blood lipid profile, type 2 diabetics, metabolic syndrome, cancer, also it reduce depression, and better cognitive function

Healthcare professionals need to be incorporating more time to meet

the individual person's needs. For example, as of now, most healthcare professionals give their advice based on prescribing drugs with a brief advice on lifestyle changes, such as exercising or smoking cessation. But this has to be changed to meet individual needs. People have different interests, needs, schedule and environment. And all of these are affected by family, work, and other social commitments. There are many hotlines available, and group therapy should be advised by professionals that aid people in case a problem does arise. Also healthcare professions should be monitoring the patient afterwards since environmental factors are largely attributed to inhibiting the change of behavior in the most motivated patients. Again, many obese people that lost weight often return within a few years when something significant happens in their life, such as a death of a family member, or relationship problems and healthcare professionals should be monitoring this to aid the patient to overcome this obstacle (American Heart Association 2007).

Recommendations

This study has several limitations. First, the use of self-reported weight, only allows us an estimation and not factual data that has been accurately measured. A future study should be done with measures of actual weight and height of the participants. Move over, the sample of the study does not truly represent Kuwaiti population. Future studies should include larger samples from all age groups from children to the elderly. Third, the BMI itself, does not differentiate muscle weight from fat. This study raises questions and concerns about the possible existence of serious overweight problems among Kuwaiti males and females. More quantitative and qualitative research should be conducted to provide better understanding of physical activity, diet, and health. Also, an understanding about the relationship between self-perceived overweight and physical inactivity behavior is needed. In order to change this trend of over-eating and lack of physical activity among Kuwaitis, we need to educate the younger population in Kuwait about the benefits of regular exercise and healthy eating, so that they can start to remodel their lives for a healthier future. This can be achieved by education through schools and public advertising to promote healthier living. A community base physical education fitness campaign is needed to promote public awareness and improve public health through healthy eating and physical activity.

"مستوى النشاط البدني والحالة الصحية لدى البالغين الكويتيين بدولة الكويت"

أ. إليزابيث أليس محمد

باحث مشارك
دولة الكويت

د. هيام رضا محمد

كلية التربية - جامعة الكويت

د. حسن محمد اشكناني

كلية التربية الأساسية - الهيئة العامة للتعليم
التطبيقي والتدريب - دولة الكويت

أ. رجاء حسني تايه

جامعة نبراسكا
الولايات المتحدة الأمريكية

الملخص

تهدف هذه الدراسة إلي التعرف على نسبة الممارسين النشاط البدني، وبعض المعتقدات - الذاتية للنشاط البدني، الوزن، والتصور الذاتي للوضع الصحي لدى الكويتيين البالغين.

تم استخدام اسلوب المسح بالطريقة المستعرضة لعينة عشوائية (ن=١٠١٠) من الأفراد البالغين في مدينة الكويت (ن=٣٧٦ ذكور، و ن=٦٣٤ إناث) أعمارهم ٢٠ عاماً في خريف عام ٢٠٠٦. أجاب المشاركون على الاستبيان الذي يتكون من ٤٣ عبارة بخصوص النشاط البدني، والوزن، والتصور الذاتي للوضع الصحي.

أشارت نتائج الدراسة أن هناك نسبة مرتفعة (٨٧,١%) من البالغين الذين يتصفون بالخمول البدني، وارتفاع معدلي فرط الوزن ($BMI < 25KG/m^2$). (٦٦,٣%) من الذكور، و(٦٩,٠%) من الإناث، والسمنة ($BMI < 30KG/m^2$) للذكور و(١٩,٤%) للإناث. انخفاض معدل نقص الوزن ($BMI > 18.5 kg/m^2$)، (٦,١%) للذكور و(٨,٤%) للإناث. كما تبين أن للذكور تصور ذاتي أعلى من الإناث في الوضع الصحي، وارتفاع نسبة المدخنين منه للذكور عن الإناث وحصولهم على مستوى أعلى في التعليم، هناك تصور ايجابي نحو مزاولة النشاط البدني بين الذين يمارسون النشاط البدني بانتظام. كما أثبتت النتائج أن هناك ظاهرة عدم الحركة وفرط الوزن والصحة البدنية مع وجود ارتباط كلي بالخمول البدني. هناك حالات تسترعي الانتباه في الوزن بين الكويتيين البالغين لذلك ينبغي ان تركز البحوث على إيجاد العلاقة بين التصور الذاتي في الوزن وقلة النشاط البدني.

REFERENCES

- 1 - Abdella, A. M., Al Nakhi, A., Al Assoussi, A.& Moussa, M. (1998). Non insulin-depended diabetes in Kuwait: Prevalence rates and associated risk factors diabetes. **Research Clinical Practice**, **42(3)**, 187-196.
- 2 - Al Aynsley, G., Waine, C., O'Connor, R., Woolnough, S., : Lang, B., Nathanson, V., Hastings, G., Landon, J., Caraher, M.,& Rayner, M. (2007). Missing the target. Retrieved January 10,2007 from http://www.sustainweb.org/pdf/Missing_the_target.pdf
- 3 - Al-Isa, N.A. (1997a). Temporal changes in body mass index and prevalence of obesity among Kuwaiti men. **Annals of Nutrition Metabolism**, **41**, 307-314.
- 4 - Al-Isa, N.A. (1997b). Changes in body mass index and prevalence of obesity among adult Kuwaiti Women attending health clinics. **Annals of Nutrition Metabolism**, (17), 307-311.
- 5 - Al-Kandari, Y.Y. (2006). Prevalence of obesity in Kuwait and its relation to socio-cultural variables. **Obesity Reviews**, **7**, 147-154.
- 6 - Al-Mousa, Z., Parkash, P. (2000). Prevalence of overweight and obesity among Kuwaiti children and adolescents. **Bahrain Medical Bulletin**, **22(3)**, 123-127.
- 7 - Al-Orifan, F.H., Bader, H.E., Se'adah, M. A., Khadada, K. E., Al-Kordi, B., & Abas, A. (2007). Obesity and cardiovascular risk factor in Kuwaiti Adults. **Kuwait Medical Journal**, **39(2)**, 163-166.
- 8 - American Academy of Family Physicians (2003). Exercise: A healthy habit to start and keep. Retrieved October 10, 2006 from <http://familydoctor.org/x2801.xml?printxml>.
- 9 - American Heart Association (2007). Physical Activity and Public Health, Update recommendation for Adult. **Journal of the American College of Sport Medicine and American Heart Association**, **Circulation**, **116**, 1081-1093.

- 10 - American Public Health Association, 133rd annual meeting & Exposition, (2005). Philadelphia, PA. Retrieved November, 2008 from http://apha.confex.com.apha/133am/techprogram/paper_110761.htm.
- 11 - Bayoumi, A., & Moussa, M. (1985). Kuwait nutritional survey: Comparison of the nutritional status of Kuwaiti children aged 6-9 years with the NCHS/CDC reference population. **International Journal of Epidemiology**, **14**, 415-419.
- 12 - Bayoumi, A., & Moussa, M. (1985). Kuwait nutritional survey: Comparison of the nutritional status of Kuwaiti children, 0-5 years with the NCHS/CDC reference. WHO Bulletin. **International Journal of Epidemiology**, **63**, 521-526.
- 13 - British Heart Foundation (2008). Physical activity to reduce cardiovascular risk. Retrieved December 9, 2008 from.
< [http://www.bhfactive.org.uk/downloads/GP_Factfile_FF115 - SEP08_Leaflet1.pdf](http://www.bhfactive.org.uk/downloads/GP_Factfile_FF115_SEP08_Leaflet1.pdf) > .
- 14 - Casperson, C. J., Powell, K. E., & Christenson, G. M. (1985). Physical activity, exercise, and physical fitness: Definitions and distinctions for health-related research. **Public Health Reports**, **100**, 126-131.
- 15 - Eid, N. (1986). Nutritional anthropometry of school children in Kuwait. **Nutrition report International**, **33**(2), 253-60.
- 16 - Ferrari, C. K.S. (2007). Functional foods and physical activities in health promotion of aging people. *Maturitas* **58**,(4). 327-339. United States Department of Agriculture (UASD). Retrieved October 15, 2008 from < http://mypyramid.gov/pyramid/physical_activity.html > .
- 17 - Hu, G., Jousilahti, P., Barengo, N. C., Qiao, Q., Lakka, T.A., and Tuomilehto, J. (2005). Physical Activity, Cardiovascular Risk Factors, and Mortality Among Finnish Adults With Diabetes. **Diabetic Care**, **28**, 799-805.
- 18 - Hagberg, M. (2001). Exercise your way to lower blood pressure. American College of Sport Medicine. Retrieved October 5, 2007

from <http://nirc.cas.psu.edu/pdf/ExerciseYourWayToLower-BloodPressure.pdf>.

- 19 - Hwang, M., Glass, R., & Mmolter, J. (1999), Why you should exercise. **The Journal of the American Medical Association** (281), 4. 394.
- 20 - Kocoglu, C., Ozdemir, L., Somer, H., Demir, D.A., Cetinkaya, S., & Polat, H. (2003). Prevalence of obesity among 11-14 years old of students in Sis-Turkey. **Pakistan Journal of Nutrition** 2(5), 292-295.
- 21 - Kuwait Nutrition Surveillance System. (2005). Administration of food and nutrition. Ministry of Health. State of Kuwait.
- 22 - Moussa, M.A., Shatout, A.A., Al-Sheikh, N., & Agha, N. (1999). Prevalence of obesity among 6 to 13 year-old Kuwaiti children. **Medical Principles and practice**, (8), 272-280.
- 23 - Press, V., Freestone, I., & George, C.F. (2003). Physical activity: The evidence of benefit in the prevention of coronary heart disease. 96. 245-251.
< <http://qjmed.oxfordjournals.org/cgi/content/full/96/4/245?etoc> > .
- 24 - Salvatore, J.G.; Grana, J., & Sewell, S. (2002). Exercise and health. An essential link for life. **The Pfizer Journal**, 6(1), Impact Communications.
- 25 - U.S. Department OF Health and Human services (1996). Physical activity and health; A report of the Surgeon General Atlanta, GA; U.S. Department of health and human Services. CDC. National Center of Chronic Disease prevention and Health promotion.
- 26 - U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation (2002). Physical activity: fundamentals to preventing disease. June 20, 2002. Retrieved March, 20, 2005 from
< <http://aspe.hhs.gov/health/reports/physicalactivity/> > .
- 27 - U.S Department of Health and Human Services (1996). Physical activity and health: a report of the Surgeon General. Atlanta,

GA:U.S Department of Health and Human Services, Center for Diseases Control and prevention, National Center for Chronic Disease Prevention and Health Promotion, Atlanta, GA:

- 28 - U.S Department of Health and Human Services, Center for Diseases Control and prevention, National Center for Chronic Disease Prevention and Health Promotion (CDC). The importance of physical activity. Retrieved October 15, 2008 from <http://www.cdc.gov/physical activity/>
- 29 - U.S Department of Health and Human Services (2002). Physical activity fundamental to preventing disease: Office of the Assistant Secretary for Planning and evaluation, June, 2002. Retrieved October 15, 2008 from <http://www.cdc.gov/physical activity/>
- 30 - U.S Department of Health and Human Services (2008). Physical activity Guidelines for Americans. Be Active, healthy and happy. Retrieved f November 5, 2008 from <http://www.health.gov/paguidelines/>.
- 31 - United States Department of Agricultural, (USDA)(2008). Inside the pyramid, what is physical activity?Retrieved November 5, 2009 from <http://www.mypyramid.gov/pyramid/physical activity.html>.
- 32 - World Health Organization (WHO)(2003). Overweight and obesity. Retrieved October 15, 2008 from <http://www.who.int/dietphysicalactivity/publications/facts/obesity/en/>.