Assessment Of Adolescents' Daily Physical Activity & It's Relation To Obesity In Secondary Schools At AL-Najaf AL-Ashraf City

تقييم النشاطات الجسمية اليومية للمراهقين وعلاقتها بالسمنه في المدارس الثانوية في مدينة

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أهداف الدراسة تقييم مستوى الفعاليات البدنية اليومية للمراهقين وعلاقتها بالبدانةفي المدارس الثانوية في مدينة النجف الاشرف
منهجية البحث دراسة وصفية أجريت في المدارس الثانوية لمدينة النجف الأشراف للمدة من ١ كانون الأول ٢٠١١ إلى ٦ نيسان ٢٠١٢.اختيرت عينة عشوائية احتمالية متعددة المراحل شملت (١٣٥٠) طالب. جمعت البيانات باستخدام استبانه مصممة ومكونة من ثلاثة أجزاء (١) نموذج البيانات الاجتماعية والاقتصادية و يحوي ١٤ فقرة (٢) مؤشر مقياس الفعاليات البدنية اليومية الذي يتألف من ١٠ فقرات (٣) القياسات البدنية الذي يشمل الوزن والطول . حددت ثباتية استمارة الاستبيان من خلال أجراء الدراسة المصغرة وحددت مصداقيتها من خلال مجموعة الخبراء مكونة من (٢٤) خبيرا.

أظهرت نتائج الدراسة أن هناك علاقة ذات دلالة إحصائية بين الفعاليات البدنية اليومية للمشاركين في الدراسة وبين الحالة الاجتماعية للأبوين. بينما لا توجد علاقة ذات دلالة إحصائية بين الفعاليات البدنية اليومية وغيرها من المتغيرات. و أظهرت النتائج أيضا عدم وجود علاقة بين الفعاليات البدنية اليومية و القياسات الجسمانية.

ا   استنتجت الدراسة أن غالبية المراهقين في المدارس الثانوية لديهم مشاكل في الفعاليات البدنية اليومية.
التوصيات توصي الدراسة إعطاء الفرص للطلاب للمشاركة في المنظمات الطلابية والمؤتمرات والفعاليات البدنية المدرسية لتعزيز مستوى النشاط البدني وتنفيذ البرامج التعليمية للمدرسين في المدارس الثانوية حول كيفية خفض البدانة بين طلابها. وينبغي عمل منهج صحي منظم موجه لوسائل الإعلام من قبل وزارة التربية والتعليم   لزيادة المعرفة والوعي الصحي لكافة طلاب المدارس حول البدانة ومشاكلها الصحية على المراهقين وأثارها على النشاط البدني.

Abstract
Objectives: To assess the secondary schools adolescents' daily physical activity& It's Relation to Obesity. **Methodology** A descriptive study is carried out at Secondary Schools in AL-Najaf AL-Ashraf City, from December 1st, 2011 to April 6th, 2012.A multi stage sample of (1350) subjects were selected throughout the use of probability sampling. The data are collected through the use of semi-constructed questionnaire designed for the purpose of the study, which consist of three parts (1) Sociodemographic data form that consist of 14-items (2) daily physical activity Scale that consists of 10-items (3) Anthropometric Measurements which consists of Weight and Height. Reliability of the questionnaire is determined through a pilot study and the validity through a panel of (24) experts.
Results The finding of the present study indicated that there is significant relationship between the daily physical activity for the study participants' and parents social status while the daily physical activity and the other variables indicated no significant relationship. The results also shows no significant relationship between the daily physical activity and the body mass index.
Conclusion Present study concluded that most of the secondary schools adolescents have daily physical activity problems.
Recommendation the study recommends that the students would be given opportunities to participate in students' organizations, conferences, and schools' physical projects to promote their level of daily physical activity, constructing and implementing educational programs for secondary schools teachers about how to decrease obesity among their students. Mass media approach should be used by the Ministry of education to increase students' knowledge and awareness of the obesity as a health problem.
Key wards: assessment, adolescent, daily physical activity, secondary school

INTRODUCTION

It is important that all activities be conducted in accordance with school board1 policies and guidelines. Principals should make all school staff involved in the planning and implementing of daily physical activity aware of board policies, procedures, and guidelines regarding physical activity, including those related to safety. Physical inactivity has been identified as the fourth leading risk factor for global mortality (6% of deaths globally). Overweight and obesity are responsible for 5% of global mortality [1].

Adolescence progresses in stages. Early adolescence begins with the first physical changes of puberty, which can occur as early as 10 but generally occurs between the ages of 12 and 14years. Middle adolescence is considered to be approximately ages 14 to 16–17years; late adolescence occurs from approximate ages 17 to 20years. The transition from primary to secondary school is a period of anxiety for many children as they face different life and social experiences; major physical, biological, and cognitive changes; and emotional distress. Although parental attachment, when secure initially, remains strong, primary relationships once based mainly on family shift to peers who exert greater influence on social behavior and moral development. Whereas same-sex peer relationships were the norm in childhood, most adolescents now develop opposite-sex friendships and socialize in mixed-gender groups. Social comparison increases and can affect both selective and global self-esteem [2].

Nearly all children attend school; therefore, the school can play a significant role in increasing their physical activity levels and habits. The association between physical activity and weight status is stronger for vigorous physical activity than for moderate physical activity. Concerning sedentary behaviors, It has been reported a positive association between television viewing and adiposity, mainly in children younger than ten at baseline, suggesting that TV viewing is a risk factor for the development of overweight/obesity in children [3].

The major intervention components included a modification of existing physical education curricula and materials, teacher training, and on-site consultation to teachers. These results provide evidence that with proper training and support, modification of the school environment can affect the activity levels of children and adolescents substantially. Sports programs also can provide opportunity for physical activity; in fact, most children's physical activity takes place in organized programs outside of school. Unfortunately, many of these programs are directed toward elite athletes and involve only a minority of the youth population. Improving the school physical education programs and involving more than elite athletes in sports programs can play a pivotal role in increasing physical activity levels of children and adolescents[4].

Physical activity is a key component of energy balance and is promoted in children and adolescents as a lifelong positive health behavior. Physical activity is to be encouraged among children and adolescents based largely on the assumption that the behavior will become part of the person's life and carry into adulthood, where it will help lower the risk of several chronic diseases as well as of premature mortality In order for a daily physical activity program to be successful, students need to develop a commitment to building a more active school. They need to do more than simply participate in the activities: they also need to be involved in the process of planning and implementing daily physical activity. Students should develop the necessary knowledge and skills to assess their own level of fitness; create a plan to determine their short-term and long-term goals; and identify when they have achieved

their goals. As students progress through the grades, they can become active role models in the school and active mentors for younger students [5].

Body Mass Index is a widely used method to define the relationship between weight and height. The Charts of BMI relative to age are used to determine childhood weight status. WHO recommends the use of age and gender-specific BMI for age percentiles for children and adolescents to assess body weight status, where overweight is defined as a BMI ≥ 85th percentile and obesity as a BMI ≥ 95th percentile[6].

METHODOLOGY

Study Design: A descriptive study is conducted through the period between December 1st, 2011 to April 6th, 2012 in-order to assess of adolescents' daily physical activity in secondary schools at al-Najaf al-Ashraf City.

Study Sample: A multi stage sample of (1350) subjects, were selected throughout the use of probability sampling. The sample of study is divided into two stages which include: First stage: schools selection by stratified- cluster. AL-Najaf City divided to six districts. The schools selected randomly (18) schools boys and girls, from (110) total schools in AL-Najaf City. Second stage: students' selection by disproportional stratified sampling. From each schools randomly selected (75) students. The total of students were (1350), (675) boys and (675) girls, their age between 13 to 16 years.

The Study Instruments: The final study instrument consisted of three major parts and those parts are: Part 1: Sociodemographic data Form: an sociodemographic data sheet, consisted of many items categorized as general information (gender, birth date, level of education, total number of siblings and number of student between siblings); and socioeconomic data(parents social status, parents occupation status, parents education levels, family type, family number, number of rooms, type of house, house area, house content and car possession), Part 2: daily physical activity domain items (10-items).The adolescents' daily physical activity was measured by the Arabic version, this is a 10-items questionnaire that uses a 3 –point Likert-type scale for responses. Part 3: Anthropometric Measurements: Weight Electronic weighting was used to obtain the weight. The scale was placed on a hard-floor surface. Height was measured for all participants, with the students bare footed and head upright.

Data collection: Data collected by utilizing of the Adopted & developed questionnaire. Weight, Height are checked for each participant. The data collection process has been performed from February 19th until April 16th 2012. Each subject takes approximately (5-10) minute to respond to the interview.

Data Analyses: In order to achieve the early stated objectives, the data of the study were analyzed through the use of statistical package of social sciences (SPSS) version 16through descriptive and inferential statistical analyses.

RESULTS:

Table (1) Distribution of the study sample by their overall measurement through BMI percentiles Results

BMI percentiles		No.	%
BMI percentiles	Underweight (<5th percentile)	32	2.4
	Normal weight (5-84th percentile)	880	65.2
	Overweight (85-94th percentile)	205	15.2
	Obesity (=>95th percentile)	233	17.3
Total adolescents' selected		1350	100%

Table (1) shows that more than half of the study sample in regard to their BMI percentile has normal weight (65.2 %), only (17.3 %) were obese, and (15.2 %) were overweight.

Table (2) Distribution of The Study Sample by Their Responses to the Daily Physical Activity Domain Items

Daily Physical Activity	Participated Response	No	%	
I feel tired and fatigue for any simple effort	Always	155	11.5	
	Sometimes	742	55.0	
	Never	453	33.6	
Increase my activity in the course of play	Always	867	64.2	
	Sometimes	402	29.8	
	Never	81	6.0	
I have a pain in the feet	Always	189	14.0	
	Sometimes	594	44.0	
	Never	567	42.0	
Strongly characterized by muscle	Always	334	24.7	
	Sometimes	689	51.0	
	Never	327	24.2	
I have no skills in sports	Always	267	19.8	
	Sometimes	639	47.3	
	Never	444	32.9	
I can continue playing for more than half an hour	Always	762	56.4	
	Sometimes	431	31.9	
	Never	157	11.6	
I watch TV more than three hours a day	Always	411	30.4	
	Sometimes	621	46.0	
	Never	318	23.6	
I enjoy in harmony between the parts of my body	Always	573	42.4	
	Sometimes	567	42.0	
	Never	210	15.6	
Suffer the difficulty of the rise and descent of stairs	Always	126	9.3	
	Sometimes	404	29.9	
	Never	820	60.7	
I practice constantly electronic computer games	Always	279	20.7	
	Sometimes	613	45.4	
	Never	458	33.9	
Daily Physical Activity Scores	Low	1170	86.7	
	Acceptable	166	12.3	
	Good	14	1.0	

Table (2) shows the distribution of the study sample by their responses to the daily physical activity domain, the results reflect that the higher percentage of the study participants (86.7%) have low daily physical activity, Only (1%) have good level of daily physical activity.

Table (3) Correlation Between Daily physical Activity Domains Results and Different General Information

		Daily Physical Activity						p-value
		Low		Acceptable		Good		
		No	%	No	%	No	%	
Gender	Male	586	50.1	82	49.4	7	50.0	0.986
	Female	584	49.9	84	50.6	7	50.0	
Date of birth	13	231	19.7	33	19.9	3	21.4	0.691
	14	285	24.4	39	23.5	3	21.4	
	15	313	26.8	55	33.1	4	28.6	
	16	341	29.1	39	23.5	4	28.6	
Number of sibling	1	18	1.5	1	.6	-	-	0.586
	2	67	5.7	13	7.8	2	14.3	
	3	178	15.2	30	18.1	1	7.1	
	4	229	19.6	38	22.9	4	28.6	
	5	252	21.5	27	16.3	2	14.3	
	6	164	14.0	24	14.5	2	14.3	
	7	127	10.9	11	6.6	2	14.3	
	8+above	135	11.6	22	13.2	1	7.1	
Order of student in the family	First	327	27.9	44	26.5	2	14.3	0.330
	Middle	659	56.3	95	57.2	7	50.0	
	Last	184	15.7	27	16.3	5	35.7	
Father alive	Yes	1100	94.0	156	94.0	13	92.9	0.984
	No	70	6.0	10	6.0	1	7.1	
Mother alive	Yes	1158	99.0	165	99.4	14	100.0	0.814
	No	12	1.0	1	.6	-	-	
Parents social status	Married	1125	96.2	153	92.2	12	85.7	0.011*
	Separated	20	1.7	7	4.2	1	7.1	
	Divorced	24	2.1	6	3.6	1	7.1	
	Others	1	.1	-	-	-	-	
Father educational level	Illiterate	55	4.7	5	3.0	2	14.3	0.084
	Read&W.	136	11.6	24	14.5	1	7.1	
	Primary	228	19.5	24	14.5	5	35.7	
	Intermed.	210	17.9	40	24.1	2	14.3	
	Secondary	210	17.9	37	22.3	1	7.1	
	College/Ins	284	24.3	34	20.5	3	21.4	
	Higer ed.	47	4.0	2	1.2	-	-	
Mother educational level	Illiterate	93	7.9	9	5.4	1	7.1	0.240
	Read&W.	186	15.9	26	15.7	-	-	
	Primary	290	24.8	41	24.7	8	57.1	
	Intermed.	251	21.5	45	27.1	2	14.3	
	Secondary	165	14.1	23	13.9	-	-	
	College/Ins	171	14.6	20	12.0	3	21.4	
	Higher ed.	14	1.2	2	1.2	-	-	
SESS	High	271	23.2	30	18.1	4	28.6	0.412
	Middle	827	70.7	129	77.7	9	64.3	
	Low	72	6.2	7	4.2	1	7.1	

* significant at p-value less than 0.05

Table (3) shows highly significant correlation between the daily physical activity domains and the parents social status at p-value (0.011). While there is a non-significant relationship with other general information at p-value more than (0.05).

Table (4) Correlation Between the BMI Percentiles Results and the Daily Physical Activity Results

		BMI percentiles								p-value
		Under-weight		Normal weight		Over-weight		Obesity		
		No.	%	No.	%	No.	%	No.	%	
Daily Physical Activity	Good	1	3.1	6	0.7	3	1.5	4	1.7	0.503
	Acceptable	2	6.3	110	12.5	23	11.2	31	13.3	
	Low	29	90.6	764	86.8	179	87.3	198	85.0	
*significant at p-value less than 0.05										

Table (4) shows there is a non- significant correlation between the daily physical activity domains results and BMI percentiles results at p-value (0.503).

DISCUSSION:

The study results table (1) shows that more than half of the study sample in regarding to their body mass index percentile has normal weight (65.2%), only (2.4%) was under weight. Although body size and composition are regulated by normal growth and maturation, perturbations in energy intake and energy expenditure can influence weight gain and maintenance during adolescence. Although several cross-sectional studies show that obese youth are less physically active than non-obese teen, the relationships between physical activity, inactivity (i.e., television watching), and weight status in the general adolescents population have not been clearly established.

The study results table (2) shows that more than two third (86.7%) of the study participants have low daily physical activities, only (1%) have good daily physical activities. This result disagreed with the CDE (2007) which has reported that the adolescents' students in secondary schools have a acceptable daily physical activity. The daily physical activity and physical adolescents behaviors that affects weight are influenced by many sectors of society, including families, community organizations, health care providers, government agencies, the media, and the schools. The involvement of all these sectors will be needed to reverse the epidemic of the problem. Daily physical activity is only one component of a school's health and physical education program. One of the learning expectations in the Active Participation strand of the health and physical education curriculum requires students to participate vigorously in a wide range of physical activities on a regular basis. Students are also required to participate in sustained moderate to vigorous physical activity for a minimum of twenty minutes each day.

The study results table (3) shows the correlation between the daily physical activity domain and the different general information, which indicated a significant relationship between the daily physical activity domain and the parents' social status at p-value (0.011). While there is a non-significant relationship with gender, age, number of sibling, order of student in the family, father and mother alive, father and mother educational level., and socioeconomic status at p-value more than (0.05).

The study results table (4) shows there is a non- significant correlation between the daily physical activity domains results and BMI percentiles results at p-value (0.503).

CONCLUSIONS:

1. The study confirms that the majority of body mass index percentile results were within normal weight.

2. The study indicates that most of adolescents in secondary schools have low daily physical activities.
3. The study confirms that the parents social status has significant impact on daily physical activity of their children.
4. The study confirms that the body mass index percentile results have non-significant impact on daily physical activity.

RECOMMENDATIONS:

For better adolescents' weight status and improved   their daily physical activity in secondary schools the investigator recommends the following for:
1. Based on these study data, approaches focusing solely on daily physical activity seem unlikely to be particularly effective in the management of obesity in the elementary adolescent years.
2. Interventions for daily physical activity for adolescents group, the focus should be on the reducing the adolescents body weight.
3. Regular visit should be scheduled for schools to detected daily physical activity's problems.
4. Implement a coordinated school health approach to prevent overweight and obesity.
5. Adolescents should be encouraged to practice sports and routine exercise.

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