Evaluation of health behaviors among secondary school students in Baghdad city

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Objectives The present study aims to assess the health behaviors among secondary school students of smoking, diet, and physical activity and to find out the relationship between health behaviors and socio-demographic characteristics of the students.

Methods A descriptive, analytical study carried out from September 2015 to April, 2016 on a simple random sample of 500 students to achieve the objectives that are stated in this study. An assessment tool is constructed by the researcher based on previous literature regarding aspects of health behaviors. Content validity for the instrument was determined through the use of panel experts to investigate the clarity, relevancy, and adequacy of the study questionnaire. The internal consistency of the instrument was determined through the pilot study and the computation of Alpha Correlation Coefficient which was statistically adequate. The analysis of the data was employed by the use of SPSS version 15.0.

Results The autonomous motivation is higher than the controlled motivation and a motivation regarding to "The reason I would not smoke", [Mean (SD) = 76.93 ± 12.02; 36.08 ± 5.4; 11.7 ± 3.5], respectively. Regarding "The reason I would eat a healthy diet", the autonomous motivation is higher than the controlled motivation and a motivation [Mean (SD) = 34.02 ± 5.5; 23.9 ± 5.7; 8.7 ± 3.8] respectively. Concerning "The reason I would exercise regularly", the autonomous motivation is higher than the controlled motivation and a motivation [Mean (SD) = 33.4 ± 5.7; 22.9 ± 6.3; 9.5 ± 3.8], respectively. The perceived competence for not smoking is higher than the perceived competence for maintaining a healthy diet and the perceived competence for exercising regularly [Mean (SD) = 23.7 ± 5.5; 19.3 ± 3.0; 18.5 ± 3.2], respectively. There is a significant inverse association between gender and health behavior ($r = -0.178$ at $P < 0.01$). There is a significant positive associations between smoking status, having one or both smoker parent(s) and the overall health behavior ($r = .417$ at $P < 0.01$; $r = .134$ at $P < 0.01$) respectively.

Conclusion The study concluded that non-smoking is the most prevalent health behavior among the students that revealed by high perceived competence related to non-smoking. Health behavior is negatively influenced by gender, and positively influenced by smoking status.

Keywords health behavior, secondary school, students

Introduction

Health behaviors are identified as any activities that undertaken by individuals to prevent and detect the disease, or to improve health. It is also referred for the health behaviors as actions and habits that they are related to maintain, resort, and improve the health.[1]

Health behaviors and risky behaviors are reported in the community as a more complex pattern of behaviors that are related to lifestyles. There are many behaviors that are reported as unhealth behaviors such as smoking, drinking alcohol, un-protective sexual intercourse, drug abuse, unhealthy diet habits, and lack of physical activities. These behaviors have become more common during the early age, especially adolescence and contribute to the mortality and morbidity.[2]

It has been reported that teenagers are more prone to high risk of unhealth behaviors such as smoking tobacco, teenage pregnancy, drug and alcohol use, in addition to high level of psychological distress for health.[3]

Moreover, a large proportion of morbidity and mortality has been indicated in the developing countries, in which high rate of mortality and morbidity among adults are attributed for unhealth behaviors that begin in early adolescence.[4]

Smoking behavior in adolescence is a common public health issue, and is one of the major problems that have consequences on health; therefore, many health institutions are seeking to reduce this phenomenon among adolescents via educational programs and campaigns, especially in the school to prevent the negative consequences on health.[5]

Unhealthy eating behaviors are frequently found in adolescents who, having physical exercise and those with low levels of physical exercise. Although, practicing physical exercise promotes physical and mental health. It looks that in terms of unhealthy eating behaviors, scientific research are inconclusive. Otherwise, some research argues that excess physical exercise may predispose young adolescents to health compromising eating behaviors. It has been estimated that young adolescent with low level of physical exercise are more vulnerable to developing unhealthy eating habits, since these habits have more impact on their health.[6]

Health promotion is considered as a fundamental for individuals. It is imperative that lifestyle is the most important factor in promoting health among the individual and preventing the disease and mortality. The major criteria are regarded by health-promoting behaviors that determine the health and are directly related to preventing many diseases.

On one hand, some hygienic measures such as immunization, efficient sleeping pattern, enough physical exercise, good nutrition, and personal hygiene. On the other hand, the lack of physical exercise, wrong nutritional habits, and behaviors lead to the prevalence of many diseases and high mortality rate in all age including adolescents. However, adolescents are considered as a central part of life and the stepping-stone of the community, which they do not live in a good health condition, a disease limits their abilities to grow perfectly.[7] Therefore, it is important to explore the health behaviors that are contributing

to health among the school students. In this paper, the researcher will assess the health behaviors of smoking, diet habits, and physical activity.

Materials and Methods

Design of the Study

A descriptive analytical study carried out from September, 2015 to April, 2016 to achieve the objectives that are stated in this study.

Sample of the Study

A simple random sample of 500 students is selected from a probability stratified sample of secondary schools for both sexes in Baghdad Al-Rasafa and Al-Karkh districts which are selected randomly.

Setting of the Study

The study was conducted in four sector areas distributed throughout the Baghdad Educational Directorate of Al-Rusafa and Educational Directorate of Al-Karkh; Baghdad Al-Jedeeda, Al-Sadir City, Palestine's Street and all around, Al-Amin, Al-Sho'ala, Al-Jawadain, Al-Ataifiya, Al-Tobchi, Al-Mansor, and Al-Harthiya which were selected randomly. These schools are considered the most appropriate settings in which the subjects for the study can be selected. The permission has been granted from Ministry of Education/Educational Directorate of Al-Karkh and Educational Directorate of Al-Rusafa. The permissions were facilitating the entrance of researcher and completing the data collection.

Instrument of the Study

An assessment tool is constructed by the researcher based on previous literature regarding aspects of health behaviors. The constructed tool includes three parts, the first part was concerned with covering letter and the agreement of participants to participate in the study, the second part consisted of demographic and personal characteristics of the students, and the third part consisted of health behaviors which include: treatment, smoking behavior, diet, and physical exercise, each sub-domain consisted of 15 items that were measured on Likert scale that rated and scored from 1 to 7 point (1 = never not true, 4 = true sometimes, and 7 = very true). The fourth part included the sub-domains of the perceived competencies which include: non-smoking, maintaining diet, and physical exercise, each sub-domain consists of four items that are measured on Likert scale which rated and scored from 1 to 7 point (1 = never not true, 4 = true sometimes and 7 = very true). Content validity for the instrument was determined through the use of panel experts to investigate the clarity, relevancy, and adequacy of the study questionnaire. In addition to the experts' responses, their suggestions were taken into consideration. So far, modifications were employed and the final copy of the constructed instrument was completed to be an appropriate tool for conducting study. A pilot study was carried out for the period of 15 days on October 2015, and conducted on 50 students who were selected randomly for the purpose of the questionnaire's reliability determination. The internal consistency of the instrument was determined through the pilot study and the computation of Alpha correlation coefficient (Cronbach's Alpha). The result of the reliability was ($r = 0.81$) which was statistically adequate.

Data Collection

The data were collected through the use of the assessment tool and the interview technique was used as a means of data collection. The questionnaire was distributed after obtaining the agreement to participate in the study, and the time for filling the questionnaire was 30–60 minutes.

Statistical Analysis

The analysis of the data was employed by the use of SPSS version 15.0 through the application of descriptive statistical and inferential statistics such as frequencies, percentages, the mean of scores and chi-square.

Results

The mean age is 15.7 ± 1.89, more than a quarter are in the 12–14-year-old age group ($n = 136$; 27.2%), more than a half are in the 15–17-year-old age group ($n = 277$; 55.4%), and less than a fifth are in the 18–21-year-old age group ($n = 87$; 17.4%). Less than a half are males ($n = 248$; 49.6%) and more than a half are females ($n = 252$; 50.4%). A very limited proportion have a poor school achievement ($n = 11$; 2.2%), more than a quarter have an average school achievement ($n = 129$; 25.8%), more than a third have a good school achievement ($n = 174$; 34.8%), more than a quarter have a very good school achievement ($n = 142$; 28.4%), and a small proportion have an excellent school achievement ($n = 44$; 8.8%).

More than a quarter are in the first rank among their brothers/sisters ($n = 144$; 28.8%), about a quarter are in the second rank among their brothers/sisters ($n = 128$; 25.6%), more than a fifth are in the third rank among their brothers/sisters ($n = 107$; 21.4%), and less than a quarter are in other ranks among their brothers /sisters ($n = 121$; 24.2%). Moreover, the Mean family members are 6.06 ± 1.53. A small proportion reported that their families have a less than 500.000 Iraqi Dinar (I.D.) as a monthly income ($n = 34$; 6.8%), less than two fifth reported that their families have a monthly income ranges between half to one million I.D. ($n = 189$; 37.8%), and more than a half reported that their families have more than 1.500.000 I.D. as a monthly income ($n = 278$; 55.6%). More than a quarter reported that their fathers have some bachelor degree ($n = 142$; 28.4%) followed by those who reported that their father are intermediate school graduate ($n = 95$; 19.0%). Also, more than a fifth reported that their mothers have some bachelor degree ($n = 108$; 21.6%) followed by those who reported that their mothers are high school graduates ($n = 100$; 20.0%).

The mean Body Mass Index (BMI) is 22.9 ± 4.2; a small proportion are underweight ($n = 48$; 9.6), most are of healthy weight ($n = 346$; 69.2%), less than a fifth are overweight ($n = 74$; 14.8%), a small proportion are obese ($n = 20$; 4.0%), and a very limited proportion are morbidly obese ($n = 12$; 2.4%).

Less than a fifth are smokers ($n = 70$; 14.0%); the majority of them are males ($n = 50$; 71.4%) and more than a quarter are females ($n = 20$; 28.6%). The vast majority are non-smokers ($n = 415$; 83.0%); less than a half are males ($n = 188$; 45.3%) and more than a half are females ($n = 227$; 54.7%). A very limited proportion quitted smoking ($n = 15$; 3.0%); two third are males ($n = 10$; 66.7%) and a third are females ($n = 5$; 33.3%).

With respect to "The reason I would not smoke", the autonomous motivation is higher than the controlled motivation and a motivation [Mean (SD) = 76.93 ± 12.02; 36.08 ± 5.4; 11.7 ± 3.5]

respectively. Regarding "The reason I would eat a healthy diet", the autonomous motivation is higher than the controlled motivation and a motivation [Mean (SD) = 34.02 ± 5.5; 23.9 ± 5.7; 8.7 ± 3.8], respectively. Concerning "The reason I would exercise regularly", the autonomous motivation is higher than the controlled motivation and a motivation [Mean (SD) = 33.4 ± 5.7; 22.9 ± 6.3; 9.5 ± 3.8] respectively.

The perceived competence for not smoking is higher than the perceived competence for maintaining a healthy diet and the perceived competence for exercising regularly [Mean (SD) = 23.7 ± 5.5; 19.3 ± 3.0; 18.5 ± 3.2] respectively.

There is a significant inverse association between gender and health behavior ($r = -0.178$ at $P < 0.01$). There is a significant positive associations between smoking status, having one or both smoker parent(s) and the overall health behavior ($r = 0.417$ at $P < 0.01$; $r = 0.134$ at $P < 0.01$), respectively.

Discussion

It has been known out of the analysis in Table 1 that more than a half of the students were females with age group 15-17 years old who were in second class and having better school achievement. These findings may give an indicator that female students are more responsible than male students in the term of school requirements. On the other hand, they are seen to be more confident at their age. The findings in Table 1 also show that the students were the firstborn of family consisted of 5-6 members; the family income was ranging between 500,000–1,000,000 Iraqi dinars; the fathers of most students were graduated from college. Most of the students were non-smokers with healthy weight. Such findings may be explained that educated fathers have an impact on their sons and daughters life including ethics and values and the manners they behave and do related to health behaviors that what is observed with the result of smoking status the students and reflected by their healthy weight. The finding of income has been clear enough for such families consisted with 5-6 persons. The findings of this study agreed with the results of Qasim and Abed[3] that they found.

The findings of Table 2 reveal that the autonomous motivation is higher than the controlled motivation and a motivation related to reason of non-smoking, reasons for eating healthy diet, and reasons for practicing exercise regularly. In accordance with these findings, it is possible to interpret the high motivation is the result of the perception of the students and the students perceive that the unhealth behaviors are the strong motives to change the behavior. This is explained by the protection motivation theory.[8,9] According to this theory, the cognitive process plays a key role in decision-making process, leading to a change in behavior. Evaluation of threat is serving as an evaluation of maladaptive behavior, therefore, the autonomous motivation is high in the students because they have perceived these threats with their cognitive abilities. These finding agree with the study of Xu and Chen[10] who found high motivation and high coping among their sample.

Table 3 shows that students' perceived competence for not smoking is higher than the perceived competence for maintaining a healthy diet and the perceived competence for exercising regularly. According to social cognition theory of self-efficacy, the individual sense of control is key role in the change of health behavior. Self-efficacy beliefs are cognition that determines whether health behavior change will be initiated, and

List	Variables	F	%
	Table 1. Participants' socio-demographic characteristics ($n = 500$)		
1.	**Age [Mean (SD) = 15.7 ± 1.89]**		
	12 – 14	136	27.2%
	15 – 17	277	55.4%
	18 – 21	87	17.4%
Total		500	100.0%
2.	**Gender**		
	Male	248	49.5%
	Female	252	50.4%
Total		500	100.0%
3.	**School class**		
	First	172	34.4%
	Second	328	65.6%
Total		500	100.0%
4.	**School achievement**		
	Poor	11	2.2%
	Average	129	25.8%
	Good	174	34.8%
	Very good	142	28.4%
	Excellent	44	8.8%
Total		500	100.0%
5.	**Rank among brothers**		
	First	144	28.8%
	Second	128	25.6%
	Third	107	21.4%
	Other	121	24.2%
Total		500	100.0%
	Number of family members		
6.	3 – 4	61	12.2%
	5 – 6	280	56.0%
	≥ 7	159	31.8%
Total		500	100.0%
7.	**Monthly income (Iraqi Dinar)**		
	Less than 500.000	34	6.8%
	500.000-1.000.000	189	37.8%
	1.001.000-1.500.000	178	35.6%
	> 1.500.000	99	19.8%
Total		500	100.0%
8.	**Father's education**		
	Unable to read and write	11	2.2%
	Elementary school graduate	46	9.2%
	Intermediate school graduate	95	19.0%
	High school graduate	79	15.8%
	Diploma	74	14.8%
	Bachelor	142	28.4%
	Postgraduate	53	10.6%
Total		500	100.0%
9.	**Body Mass Index (BMI)**		
	Underweight (< 18.5)	48	9.6%
	Healthy weight (18.5 – 24.9)	346	69.2%
	Overweight (25 – 29.9)	74	14.8%
	Obese (30 – 34.9)	20	4.0%
	Morbidly obese (> 35)	12	2.4%
Total		500	100.0%
10.	**Smoking status**		
	Smoker	70	14.0%
	Non-smoker	415	83.0%
	Quit smoking	15	3.0%
Total		500	100.0%

F: Frequency; %: Percentage; SD: Standard deviation.

how it will sustain in overcoming the obstacles. Self-efficacy is directly related to the health behavior, because its effects on the goal of health behaviors are set by individuals. Therefore, the findings of this study showed that students who have high-perceived competence have strong self-efficacy in selecting their goals, and they are focusing on opportunities than on obstacles. Supportive evidence for these results are found Epstein et al.[9] and Spek et al.[11] who reported high competence among the sample.

The findings of Table 4 show that there is a significant inverse association between gender and health behavior. And there is a significant positive association between smoking status, having one or both smoker parents and the overall health behavior. The inverse association between the gender and health behavior may be explained that genders are influenced by seeking information, the males are less interest in seeking information than females unless they are still young. Such finding has been supported by Deeks et al.[12] and Siegrist et al.[13] The positive relationship between smoking status and health behavior may be explained by high competence that they have concerning smoking, due to their high cognition that is reflected by high self-efficacy, they are aware to be non smoking behavior is the key of good health which is associated with health behavior that they practice. The finding of this study agree with the study of Saingam et al[14] who found a significant association between smoking status and health risk behaviors.

Conclusions

1. Non-smoking behavior of students is revealed by the high autonomous motivation rather than controlled motivation.
2. Non-smoking is the most prevalent health behavior among the students that revealed by high-perceived competence related to non-smoking.
3. Health behavior is negatively influenced by gender, and positively influenced by smoking status.

Recommendations

1. More effective awareness programs are required to improve knowledge and practice regarding health behaviors.
2. Motivational programs are required for the school-teachers to improve health behavior practices among the students.

Conflict of interest

None. ■

Table 2. **Mean and standard deviation for the sub-domains of the reason I would not smoke, the reason I would eat a healthy diet, and the reason I would exercise regularly**

Sub-domain	Autonomous motivation	Controlled motivation	Amotivation	Total
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
The reason I would not smoke	76.93 ± 12.02	36.08 ± 5.4	11.7 ± 3.5	76.93 ± 12.02
The reason I would eat a healthy diet	34.02 ± 5.5	23.9 ± 5.7	8.7 ± 3.8	66.6 ± 9.3
The reason I would exercise regularly	33.4 ± 5.7	22.9 ± 6.3	9.5 ± 3.8	65.9 ± 9.9

Table 3. **Mean and standard deviation for the perceived competence for not smoking, maintaining a healthy diet, and exercising regularly**

Sub-domain	Mean (SD)
Perceived competence (Not smoking)	23.7 ± 5.5
Perceived competence (Maintaining a healthy diet)	19.3 ± 3.0
Perceived competence (Exercising regularly)	18.5 ± 3.2
Overall	2.70 ± 2.90

Table 4. **Correlations among the study variables**

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	–												
2. Gender	0.274**	–											
3. School achievement	−0.287**	−0.052	–										
4. Rank among brothers	0.045	0.203**	0.015	–									
5. No. of family members	0.163**	0.138**	−0.128**	0.470**	–								
6. Monthly income	−0.157**	−0.071	0.224**	0.059	−0.031	–							
7. Father's education	−0.166**	−0.194**	0.222**	−0.002	−0.061	0.584**	–						
8. Mother's education	−0.210**	−0.190**	0.233**	−0.179**	−0.293**	0.493**	0.383**	–					
9. BMI	0.024	−0.191**	−0.027	−0.039	0.065	0.049	−0.051	−0.020	–				
10. Smoking status	−0.137**	0.128**	0.142**	0.035	−0.002	0.107*	0.075	0.089*	−0.118**	–			
11. Are one or both parents are smoker?	−0.099*	0.019	0.095*	0.057	−0.009	0.049	0.118**	0.052	−0.071	0.194**	–		
12. Do you have smoker friends?	−0.194**	0.344**	0.172**	0.097*	0.022	−0.007	−0.061	−0.113*	−0.070	0.209**	0.184**	–	
13. Health behavior	−0.227**	−0.178**	0.036	−0.004	−0.033	0.047	0.036	0.027	0.022	0.417**	0.134**	0.061	–

**Correlation is significant at the 0.01 level (2-tailed); *Correlation is significant at the 0.05 level (2-tailed).

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