

Promoting Behaviors of Healthiness in two Domains of Physical Activity and Nutrition Statue in High School Students

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Abstract

Background

Youth' healthiness depends on their hygiene behaviors. Doing promoting behaviors of healthiness is one of best ways of health protect and control. This study aimed to investigate promoting behaviors of healthiness in two physical activity and nutrition statue domains in high school students.

Materials and Methods: The study was descriptive-analytic of cross-sectional type study which was done on 800 students of second level of high school in Sabzevar- Iran, during 2015-2016. Sampling method was as clustered and tool of collecting data was questionnaire include: first part demographic information and second part standard of healthiness promoting behaviors (HPLP). Data were entered into using Stata version 12.0 after collecting and were analyzed with statistical-descriptive and Chi-square tests.

Results: Average of physical activity in boys and girls were 18.27 ± 5.38 and 13.8 ± 6.3 , respectively. There was a significant relationship between rate of students' physical activity with level of parents' education and educational grades of students. Boys had more physical activity compared to girls in terms of gender ($P < 0.05$). In investigation of nutrition statue item there was no nutritional difference in boys and girls groups ($P > 0.05$); while, there was significant relationship between favorable nutritional statue and their educational grade levels, educational field and parents' occupation in students ($P < 0.05$).

Conclusion

In current study, female students had less physical activity and required programming to improve more physical activities among girls. Parents who had higher educational level, their children had more suitable pattern in terms of physical activity and nutrition statue.

Key Words: Health promotion, Nutrition, Physical activity, Students.

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1- INTRODUCTION

Diseases epidemiology in comparison to the past has changed and non-epidemiologic diseases that are multifactorial are increasing. The diseases are not just affected by age, gender and family history which are unchangeable factors, but other changeable and amendable factors are involved in incidence of such diseases include not doing appropriate physical activities, fatness, not having balanced diet and so on (1). Researches have shown that the reason of many chronic diseases is lifestyle and human behavior. Lifestyle is determined by individual's behavioral patterns and has deep impact on individual and society healthiness and is used for the method which individual use to do an activity in life (2). According to World Health Organization (WHO) statistics, 70-80% of deaths in developed countries, 40-50 percent of them in developing countries are due to lifestyle-related factors (3, 4).

One of the best ways that people can protect their healthiness and improve it, is doing health promoting behaviors (5-7). Including health behaviors are immunization, proper sleep patterns, adequate exercise, proper nutrition and personal hygiene. On the other hand, lack of mobility physical activity and unhealthy nutritional behaviors cause to disease and death in all population groups, including youth (8). Many health problems such as fatness, cardiovascular diseases, cancer types etc. which can be seen in most developing countries nowadays is related to lifestyle changes of that society people (9). By changing these factors can be prevented from 80% of cardiovascular diseases and 90% of type 2 diabetes. Also, 1.3% of the cancers are preventable by improving nutrition and controlling body weight and doing physical activity and another 1.3 by avoiding smoking (2). Most of Eastern Mediterranean countries (EMRO), are changing their lifestyle,

dietary habit is changing, physical inactivity has converted to an unavoidable lifestyle in societies especially in cities and increase access to the media and communication equipment, have changed life habits all over the world that can be referred to inappropriate diet, inactivity and low physical activity and smoking as the most important factors of health risk (10). Iran with more than 15 million youth population is considered as one of the youngest countries in the world (11). The youth are the country's main wealth and have a vital role in forming future generation and improving society healthiness (12). Adolescence is very vital and sensitive period which is accompanied with physical, emotional and evolutionary changes and prepare person to enter adulthood (13).

The results of various studies have shown that 51 percent of youth have unhealthy behaviors. Studies showed that physical activities are one of the most important health promoting behaviors in teenagers and youth. Also, studies showed that promoting behaviors of students' nutrition patterns are undesirable limit (11, 14). World Health Organization regarding to the issues has emphasized on plan of health promoting schools (12, 14). Addressing the subject of health promoting behaviors among students is of basic subjects of educational systems in each society. Hence identifying related and effective factors with the subject in each society by its appropriate cultures in order to promote health level and intervention actions with scientific base is resulted from done researches in this field. So our study was done with the aim of investigating health promoting behaviors among students of Sabzevar high school.

2- MATERIALS AND METHODS

2-1. Study design and population

The research is descriptive- analytic of the cross sectional, which is result of

research project with ID code 94041 in Medical Sciences University of Sabzevar-Iran, was done with the aim of investigating health promoting behaviors on 800 students of second period of high school in tenth, eleventh and twelfth grades of academic years 2015-2016 in Sabzevar city, Iran.

Sample size using similar research information and 95% confidence level (CI), and 90% test power by below formulation was calculated 777 students, that finally determined 800 students by considering statistical considerations. In this study the following formula was used to determine the sample size:

$$n = \frac{2 * (Z_{1-\frac{\alpha}{2}} + Z_{1-\beta})^2 * (\sigma_1^2 + \sigma_2^2)}{(d)^2}$$

Where:

$$\sigma_1 = 21.59, \quad 1 - \beta = 0.9, \quad 1 - \alpha = 0.95$$

$$\sigma_2 = 21.42$$

2-2. Methods

Student selection was cluster sampling as students randomly were chosen from 10 high schools of Sabzevar city; 5 girls highschool and 5 boys highschool. After having conscious satisfaction of students to participate in study, not having chronic mental and physical disease and passing physical education unit were entered to the study.

2-3. Measuring tools: validity and reliability

In this research, self-report questionnaire was used which had two parts, first part was demographic information include: age, gender, weight, height, grade and academic major, parents' education, parents' occupation, and second part was standard questionnaire of health promoting behaviors. Health-Promoting Lifestyle Profile (HPLP) questionnaire provides multidimensional evaluation of health

promoting behaviors. This questionnaire measures health promoting behaviors in 6 dimensions (responsibility for health with 9 questions, physical activity with 8 questions, nutrition with 9 questions, spiritual growth with 9 questions, stress management with 8 questions, and interpersonal relationships with 9 questions) and includes 52 questions that there is 5 responses for each question, that is scored as very low, low, sometimes, very, very much (score of every question from 0 to 4). In this study, two dimensions related to physical activity and nutritional status were studied.

Related questions of physical activity part includes 8-question (measuring regular patterns of doing exercise and physical exercises), that is given determined score to every question, maximum score in physical activity is 32 and minimum score is zero. Questions of nutrition part include 9-question (evaluating nutritional patterns and nutritional options). Maximum score in nutrition part is 36 and the minimum score is zero.

Walker et al. in this research calculated Cronbach's alpha coefficient for the subscales the questionnaire. They calculated Cronbach's alpha coefficient among 0.88 to 0.90 for six subscales of the test (15). In Iran, psychometric characteristics of the questionnaire have been investigated in Mohammadi Zaidi et al.'s research (2011), Cronbach's alpha coefficient was 0.82 for the entire tool and from 0.64 to 0.91 for subscales (16).

2-4. Ethical consideration

Participation in the scheme was optional and not required to write the name. This study was approved by the Ethics Committee of Sabzevar University of Medical Sciences, with ID code No. 94041.

2-5. Inclusion and exclusion criteria

In this study, criterion of entering students to the study was students' education in secondary second grade (tenth, eleventh and twelve classes), having age of 16-18, volunteering of student, not having physical education unit during study time, and criteria of exit of study, lack of students' agreement or having chronic spiritual and physical disease.

2-6. Data analyses

All statistical analyses were performed at a confidence level (CI) of 0.05 using SPSS version 17.0. Collected data were analyzed using the descriptive statistics including the percent and frequency. In this study, Chi-square test was used to evaluate the relationship between health promoting behaviors and demographic variables.

3- RESULTS

From 800 students of the study 328 (41%) persons were tenth grade, 345

(43.1%) persons were eleventh grade and 127 (15.9%) persons twelfth grade. 211 (26.4%) persons were Science, 206 (25.8%) persons Humanities, 85 (10.6%) persons Mathematics and Physics, 60 (7.5%) persons vocational and 238 (29.8%) persons were of Technical and Professional. In parents' occupation survey about half of (52%) students' fathers were self-employment and 85% of their mothers were housewives. In investigation of parents' education, about half of students' parents (50 %), had diploma or higher education.

Results of questionnaire showed that the average of physical activity in boy and girl groups were 18.27 ± 5.38 and 13.8 ± 6.3 , respectively (of total score 32). In terms of nutrition statue the average of nutrition score of boy and girl groups were 19.63 ± 4.96 and 19.31 ± 5.14 , respectively (of total score 36) (**Figure.1**).

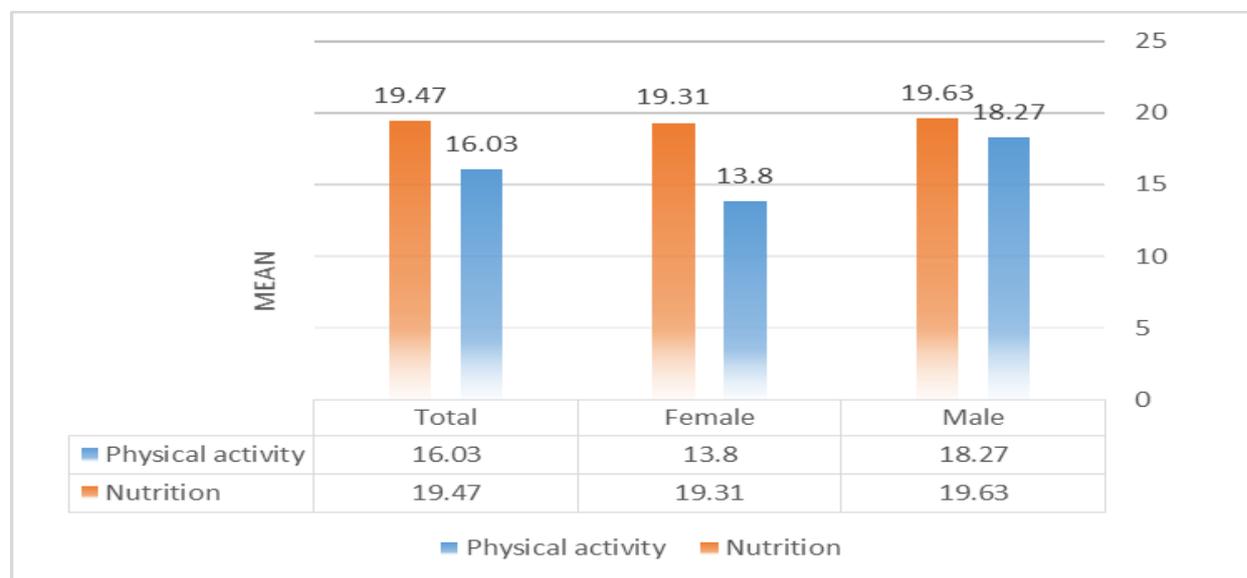


Fig.1: Score mean of physical activity and nutrition statue in boy and girl groups.

Investigation results of questionnaire on health promoting behaviors standards in the field of physical activity and nutrition showed that girls had weak physical

activity in 60.8% cases and only well physical activity in 7.5%, while more than half of boys had average physical activity, and 25% of them had well physical

activity. Statistical Chi-square test results showed that there was a significant statistical relationship between students' physical activity and gender. The boys significantly have more physical activity compared to the girls ($P < 0.05$). Our study results showed that parents' occupation had no effect on students' physical activity ($P > 0.05$). Results showed that there was a significant relationship between rate of parents' education and rate of students' activity ($P < 0.05$). According to the findings based on educational grade, the results showed that there was a significant

difference between physical activity and educational grade ($P < 0.05$). In students' survey based on Field of study, the results showed that there was a significant difference between Field of study and physical activity, so that approximately 65% of students in the field of vocational had weak physical activity, while only 16.5% of students in the field of mathematics and physics had weak physical activity, that there was a statistically significant difference ($P < 0.05$) (**Table.2**).

Table-2: The relationship of physical activity with demographic variables among students participating in this study

Variables		Physical activity			P-value
		Weak	Average	Good	
Gender	Girl	243(60.8)	127(31.8)	30(7.5)	0.001
	Boy	88(22)	212(53)	100(25)	
Father's occupation	Unemployed	19(40.4)	22(46.8)	6(12.8)	0.70
	Self-employment	173(41.6)	180(43.3)	63(15.1)	
	Worker	51(43.6)	47(40.2)	19(16.2)	
	Employee	55(36.7)	67(44.7)	28(18.7)	
	Retired	133(47.1)	23(32.9)	14(20)	
Mother's occupation	Housewife	290(42.08)	288(42.38)	111(16.11)	0.22
	Employee	24(32.4)	40(54.1)	10(13.51)	
	Worker	17(45.96)	11(29.72)	9(24.32)	
Father's education	Illiterate	24(42.2)	20(38.5)	8(15.34)	0.013
	Primary	89(50.3)	69(39)	19(10.7)	
	Guidance	75(37.7)	88(44.2)	36(18.1)	
	Diploma	84(39.8)	94(44.5)	33(15.6)	
	Academic education	59(36.66)	68(42.23)	59(36.66)	
Mother's education	Illiterate	(17)9	(32.1)17	27(50.9)	0.009
	Primary	(48.5)116	(35.8)92	31(13)	
	Guidance	(36.1)56	(47.7)74	25(16.1)	
	Diploma	(40.7)94	(45.5)1.5	32(13.9)	
	Academic education	(31.16)38	(41.8)51	33(27.04)	
Education grade	Tenth	108(9.32)	137(41.8)	83(25.3)	0.000
	Eleventh	169(49)	148(42.9)	28(8.1)	
	Twelfth	54(42.5)	54(42.5)	19(15)	
	Science	70(33.2)	97(46)	44(20.9)	
Field of Study	Humanities	102(49.5)	75(36.4)	29(14.1)	0.00
	Mathematics and physics	14(16.5)	48(56.5)	23(27.1)	
	Vocational	39(65)	18(30)	3(5)	
	Technical and Professional	106(44.5)	101(42.4)	31(13)	

In survey of second item means analysis results of students' nutrition information, the results showed that 38% of girl students had weak nutrition statue, 53% average nutrition statue and only 9% had well nutrition statue. The results of nutrition survey of boy students showed that near more than half of boy students (56.5%) had average nutrition statue and 33.85% had weak nutrition statue.

For investigating relationship among demographic variables and nutrition statue of students, statistical Chi-square test was used. The results showed that there was no difference between nutrition statue of boy and girl students.

In survey of occupation categories, results showed that more than half of students (50 %), whose fathers' occupation were self-employment, worker, employer and retired, had average nutrition statue; while students whose fathers were self-employment, near half of them had weak nutrition statue.

Nutrition statue surveys of students showed that there was no statistical significant relationship between students' nutrition statue and parents' occupation ($P > 0.05$). The results showed that difference in nutrition statue in occupation categories of students' mothers, was not significant statistically ($P > 0.05$). Survey of our study showed that there was a significant difference between parents' education and students' nutrition statue and students whose parents' education was less, had more inappropriate nutrition statue and the difference was significant statistically ($P > 0.05$).

The results showed that there was a statistically significant relationship among education grade and Field of study nutrition statue ($P < 0.05$). Among different grade levels of students, tenth grade 's students had more better nutrition statue compared to other grades and also students of Mathematics-physics field, had more better nutrition statue compared to other fields (**Table3**).

Table-3: The relationship of nutrition statue with demographic variables in among students participating in this study

Variables		Nutrition statue (%)			P-value
		Weak	Average	Good	
Gender	Girl	152(38)	212(53)	36(9)	0.45
	Boy	135(33.8)	226(65.5)	39(9.8)	
Father's occupation	Unemployed	24(51.1)	18(38.3)	5(10.6)	0.35
	Self-employment	145(34.9)	231(55.5)	4.(9.6)	
	Worker	48(41)	59(50.5)	10(8.5)	
	Employee	48(32)	89(59.3)	13(8.7)	
	Retired	22(31.4)	41(58.6)	7(10)	
Mother's occupation	Housewife	255(37.01)	370(53.70)	64(9.28)	0.03
	Employee	19(25.7)	47(63.5)	8(10.8)	
	Worker	13(35.15)	51(56.75)	3(8.10)	
Father's education	Illiterate	28(53.8)	19(36.5)	5(9.6)	0.001
	Primary	86(48.6)	80(45.2)	11(6.2)	
	Guidance	57(28.6)	117(58.8)	25(12.6)	
	Diploma	68(32.2)	123(58.3)	20(9.5)	
	Academic education	48(29.82)	99(61.49)	14(8.69)	
Mother's education	Illiterate	27(50.9)	22(41.5)	4(7.5)	0.003
	Primary	99(41.4)	123(51.5)	17(7.1)	
	Guidance	46(29.7)	91(58.7)	18(11.6)	
	Diploma	83(32.9)	126(54.5)	22(9.5)	

	Academic education	32(26.24)	76(62.29)	14(11.47)	
Education grade	Tenth	104(31.7)	186(56.7)	38(11.6)	0.003
	Eleventh	142(41.1)	180(52.2)	23(6.7)	
	Twelfth	14(11)	72(56.7)	14(11)	
	Science	71(35.1)	123(58.3)	14(6.6)	
	Humanities	69(33.5)	119(57.8)	18(8.7)	
Field of Study	Mathematics and physics	34(40)	37(43.5)	14(16.5)	0.002
	Vocational	28(46.7)	23(38.3)	9(15)	
	Technical and Professional	82(34.5)	136(57.1)	20(8.4)	

4- DISCUSSION

In this study, health promoting behaviors of high school students in terms of physical activity and nutrition was investigated. The results of the research showed that mean score of physical activity was 16.03 ± 5.8 (out of 32), and mean score of nutrition was 19.47 ± 5.05 (out of 36). The results showed that the physical activity scores of the boys were more than the girls ($P < 0.05$). Physical activity of students who their parents had higher education, was better than others ($P < 0.05$). Also, physical activity rate was different among various educational grades and these differences were statistically significant ($P < 0.05$).

The mean scores of nutrition was 19.47 ± 5.05 , and there was no significant difference between boys and girls (19.63 ± 4.96 vs. 19.31 ± 5.14). In the study of Motagi et al. (17), mean scores of nutrition was 1.10 and mean scores of physical activity was 6.1 which was lower than our study. In the study of Moieni et al. (11), mean scores of physical activity was 19.81, and mean scores of nutrition was 21.93 which were higher than our study.

In current study, the girls had undesirable physical activity statue compared to the boys. The study of Piri et al. (18), in Poldokhtar showed the same results that were consistent with the study of Rahnamud et al. (18), and Scali et al. (19). But in the study of Pourokhoshvary et al. (21), the results were opposite to our results and physical activity of girls was

better than the boys, which was not consistent with obtained results in our study. The reason of these results may be due to some restrictions of girls in doing some outdoor activities. The results showed that there was a significant relationship between level of parents' education and students' nutritional statue, so that low level of education was along with low level of nutrition and physical activity. These results were consistent with the study of PoorYousefi et al. (26).

The results showed that there was no statistically significant relationship between students' gender and nutrition statue; while in the study of Rayat et al. (23), there was a statistically significant relationship between gender and nutrition statue. In fact, correct dietary pattern of parents causes appropriate dietary habits in youth (24). The results of our study showed that there was statistically significant relationship between educational grade and nutrition statue ($P < 0.05$), so that students in first grade had more suitable nutritional statue compared to second and third grades that was consistent with results Nejat et al (8) and results Motaghi et al. (17). The results showed that there was a significant relationship between level of parents' education and students' nutritional statue that was consistent with the study of Motlaq et al. (25).

In the present study, there was no statistically significant relationship between parents' occupation and physical

activity; while there was a significant relationship between mother's occupation and students' nutrition statue, so that students who their mothers were employed, their nutrition statue was better than others; while in the study of Yusefi et al. (26), and Motagi et al. (17), there was no statistically significant relationship between parents' occupation and health promoting behaviors that the results was not consistent with obtained results of our study.

4-1. Limitations of the study

Since the study has been done in Sabzevar city, and there is no ethnic variety and difference of economical-cultural level among students and parents, hence to generalize the results of the research required to various studies with more sample volume, till obtaining more generalized results.

5- CONCLUSION

According to findings, the girls had no suitable physical activities compared to the boys. It should be noted that educational program are deeply required in order to improve their physical activity. The knowledge of low physical activity outcomes and nutritional problems should be taught them, because it will threaten their health in future. It is an idea to establish units in schools as "sport and healthiness to this group of students who will be mothers in future.

6- CONFLICT OF INTEREST: None.

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