Available online at **www.ijmrhs.com**

ISSN No: 2319-5886

International Journal of Medical Research & Health Sciences, 2016, 5, 6:67-71

The Evaluation of Effects of Educational Intervention Based on Planned Behavior Theory on Reduction of Unhealthy Snack Consumption among Kermanshah Elementary School Students, 2015- 2016

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ABSTRACT

Sedentary lifestyle and great advertising of high calorie junk foodstuffs cause the change of the nutritional pattern of children and adolescents. This study has been carried out with this objective: determining the effect of educational intervention based on the theory of planned behavior on reducing consumption of unhealthy snacks in the elementary students in Kermanshah City in 2015-2016. This research is a quasi-experimental study. Research setting was the primary schools in Kermanshah city. Sampling was conducted in multi-stage random method. Three hundred and fourteen female and male students were selected randomly. They were divided into two groups of Case and Control. The data collection tool in this study was a questionnaire. Status of snacks consumption among students in both study groups was examined after four weeks. Descriptive statistics and inferential statistics were used in order to analyze data. Before intervention, there were no significant differences between two groups of case and control. The average grades of the theory of planned behavior structures have increased in case group after intervention and it shows a significant difference ($P < 0.05$). No significant differences were observed in each structure in control group after intervention. The results indicate the positive effect of educational intervention based on the theory of planned behavior on reducing consumption of unhealthy snacks in elementary students. Theory-based educational intervention has also increased students' willingness to consume healthy snacks.

Keywords: Unhealthy Snacks, Planned Behavior Pattern, Students, Health Education

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INTRODUCTION

The main capital of each country is its children and teens whose healthy nurturing should be a part of goals of socio-economic development programs. Having a healthy future generation warrants giving priority to training, education and health plans. It is necessary for children and teens to eat healthy food in order to grow physically and develop mentally property. Training and introducing this group to the principles of a healthy life style is among each society requirements [1]. Having a Population of 18 million students, Iran is considered among the youngest contemporary societies. The provided skills along with behaviors shaping children's personalities influence their individual, family and social health [2]. Inactivity and advertisement on high-calorie, low valued foodstuffs have changed the patterns of this group's eating habits [3]. Such unfavorable changes led Iranian children to consume unhealthy snacks with low nutritional values. Therefore, it is important to train them on health issues in order to lead them toward an appropriate, healthy nutritional model. Training is a way for increasing student's awareness as well as creating a correct attitude and performance among them [4]. According to the studies and done research, the best, the cheapest and the most effective ways for coping with diseases and securing public health is training [5]. Using models and theories correctly makes health training programs effective and efficient. One theory is the Planned Behavior theory being applied by present research. The different studies performed based on this model have proven its efficiency,

especially in the domain of nutrition training [6]. According to the findings of Karimishahanjarini [7] no differences were observed in amount of consumption of unhealthy snack in both intervention and control groups. But difference between two groups was significant after educational intervention and, the frequency of consumption of junk snacks was decreased to 3.3 times per week. Also, the consumption of healthy snack in intervention group has been 2.7 times per week more than the control group [7]. This study has been carried out with this aim: determining the effect of educational intervention based on the theory of planned behavior on reducing the consumption of unhealthy snacks in elementary students in Kermanshah City in 2015-2016.

MATERIALS AND METHODS

This research is a quasi-experimental study, which has been carried out for examining the effect of education based on the theory of planned behavior on reducing the consumption of unhealthy snacks in students. In this study, the researcher has evaluated the manner of effect of education on research variables in two stages: before intervention and after intervention.

Research environment: it has been the elementary schools in Kermanshah city.

Sampling method: sampling was conducted in multi-stage random method. At first, a list of primary schools of boys and girls in Kermanshah city were prepared from the Department of Education. Then 8 schools (four girls' schools and four boys' schools) were selected randomly among them. Due to the high volume of elementary students' population in Kermanshah city, sampling was done in following method:

$$n=2\left(Z_{1-\frac{\alpha}{2}} + Z_{1-\beta}\right)^2 \bar{p}(1 \quad \bar{p})/(P_1 \quad P_2)^2$$

With the test power of 90 and confidence coefficient of 95% and p = 50, the number of samples was estimated as 157 people in the test group and 157 people in control group, and in total 314 people.

Research plan: The present study is a pretest-posttest plan with case/ control group. Randomly selection of half of the sample members in this plan was done in case group and the other half in the control group. Each group was measured twice via questionnaire of unhealthy snack in students. The first measurement was with the implementation of pre-test and the second measurement was with implementation of post-test. The only difference was that case group received independent variable (education based on the model of planned behavior), but independent variable was not applied for control group.

Table 1: Pre-test and post-test plan with control group

Research group	Post-test	Independent variable	Pre-test	Randomly selection
Case group	T2	X	T1	R
Control group	T2	-	T1	R

Data collection tool in this study is a questionnaire with the framework of theory of planned behavior. The questionnaire questions include the following sections:

Part I: Public and Demographic Profile
The variables of gender, weight, height, number of family members, birth rank, and status of living with parents, parental education level, parental occupation and; daily pocket money amount were measured in this section.

Part II: questions related to the structures of the theory of planned behavior
This section has contained 35 questions:
Questions of attitude toward behavior: 10 questions
Questions of subjective norm: 9 questions
Questions of perceived behavioral control: 9 questions
Questions of intent: 7 questions

Part III: Questions related to behavior of consumption of nutritive snacks are being examined in students.

Following cases were used to analyze the data:
• Descriptive statistics (frequency and frequency percentage, mean, median, exponent, mode, and standard deviation)
• Inferential statistics (independent t-test, paired t-test, Mann-Whitney test, Kolmogorov-Smirnov, Wilcoxon test)
Data analysis was performed by SPSS software, version 20.

RESULTS

As can be seen in Table 2, two case and control groups had no significant difference in comparison with each other in terms of birth rank (P-V = 0.910), number of family members (P-V = 0.145 = PV), father's occupation status (P-V = 0.054), mother's job (P-V = 0.388) , father's education (P-V = 0.129), mother's education (P-V = 0.226), the amount of daily pocket money (P-V = 0.085) and status of living with parents (P-V = 0.061). It can be said that we have chosen control and case groups homogeneous in terms of the examined variables. Body mass indexes in both groups were not significantly different according to the chi-square test (P-V = 0.212). It can be said that case and control groups are homogeneous in terms of this item.

Table 2: comparing the demographic variables in both groups

Variable		Case	control			
		Number	Percentage	Number	Percentage	Total	P value
Birth rank	First	73	46.5	74	47.1	147	0.91
	Second and more	84	53.5	83	52.9	167	
Number of family members	4 people and lower	104	66.2	87	55.4	191	0.145
	5 to 6 people	43	27.4	57	36.3	100	
	More than 6 people	10	6.4	13	8.3	23	
Father's job	Employee	39	24.8	28	17.8	67	0.054
	Free	102	65	106	67.5	208	
	Jobless	13	8.3	23	14.6	36	
	Other cases	3	1.9	0	0	3	
Mother's job	Employee	12	7.6	11	7	23	0.388
	housewife	131	83.4	138	87.9	269	
	Free	12	7.6	8	5.1	20	
	Other cases	2	1.3	0	0	2	
Educational status of father	illiterate	12	7.6	23	14.6	35	0.129
	Elementary	33	21	41	26.1	74	
	Under Diploma	23	14.6	22	14	45	
	Diploma	49	31.2	44	28	93	
	Collegiate	40	25.5	27	17.2	67	
Educational status of mother	illiterate	13	8.3	23	14.6	36	0.226
	Elementary	29	18.5	37	23.6	66	
	Under Diploma	32	20.4	29	18.5	61	
	Diploma	49	31.2	43	27.4	92	
	Collegiate	34	21.7	25	15.9	59	
Amount of pocket money of daily	I do not take money	7	4.5	12	7.6	19	0.085
	1000 Tomans and less	53	33.8	68	43.3	121	
	between the 1,000 and 30,000 toman	83	52.9	70	44.6	153	
	More than 3,000 Tomans	14	8.9	7	4.5	21	
Life situation with parents	I live with parents	149	94.9	140	89.2	289	0.061
	Other conditions	8	5.1	17	10.8	25	
BMI	Under 18 (Slim)	77	49	92	58.6	169	0.012
	18-24 (normal)	64	40.8	54	34.4	118	
	Top of 24 (overweight and obese)	16	10.2	11	7	27	

Table 3) comparison of the mean, standard deviation and significance level for the number

of unhealthy snacks in case and control groups

Phrases		Case		Control		p-value
		Mean	Sd	Mean	Sd	
Total Unhealthy Snack	Before	51.3	25.2	67.32	16.2	0.609
	After	16	1.03	34.27	2.05	<0.001
	Comparison	<0.001		0.648		
Beverages and industrial drinks	Before	5.23	0.4	5.31	0.4	0.739
	After	2.15	0.22	5.61	0.41	<0.001
	Comparison	<0.001		0.255		
Sweet snacks such as variety of confection and chocolate	Before	18.37	1.4	19.5	1.38	0.832
	After	10.54	0.61	20.5	1.28	<0.001
	Comparison	<0.001		0.614		
Prepared foods	Before	2.45	0.24	2.42	0.23	0.805
	After	0.96	0.14	2.57	0.23	<0.001
	Comparison	<0.001		0.557		
Sour and salty snacks	Before	4.45	0.39	5.4	0.4	0.057
	After	2.43	0.24	5.59	0.42	<0.001
	Comparison	<0.001		0.383		

As the results indicate that means of two groups of control and case before conducting the intervention is 32.67 and 51.30 respectively, which due to obtained probability value (P-V=0.609) it can be concluded that there is no significant difference between the case and control groups before conducting the intervention. The results also show means of two groups of control and case after conducting the intervention is 34.27 and 16.08 respectively which due to obtained probability value (P-V<0.001) it can be concluded that there is significant difference between the case and control groups after conducting the intervention. In control group, there is no significant difference between the mean frequency of consumption, before and after conducting the intervention. In case group, there is a significant difference between the mean frequency of consumption, before and after conducting the intervention.

About fast-food consumption

The results show the means of the two groups of case and control groups after conducting the intervention is 2.57 and 0.96 respectively which due to obtained probability value (P-V<0.001) there is a significant difference.

Table 4) comparing the mean frequency of healthy and unhealthy snack food consumption in two case and control groups

snacks type	case		Control	
	before	After	before	After
Healthy snack	32.73	37.05	34.19	33.89
unhealthy snack	31.96	13.97	32.55	33.81

According to Table 5) there is no significant difference between the girls and boys in terms of frequency of unhealthy snack consumption neither in case group and nor in control group.

Table 5) Comparison of scores of girls and boys in terms of unhealthy snack consumption

Phrases		Case				p-value	Control				p-value
		Girl		Boy			Girl		Boy		
		Mean	Sd	Mean	Sd		Mean	Sd	Mean	Sd	
Total Unhealthy Snack	Before	30.3	2.12	30.72	2.89	0.87	32.64	1.69	3.27	2.5	0.62
	After	15.95	1.61	16.21	1.14	0.34	33.9	0.32	34.64	0.34	0.66
	Comparison	<0.001		<0.001			0.38		0.25		
Beverages and industrial drinks	Before	5.26	0.251	5.2	0.71	0.58	5.26	0.73	5.36	0.21	0.84
	After	2.11	0.56	2.19	0.18	0.91	5.52	0.43	5.7	0.45	0.76
	Comparison	<0.001		<0.001			0.66		0.89		
Sweet snacks such as variety of confection and chocolate	Before	18.5	1.58	18.24	1.18	0.29	19.6	1.45	19.4	1.18	0.82
	After	10.94	0.8	10.14	0.44	0.64	20.7	0.38	20.3	0.32	0.85
	Comparison	<0.001		<0.001			0.485		0.37		
Prepared foods	Before	2.32	0.5	2.6	0.4	0.254	2.3	0.14	2.5	0.25	0.336
	After	0.89	0.19	1.03	0.21	0.37	2.44	0.16	2.7	0.43	0.721
	Comparison	<0.001		<0.001			0.67		0.84		
Sour and salty snacks	Before	4.36	0.45	4.54	0.15	0.56	5.84	0.45	5.04	5.25	0.36
	After	2.13	0.17	2.73	0.32	0.236	5.68	0.29	5.5	0.45	0.59
	Comparison	<0.001		<0.001			0.77		0.35		

DISCUSSION

Karimishahanjarini's study [7] showed decreased consumption of junk goody after educational intervention based on the planned behavior theory. In addition [7], Qeisavandi's study [8] showed increased consumption of dairy products after the educational intervention based on the planned behavior theory [8].

CONCLUSION

Present study showed that educational intervention based on the planned behavior theory can decrease/increase consumption of unhealthy / healthy snacks among students. In general, results of present research reflect high value of such cognitive theories as planned behavior one in designing interventional programs effective in changing health-related behaviors positively. Therefore, it is suggested that similar studies be performed on student's mothers and school-buffet owners in the future.

An approach to enhancement of children's health should take followings into account:
- To provide a correct model of healthy snack consumption by educating;
- To include nutritional materials within textbooks;
- To provide consultation on feeding;
- To place emphasis on encouraging producers to prepare healthy and safe snacks through advertisements.

REFERENCES

[1] Kennedy E, Goldberg J. what are American children eating? Im plications for public policy. NutrRev 1995,53: 111-26.
[2] Ramezankhani, public health, school health causal comprehensive book/chapter 11/19 Publisher's speech Ministry of Health and Medical Education Third Edition 2013
[3] Dorosty AR, Siassi F, Reilly JJ. Obesity in Iranian children. Arch Dis Child. 2002, 87: 388-91.
[4] Vakili. M, Baghianimoghadam. H, Pirzada. A, peasants. The investigation of the effect of health education on knowledge, attitude and practice of students about milk and dairy products. Journal of Medical Sciences anymore. 2007, 2 (4): 40-45
[5] Kebriyai. F, Asgari Vaziri. F, impact of health education on knowledge, attitude and practice of teachers in Yazd about oral health. PhD thesis, Faculty of Dentistry, University of Medical Sciences and Health Services Yazd martyr, 2005, 20
[6] Armitage CJ, Conner M. Efficacy of the theory of planned behavior: a metaanalytic review. Br J Soc Psych. 2001- 40, 471-99.
[7] Karimishahanjarini, A. the effect of two interventions designed based on the theory of planned behavior to reduce junk food consumption among adolescent girls, 2009
[8] Qeisavandi, E, Effects of educational intervention based on the theory of planned behavior (TPB) on dairy products and milk consumption among junior high school girl students in Kamyaran division in school year of 2013-1014, Tehran University of Medical Science and Health Services, School of Public Health: 2014