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The Effect of nutrition education on knowledge, attitude, and performance about junk food consumption among students of female primary schools

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Abstract

Background:

Undoubtedly, proper nutrition has important role in safeguarding the individual from many diseases, especially chronic ones, and increasing ones physical and intellectual efficiency. Considering the importance of nutrition education to school-age kids, this research was done with the purpose of determining the effect of nutrition education on the knowledge, attitude, and performance of female students at primary school about junk food consumption.

Materials and Methods:

This is an experimental intervention study in Shahr-e-kord city about the reduction of junk foods consumption in 2011. Seventy-two primary girl students were randomly divided into 2 groups, experimental (36) and controls (36). Before of the educational program, self-administrative

questionnaire and FFQ (Food Frequency Questionnaire) questionnaire were filled out for both the groups. The self-administrative questionnaire was completed 3 times (before, immediately, and 2 months after education), and FFQ questionnaire was completed 2 times (before and 2 months after education) by students. After pre-test, 4 educational session classes in experimental group were performed. Finally, data were collected and analyzed by SPSS 16 computer software.

Results:

Demographic variables of the studied population in 2 groups were similar. Before intervention, there were no significant differences regarding the knowledge, attitude, and performance in 2 groups ($P > 0/05$). After intervention, there were significant differences in the levels of knowledge, attitude, and performance between experimental and control groups ($P < 0.001$).

Conclusion:

According to the results, intervention has positive impact on pattern of nutrition, and it can be concluded that intervention is effective on increasing or improving the knowledge, attitude, and performance of the students.

Keywords: Attitude, education, junk food, knowledge, performance

INTRODUCTION

In recent years, high attention has been focused on the primordial and primary prevention of behavioral and biological risk factors of the adults' chronic diseases because there are convincing evidences showing the emergence of chronic diseases and atherosclerosis from the very beginning of the life time.[1,2,3] Behavioral and biological risk factors concerned with the non-communicable diseases are formed in the childhood and remain constant to adulthood.[4,5,6,7,8,9,10,11,12,13,14,15,16] Numerous risk factors such as obesity, dyslipidemia, and high blood pressure continue from childhood and adolescence to adulthood and are related to emergence of the disease incidence in later ages.[17,18,19,20,21] Findings of different studies warn us of the high speed trend of overweight and immobility[21,22,23] as well as orientation towards high calorie and low value of foods,[22,23,24,25,26,27,28] on the other hand, most of the risk factors of non-communicable diseases are preventable and controllable from the childhood.

Children's eating habits and patterns are at first just under the influence of the family situations; however, they may change, with their entering the school, as they spend more time away from home and from the parents' direct supervision,[29] and the children get many eating habits about "what to eat" and "how to eat" from outside the home.[30] Nowadays, the intake of junk foods as snacks among the children, specially the primary schools students, is on the rise. Changing the eating patterns during the recent decade has caused the nutrient snacks to be replaced by junk food and worthless eating materials.

Increasing trend of urbanization life, widespread advertisements by TV and mass media, attractive packaging, and poor nutrition knowledge of parents are considered among the common reasons of increased junk food consumption. Through decreasing their appetite, extreme consumption of these worthless nutrients deprives the children from the opportunity of eating the highly nutritious food prepared in the family environment.[31] On the other hand, since junk foods contain high sugar, salt, and fat, they form the setting for affliction with the chronic diseases such as obesity, diabetes, and cancer in later years of the life.[31] With the beginning of school ages, factors such as teachers, school authorities, and peers play significant role in children's choosing of the eating materials and forming their eating habits. Out of these factors at school environment, the child's peers play a very more important role in forming his/her eating habits.[31] School is a suitable place for health education, and the children need sufficient knowledge, skills, attitude, and values for their health promotion. On the other hand, the meals consumed during the school hours are one of the important items of Nutrition Education at schools.

In the meantime, girls are more important than boys because they are future mothers, and dietary concepts are mainly obtained by them at these ages, which will have fixed and permanent effects on both their health and their children's and family's health.[32,33] Considering that there is a rather strong relationship between the persons' degree of knowledge, attitude, and performance, it is clear that if girls do not receive the suitable knowledge, they are not supposed to perform well their future assigned duties as with regard to their children and family.[34]

In addition, considering the importance and significant role of girl students as the future mothers, low cost health education activities as compared to the treatment activities, and also existing limited and similar studies regarding the role of education on the amount of junk food consumption and the effect of different educational methods, especially at primary school level, it seems necessary to set and develop the educational programs.[34,35]

A study, which was conducted by Pour Abdollahi *et al.* in 2004 in Iran, titles The effect of nutrition education on the knowledge and practice of elementary school children regarding junk food intake; the findings indicated an obvious increase in decreasing junk food intake among the elementary school children.[31]

Also, recently conducted similar studies have shown the effectiveness of training about various issues such as milk and dairy products,[36] nutritional knowledge,[37] oral health education.[38] Accordingly, this study was conducted with the purpose of examining the effect of nutrition education on the knowledge, attitude, and performance of the girl students at primary schools in Shahr-e-kord city about the reduction of junk foods consumption.

MATERIALS AND METHODS

This experimental and prospective study was conducted to examine the effect of nutrition education on the knowledge, attitude, and performance of the girl students at primary schools in Shahr-e-kord city about the reduction of junk foods consumption in 2011.

Seventy-two primary school's girl students participated in the study quantitatively with calculation of 95% confidence interval and 80% power of test and 10% difference, which was classified into two groups (36 subjects in the experimental group and 36 subjects in the control group). Sampling was multistage as: Total number of districts in Shahr-e-kord was 2; district 2 was selected by simple random sampling, because of socio-economic differences and differences in locations, also prevention interference in educations and more efficient training. Then, the samples were selected from 2 schools by random sampling (After getting a list of all primary schools in district 2, two schools that had not economic, social, and cultural differences and were close to each other.) Data gathering instrument was a 4-part questionnaire; the first part was used to obtain the demographic characteristics of the participants (4 questions), and the second part involved knowledge questions (12 questions) that got the score "1" in the case of correct answer and "0" in the contrary; the third part included attitude questions (6 questions) based on the 5-item Likert scale (completely agree, agree, no idea, disagree, completely disagree), which was scored from 0-4, and the fourth part consisted of the questions measuring the students' performances through the questionnaire of the rate of occurrence or consumption frequency containing 12 cases of refreshments (corn puffs, biscuit, chocolate, chips, fruit leather, soft drinks, ice drinking, ice cream, candies, Indian leather foods, chewing gum, and sour plum).

Assessment of the validity of the above-mentioned questionnaire was conducted through face and content validity; thus, the questionnaire was provided given reliable articles and references, and content validity were assessed using a qualitative approach based on comments of a panel of experts (6 members of specialists), and a number of the views and comments applied in the questionnaire. Also, in order to assess the face validity, it was given to 15 students, questions and shortages inside the questionnaire were evaluated.

The reliability was obtained through conducting the test- re-test by pilot testing of the questionnaire using coherence and consistency upon 30 students who were later excluded from the survey. Cronbach's alpha coefficient was also obtained as 0.92. Then, the questionnaire was modified based on their feedback. After getting permission from the authorities of the provincial health center and the education ministry, entering the schools and introducing herself to the students and describing the research purposes and finally obtaining their written consent to participate in the examination, the researcher began to fill out the questionnaire taking the moralities, freedom, and willingness to complete the questionnaire. The students were informed that all data obtained would be used without personal identifiers and would, therefore, remain confidential. Identical questionnaires were used for both of the experimental and control groups. The inclusion criteria included students with addresses and phone numbers in order to clear up and completing a written consent form at the beginning of the study and after receiving information about the study objectives.

After completion of the questionnaire by both the groups, the educational program was designed based on the pre-test results. It was found that intended samples in which part of the model structures are weak and in which are strong, so for structures with low scores, further work has been done. The educational intervention was conducted for the experimental group during 1st week in 4 sessions of 45-90 minutes. During first session, using the direct education, different types of illness and increased knowledge of the dangers of consuming too much junk food were presented via lecture and questioning after acquainting students with asthma definition. During second session, the content of the first session was firstly gone

through, and some questions about first session's ideas were asked. Then, contents of the second session, including the benefits of reducing consumption and increasing positive attitude toward reducing consumption, were offended by giving lecture group discussion, asking and answering questions, and brainstorming methods. As the third session started, questioning and group discussion were adopted, and it was followed by presenting this session's content including barriers reducing junk food consumption and ways to overcome barriers and increase self-efficacy in students about reduced consumption of junk foods. During the fourth session, described eating healthy and beneficial foods such as fruits and vegetables, natural juices, homemade cakes, nuts With educational slides, posters, pamphlets, and white board were used in order to help proper understanding of contents by students and prevention from misunderstanding as well as students visual sense involvement in learning.

Having finished the education, the questionnaire was filled out by 2 groups and compared 2 months later again with the very previous one is terms of the findings of 2 previous stages in order to examine the degree of durability of the given educations. In order to analyze the information using the SPSS 16 statistical software tests of paired T test and Mann-Whitney, Friedman and ANOVA with observations repetition, and T test were applied for comparing the average scores of the students' knowledge, attitude, and performance before and after the intervention in the 2 groups, average scores of the students' knowledge and attitude before, on the spot, and two months later than the educational intervention, as well as the average score of their performance before and two months later than the intervention in each one of the experimental and control groups, respectively.

RESULTS

In this study, all of 72 primary schools girl students fully cooperated with the researchers. Based on the study results, most of the fathers in the under research units had diploma in terms of the education (50% in the experimental group and 61.1% in the control group), were self-employed (58.3% in the experimental group and 50% in the control group), and most of the mothers had diploma (52.8% in the experimental group and 66.7% in the control group) and were housekeepers (80.6% in the experimental and 88.9% in the control groups). Table 1 shows that The students' average score of knowledge before intervention was 28.94 ± 15.10 and 28.70 ± 12.51 in the two experimental and control groups, respectively, and reached to 93.52 ± 8.93 immediately and 90.27 ± 8.79 two months after the intervention in the experimental group ($P < 0.001$) However, the knowledge average in the control group did not show any significant differences. The findings presented in Table 1 indicate that the average score of attitude was 20.37 ± 17.21 before the intervention, which reached to 60.53 ± 14.06 and 54.05 ± 13.92 immediately and 2 months after intervention, respectively ($P < 0.001$).

Table 1 shows that the average score of performance, it was 39.86 ± 9.85 before holding the educational classes that increased 2 months after intervention to 50.00 ± 6.11 ($P < 0.001$).

DISCUSSION

The pupils' average scores of knowledge, attitude, and performance in the 2 experimental and control groups were low before the educational intervention. In addition, independent *t*-test showed that no significant differences were seen between the 2 groups in these variables and the 2 groups were in similar conditions in this regard. These findings are in agreement with the results obtained from the similar studies conducted by Poor Abdollahi, *et al.*,[31] Vakili *et al.*,[36] Choobineh *et al.*,[37] Mazloomi *et al.*,[38] as well as Hosseini *et al.*[39] The results showed that the pupils knowledge, attitude, and performance regarding the junk foods intake after intervention has increased significantly; this result is indicate of the positive effect of education on improving pupils' knowledge, attitude, as well as promoting their performance in decreasing the junk foods intake. The findings of Pour Abdollahi,[31] Vakili *et al.*[36] confirm these results, but in the latter study, the degree of increasing the participant's performance score was not significant, this does not match the present study. Also, the studies by Chobineh *et al.* confirmed of the effect of education on the students' eating knowledge and performance.[37] These results are also matched with the ones obtained from the study done by Hoffman *et al.* in 2003 on 70 girl and boy students at guidance school level for 5 weeks with the purpose of increasing the consumption of fruits and vegetables.[40] In the study conducted by Heidari *et al.*, in 2003, eating education was applied by using educational materials like newsletters special for kids, parents, and teachers in order to increase the kids' knowledge and attitude towards fruits and vegetables. Nine months after the intervention, the researchers observed a significant increase in the participant's knowledge and attitude towards the fruits intake.[41]

Junk food and processed foods seem to be an increasing part of our daily feeding. Sadly, this low nutrition, high-calorie eating behavior is leading to the weight gain, increased blood pressure, and increased cholesterol levels that are contributing to our current obesity and diabetes epidemics. Many packaged and processed foods are marketed for children because they are tasty and easy to eat. However, these foods are high in sugar and fats and low in nutritional value. It is important to teach your children to eat more balanced, whole foods and avoid junk food. These healthy eating habits will affect their physical, emotional, and mental growth and development, and even their adult years.

It can be difficult to make sure that children eat balanced meals and snacks every day, and in some cases, children will not eat enough. School-age children need between 1,740 and 1,970 calories per day; it is important that these are not empty calories from junk food. A poor diet during childhood can lead to disorders such as diabetes, heart disease, and osteoporosis or weak, brittle bones later in life.[42]

CONCLUSION

Considering the poor knowledge, attitude, and performance of students regarding the junk foods intake and the positive effect of education on the above-mentioned construct, it seems that education as one of the most important influencing factors can supply necessary grounds for increasing the knowledge, attitude, and performance of the students and so the society. Besides, considering the important role of girls as the future mothers and low cost of preventive activities like nutrient education as compared with the treatment activities, it seems necessary to generalize such educational programs to all other related groups and populations.

However, in the present study, parental participation was not included, which is otherwise essential for the achievement of long-term benefits of the enhancement of the program for implementation during their stay at home. Long-term value of the improvement need to be confirmed by

further studies because improved junk food consumption in children may exist only during the program or a short period thereafter. School personnel's and teachers should be involved. Coordinating efforts should be made between school personnel, health professionals, and parents to ensure long-term benefits of such programs.

Footnotes

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Conflict of Interest: None declared.

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Figures and Tables

Table 1

Intended variable	Research time	Mean±SD		Test result
		Experimental group	Control group	
Knowledge	Before the intervention	28.94±15.10	28.70±12.51	0.94
	Immediately after the intervention	93.52±8.93	37.96±14.83	<0.001*
	2 months after the intervention	90.27±8.79	32.63±13.26	<0.001*
R.M.ANOVA test		<0.001*	0.320	
Attitude	Before the intervention	20.37±17.21	15. 74±11.74	0.395
	Immediately after the intervention	60.53±14.06	30.43±14.80	<0.001*
	2 months after the intervention	54.05±13.92	26.27±12.97	<0.001*
R.M.ANOVA test		< 0.001*	0.06	
	Before the intervention	39.86±9.85	37.57±10.82	0.352
	2 months after the intervention	50.00±6.11	36.07±9.92	<0.001*
Test result		<0.001*	0.317	

Comparison of the average scores of knowledge, attitude, and performance before, immediately, and 2 months after the intervention between 2 groups of experimental and control