

CAN EDUCATION THROUGH POSTER IMPROVE THE KNOWLEDGE AND PRACTICE OF PRESCHOOLERS ABOUT HEALTHY LIFESTYLE? IHHP-HHPC

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Abstract

INTRODUCTION: Lifelong behavior and risk factors of chronic diseases extend from early life to adulthood. It seems that dietary habits and unhealthy food consumption, as well as passive smoking play an important role in the development of such diseases. Multiple studies have shown that healthy lifestyle education in preschool children improves their knowledge, attitude and practice about healthy lifestyle. This study was conducted to evaluate the effect of lifestyle education with educational posters in daycare centers on preschool children.

METHODS: In an interventional study, 250 preschool children were selected via 2-stage random cluster sampling and taught tips on healthy lifestyle via educational posters. Their knowledge on healthy lifestyle was assessed before and after (1 week and 3 months) education via a picture-questionnaire, and their practice and behavior were assessed before and after education via their favorite choice of snack in daycare centers. Collected data were analyzed using SPSS13 by paired t-test and Man Whitney test.

RESULTS: The knowledge and practice scores of the studied subjects improved significantly one week after intervention compared with baseline, and persisted until the third month after education.

DISCUSSION: Healthy lifestyle education via poster for preschool children can significantly improve their knowledge and practice towards healthy lifestyle.

Keywords • Healthy life style • Education • Preschool children

ARYA Journal, 2005, 1(3): 207-211

Introduction

Healthy lifestyle, notably nutrition and physical activity is a major factor in health. Nutrition is one of the most important aspects of a healthy community and nutritional disorders have a negative effect on development of a country.

While about 30% of children aged between 1 and 3 years still suffer from mild to severe malnutrition in Iran, childhood obesity is also increasing rapidly in this country.

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Without controlling disorders of nutrition and unhealthy nutritional behaviors, we will continue to face a generalized pattern of malnutrition, obesity epidemic and an increasing rate of metabolic disorders. Meanwhile poor food intake by children especially toddlers can result in impaired cognitive development, physical growth retardation, childhood obesity¹ and infectious disease.

It is well documented that atherosclerosis begins from early life and cardiovascular disease (CVD) risk factors in children are related to the development of such diseases in adulthood.²⁻⁴

Our previous study showed a significant relationship between the lifestyle of parents and overweight in their children.⁵

Previous studies in western countries⁶⁻⁸ have shown that children eat small amounts of vegetables and fruits and inadequate amounts of grains especially whole grains.⁹

A US study found soft drink consumption in this country to be 2.5 times as much as milk consumption in 1997.

Interventional scientific guidelines recommended 60 minutes of moderate daily physical activity for children.¹⁰⁻¹² The mean duration of daily TV watching or computer game-playing for children is 2 hours.¹³

In one study, fruit and vegetable consumption in 4-11-year-old children before and after 2 interventional methods (peer-modeling and reward-based) increased significantly.¹⁴

Another study showed that healthy lifestyle education in schools improves knowledge, attitude and practice of the students.¹⁵

Given the importance of acquiring healthy behaviors from early childhood, one of the interventional projects of Isfahan healthy heart program has been entitled *heart healthy promotion from childhood*.¹⁶

We aimed to study the effect of lifestyle education via educational posters on preschool children in daycare centers.

Materials and methods

In an interventional study, we randomly selected 250 preschool children via 2-stage cluster sampling from 250 daycare centers in Isfahan. We selected 8 clusters, from low-, middle-, high- and very high-income regions in Isfahan (2 clusters from each region).

In collaboration with respective authorities, daycare center instructors were taught (through face-to-face interviews) by a physician cooperating with the

project on how to teach healthy lifestyle to children via educational posters and pamphlets (Figure 1).

Posters and pamphlets included educational pictures and simple comments on healthy eating and physical activity, as well as hazards of passive smoking.

After distributing the educational materials among children, the instructors explained them to the children. After 1 and 3 weeks the children were assessed in respect of their knowledge and practice towards healthy lifestyle.

An illustrative questionnaire with 18 questions was designed and validated for assessment of knowledge of children after healthy lifestyle education via posters and pamphlets.

The questions were divided in to two parts: 12 questions about healthy eating and 6 about physical activity and passive smoking. One score was given to each correct answer.

To assess the children's practice following education, two kinds of snacks including fresh fruits in one plate as healthy snacks, potato chips and cheese puffs in another plate as unhealthy snacks were prepared and the children were asked to choose their favorite snacks among them. This assessment was done before intervention, as well as 1 week and 3 months after intervention. Children who chose both kinds of snacks or did not choose any of the snacks were given a score of 0, those who only ate fruits got a score of 2, and those who only chose potato chips and cheese puffs got a score of -2.

Statistical analysis: Collected data were analyzed and reported using SPSS13 with t-paired test (for knowledge assessment) and Man Whitney test (for practice assessment) ($P < 0.05$).

TABLE 1. Nutritional knowledge and behavior scores before and after education

	Pretest				Post-test (1 week)				Post-test (3 months)			
	n	min	max	mean±SD	n	min	max	mean±SD	n	min	max	mean±SD
Nutritional knowledge	33	7	25	18/39±3/69	36	15	25	22/56±2/27	34	16	25	22/38±2/50
Behavior	37	-2	2	±0/83	36	-2	2	0/42±0/73	28	-2	2	-0/21±0/74

TABLE 2. Nutritional knowledge and behavior from baseline to after education

	Pretest		Post test (1 week)		P value	Pretest		Post test (3 months)		P value
	mean	SD	min	SD		mean	SD	min	SD	
Nutritional knowledge	18.39	3.69	22.56	2.27	< 0.01	39.18	69.3	22.38	2.50	< 0.01
Behavior		0.83	0.42	0.73	< 0.01	-	0.83	-0.21	0.74	< 0.02

**FIGURE 1.** Educational poster for pre-school students

Results

The scores of nutritional knowledge increased significantly 1 week after education ($P < 0.01$), but were no more increased in the third month compared with 1 week after intervention (Table 1). Behavior scores increased significantly 1 week after intervention ($P < 0.01$), but decreased 3 months after education compared with 1 week after intervention. Table 2 shows that although the scores of nutritional knowledge and behavior decreased 3 months after education compared with 1 week after intervention, they were still significantly higher than baseline scores.

Discussion

Many school-based health and nutrition educational programs in western countries have improved the knowledge of students about healthy lifestyle. In some studies, such educational programs even improved nutritional behaviors. In one study, significant differences were found in primary school students' (aged 8-10 years) behavior after nutritional education, while the average change in knowledge levels was not significant.⁶ A previous study on pre-adolescent African-American girls showed that active intervention reduced their consumption of sweetened beverages by 34% and increased their level of moderate to vigorous activity by 12%.¹⁵

In a research in India, preschool children participating in nutrition and health education (NHE) for one year showed significant improvement in lifestyle and personal hygiene.¹⁷

The pilot study of Warren et al showed significant improvement in knowledge of nutrition, diet and physical activity after intervention compared with baseline, but no significant changes were seen in the rate of overweight and obesity following the intervention.¹⁸

Campbell et al showed that there is limited high-quality data on the effectiveness of childhood obesity prevention programs.¹⁹

In our study, consistent with most of the previous studies, there was a significant improvement in the nutritional knowledge and behavior of the studied preschool children after intervention (education via poster) compared with baseline persisting over time.

The limitation of this study was the short duration of the project.

It seems that more time is needed for more accurate assessment of the effectiveness of educational interventions on the knowledge and behavior of preschool children about healthy lifestyle.

Our results showed that educational interventions for preschool children in daycare centers can play a significant role in improving their knowledge and behavior about healthy lifestyle, but such interventions must be continued.

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