

Qualitative study on nutritional knowledge of primary-school children and mothers in Tehran

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دراسة وصفية حول المعارف التغذوية لتلاميذ المدارس الابتدائية وأمهاتهم في طهران
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الخلاصة: تم في هذه الدراسة الوصفية تقييم التنقيف التغذوي لتلاميذ المدارس الابتدائية في طهران، من خلال 20 حلقة مناقشة جماعية، 16 حلقة للأطفال و4 حلقات للأمهات، وذلك في 128 طفلاً تتراوح أعمارهم بين 6 و11 عاماً و32 من الأمهات في ثماني مدارس ابتدائية في طهران. ولوحظ أن التلاميذ يعرفون فوائد مختلف المجموعات الغذائية، بما في ذلك ما يساعد منها على الهضم والنمو وزيادة الذكاء. وقد حصل التلاميذ على هذه المعارف أساساً من الوالدين والتلفاز، وكذلك من الكتب والمعلمين والأصدقاء. وترى الأمهات أن المصادر الأكثر تأثيراً على المعارف التغذوية للتلاميذ هي إعلانات التلفاز، والوالدان، وزملاء الفصل. وزعم معظم التلاميذ أنهم يفضلون اكتساب معلوماتهم عن التغذية من الوالدين والتلفاز، أي البرامج والإعلانات الموجهة للأطفال.

ABSTRACT The nutritional education demands of primary-school children in Tehran were evaluated in a qualitative study, through 20 focus group discussions, 16 for children and 4 for mothers, among 128 children aged 6–11 years and 32 mothers in 8 primary schools in Tehran. Children knew about the advantages of different food groups, including helping digestion, growth and increasing intelligence. They obtained their knowledge mainly from their parents and television, as well as books, teachers and friends. Mothers thought the sources that had most effect on children's nutritional knowledge were television advertisements, parents and classmates. Most of the children claimed that they preferred to learn about nutrition from their parents and television, e.g. children's programmes and advertisements.

Enquête qualitative sur les connaissances des enfants des écoles primaires de Téhéran et de leurs mères en matière de nutrition

RÉSUMÉ Les besoins des enfants des écoles primaires de Téhéran en matière d'éducation nutritionnelle ont été évalués dans le cadre d'une enquête qualitative de groupe dirigé reposant sur 20 *focus groups*, à savoir 16 groupes d'enfants âgés de 6 à 11 ans ($n = 128$) et 4 groupes de mères ($n = 32$), issus de 8 écoles primaires de Téhéran. Les enfants connaissaient les avantages des différents groupes d'aliments, notamment ceux qui facilitent la digestion, ou ceux qui favorisent la croissance ou développent l'intelligence. Les sources de leur savoir étaient principalement leurs parents et la télévision, mais aussi les livres, les enseignants et leurs camarades. Les mères estimaient que les sources d'informations nutritionnelles ayant le plus d'impact sur les enfants étaient les publicités télévisées, les parents et les camarades de classe. La majorité des enfants a déclaré préférer s'initier à la nutrition auprès des parents ou à travers la télévision, grâce par exemple aux programmes pour la jeunesse et aux publicités.

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Introduction

Most chronic diseases in adulthood originate from nutritional habits, which are mainly formed during childhood [1,2]. Following a balanced nutritional regimen could have an important role in children's development, and consequently decrease the incidence of a number of diseases in adolescence. School age children spend more and more time away from their parents' direct supervision and many factors such as friends and media (especially TV) affect the formation and stabilization of their nutritional habits [3]. About 60% of 8–12-year-old children choose their own snacks, and this age group comprises 15% of the population in the Islamic Republic of Iran [4].

Using suitable ways of improving nutritional patterns and promoting the health quality of the diet should be a priority. There have been a number of studies showing how education programmes can influence nutritional behaviour and outcome in children [5–7]. In order to choose and plan an efficient programme, the first step is to recognize specific needs and existing nutritional problems. It has been shown that the knowledge of parents and children can affect the nutritional behaviour of children. Lay knowledge can have a real impact on children's health [8–11].

One important way to determine the needs of the target group is to conduct personal interviews or focus group discussions (FGDs). Unfortunately there are few accurate and successful nutritional education programmes at schools in the Islamic Republic of Iran, and the needs and interests of the child are not clearly specified. Using group discussion with children and mothers, this study was carried out to determine and evaluate the nutritional knowledge of primary-school children in Tehran.

Methods

This qualitative study was conducted in 2003 on children aged 6–11 years in 2 of the 19 educational districts in Tehran, districts 1 and 6. From a socioeconomic perspective, district 6 is a middle class area and is culturally homogeneous compared to other districts of Tehran, and is considered to be representative of the city as a whole. District 1 was selected as it is the only educational district in Tehran which includes accessible rural areas. The field work of the study was carried out over approximately 2 months, from October 19 to December 10, with a 1-month pause because of Ramadan (during this month Muslims abstain from eating during daytime, and this may change the usual pattern of food intake).

Eight primary schools (4 girls' and 4 boys') were randomly selected in each district. We asked the schools to explain the study and to invite children and mothers to participate. A total of 128 children (64 from district 1, and 64 from district 6) were enrolled, 32 boys and 32 girls in each group. Additionally, 32 mothers, 16 from each district, agreed to participate.

Appropriate questionnaire guides were designed based on the research objectives. The children's guide included the following points.

- How do children find out that a food is healthy or not?
 - What have they learned from these sources?
 - Do they follow the information they learn?
- What kind of information do children like to know about foods?
 - If someone were to teach these topics to the children, whom would they prefer to do it?

- Using which programmes and methods?
- Where?

The mothers' questionnaire guide covered the following points.

- What do children know about nutrition and what do they not know?
- Where does their existing knowledge usually come from?
- What sources have been most effective, and why?
- Which items are essential to teach to children?
 - Who should teach children these topics?
 - Where and how?

There were 2 research teams; each team consisted of 1 moderator, 1 or 2 observers and 2 nutritionists as note takers. The person selected as moderator was open-minded, flexible, a good listener, very interested in children, able to establish a rapport with them and make them feel relaxed and willing to talk. Before starting the fieldwork activities, a pilot group discussion was conducted in a girls' school to identify any inadequacies. Team members had already attended 2 workshops on managing a focus group discussion appropriately; one of these was held right before the study to update team members. The study counsellor, an epidemiologist who was an expert in qualitative research, supervised all stages of the study from the beginning to the end.

Every working day, 2 FGDs, 1 for girls and 1 for boys, were held separately at the same time in 2 primary schools. In order to best manage the discussions, separate sessions were organized for each sex and for each subgroup.

The fieldwork activities of this study consisted of 20 FGDs, 16 for children in 1st to 4th grades (8 from first and second

grades, 8 from third and fourth grades), and 4 for mothers, 2 of mothers of boys and 2 for mothers of girls. Each FGD was held with 6–10 participants and each session lasted 45–60 minutes. Before each FGD, the children and the mothers were assured that all data would be confidential. At the end of each FGD some gifts were given to the children, some booklets to the mothers and some to the school libraries.

The information from the 20 FGDs were analysed using the Krueger method. At the end of each FGD session, team members completed their notes, and then on the basis of the research objectives the notes were coded, analysed and classified. Although separate FGDs were conducted for boys and girls, the results are not presented by sex: they cover both boys' and girls' FGDs.

Results

The group discussion results amongst students' groups indicated that the children had learned about the advantages of milk and dairy products, fruits, meat and vegetables. They knew that these food groups were helpful for digestion, blood, increasing growth and intelligence and the fact that they were actually delicious. The students also recognized the vitamin, phosphorus and calcium contents of these food groups. They also knew about nutritive and energizing foods and foods containing proteins. Some children were familiar with the important role that a healthy nutrition had in their growth. They were also aware of the advantages of eating breakfast every day and of abstaining from overeating. Almost all children were well informed that crisps, puffed cereals, soft drinks and chocolate were harmful, may cause cancer, prevented growth and produced dental caries.

When the students were asked if they would adapt themselves to eating healthy food, they were all positive and only a few claimed they disliked milk and breakfast. Although they knew that gum and chocolate were not good, they carried on consuming them.

Overall, mothers claimed that children did not know anything about nutrition or had only a little knowledge. The result of the FGDs for some of the mothers, however, indicated that they considered that children's nutritional knowledge was good and they knew about milk, meat, fruit, vegetables and fish but they were not very familiar with soy bean, cereals and grains.

All the children obtained their knowledge from their parents and TV programmes such as children's programmes, family programmes, advertisements, news and educational programmes. Other sources of knowledge were books, teachers, friends, newspapers, doctors, schoolteachers and nutritionists. In the mothers' opinion, the factors that had the greatest effect on children's nutritional behaviour were TV advertisements, parents, family environment and classmates.

Nearly all the children were interested in learning the recipes of some foods (commercial or home-made), knowing about benefits of healthy food, fruits, wholesome and nutritive foods, and also about the foods containing phosphorus, iron, calcium, vitamins and proteins and finally about unhealthy foods. Some wanted to know about foods that helped their growth, milk and dairy products and energizing foods. One child wanted to learn which foods contained calcium and prevented osteoporosis.

Almost all the children claimed that they would prefer to learn about nutrition from their parents and television. The type of television programmes mentioned were children's programmes, advertisements

and educational and family programmes. Some indicated stories and science books, magazines, textbooks and newspapers as their choice of interesting teaching sources. Many indicated that school staff such as teachers, health trainers, doctors and nutritionists were their choice of interesting educational sources. A few named their friends and computer (health and nutritional Internet sites).

Most of the children were interested in learning about nutrition by direct conversational methods such as children's rhymes, while some preferred puppet shows, theatres, plays, and games. Others believed that posters and good teaching were the best methods to learn about healthy nutrition.

Discussion

The results of the group discussions indicated that the children were aware of food groups, the relation between foods and diseases, and that healthy food may increase their intelligence and help digestion and growth. A recent British study also showed that children understood the content of a balanced diet and the relationship between their diet and their health, both at present and in the future [12].

Almost all the children knew about the effects of unhealthy or harmful foods but they continued to consume some of them, indicating that their knowledge had not changed their practices. In other words, though a lot of children had good knowledge, their practices did not comply with healthy eating habits, a fact that is documented in other studies [13–16].

The mothers claimed that children knew little about nutrition although the children's results showed their general knowledge and attitude regarding nutrition was relatively satisfactory. This misinterpretation by the

mothers is probably due to the generation gap: mothers may still assume the general knowledge of their children is similar to their own childhood knowledge.

The children in this study obtained their nutritional knowledge mainly from their parents and television, but also from books and friends. A previous study among adolescents also showed that friends had an important role regarding acquisition of nutritional knowledge in children [14].

From the FGDs, it was clear that the children generally knew a great deal about food ingredients, nutritional values of food groups and food items, effects on health and disease, and recognizing healthy nutritive foods as well as unhealthy ones. A few were interested to know about the expiry date of food products, form or texture of foods and the reasons for mothers forbidding or encouraging certain foods. Mothers' group discussions focused on educating children how and when to eat, giving them proper knowledge about junk foods and fruits, food advantages and disadvantages, nutritional values and food composition.

Comparing the opinions of the children and the mothers, there was not much in common. Mothers were more interested in "advantages and disadvantages" and "rights and wrongs"; children were more interested in reasoning. They were anxious to learn about healthy and unhealthy foods and the process of digestion as well as the effects. They not only wanted to know which foods were better, but also the reasons. These are the topics that have not been adequately considered in our nutritional education system. Increasing knowledge would be very effective in changing attitudes: a Venezuelan study showed that children's knowledge affected the family's shopping patterns [17].

Group discussion findings show that both mothers and children believed TV

programmes were the most important and effective educational means. In fact, nowadays watching TV is an inevitable part of children's daily activities, and they constantly refer to it as an amusing, informative instrument. In practical terms, TV has a great capacity to educate since it has more real content in its programmes [18]. That is why it is referred to as the most powerful advertising medium [19] and can be very effective in changing children's nutritional behaviour. A study in 1992 showed that a considerable number of the foods requested by children were advertised on TV during the 6 previous months [20]. It is suggested that TV must be recognized as a major source of nutrition (mis)information. Nutrition-related information on TV could help nutrition educators aid their clients in making food choices more in line with current recommendations [21].

Advertisements also had a strong effect on children's nutrition knowledge and choices. A study in the Islamic Republic of Iran showed that there was a significant relation between recall of advertisements and food consumed in teenagers [22]. Other studies from the country showed that generally foods of low nutritional value were advertised for children's age group [22–24]. In addition, it is clear that nutrition educators need to advocate for healthy food advertisements and educate the advertisers to send accurate nutritional messages [21].

The results also indicated that children believed their parents were an important teaching source; this fact is verified in other research [25]. Another study showed parental involvement has become an integral part of the majority of school-based health education programmes [26]. Cognitive scores for kindergarten and first grade students were significantly higher in schools with parental involvement [27]. A follow-up indicated that a better quality diet was sus-

tained into pre- and early adolescence when parents received nutritional information.

School staff, especially teachers, were considered effective as well. One survey found that teachers who had taken nutrition courses and had greater nutritional knowledge showed more favourable attitudes towards teaching nutrition [28]. Therefore, considering school staff have an inevitable effect on children's nutritional behaviour, a more serious programme should be considered for teaching this important and effective group.

A few children also asked for more suitable books and textbooks, indicating that the current versions were not satisfactory. Only 1 child pointed to the Internet as a teaching instrument; this was expected since there is limited Internet coverage in most teaching centres in our country. Children also claimed that they would prefer entertaining educational programmes, e.g. with music and stories. Research on 6–11-year-olds has shown that they preferred interesting, innocuous and realistic programmes [29].

These findings indicate that our education system has not been entirely successful

in attracting children and some fields need to be reviewed more carefully. It is very interesting that children wanted to learn the contexts clearly, understandably and in a fun way in their own language. The children's emphasis on this problem indicates a lack of an appropriate relationship between children and teacher.

Conclusion

Children need to learn more about nutrition. They are eager to know about nutrition and the effect of different foods on health.

Students will need to be nutritionally literate consumers and competent decision-makers in future. The nutrition content of the school syllabus should be appropriate for each level in terms of cognitive development, and the effective domain should be addressed. Nutrition education programmes for younger children should not only include children but their parents as well, since this can enhance the initiation of behavioural change.

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Nutrition-Friendly Schools Initiative

The main aim of the Nutrition-Friendly Schools Initiative (NFSI) is to provide a framework for designing integrated school-based intervention programmes which address the double-burden (obesity and undernutrition) of nutrition-related ill health, building on and inter-connecting the on-going work of various agencies and partners. These include the FRESH Initiative, Essential Package (UNICEF/WFP), Child-Friendly Schools (UNICEF), Health Promoting Schools (WHO), School Food and Nutrition Education programmes (FAO) to mention just a few. NFSI applies the concept and principles of the Baby-friendly Hospital Initiative.

Improving the nutritional status of school-age children is an effective investment for the future generation. Pre-schools and schools offer many opportunities to promote healthy dietary and physical activity patterns for children and are also a potential access point for engaging parents and community members in preventing child malnutrition in all its forms (i.e. undernutrition, micronutrient deficiencies, and obesity & other nutrition-related chronic diseases).

Further information about NFSI is available at: http://www.who.int/nutrition/topics/nut_school_aged/en/index.html