

Testing habits and diet quality of schoolgirls

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ABSTRACT

Aim To examine the nutritional status, dietary habits, attitudes and knowledge about the importance of proper nutrition and physical activity, as well as raising awareness of the active effects of proper nutrition on the performance, their psychophysical activity and general health throughout further growth and development.

Methods The study was conducted by surveying 267 7–14 years old girls, participants of the Fun School Soccer tournament in Travnik during 2012. The survey contained 22 questions that were related to the ingrained habits, related to their diet which the participants anonymously filled in.

Results The results of the BMI showed that 94 (35.2%) students had a desirable body weight, 165 (61.8%) were thin and malnourished, and 8 (3%) had increased body weight. The average age of respondents was 13. Out of the total number of surveyed participants 11 (4.1%) never consumed sweets, 28 (10.5%) consumed less than once a week, 39 (14.6%) once a week, 67 (25.1%) 2–4 days a week, 41 (15.4%) 5–6 days a week, 36 (13.5%) once a day, every day, and 45 (16.9%) consumed sweets every day, several times a day.

Conclusion The results indicate the existence of problems related to malnutrition and malnourishment. The introduction of teaching contents and various workshops on healthy eating would ensure timely correction of poor eating habits, and provide the possibility of forming a positive attitude about physical activity, health and aesthetic problems that can arise from that.

Key words: Body Mass Index, dietary habits, physical activity, health promotion.

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INTRODUCTION

Modern way of life, with all the technological advances, has led to imbalance of natural eating habits. Food is consumed in a hurry, without special analyzing what you eat, it just creates a feeling of fullness depending on smell, color and quantity (1). Proper nutrition has always been argued, which brings health, improves mental capacity, longer life expectancy, increases strength and endurance (2). Children of school age are in an important period of the life in which the attitudes and practice related to diet are formed. Choosing a healthy diet during this period constitutes one of the key determinants of health and prevention of diseases in adult age (2). It is very important for children to ensure adequate intake of carbohydrates, proteins, fats, vitamins, minerals along with exemplary amount of water (3). Food should be appropriate to gender, age, genetics, constitution, habits, climatic and geographical conditions, as well as the environment in which the child lives (3). When planning the child's diet, it's necessary to follow two basic rules: the rule of diversity and the rule of right measures (4). Therefore, a child who takes various foods properly will not miss the proper amount of the macro- and micronutrients, and will meet the energy needs (4).

Monitoring the health of the population includes an assessment of nutritional status of certain population groups (5). Such studies allow identification of deficient condition and appearance of eating disorders and the assessment of risks to health (5). The results may serve as a starting point for creating nutritional and health policies of various programs, as well as improving nutrition at the local level (5). Particular importance is the monitoring of diet and nutritional status workshop, since these age groups are in the fastest period of growth and development, and are also a good indicator of nutritional status in the local community (5). Knowledge of the main determinants of energy and nutritional needs makes it easier to understand the implementation of recommendations for the children nutrition (6). If the diet does not provide sufficient amounts of energetic materials - carbohydrates and fats - there are signs of malnutrition (7).

The aim of this study was to examine nutritional status, dietary habits, attitudes and knowledge about the importance of proper

nutrition and physical activity, as well as the consciousness awakening of the active effects of proper nutrition on the performance, their psycho-physical activity and general health throughout further growth and development.

EXAMINEES AND METHODS

The study was conducted in August 2012 at the Stadium in Travnik. The survey was anonymous with the voluntary consents of the participants. During interviews with teachers who conducted trainings we got their consent to conduct surveys and anthropometric measurements. The research was based on a survey of 267 school girls and analysis of the questionnaire. The questionnaire consists of three parts: general information (place of residence, age, class, members of the household, employment of parents), eating habits (how often examinees had breakfast, number of snacks during the day, how often they have lunch and dinner), attitudes about nutrition (how often they eat or drink - fruit, vegetables, sweets, co-ca-cola, cheese, cereal)

Nutritional habit was evaluated on the basis of frequency of consumption in relation to the basic food groups (cereals and cereal products, fruits and vegetables, milk and dairy products, and meat and meat substitutes) as well as frequency-related habits of eating breakfast and lunch, as well as a basic meal (8).

Knowledge and attitudes were measured through the answers to the questions with more than one option - never, every day, only occasionally, weekends, only one.

In addition, the study included anthropometric measurements (measurement of weight and height), and the assessment of nutritional status by body mass index (BMI). Data were statistically analyzed.

RESULTS

Desirable body weight was found in 94 (35.2%) examinees, 165 (61.8%) were skinny or malnourished, seven (2.6%) were overweight, and one (0.4%) was in the category of obesity (Table 1). The average age of respondents was 13 years.

With regard to the question about the frequency of eating breakfast, 230 (86.1%) participants had breakfast daily, 30 (11.2%) sometimes ate breakfast, six (2.4%) had no breakfast, and one (0.3%) had breakfast on weekends

Table 1. Nutritional status of girls surveyed

Nutritional status	Body mass index (BMI)
Malnutrition	165 (61.8%)
Desirable body weight	94 (35.2%)
Overweight	7 (2.6%)
Obesity	1 (0.4%)

Table 2. Frequency of meals

Frequency of meals	No (%) of examinees		
	Breakfast	Lunch	Dinner
Never	6 (2.4%)	2 (0.8%)	5 (1.9%)
Every day	230 (86.1%)	243 (91%)	202 (75.7%)
Only occasionally	30 (11.2%)	22 (8.2%)	59 (22.1%)
Weekends only one	1 (0.3%)	0	1 (0.3%)

(Table 2).

Frequency of eating lunch and dinner among the participants was as follows: (0.8%) never had lunch, five (1.9%) never had dinner, 243 (91%) had lunch, and 202 (75.7%) had dinner every day, 22 (8.2%) and 59 (22.1%) had lunch and dinner, respectively, only sometimes, and one (0.3%) examinee had dinner only on weekends (Table 2).

Eleven (4.1%) participants in each had never consumed sweets and snacks, while 28 (10.5%) and 27 (10.1%) consumed sweets and snacks, respectively, less than once a week. Once a week 39 (14.6%) examinees had consumed sweets and 38 (14.2%) snacks, 2-4 days a week 67 (25.1%) had consumed sweets and 61 (22.8%) snacks. It was found that 41 (15.4%) of participants consumed candies 5-6 days a week, and 44 (16.5%) snacks. Once a day, 36 (13.5%) each day consumed sweets, and 33 (12.4%) snacks, 45 (16.8%) consumed sweets every day, several times, and 53 (19.9%) some snacks (Table 3).

From the question concerning the frequency of fruits and vegetables consumption within the total sample, it is evident that there were those who never consumed fruits, 37 (13.8%) never consumed cooked vegetables, while 30 of them (11.2%) never consumed fresh vegetables. Less than once a week, five (1.8%) examinees consumed fruits, 19 (7.2%), cooked vegetables, and 17 (6.4%) fresh vegetables. Once a week, 22 participants (8.2%) consumed fruits, 36 (13.4%), cooked vegetables, and 35 (13.1%). Of the total number of participants 2-4 days a week fruit was consumed by 60 (22.4%) participants, cooked vegetables by 68 (25.5%), and fresh vegetables by 51 (19.1%). Of the total number of participants, 24 (9.0%) consumed

fruits 5-6 days per week, 31 (11.6%) cooked vegetables, and 32 (12.0%) consumed fresh vegetables. Once a day 66 (24.8%) consumed fruits, 36 (13.5%) cooked vegetables, and 51 (19.1%) fresh vegetables. Every day, several times, 90 (33.8%) participants consumed fruit, 40 (15.0%), cooked vegetables, and 51 (19.1%) fresh vegetables (Table 4).

DISCUSSION

Eating habits can be affected by various unhealthy behaviors such as skipping meals (especially breakfast), the desirability of an ideal body weight and excessive tendency for foods with low levels of nutrients, high levels of sugar and fat (candy, sweet drinks, snacks and fast food) (9). Proper nutrition in adolescence contributes to cleaner and nicer skin, healthy hair, nails and teeth, which is perhaps more important in the youth than in other periods of life (10). Breakfast is the most important meal of the day, because it is preceded by a period of food shortage, when energy supplies are exhausted, and need to be supplemented, so a student could perform all obligations in the following day. In this study, 86.1% of participants surveyed had breakfast every day, 11.2% only sometimes 2.4% had never had breakfast, and 0.3% only had breakfast at weekends, while a research in Croatia indicated that 15% of

Table 3. Habit of eating sweets and snacks

Habit of consuming sweets and desserts	No (%) of examinees	
	Candy	Snacks
Never	11 (4.1%)	11 (4.1%)
Less than once a week	28 (10.5%)	27 (10.1%)
Once a week	39 (14.6%)	38 (14.2%)
2-4 days a week	67 (25.1%)	61 (22.8%)
5-6 days a week	41 (15.4%)	44 (16.5%)
Once a day, every day	36 (13.5%)	33 (12.4%)
Every day	45 (16.8%)	53 (19.9%)

Table 4. Habit of eating fruits and vegetables

Habit of consuming fruits and vegetables	No (%) of examinees		
	Fruits vegetables	Cooked vegetables	Fresh vegetables
Never	0 (0.0%)	37 (13.8%)	30 (11.2%)
Less than once a week	5 (1.8%)	19 (7.2%)	17 (6.4%)
Once a week	22 (8.2%)	36 (13.4%)	35 (13.1%)
2-4 days a week	60 (22.4%)	68 (25.5%)	51 (19.1%)
5-6 days a week	24 (9.0%)	31 (11.6%)	32 (12.0%)
Once a day	66 (24.8%)	36 (13.5%)	51 (19.1%)
Every day, several times	90 (33.8%)	40 (15.0%)	51 (19.1%)

participants did not have breakfast, and 6% had breakfast at weekends (11). During working days, 59% male students and 54% female students always had breakfast in some studies (12). Breakfast, especially the one rich in grains, is a good start for the new day, and contributes to better mood, attention, and achieving better school results (12).

This research has shown satisfactory results in the habit of eating breakfast, unlike neighboring states. The consumption of fruits and vegetables in the largest part of the youth in Croatia did not satisfy expert recommendations (12). Specifically, 66% of students did not eat fruit and 76% did not eat vegetables every day, while the girls eat more fruits and vegetables in all age groups (13). The same trend was observed also in other countries (14) as well as in this study, where there was no one who ever consumed fruits and vegetables.

According to a survey from Croatia, data on body weight indicated that 20% of participants were obese whereas in this study 61.8% were skinny or malnourished, but obese did not exist. In the United States and countries in Western and Southern Europe (15), the situation is similar as in Croatia, where obesity is a public health growing problem for adults, as well as in the childhood. (12,13,15)

In developed countries population eat a lot of fat, carbohydrates, especially sucrose sugars, protein and salt, therefore obesity appears as a serious disease (16). On the other hand, in the underdeveloped countries, the population is poor both in quality and the amount of

food, and there is evidence of mass malnutrition, as is the case in our study, and it endangers life (16). Unbalanced diet affects mental and physical retardation, and lack of certain nutrients appear in certain diseases (16). Regular nutrition does not only depend on material wealth, geographical disposition of the population, the climate, but rather of the total, particularly medical enlightenment of the people (16).

Introducing teaching contents about healthy nutrition in schools among students would facilitate well-timed correction of bad eating habits. It is very important that the younger population has high quality eating habits and that they are given the right choice of healthy nutrients. It is necessary to strengthen the training and correct attitudes and provide conditions and encourage sports recreation in order to achieve an environment in which young people are able to adopt positive attitudes and habits, which will ensure unhindered growth and development into psycho - physically stable and mature people, who are the basis of further progress. As a result of this study we obtained the basic information that can serve as a good starting point for the development of educational prevention programs in these areas.

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TRANSPARENCY DECLARATIONS

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Ispitivanje navika i kvalitete ishrane kod djevojčica školskog uzrasta

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SAŽETAK

Cilj Ispitati stanje uhranjenosti, prehrambenih navika, te stavova i znanja o značaju pravilne prehrane i tjelesne aktivnosti, kao i buđenje svijesti o aktivnom utjecaju pravilne ishrane na obavljanje svih njihovih psihofizičkih aktivnosti i opće stanje organizma kroz daljnji rast i razvoj.

Metode Istraživanje je sprovedeno anketiranjem 267 djevojčica, starosti od 7 do 14 godina, učesnica turnira zabavne škole nogometa u Travniku 2012. godine. Anketa je sadržavala 22 pitanja koja su se odnosila na usvojene navike vezane uz prehranu, a učesnice su je ispunjavale anonimno.

Rezultati Rezultati ITM-a pokazali su kako su 94 (35,2 %) učenice imale poželjnu tjelesnu težinu, 165 (61,8%) su bile mršave ili neuhranjene, a 8 (3%) povećanu tjelesnu težinu. Prosječna dob ispitanica bila je 13 godina. Unutar ukupnog broja anketiranih 11 (4,1%) učesnica nikada nisu konzumirale slatkiše, 28 (10,5%) manje od jedanput sedmično, 39 (14,6%) jedanput sedmično, 67 (25,1%) dva do četiri dana sedmično, 41 (15,4%) pet do šest dana u sedmici, 36 (13,5%) jednom dnevno, odnosno svaki dan, a 45 (16,9%) svaki dan, više puta dnevno.

Zaključak Rezultati istraživanja ukazali su na postojanje određenih problema vezanih za neuhranjenost i nepravilnu ishranu. Uvođenjem nastavnih sadržaja i različitih radionica o temi zdrave ishrane blagovremeno bi se omogućila korekcija loših prehrambenih navika i pružila mogućnost formiranja pozitivnog stava o tjelesnoj aktivnosti, te zdravstvenih i estetskih problema koji proizlaze iz toga.

Ključne riječi: indeks tjelesne mase, prehrambene navike, tjelesna aktivnost, unapređenje zdravlja