

RISK FACTORS IN THE NUTRITIONAL BEHAVIOUR OF TEENAGERS

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Received March 10, 2008

Teenagers tend not to be concerned about the future (Green, 1986) and about the long-run consequences of their lifestyle (Cardonier, 1998). Moreover, they consider themselves untouchable to illnesses, so that they do not pay much attention to preserving the "capital" of their health for the future.

According to Dubos Rene, "deterioration of the nutritional behaviour accompanies the economic progress" in terms of a "loss of the biological wisdom" that characterizes the human society. He sustains that there is no instinct for good nutrition, only a type of empirical learning, based on attempts and mistakes, from the experience accumulated in the subconscious, under certain circumstances. This type of "nutrition related" biological wisdom is lost as soon as the circumstances change or change too quickly. Education, as well as the growth of urbanization, weakened the authority of the customs and traditions for the present generations.

In this paper, the teenagers' nutritional behaviour represented the object of a questionnaire regarding the relation between knowledge, attitudes and habits related to nutrition, which affect the public health in the current socio-economic context.

The authors approached the issue of the family-teenager relationships, of the families' mistakes regarding the unhealthy nutritional behaviour and lifestyle of children and teenagers. We studied the lifestyle and the nutritional behaviour of children and teenagers in secondary schools (11-14 years old) and in colleges and high schools, for approximately 3,000 boys and girls as subjects.

It is estimated that about 40% of the death rate in the developing countries and 60-70% in the developed countries can be caused by lifestyle.

Teenagers are aware of the relation between nutrition habits and their health, they know what is right or not, but usually they act differently.

It is felt the lack of a "nutrition culture" that should include deeper knowledge about the influence of food on the nutritional health involved in the fight against malnutrition and obesity (and their effect on other degenerative diseases). It is necessary an education of the nutrition style that is not done either by parents or by school.

Smoking, alcohol consumption raise the long term risks of cancer, cardiovascular diseases, diabetes and many others, and yet, from a very young age, these habits tend to be more and more spread at teenagers.

The health programmes can be implemented in schools, with low costs, as they are based on an already existing infrastructure. School can provide nutritional education both for parents and for children. The paper shows that family plays a decisive role in the nutritional behaviour of children and that it represents a weak link in the education of the children's lifestyle.

Key words: Adolescence family; Behaviour; Nutrition; Education.

INTRODUCTION

The most serious problems of health and nutritional health are weight insufficiency due to malnutrition and overweight due to an energetic intake exceeding consumption.

The general strategy in adopting the interventions in nutrition should include promoting nutrition as an integrative part of promoting health, involving a healthy way of eating, physical movement, promoting breast feeding and self-respect.

Through the nutritional behaviour, we show ourselves in a balanced or unbalanced way as concerns food, exposing ourselves to serious risks for the nutritional health, such as weight insufficiency due to malnutrition and overweight due to an energetic intake exceeding consumption.

Nutrition is a biologic concept because it interferes in health and illness. It is a social concept connected to a basic lack in a context of poverty, of health insecurity and impossibility of obtaining food. It is also a cultural concept (it takes into account customs, rituals, taboos, that is a cultural pattern). The way of nutrition, the preferred types of food, the meals timetable represent nutritional behaviours.

Promoting nutrition means more than nutritional education as it involves also strengthening the teenagers' control on food and on food resources (food safety), improving their access to proper nutrition services, developing their nutrition related abilities, sustaining healthy lifestyle and eating patterns.

Even if adolescence is described in general as a period characterized by health, with a low frequency of infections and chronic diseases (Sandowitz, 1995), teenagers are very vulnerable to significant economic and social changes, leading to high risk behaviours for health.

The overweight variation at teenagers and the chronological development of the growing up process are mainly genetically determined for the population living in an environment that allows the total expression of the genotype.

If the health related factors limit this expression, the noticed growth and maturity (phenotype) reflect the environmental influence more than genetic heritage.

It is necessary to define a nutritional culture that should include knowledge about the influence of food on the nutritional health, involved in the fight against overweight and malnutrition that became endemic maladies.

In our paper, on a sample of approximately 3,000 subjects, teenagers between 11 and 18 years old of Bucharest, we studied a series of nutritional behaviours, trying to explain the "indifference" of the current generation of teenagers towards health and the health risks of the lack of culture and wrong behavior.

MATERIAL AND METHODS

The subjects were 3,000 boys and girls between 11 and 18 years old, studying in the schools in Bucharest.

There were taken into account certain anthropometric dimensions relevant for the somatic weight and it was calculated the Body Mass Index recommended by WHO that defines the normal weight and the variants with pathologic potential represented by the weight insufficiency and by excessive weight with obesity.

Defining these weight diagnoses was done by the percentile method.

For this study we used a questionnaire regarding the nutritional behavior and lifestyle of the underweight, normal weight and overweight teenagers, in order to observe children's unhealthy behaviours according to their physical condition. Mainly there could be noticed tendencies towards an improper nutritional behaviour in the case of the overweight children.

We started from the children's perception on their health, and then we went on with their pathologic antecedents. We approached the role of the family in developing certain unhealthy behaviours and we noticed a lack of family's involvement in the elements that compose the children's behavior, a kind of early "abandon" of their responsibility towards children.

We analyzed especially the items regarding the nutritional knowledge, abilities and habits that reveal the lack of nutritional education, both in case of children and of family and school.

THE ANALYSIS OF THE RESULTS

A first item regards the *teenagers' self-appreciation of their health*: in the case of the highschool boys between 15 and 18 years old: 16.88% of the overweight boys, 13.29% of those with normal weight and 10.84% of the underweight ones do not consider themselves healthy. In the case of the highschool girls 29.41% of the overweight girls, 23.83% of those with normal weight and 27.27% of the underweight girls do not consider themselves healthy.

The significant percentage differences suggest that girls have a negative perception of their health, in comparison with boys.

The teenagers' pathologic antecedents sustain the girls' negative perception of their health in comparison with boys (Table 1).

According to their declarations, teenagers consider that *bad food habits* can influence their health: in the case of boys: 90.91% of the overweight boys, 86.01% of those with normal weight and 87.95% of the underweight ones; in the case of girls: 94.12% of the overweight girls, 91.83% of those with normal weight and 83.25% of the underweight girls.

This item indicates an awareness of the relation between the teenagers' food habits and health.

We analyzed *the parents' financial situation*, which provide food safety to the children and teenagers and which is indirectly reflected in the care for the nutritional education in the family.

In the case of boys, it was revealed a good financial situation for 87.01% of the overweight boys, 90.68% of those with normal weight and 96.39% of the underweight ones.

In the case of girls it was registered a good financial situation for 91.18% of the overweight girls, 89.16% of those with normal weight and 85.17% of the underweight girls.

According to an elementary logic of the "atmosphere" offered by the family environment, it was conceived the item referring to *relations with the parents*. 77.92% of the overweight boys, 76.22% of those with normal weight and 74.70% of the underweight ones get along with their parents. The second possible answer was "no" for 6.49% of the overweight boys, 5.36% of those with normal weight and 3.61% of the underweight ones.

In the case of girls, 86.76% of the overweight girls, 79.52% of those with normal weight and 80.86% of the underweight girls get along well with their parents. 1.47% of the overweight girls, 5.09% of those with normal weight and 8.61% of the underweight girls do not get along well with their parents.

As concerns the *family health*, we took into account only the cardiovascular diseases, the overweight and the alcohol consumption in the teenagers' families (Table 2). We notice high "pathologic antecedents" in the case of grandparents.

The following items concern family as the main factor in the nutritional education and in providing nutritional safety for children and teenagers.

The first negative impact of the family, as regards the nutritional health and its consequence on the nutritional behaviour, is represented by *the pocket money offered to the children and the way it is used* (Table 3).

Teenagers between 15 and 18 years old did not want to reveal the amount of the pocket money, probably higher than in the case of the children of 11–14 years old – or the latter have richer parents.

These "other" expenditures cover alternative behavioural variants at least unhealthy, allowed only by the lack of involvement of the family in the teenager's lifestyle, favouring financially the frequent visits to fast-foods and bars where the process of socialization between those of the same age takes place.

Variations indicate an unhealthy behaviour, dangerous for the teenagers' health. If we analyze the variability of the nutritional habits we notice the following: almost all the food habits with risk for health tend to increase every year, sometimes

even with a double rate. There can be observed differences not always significant between the food habits of boys and girls. The teenagers with excessive weight (potentially overweight) have a frequency of bad food habits higher than the underweight teenagers and those with normal weight.

In the teenagers' obesity chain was proved the negative effect of the lack of breakfast on the overweight and the effect of not covering the nutritional necessities in the case of the underweight. It is known that this habit is also involved in obesity, as teenagers "complete" the calories with fast-food products, rich in fats and low in proteins.

Adolescence is a period of rapid growth: there are bone changes up to 45% and a growth between 15 and 25% of the height of an adult (Rees and Christine, 1989). During this period it is gained up to 37% of the total weight of the bones (Key, 1989). Although nutrition influences the growth and development of the new-born, then of the children and of the teenagers, the teenagers has the highest nutrition needs (Lifshitz, Tarim, Smith, 1993).

Nutrition is just an aspect of the health related behaviours and the relation between these ways of behaviour and chronic diseases is better determined by a "risk chain" (Kum *et al.*, 1997).

In this regard, the analyzed nutrition habits represent also risk factors of the children and teenagers' growth and development.

As concerns the habit of having breakfast, we analyzed a compensatory item that could become a later breakfast: the *packed snack* possibly prepared by parents or grandparents.

In the case of parents, this lack of care, especially when they have over or underweight children, can be explained by a lack of basic knowledge as regards the children's growth and education according to healthy principles.

Besides the unhealthy habits in the family, teenagers with pocket money also have a series of *harmful health habits*, such as smoking, alcohol consumption and replacement of the breakfast with coffee, starting when they are in the full process of physical and intellectual development.

The risks of these habits for health are well-known: long-term risks for cancer, heart and respiratory diseases. The problems caused by these bad habits can affect the judgment capacity and increase the risks of hurting both accidental or on purpose due to the spread of violence, which leads to increased teenagers' criminality.

Table 1

Teenagers' pathologic antecedents

Teenagers' pathologic antecedents	Boys			Girls		
	Underweight	Normal weight	Overweight	Underweight	Normal weight	Overweight
Cardiovascular diseases	2.41	1.86	2.60	3.35	2.95	7.35
Digestive disorders	1.20	3.50	2.60	5.74	6.56	4.41
Diabetes	2.41	0.47	0.00	0.00	0.40	0.00
Lung problems	9.64	4.66	5.19	4.31	4.02	11.76
Tooth problems	40.96	40.79	28.57	50.24	52.48	45.59

Table 2

Prevalence of cardiovascular diseases, overweight and alcohol consumption in the teenagers' families

Parents' antecedents	Boys			Girls		
	Underweight	Normal weight	Overweight	Underweight	Normal weight	Overweight
Cardiovascular diseases						
– of mother	9.64	6.53	7.79	10.05	10.17	11.76
– of father	12.05	9.56	11.69	7.66	7.23	10.29
– of grandparents	21.69	18.88	18.18	27.27	34.00	37.91
Excessive weight and obesity						
– of mother	2.41	6.29	6.49	3.83	5.89	11.76
– of father	2.41	5.83	11.69	6.22	4.02	13.24
– of grandparents	10.84	7.23	15.58	14.83	14.73	11.76
Alcohol consumption in the family	25.30	19.81	18.18	13.27	18.61	19.14

Table 3

Pocket money

Pocket money	11–14 year old boys			11–14 year old girls		
	Underweight	Normal weight	Overweight	Underweight	Normal weight	Overweight
no money	17.78	16.99	22.86	19.71	14.38	9.09
under 15 RON	19.44	16.16	14.29	20.00	18.58	15.91
15–50 RON	48.33	46.80	40.10	46.47	51.55	50.00
over 50 RON	14.44	22.86	13.82	13.82	15.49	25.00
	15–18 year old boys			15–18 year old girls		
yes	83.13	88.11	87.01	81.82	88.35	88.24
no	16.87	11.89	12.99	18.18	11.65	11.76

Table 4

Food habits as risk factors for teenagers' health

Items	Boys			Girls		
	Underweight	Normal weight	Overweight	Underweight	Normal weight	Overweight
Do not have breakfast						
11–14 years	8.89	9.79	12.86	6.18	14.60	25.50
15–18 years	14.46	19.58	24.68	20.57	24.90	35.20
Do not take a packed snack						
11–14 years	60.28	62.40	42.06	42.06	53.76	65.91
15–18 years	86.75	82.28	75.32	75.12	74.43	75.00
Eat fast-food products						
11–14 years	50.00	44.01	31.43	45.59	45.13	34.09
15–18 years	71.08	67.53	69.94	79.43	76.57	39.12
Do not drink milk						
11–14 years						
15–18 years	13.25	16.55	15.58	18.66	20.21	19.12
Do not eat fruit daily						
11–14 years	34.44	28.97	41.43	28.00	34.00	29.55
15–18 years	65.00	61.77	61.04	54.55	58.90	63.24

Table 4 (continued)

Do not eat meat daily						
11–14 years	63.24	61.73	70.45	56.67	55.15	58.57
15–18 years	67.47	66.90	74.03	44.50	48.33	51.47
Eat too many sweets						
11–14 years	46.94	43.73	30.00	48.19	49.42	44.16
15–18 years	91.41	46.20	29.55	61.24	53.13	64.71

Table 5

Self-image

11–14 year old boys

Item	Answer	Underweight		Normal weight		Overweight	
		N	%	N	%	N	%
1	yes	272	75.56	270	75.21	55	78.57
2	yes	111	30.83	146	40.67	31	44.29
3	yes	111	30.83	174	48.47	33	47.14
4	yes	22	6.11	79	22.01	40	57.14
5	yes	169	46.94	157	43.73	21	30.00
6	doctor	129	35.83	150	41.78	32	45.71
7	yes	70	19.44	83	23.12	20	28.57

11–14 year old girls

Item	Answer	Underweight		Normal weight		Overweight	
		N	%	N	%	N	%
1	yes	290	85.29	418	92.48	41	93.18
2	yes	155	45.59	233	51.55	21	47.73
3	yes	147	43.24	231	51.11	28	63.64
4	yes	34	10.00	184	40.71	37	84.09
5	yes	168	49.41	208	46.02	13	29.55
6	doctor	129	37.94	208	46.02	20	45.45
7	yes	87	25.59	116	25.66	15	34.09

15–18 year old boys

Item	Answer	Underweight		Normal weight		Overweight	
		N	%	N	%	N	%
1	yes	76	91.57	406	94.64	72	93.51
2	yes	21	25.30	154	35.90	28	36.36
3	yes	43	51.81	269	62.70	58	75.32
4	yes	4	4.82	44	10.26	28	36.36
5	yes	40	48.19	212	49.42	34	44.16
6	doctor	14	16.87	58	13.52	22	28.57
7	yes	18	21.69	94	21.91	16	20.78

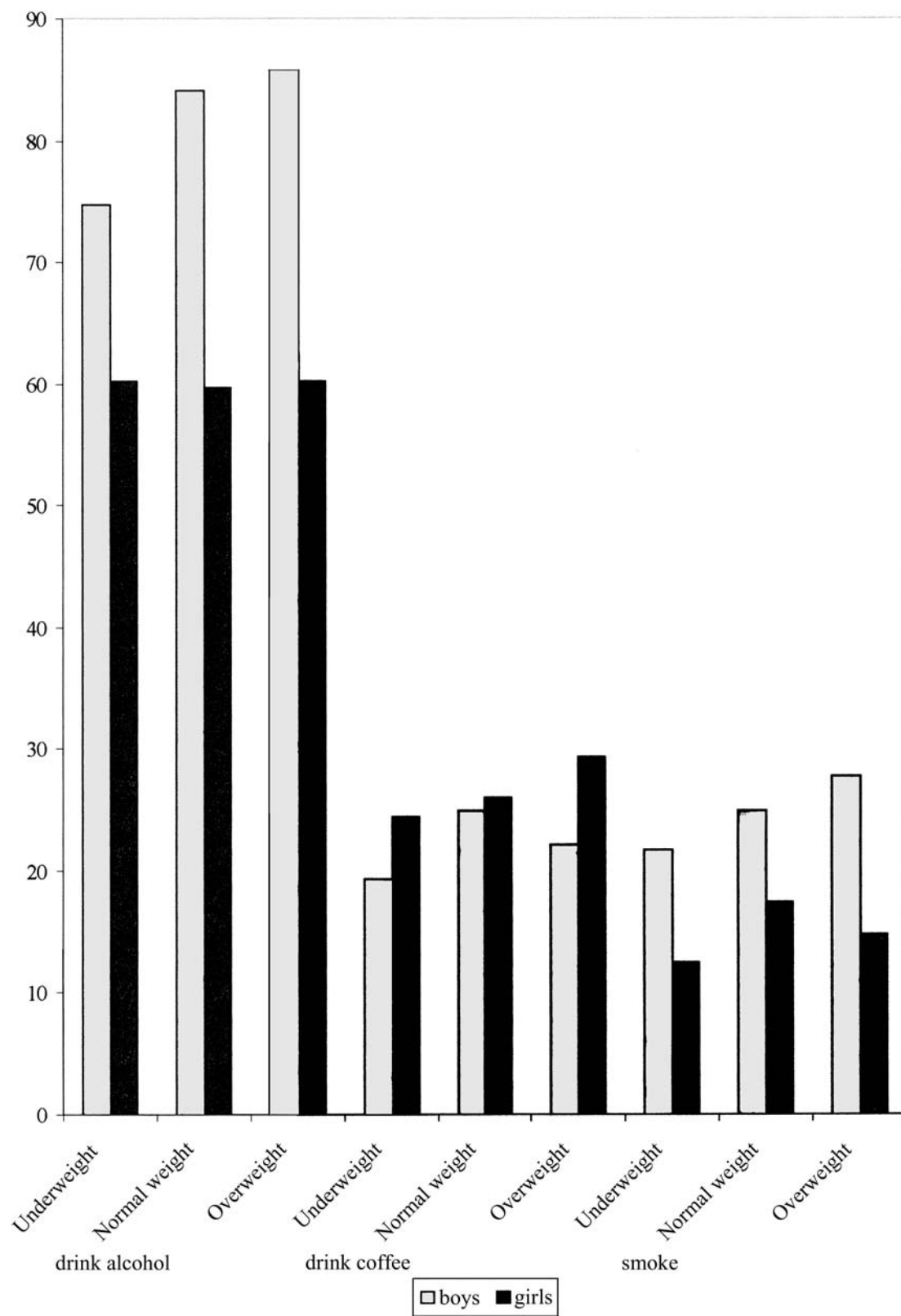
15–18 year old girls

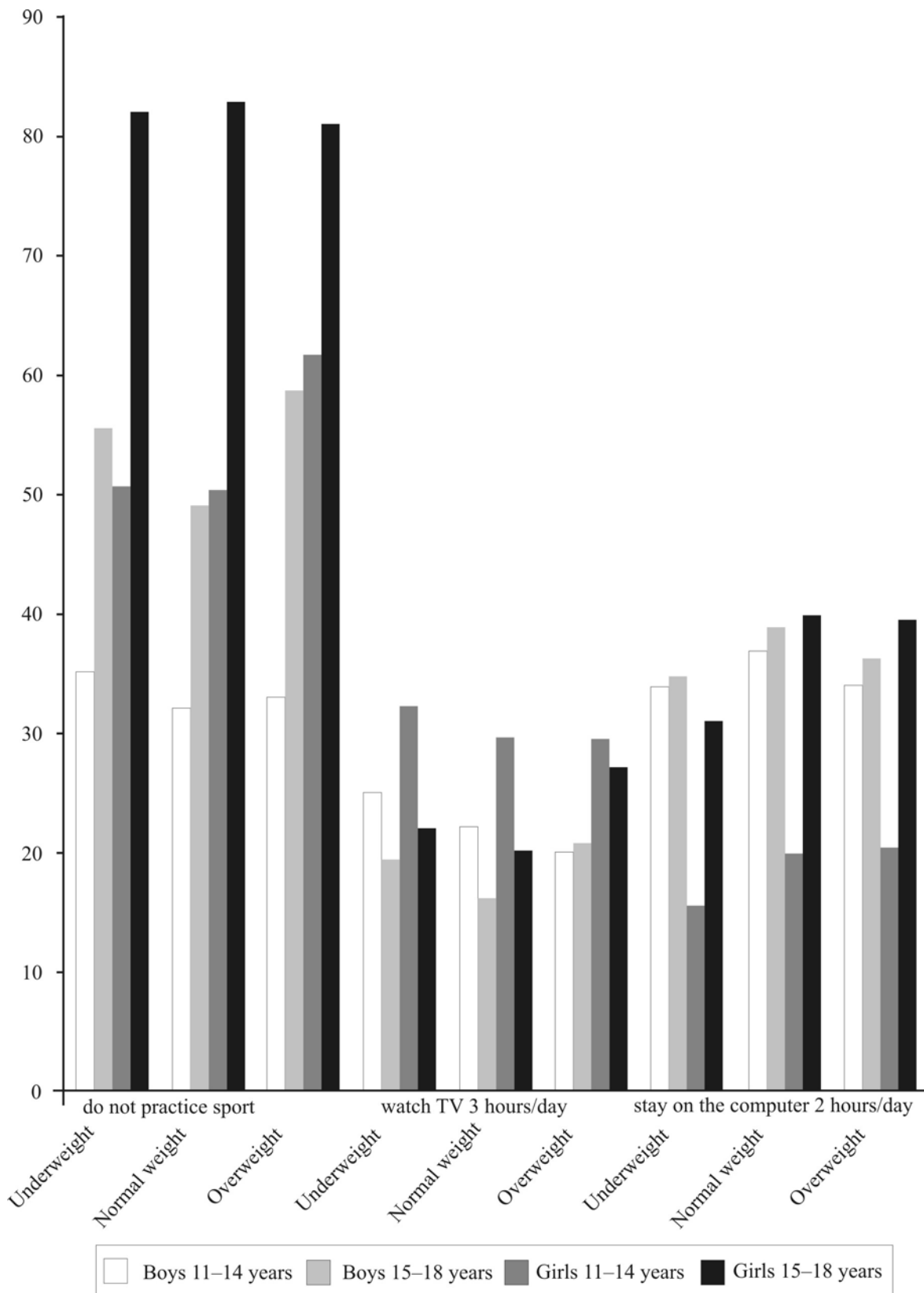
Item	Answer	Underweight		Normal weight		Overweight	
		N	%	N	%	N	%
1	yes	205	98.09	722	96.65	65	95.59
2	yes	84	40.19	368	49.26	28	41.18
3	yes	140	66.99	558	74.70	53	77.94
4	yes	33	15.79	284	38.02	40	58.82
5	yes	128	61.24	397	53.15	44	64.71
6	doctor	58	27.75	279	37.35	29	42.65
7	yes	51	24.40	217	29.05	23	33.82

Item explanation

1. Are you concerned of your look?
2. Do you regularly control your weight?
3. Do you know the weight you should have according to your height?
4. Have you ever gone on a diet?
5. Do you eat many sweets?
6. What information sources do you use when you decide to choose a diet?

Do you know the caloric value of food?





The analysis of the item relative to *outside school sports* shows the increase of the sedentary behaviour in the case of boys and girls between 11 and 18 years (Fig. 2).

We also approached the problem of the teenagers' *self-image*, starting from the idea that the own values, the cultural aspects of the perception of body dimensions can be important for explaining the nutritional attitudes and habits and the nutritional risk in adolescence. The body image and its distortion is a critical determinant for the bad food habits and for the nutritional risk in adolescence, especially in the girls' case.

The concept of "body image" has become synonymous with the physical appearance and is currently defined as composed of three elements: perception of the body size, a subjective component of satisfactions or dissatisfaction about the body and a behavioural aspect (Wood and Thompson, 1996).

The approach of this issue revealed the teenagers' lack of basic knowledge as regards the self-image and the tendency to have a sedentary lifestyle, as they dedicate little time to outside school sports.

Adolescence is a period of high vulnerability to the pressures of the society and of the others, enhanced by television and magazines, as teenagers are in the process of adapting their nutritional methods that can represent their food habits for the rest of their lives.

The impact on the behaviours with high risk for health suggests that the commercials have an active role in modeling the children and teenagers' nutritional characteristics.

Moreover, television has an important effect of two-three hours a day for watching and for computer games and this reduces the time for physical activity and reading.

As regards school involvement in promoting nutrition for teenagers, WHO suggested that schools should adopt a certain nutrition policy that should promote health nutrition by the means of "nutritional classes" and that should represent a support environment for these classes. At the same time, school should implement nutritional education starting from the pre-school up to the secondary school, as a part of an educational curriculum, in order to help students adopt healthy

food habits. The nutritional education should be relevant from a cultural point of view through activities involving students, containing strategies for future and engaging the family and community members.

It was revealed the fact that nutritional knowledge is little predictive when it comes to nutritional behaviour.

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