

Socio-economic factors influencing the nutritional behaviour of pupils

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ABSTRACT The purpose of the study was to evaluate the quality of morning nutrition of children in primary school, related to the residence environment and the family educational level. We included in our study 220 children in the age group 8-10, studying in urban and rural schools. They answered a 24-itemed questionnaire regarding their morning nutrition. Nutrition state, health state and school performance were evaluated. We found that 9.1% of all the children skip breakfast and midmorning snack. Most frequently they have margarine, salami, jam or cheese sandwiches and tea as breakfast. The free "milk and roll" are daily consumed by less than 45 % of the subjects. We did not find significant disorders in their nutrition and health state. Educational activities for a healthy nutrition are necessary.

KEYWORDS breakfast, educational level, residence environment

Introduction

The current nutritional habits of children and teenagers can have harmful effects on their health. The most often nutritional errors observed in these age groups refer to the exaggerated consumption of alcoholic drinks and fast-food products, which are detrimental to fresh vegetables and fruit, to other products rich in nutritional fibres, dairy products, and other products rich in calcium. The current lifestyle has added another nutritional error, that is skipping breakfast. Studies have proven that breakfast significantly contributes to a complete diet; persons who eat breakfast more often provide a balanced diet for themselves, both from energetic point of view, and from the point of view of the contribution of macronutrients, micronutrients and dietary fibres. In the case of school children, the benefits of breakfast are even more obvious: providing an optimal contribution of catalytic and calorogenic nutrients which are necessary for growth and development, maintaining normal ponderability, improving school performances [1, 2, 3].

In this context, our study has proposed to assess the quality of morning eating (breakfast and snack) in children from elementary grades, especially that, in accordance with the Emergency Ordinance no. 96/2002, as further amended and completed through the Law no. 16/2003, as further completed, pupils from 1st-8th grades from state education as well as pre-school children from state kindergartens with normal 4-hour schedule, received dairy and bakery products for free [4].

Material and method

Our study included 220 children with ages between 8 and 10 years, pupils from 3rd and 4th grades from cities (U) and villages (R). They were asked to answer a questionnaire with 24 items regarding their morning diet; questions referred to aspects regarding the hours they eat breakfast/morning snack and the products they eat (including the consumption of dairy and bakery products given in accordance with the Emergency Governmental Ordinance 96/2002), aiming at revealing the characteristics of these nutritional habits during the week and during free days (on Saturdays and on Sundays).

In order to determine the nutrition state of the children in the group, the body mass index (BMI) was determined based on the two somatometric indicators (height and weight) measured by the employees of the school medical consulting room / family medicine consulting room during the examinations. Pupils' health state was also determined by the school/family physician of studied communities.

The teachers coordinating the activity of the pupils from the classes included in the research provided us information regarding the family social and economic status and school performance of the studied pupils.

The statistic processing of results was made by determining the χ^2 test and Pearson correlation coefficient.

Results and discussion

Tables 1 and 2 render the structure of the batch of students included in the study taking into

consideration their gender and residence environment, parental educational level respectively. We notice the relatively homogeneous structure of the batch regarding subjects' gender and residence environment. In return, by considering parents' training level, we get unbalanced sub-batches from numeric point of view – most of the pupils (80 %) come from parents with an average training level.

Table 1. Statistical distribution of the pupils according to the gender and the residence environment

	Boys	Girls	Total		
Urban	70	58	128 (58.2 %)		
Rural	52	40	92 (41.8 %)		
Total	122 (55.45 %)	98 (44.55 %)	220		
	High education	Middle education	Elementary education	Illiteracy	Total
Urban	18	106	0	4	128
Rural	2	70	8	12	92
Total	20 (9.1 %)	176 (80 %)	8 (3.63 %)	16 (7.27 %)	220

Our attention is drawn by a case met in rural areas, where only two children live in an intellectual familial environment; other 20 children (21.70 %) seem deprived of a familial support in their school education, belonging to families whose educational level is minimum or even zero.

The statistic processing of the answers given by pupils to the questions of our questionnaire suggested several aspects that have especially drawn our attention.

1. During school days, a number of 20 children (9.1 %) – 12 from sub-batch U and 8 from sub-batch R – do not eat breakfast or the 10 o'clock snack, the first food products being eaten after noon, when the child comes back home, after finishing school classes. In other words, these pupils do not have any energetic and nutritional contribution during school hours, when their neuro-psyche demands are maximum. This is even more worrying, as it is most often seen in children with parents that have higher studies, who we expect to be more aware on the importance of little pupils' morning meals (figure 1): 10 of these children (50 %) leave home without having breakfast, and only 20% of them eat something during a break; the other 30% indicate the lack of nutrition during mornings. This suggests the idea that solving professional problems by parents (in order to get incomes that allow high living standards) becomes primary in

relation to other domestic tasks, including supervising the eating habits of the child. This possibility seems to be supported by the conclusion that at weekends, when parents are no longer/are less involved in their professional activity, all the 10 children have breakfast in the family [5].

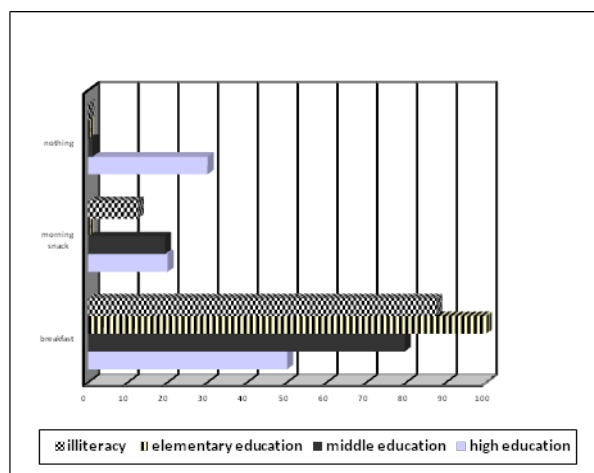


Figure 1. Statistical distribution of the pupils according to the food ingestion during the morning and to the educational level of their parents

At the same time, we do not have to neglect the fact that many of the children coming from modest families from social and economic point of view eat the “croissant and milk” offered for free to the pupils from state education (according to the Emergency Governmental Ordinance 96/2002), products that pupils coming from families of intellectuals eat rarely (an aspect that we will discuss later). We could therefore explain the lower percentage of pupils coming from modest families from social and economic point of view that have no meal in the morning: in reality, it is not their parents' concern, but rather the concern of governmental institutions that could be responsible for the presence of a snack in the morning in the case of children coming from disadvantaged families.

2. During school days, the structure of pupils' morning meal is dominated by the consumption of slices of bread and margarine, salami, jam or cheese and tea (figures 2 and 3). Very few children drink milk or eat dairy derivatives (yoghurt), as they come from families with higher/average education level or from families from rural areas, where milk is basic food, taking into consideration that animals are raised in their own households ($p < 0.01$). Besides the reduced consumption of this category of nutritional products (the main calcium source of the body,

also providing the optimal conditions for its absorption), we notice the absence of eggs (the best source of proteins) and vegetables and fruit – basically the main source of vitamin C as well as other numerous vitamins and mineral elements necessary in a balanced nutrition [6, 7, 8, 9].

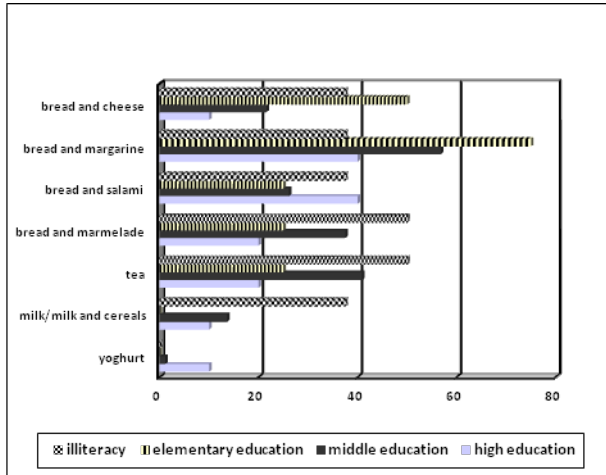


Figure 2. Statistical distribution of the pupils according to the structure of the breakfast in schooldays and to the educational level of their parents

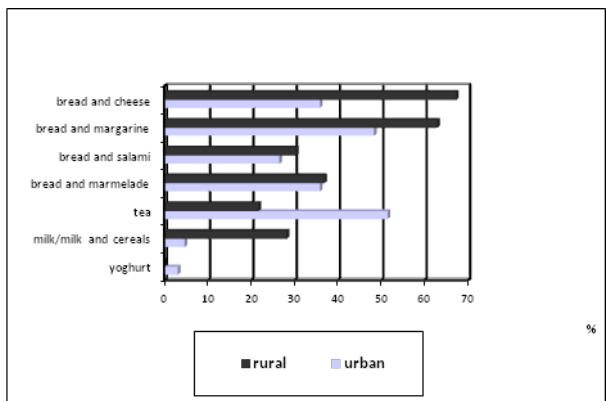


Figure 3. Statistical distribution of the pupils according to the structure of the breakfast in schooldays and to the residence environment

The structure of morning meals on Saturdays and Sundays is not very different from the one we have already mentioned: slices of bread and butter are this time as well first in children’s breakfast. We notice a higher consumption of dairy derivatives ($p < 0.01$), as well as the preference for eggs (mainly in rural areas, where eggs come from their own household – 45.65 % vs. 29.69 %, $p < 0.01$), and cooked meals (15.22 % vs. 17.19 %).

3. The answers given by children to the questions regarding the consumption of dairy and bakery products given according to the Governmental Emergency Ordinance 96/2002 have led to the results presented in figures 4 and 5.

“The croissant” – the most frequently distributed bakery product among pupils is eaten daily only by 35.94 % of the pupils from urban areas and by 43.48% of the pupils from rural areas. Often, the croissant which is left uneaten is offered to the classmates/family members (little brothers or sisters or grandparents) or it is used for preparing sandwiches in the family. Biscuits (bakery products sometimes offered as substitutes for croissants) have had a bigger success among children, being eaten by 57.81 % vs. 80.43 % of the subjects.

The situation is similar in the case of “milk” as well – the dairy product most frequently distributed among pupils; it is drunk daily by even smaller percentages of children – 15.63 % of the pupils from urban areas and by 28.26 % of the pupils from rural areas. In this case as well, the milk which is not drunk is offered to classmates or to family members or it is used for making cakes. When it is provided as a substitute for milk, sour cream has been appreciated more by children, being eaten by 92.18 %, 86.95 % respectively of the subjects.

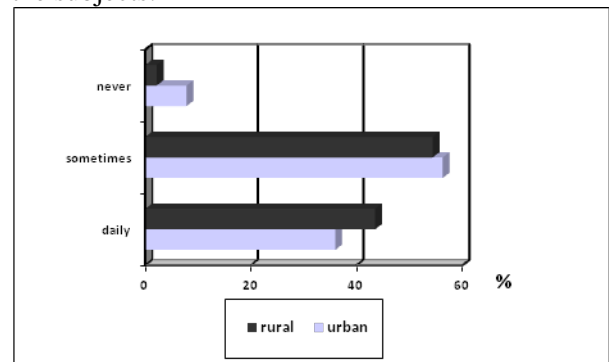


Figure 4. Statistical distribution of the pupils according to „the croissant” consumption in schooldays and to the residence environment

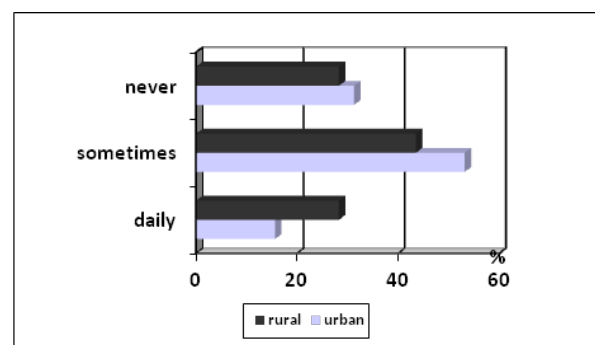


Figure 5. Statistical distribution of the pupils according to the milk consumption in schooldays and to the residence environment

The calculation of BMI has identified the presence of three overweighted children in the

batch, without their answers to the questionnaire reveal significant differences between their nutritional preferences and the preferences of the other subjects.

The determination of pupils' health state based on the primary records from school consulting rooms/ family medicine consulting rooms has indicated a good health state of subjects, mortality rate being within the average ranges for this age group.

Our study has not revealed any statistic correlations between the quality of morning nutrition and school performances of the subjects included in the study.

Conclusions

In our batch, 9.1 % of the pupils take part in the instructive-educative process in the morning without eating breakfast or a snack during breaks. Although our results do not indicated significant alterations of school performances or of these pupils' health state, the health related potential of eating breakfast for pupils cannot be neglected. It is very important that the meals in the morning provide children an energetic and nutritive contribution adequate to their age, a contribution provided by whole cereals, fresh fruit and vegetables, dairy products and meat products with low content of lipids. Parents can play an important role in planning and serving breakfast within the family [10-12].

Breakfast has to be considered an important part within a global preventive strategy meant to reduce the risks for children and teenagers' health. Along with healthy nutrition, this strategy has to include the decrease/removal of other components of their living style that could have a negative impact on their health (the consumption of cigarettes and alcohol, sedentariness, etc) [13-15].

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