

ASSESSMENT OF THE FREQUENCY OF SNACK AND BEVERAGES CONSUMPTION AND STIMULANTS INTAKE IN CHILDREN GROWN UP IN ORPHANAGES IN KRAKOW

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ABSTRACT

Background. Childhood is a particular period of life, when nutritional habits are emerging, so much attention should be paid to proper dietary habits, which become a nutritional pattern copied in the future.

Objective. The aim of this study was to evaluate selected dietary habits and preferences in a group of children living in Krakow orphanages (supervising by the Social Welfare Centre in Krakow), by assessing the frequency of snacks and beverages consumptions as well as an intake of beverages with caffeine, alcohol and smoking cigarettes.

Material and methods. Studies were performed in the years 2007-2008 in five orphanages located in Krakow. 181 children, 9 to 20 yrs of age, participated in this study. Assessment of dietary habits and preferences was performed based on anonymous questionnaire which included questions about snacking frequency, favorite and most frequently drank beverages without or with caffeine, alcohol and cigarettes smoking.

Results. The analysis of nutritional habits showed that the most popular high-calorie snacks were eaten by the youngest children. Children and adolescents asked for the most commonly consumed beverages indicated on fizzy drinks and fruits juice. Among the youngest children (9-12 years old), 5% reported drinking alcohol, 10% of boys smoked cigarettes, 10% of girls and 21% of boys drank coffee. Among the oldest respondents, about 35% declared drinking coffee, 39% girls and 65% boys declared smoking cigarettes, whereas drinking alcohol reported 22 and 38% subjects, respectively.

Conclusions. Results obtained in this study, indicate the necessity of intervention, consisting on running training courses and workshops of the assessed population, i.e. children, adolescents and instructing their educators.

Key words: *nutritional habits, food frequency, children, orphanages*

STRESZCZENIE

Wprowadzenie. Dzieciństwo jest szczególnym okresem dla kształtowania zwyczajów żywieniowych, dlatego ważne jest, aby zadbać o prawidłowy sposób odżywiania dzieci, który staje się wzorcem w przyszłości.

Cel. Celem przeprowadzonych badań była ocena zwyczajów i preferencji żywieniowych dzieci przebywających w domach dziecka na terenie Krakowa, w zakresie częstotliwości spożywania przekąsek i napojów oraz stosowania używek typu kawa, alkohol i papierosy.

Material i metody. W badaniach, które przeprowadzono w latach 2007-2008, uczestniczyło 181 wychowanków w wieku 9-20 lat przebywających w pięciu domach dziecka zlokalizowanych na terenie Krakowa, będących pod opieką Miejskiego Ośrodka Pomocy Społecznej. Oceny zwyczajów i preferencji żywieniowych dokonano na podstawie badań z wykorzystaniem anonimowego kwestionariusza, zawierającego pytania dotyczące częstotliwości pojadania przekąsek, najczęściej spożywanych napojów oraz korzystania z używek tj. kawy, papierosów i alkoholu.

Wyniki. Analiza preferencji żywieniowych wykazała, że wysokokaloryczne przekąski spożywały najczęściej dzieci najmłodsze. Napoje gazowane oraz soki owocowe najchętniej spożywały zarówno dzieci jak i młodzież. Wśród młodzieży ze starszych grup wiekowych stwierdzono wysoką częstotliwość korzystania z używek. Spośród najmłodszych dzieci (9-12 letnich) 5% deklarowało picie alkoholu, 10% chłopców palenie papierosów, 10% dziewcząt i 21% chłopców picie kawy. W najstarszej grupie wiekowej 35% ankietowanych deklarowało picie kawy, 39% dziewcząt i 65% chłopców palenie papierosów i 22% dziewcząt i 38% chłopców spożywanie alkoholu.

Wnioski. Wyniki badań wskazują na konieczność podjęcia działań interwencyjnych polegających na prowadzeniu specjalnych szkoleń i warsztatów dla dzieci i młodzieży oraz udzielaniu wskazówek ich opiekunom.

Słowa kluczowe: *zachowania żywieniowe, częstotliwość spożycia, dzieci i młodzież, domy dziecka*

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INTRODUCTION

Snacking between main meals, particularly products rich in simple sugars, sucrose, rapidly digestible starch and salty snacks, is regarded as nutritional mistakes of children and adolescents. Snacking frequency along with type of the food eaten play a crucial role when is used for assessing dietary habits. The scientific results indicate on an occurrence of beneficial metabolic effects after more frequent intake of meals volumetrically smaller; although, if the food volume is not monitored, the excessive amounts of energy may be supplied to the organism that in turn may lead to the prevalence of overweight and obesity [10].

Prevention is targeted to the population under 18 yrs. Such action, aimed at modifying dietary habits, and enhancing physical training, may lead to measurable and beneficial social consequences, chiefly by reducing medical costs associated with the treatment of the diet-related diseases as well as with economic effects of disabilities and the premature mortality [1].

Orphanages are responsible not only for psycho-physical development of children and adolescents, but also for assuring them proper life conditions. Being the institutions compensating the child for lack of the family home they should also provide it with pro-health education including dietary habits. Children and teenagers belong to the group, which is highly exposed to the effects of unhealthy nutrition; therefore, it seemed reasonable to undertake studies targeted at the group of children and adolescents fostered in orphanages.

The aim of this study was to evaluate dietary habits and preferences in a group of children living in orphanages located in Krakow (supervising by the Social Welfare Centre in Krakow), by assessing the frequency of snacks and beverages consumptions as well as an intake of beverages with caffeine, alcohol and smoking cigarettes.

MATERIAL AND METHODS

Study was performed in children who were growing up in five orphanages in Krakow, which are supervising by the Social Welfare Centre in Krakow. Questionnaire surveys of 181 individuals, ranging in age from 9 to 20 years, was carried out in the years 2007-2008, to assess their nutritional preferences. Gender and the age were two differentiating factors for grouping the entire population. In a female group, comprising 46% the whole population, there were 89 individuals including: 20 girls ranging in age from 9 to 12 yrs; 41 adolescents aged 13-16; and 23 aged 17-20. A male group, comprising 54% the entire population, was divided into the following

sub-groups: 19 boys aged 9-12; 49 adolescents aged 13-16; and 29 ranging in age from 17 to 20 yrs.

Nutritional habits and preferences were assessed with an anonymous questionnaire, developed at the Department of Human Nutrition at the University of Agriculture in Krakow, with questions suitable for the respondents' age. Respondents of this survey were ensured about the discretion and about using obtained information exclusively for research purposes.

In the entire population, statistical analysis by gender and age has been applied using the *Chi square* test (at the probability level of $p < 0.05$) for differences in the percentage of answers to the individual questions. The Statistica 9.0 (StatSoft, Inc., Tulsa, OK, USA) program and the EXCEL calculation sheet were applied for all calculations.

RESULTS

Snacking frequency

The girls, 9-12 years old, declared that they had consumed few times a week the sweet products: buns, chocolate bars, ice-creams and candies. Chewing gum drops and chocolates were eaten less than once a month. Fruit and vegetables and dairy products were consumed every day. For their male counterparts, candies and chocolate bars were the favorite daily eaten products. Buns were consumed several times per week, while chewing gums and gumdrops several times per month.

The „fast-food” type products such as pizza, hamburger, and grilled sandwiches were consumed by a considerable number of adolescents once a month, while chips were eaten several times a week.

The statistical analysis conducted using the *Chi²* test revealed that for many products, both sweet and salty, gender-related differences in snacking frequency were statistically significant. Girls (the percentage of which was significantly higher than boys) declared that they did not eat candy bars, wafers, candies and puff snacks at all, while boys more often excluded from their diet the „fast-food” type products (Table 1).

Older girls (13-16 yrs old) consumed more commonly ice creams, candies, chewing gums and fruits. It has been observed that in girls at this age, compared to their younger counterparts, the proportion of “everyday” responses was lower, while in terms of the “several times a week/months” option was higher. Fruits were eaten daily and several time a week, whereas yoghurts and cheeses were consumed as snacks only several times a month. In a group of boys aged 13-16 yrs, only candies were most often declared to be eaten daily as a snack. Male respondents ate several times per week: buns, candy bars, wafers, ice-creams, chewing gums, and chocolates. In comparison with a previous age group,

Table .1. Percentage of answers of children concerning to the question „Which snacks do you consume most frequent?“

SWEET SNACKS	9-12 yrs		13-16 yrs		17-20 yrs		SALTY SNACKS	9-12 yrs		13-16 yrs		17-20 yrs	
	G	B	G	B	G	B		G	B	G	B	G	B
1. Sweet buns	† / ††	†	††				1. Pretzels	†				††	
every day	10.0	26.3	4.9	20.4	4.9	20.4	every day	25.0	21.1	19.5	24.5	4.3	17.2
several times a week	50.0	26.3	22.0	51.0	22.0	51.0	several times a week	30.0	21.1	31.7	22.4	21.7	24.1
several times a month	35.0	42.1	63.4	22.4	63.4	22.4	several times a month	40.0	47.4	39.0	49.0	47.8	41.4
at all	5.0	5.3	9.8	6.1	9.8	6.1	at all	5.0	10.5	9.8	4.1	30.4	17.2
2. Chocolate bars, wafers	††	†					2. Chips	† / ††	†			††	
every day	20.0	36.8	14.6	28.6	14.6	28.6	every day	10.0	31.6	19.5	24.5	17.4	10.3
several times a week	55.0	31.6	53.7	49.0	53.7	49.0	several times a week	45.0	47.4	31.7	40.8	39.1	48.3
several times a month	10.0	31.6	22.0	18.4	22.0	18.4	several times a month	35.0	15.8	39.0	26.5	39.1	24.1
at all	15.0	0.0	9.8	4.1	9.8	4.1	at all	10.0	5.3	9.8	8.2	4.3	17.2
3. Ice creams		†	††		††		3. Nuts	††	††				
every day	20.0	36.8	29.3	18.4	29.3	18.4	every day	5.0	10.5	7.3	12.2	4.3	3.4
several times a week	40.0	47.4	36.6	61.2	36.6	61.2	several times a week	20.0	36.8	29.3	22.4	26.1	27.6
several times a month	40.0	15.8	31.7	18.4	31.7	18.4	several times a month	70.0	26.3	48.8	51.0	47.8	55.2
at all	0.0	0.0	2.4	2.0	2.4	2.0	at all	5.0	26.3	14.6	14.3	21.7	13.8
4. Candies	†/††				††		4. Sticks	† / ††	†				
every day	40.0	42.1	29.3	38.8	29.3	38.8	every day	30.0	21.1	12.2	20.4	13.0	6.9
several times a week	50.0	26.3	39.0	34.7	39.0	34.7	several times a week	50.0	26.3	29.3	38.8	26.1	17.2
several times a month	5.0	31.6	26.8	20.4	26.8	20.4	several times a month	10.0	42.1	48.8	30.6	43.5	55.2
at all	5.0	0.0	4.9	6.1	4.9	6.1	at all	10.0	10.5	9.8	10.2	17.4	20.7
5. Chewing gums	†	†			††		5. Sunflower seeds	†	†			††	
every day	35.0	31.6	31.7	34.7	31.7	34.7	every day	15.0	10.5	7.3	16.3	4.3	0.0
several times a week	25.0	21.1	36.6	38.8	36.6	38.8	several times a week	15.0	10.5	14.6	18.4	13.0	3.4
several times a month	40.0	42.1	22.0	18.4	22.0	18.4	several times a month	35.0	47.4	53.7	51.0	56.5	72.4
at all	0.0	5.3	12.2	8.2	12.2	8.2	at all	35.0	31.6	24.4	14.3	26.1	24.1
6. Gam drops	† / ††	†					6. Pizza	† / ††	†	††			
every day	20.0	21.1	9.8	14.3	9.8	14.3	every day	10.0	26.3	9.8	18.4	8.7	10.3
several times a week	35.0	31.6	36.6	26.5	36.6	26.5	several times a week	0.0	15.8	24.4	36.7	13.0	17.2
several times a month	45.0	31.6	43.9	49.0	43.9	49.0	several times a month	75.0	36.8	56.1	40.8	52.2	58.6
at all	0.0	15.8	9.8	10.2	9.8	10.2	at all	15.0	21.1	9.8	4.1	26.1	13.8
7 Yoghurts , cheeses	† / ††	†			**		7. Puff snacks	†	†			††	
every day	15.0	21.1	14.6	30.6	14.6	30.6	every day	20.0	15.8	14.6	22.4	4.3	17.2
several times a week	65.0	26.3	36.6	38.8	36.6	38.8	several times a week	30.0	42.1	41.5	28.6	26.1	24.1
several times a month	15.0	31.6	41.5	24.5	41.5	24.5	several times a month	30.0	26.3	29.3	38.8	34.8	37.9
at all	5.0	21.1	7.3	6.1	7.3	6.1	at all	20.0	15.8	14.6	10.2	34.8	20.7
8. Chocolate	† / ††		††		††		8. Burgers	†/††	†	††		††	
every day	20.0	21.1	12.2	30.6	12.2	30.6	every day	10.0	15.8	9.8	14.3	17.4	13.8
several times a week	30.0	57.9	31.7	44.9	31.7	44.9	several times a week	0.0	5.3	17.1	30.6	4.3	37.9
several times a month	50.0	15.8	48.8	16.3	48.8	16.3	several times a month	65.0	47.4	48.8	51.0	52.2	31.0
at all	0.0	5.3	7.3	8.2	7.3	8.2	at all	25.0	31.6	24.4	4.1	26.1	17.2
9. Fruit	†		††				9. Grilled sandwiches	††	†	††		††	
every day	55.0	52.6	41.5	46.9	41.5	46.9	every day	5.0	26.3	9.8	20.4	4.3	17.2
several times a week	25.0	26.3	46.3	28.6	46.3	28.6	several times a week	20.0	21.1	26.8	34.7	17.4	37.9
several times a month	15.0	15.8	12.2	18.4	12.2	18.4	several times a month	70.0	42.1	39.0	38.8	56.5	27.6
at all	5.0	5.3	0.0	6.1	0.0	6.1	at all	5.0	10.5	24.4	6.1	21.7	17.2

G - Girls, B – Boys

†- statistically significant differences ($p \leq 0.05$) between percentage of respondents dependent on age of girls or age of boys

†† - statistically significant differences ($p \leq 0.05$) between percentage of respondents dependent on gender

the percentage of boys who reported eating fruits with a daily consumption (“everyday”) as well as yoghurt and cheeses with weekly consumption (“several times per week”) increased considerably.

It has been found that the salty snacks’ were usually eaten several times per month; in an opinion of respon-

dents the most popular products were chips, pretzels and sticks. In the assessed age group the percentage of “never” responses markedly elevated that may be interpreted as a positive result.

In the oldest group of adolescents, a fall in the percentage of “everyday” responses has been noticed once

again that was accompanied by a rise observed in the „several times per week/month” option in younger age groups. 40% of both boys and girls everyday consumed fruits, while daily consumption of yoghurts was reported by 38% of boys and only 9% of girls. The percentage of respondents who declared eating the „fast-food” type products several times per month was similar. A total number of „never” responses increased compared to a younger age group that in the case of fruits or yoghurts only can make someone feel anxious.

The statistical analysis revealed that age of girls had a significant ($p < 0.05$) effect on consumption frequency of the products investigated. Consumption of a majority of products, listed in a questionnaire, was decreasing with the respondent's age, the only exception being hamburgers, which consumption was increasing in older age groups. Similar results were observed for boys, who with age consumed significantly less seldom most of the examined snacks except for buns, chewing gums and yoghurts eaten by older respondents more frequently (Table 1).

Preferences referring to a favourite beverage

Figures 1, 2 and 3 illustrate, in individual age groups, the percentage of responses to the questions relating to the most willingly consumed beverages. With regard to this question multiplied choice was allowed. Fizzy drinks were the most popular beverages in all ages group participating in this study (Figure 1A, 1B and 1C) but their popularity decreased with age. A lower percentage of children aged 9-12 have drink fruits juice, mineral water, milk and cocoa. These products were consumed most frequently by an oldest age group.

The Chi^2 test confirmed that the age was a significant factor ($p < 0.05$) affecting the choice of fruits juice, sweet fizzy beverages and milk (among girls) and mineral water, fruits juice, fizzy drinks and tea (among boys). With age, girls preferred more rarely sweet fizzy drinks and milk to the benefit of fruits juice. Among boys, an

interest in sweet fizzy drinks was decreasing with age accompanied by growing simultaneously an interest in mineral water, fruits juice and tea.

Frequency of drinking coffee, alcohol and smoking cigarettes

The highest percentage those who commonly avoid coffee, cigarettes and alcohol were noted in the youngest age groups (Figure 2). The smallest number of young people who avoided taking stimulants was recorded in a group of 13-16-year-olds, about 65% of the surveyed admitted to taking stimulants. Answers to the question discussed revealed that teenagers' willingness to take stimulants was rising with age.

Frequency of stimulants intake was increasing with respondents' age ($p < 0.05$) depending on age of girls and boys. At the same time, the percentage of girls, who reported taking stimulants, was statistically significant compared to boys in the youngest age group.

It has been found that $\frac{1}{4}$ girls and $\frac{1}{3}$ boys in age 9-12 year-olds, declared that they had contact with cigarettes and natural coffee. In older groups this percentage increased respectively to ~50 and over 75% (13-14 yrs) and 60% and 80% (17-20 yrs).

The Chi^2 test proved relationships ($p < 0.05$) of the age of female respondents with their first attempt to smoking cigarettes as well consumption of coffee. The percentage of respondents who were taking these products in the past was significantly increasing with age. Moreover, the percentage of girls who continued smoking, coffee and alcohol drinking with age was statistically higher. Boys, in turn, had statistically ($p < 0.05$) more frequent contact with coffee, alcohol, and cigarettes smoking. Age had a statistically significant effect on the continuation of these products' consumption. It has also been observed that the higher percentage of boys than girls reported smoking cigarettes and drinking alcohol (13-16 yrs).

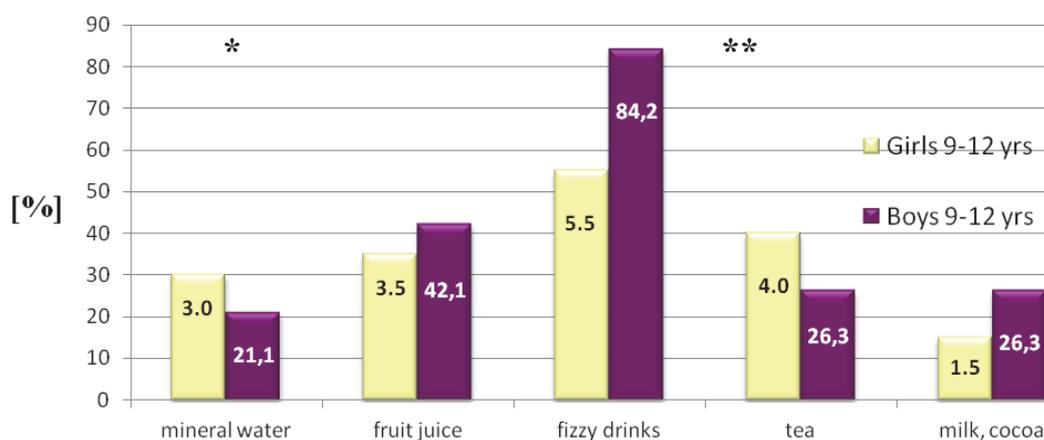


Figure 1A. Percentage of responses to the question concerning beverages preferences in assessed children and adolescents aged 9-12.

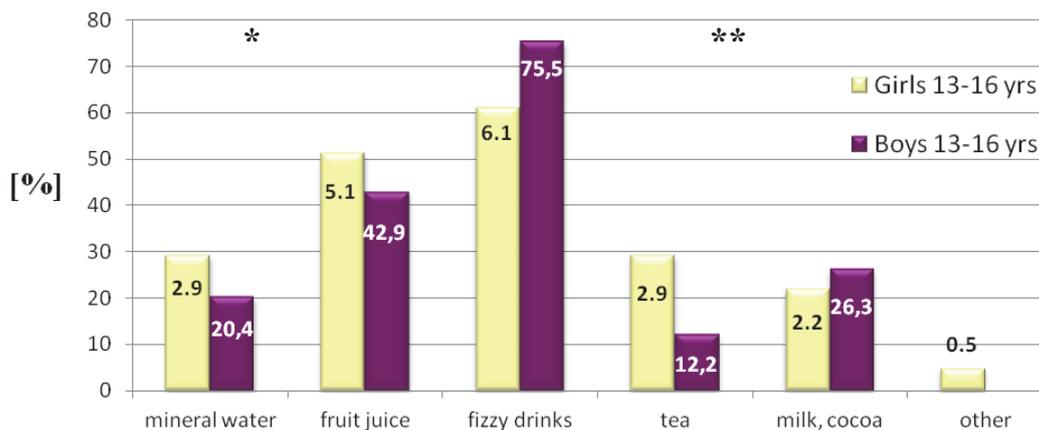
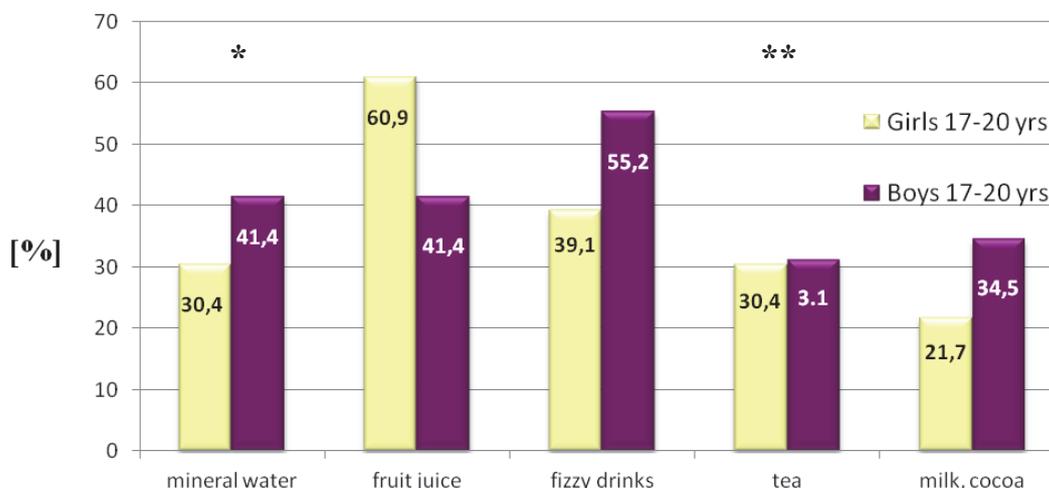


Figure 1B. Percentage of responses to the question concerning beverages preferences in assessed adolescents aged 13-16.



* - statistically significant differences ($p \leq 0.05$) dependent on the age of girls in preferences of choosing sweet beverages, milk and fruit juice
 ** - statistically significant differences ($p \leq 0.05$) dependent on the age of boys in preferences of choosing sweet beverages, milk and fruit juice

Figure 1C. Percentage of responses to the question concerning beverages preferences in assessed adolescents aged 17-20)

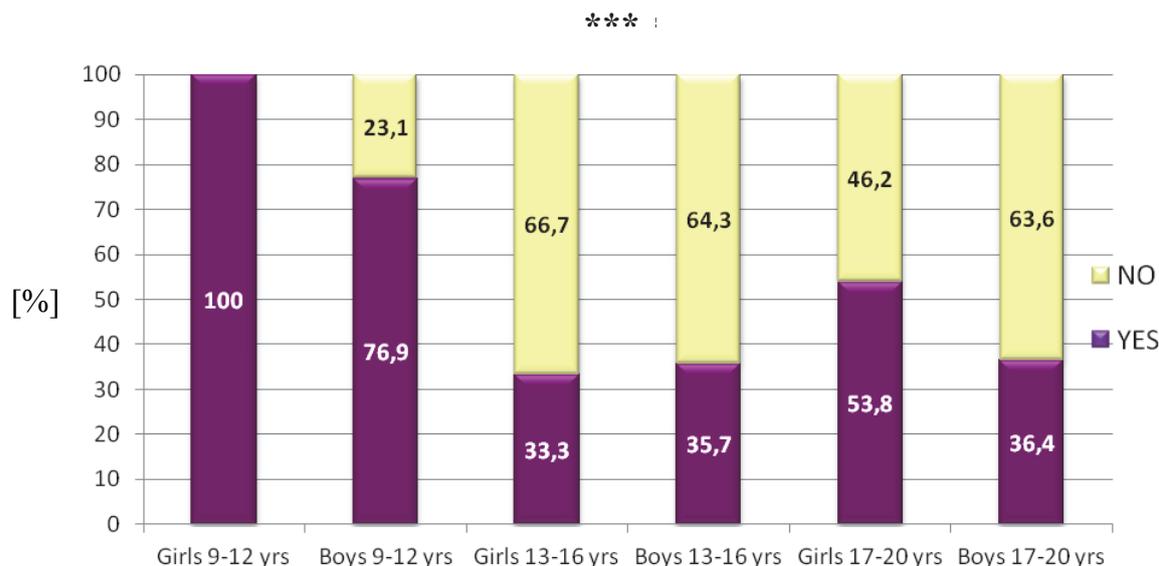
DISCUSSION

In the available literature there are difficult to find the studies on the frequency of consumption of various food products by children and youth from orphanages. In 1999 *Polus-Szeniawska* [20] have published the results about the frequency of consumption of meals, but there was no data concerning the frequency of snacking, drinking various types of beverages including coffee and cigarettes smoking. For this reason results obtained in this study were compared with data published concerning the children and adolescents usually living in full families.

The results of this study indicate that young people growing up in orphanages in Krakow are often snacking in between main meals. The most popular were sweet snacks and „fast-food” type products or chips, but less common were vegetables and fruit. According to *Urbańska* and *Czarniecka-Skubina* [27] 84% of young respondents from secondary schools

declared consumption the snacks between main meals. A remarkable part of adolescents ate chocolate bars, cakes, chocolates and sweets several times a week or month. Less popular were chips; salty sticks and nuts, while „fast-food” meals were eaten several times per month. The authors also proved that nutritional habits depend on gender. Boys consumed „fast-food” meals significantly more often, which is also confirmed by research of *Łagowska* et al. [15].

A survey conducted by *Piórecka* et al. [19] on nutritional behaviors of secondary school pupils in Malopolska region, demonstrated frequent consumption of fruits (at least once a day), less frequent of ice creams (several times per week) and yoghurts (several times per month). The study in group of nursery school children has demonstrated that snacking between main meals 87% of children. Between meals they have eaten sweets (64%), fruit (56%) and dairy products (43%) [6]. Similar results have been also published by *Kollajtis-Dolowy* et al. [11] in group of children aged 11-12.



***- statistically significant differences between gender ($p \leq 0.05$)

Figure 2. Percentage of responses to the question „Assuming that „healthy” lifestyle is a matter of your concern, do you avoid coffee, cigarettes and alcohol?” in a group of children and adolescents

In middle school sweets and confectionery were eaten daily by 46% girls and 40% boys [5], but in Medical University respectively only 10 and 15% students [16].

The results obtained in this work revealed that over 85% of respondents willingly reach for sweets and sweet snacks; 40% eat such products every day, which agree with the findings reported by *Szewczyński* et al. [26] and *Jeżewska-Zychowicz* [9], who found that over half of the teenagers ate sweet snacks at least once a day. In addition, according to the *Jeżewska-Zychowicz* [9] girls were more interested in such products, which agree with the findings obtained in this work.

The results obtained in this work about consumption of vegetables and fruit have been confirmed by studies of *Szewczyński* et al. [26], who reported daily consumption of fruit and vegetables in 80% of adolescents. According to *Jeżewska-Zychowicz* [9] over half of the teenagers aged 13-15 declared daily consumption of fruit, 36% of them ate fruit least once a day, while the highest number of respondents ate vegetables 3-4 times per week.

Kośmider and *Gronowska-Senger* [12] revealed the most frequent presence of „fast-food” type products in teenagers’ diets. In view of the results obtained, school children consumed such products 1-2 times a week and pizza, hamburger, and grilled sandwiches were the most popular. According to *Kollajtis-Dolowy* et al. [11] 70% of 11-12-year-old children declared, that they visited the McDonald’s restaurant; 56% was there rarely, while 14% fairly often. *French* et al. [4] showed that eating meals in fast food bars 3 or more times during the week was connected with a greater total caloric as well as higher fat consumption; however, there was no

significant correlation between consumption in such bars and Body Mass Index (BMI).

It has been found that fizzy drinks were the most popular beverage consumed by children growing up in orphanages in Krakow. Less popular were fruits juice, milk, mineral water and tea. In general, these data correspond with those reported by the authors beneath. A large number of boys preferring sweet fizzy drinks were confirmed by *Kośmider* and *Gronowska-Senger* [12] and *Ślawińska* et al. [21] too. *Górska-Warsewicz* [8], found that over half adolescents up to 20 yrs declare the daily consumption of juice, beverages and nectars. The findings of *Jeżewska-Zychowicz* [9] demonstrated that about 30% girls and over 40% boys aged 14-15 yrs reported drinking sweet fizzy drinks several times per day. Over half the adolescents examined favored daily consumption of fruits juice. Also *Gacek* [5] showed that 32 % girls and 43% boys were drinking sweetened fizzy drinks daily. Similar percentage had shown *Likus* et al. [16]. Less daily consumption of those products (17% Polish students) showed *Szczepańska* et al. [24]. According to the other studies, tea and water consumption was more popular compared to the results reported in this paper [14, 22].

Ludwig et al. [17] observed an increase in consumption of sweet beverages in children aged 11-12 accompanied by a rise of BMI as well as an increase in a number of obese children [17, 23].

Results obtained in this study, concerning frequency of consumption of coffee, are similar to data published by *Górnicka* et al. [7], who reported daily consumption of coffee in 51% of pupils attending to the middle school and 88% of university students.

In opposite findings reported by numerous authors did not confirm the data concerning high consumption of natural coffee, which were found in this study. As was reported by *Jeżewska-Zychowicz* [9], of the 13-15-year-olds students, more than half eliminated completely the coffee from their daily diets, while 5% girls and 6% boys consumed coffee several times per day.

Genesis of nicotine addiction, defined as addiction to tobacco, is associated with various factors like, imitation of elderly people behavioral patterns, influence of students, as well as the positive attitude towards smoking. According to *Kowalewska et al.* [13], 44% of teenagers at the age of 11-15 yrs tried smoking and boys did it more often than girls. Similar results have also been noticed by *Szczerbiński et al.* [25]. These authors mentioned claimed that boys and girls under 10 years old as well as over teenagers aged 14-16 have already experienced smoking. In the examined population of teenagers, an everyday smoking was declared by 1/3 boys and 1/5 girls. *Frączek* [3] has also reported that among secondary school pupils less than 1/3 of the population declares smoking.

Among various risk factors, early initiation of alcohol consumption is a factor determining the development of alcohol addiction. Reports proved that over 90% of secondary school pupils and nearly 100% of those attending high schools experimented with drinking alcohol [3, 18]. On the other hand, according to *Szczerbiński et al.* [25], who analyzed frequency of drinking alcoholic drinks by 17-19 year-old adolescents, 80% of all the respondents examined declared they had contact with alcoholic drinks. Boys had more often tried alcohol than girls and the percentage was rising with age. The findings of *Frączek* [3] showed that 86% of high school children declared they were drinking alcohol; the percentage observed in the identical group by *Fatyga et al.* [2] in the Silesia region in Poland was slightly lower (40%), of which 36% and 4% were respectively occasional and regular drinkers.

CONCLUSIONS

1. Analysis of nutritional preferences revealed that the high-caloric snacks were most often consumed by the youngest children. In girls, consumption of hamburgers was increasing, and in boys buns, chewing gums, and yoghurts, were more often eaten by the older respondents.
2. Fizzy drinks and fruits juice were found to be beverages the most willingly consumed by children and adolescents.
3. An appetite for drinking coffee and alcohol and smoking cigarettes was rising with age. In the oldest age group, nearly 1/3 respondents reported drinking

coffee, 1/3 girls and over 1/2 boys smoking cigarettes, while 1/5 and 1/3 respectively drank alcohol.

4. Results obtained in this study, indicate the necessity of intervention, consisting on running training courses and workshops of the assessed population, i.e. children, adolescents and instructing their educators.

Conflict of interest

The authors declare no conflict of interest.

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