

THE FREQUENCY OF FRUIT AND VEGETABLE CONSUMPTION IN THE BESKID SĄDECKI REGION

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Abstract. The study was carried out to estimate the frequency of fruit and vegetables consumption by the inhabitants of the Beskid Sądecki region. Moreover the preferences of species and of the form of these food products consumption in dependence of gender, age and income were defined. It was observed that only just 35.5% of respondents eat fruits every day, while 4% of persons never do it or less often than once a week. Vegetables are eaten less often than fruit. 54% of respondents are motivated by their taste preferences, while 41% are driven by advantages for their health. For elder people more important was the effect of fruit and vegetables on health. Similar approach was demonstrated by consumers of higher education and inhabitants of large cities. However, every second respondent consuming fruit and vegetables less often than once a day said that they saw no necessity of doing it more often. Over one fifth of respondents (20.4%) indicated no taste to eat such food, while similar number (17.2%) said that fruit and vegetables are too expensive.

Key words: fruit, vegetables, frequency of consumption, questionnaire study

INTRODUCTION

Fruit and vegetables belong to low-calorie products, because they contain monosaccharides, organic acids, ethereal oils, tannins and also dietary fibre. Despite of this these food products are the most valuable source of soluble in water vitamins and mineral elements keeping the acid-base equilibrium [Cieślik et al. 2001]. When considering a positive effect of these products on human health, they can help in prevention and treatment of diseases of civilisation, especially tumour and cardiovascular diseases.

In the last decade the positive increasing tendency of fruit and vegetables consumption in Poland was observed. However, it is still low [Cieślik et al. 2001]. According to Mitek et al. [1998] fruit is consumed every day by every second adult in Poland, while vegetables only by every third. The aim of this study was to estimate the frequency of fruit and vegetable consumption by the inhabitants of Beskid Sądecki depending on gender, age and income.

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MATERIAL AND METHODS

The questionnaire study was carried out in the Beskid Sadecki region (south-eastern part of the Malopolska province) in autumn-winter period from November 2001 to January 2002. The study covered 200 respondents chosen by drawing lots, including 110 females and 90 males at age 16 up to 70. The respondents filled the questionnaire anonymously, voluntarily and independently.

The questionnaire included 18 questions related to information demographic profile (age, gender, education, place of residence), the frequency and motivation for consumption and preferences of processed product category and the time of fruit and vegetables consumption. The applied method made it possible to gain information about nutrition habits relative to gender and the form of fruit and vegetables consumption.

All obtained results were subjected to statistical analysis. To compare particular groups of respondents the test of independence χ^2 was used [Greń 1987].

RESULTS AND DISCUSSION

The characteristic of respondent groups

Among persons involved in the study, the most numerous group (132 people) were young people (below 24 years old), while only 18 persons were at age 50 or above. 55.5% of the respondents were of secondary education, while vocational and primary education contributed in 28%. Higher education possessed 21% of males and 12.7% of females. Only just 7.5% of people lived in large cities, while the majority were inhabitants of villages (45%) and small towns (47.5%).

Frequency of fruit and vegetables consumption

The fruit consumption studies carried out in the Nowy Sącz region have indicated that almost one fifth of respondents (18%) eat fruit several times a day, while only 35.5% do it regularly every day. Most of respondents (42.5%) eat fruit several times a week, while 4% never do it or not more than once a week. Vegetables are eaten less often than fruit. 7% of respondents have declared that they eat vegetables several times a day, while only 26% do it everyday. Many people (57.5%) eat vegetables several times a week, while 9.5% do it not often than once a week. Such low consumption figures result from seasonal nature of these food products. The Nowy Sącz region is mainly supplied with fruit and vegetables from local sources. Thus, one can conclude that similar studies performed in summer and autumn could indicate a higher level of fruit and vegetable consumption.

Some significant statistical differences in fruit consumption depending on gender have been found. 23.7% of females and 10.5% of males have declared that they eat fruit several times a day, while 1.9% of females and 7% of males never do it or less often than once a week. Such differences could arise from different demand for calorific food. Males eat more stodgy products (with higher energy value), while females prefer low calorific food, including fruit. For vegetable consumption only 8.2% of females and

6.7% of males have declared that they eat vegetables several times a day, while 10% of females and 8.9% of males do it less often than once a week.

The studies have shown also differences in consumption profile depending on age. The dominant group (33%) consisting of people at age 25 to 34 eats fruit several times a day. Among elder people (at age 50 or above) the obtained fruit consumption figures are significantly lower than those published by the Główny Urząd Statystyczny [Budżety... 2000] and the Instytut Ekonomiki Rolnictwa i Gospodarki Żywnościowej [Rynek owoców... 1997], indicating that the higher monthly consumption of fresh fruit (61 kg) is noted in the group of retired employees and pensioners. One can conclude that such a divergence may result from differences between the data published by GUS [Budżety... 2000] and IERiGŻ [Rynek owoców... 1997] where the average monthly fruit consumption reaches maximum both in summer and autumn months, when fruit supply is the highest.

The consumption of vegetables was the highest in the group of elder people. 17.7% of them have declared that they eat vegetables several times a day. Young people eat the smallest amount of vegetables, as confirmed by other publications [Mitek et al. 1998, Rynek... 2000, Świetlik 2001].

Education level of the respondents is another important factor which has an effect on the frequency of fruit and vegetables consumption. People of higher and secondary education more often use fruit and vegetables in their menu than people of lower qualifications. 20.6% of respondents of higher education and 20% of secondary education eat fruit several times a day, while the same figure for primary education level is only 8.8%.

Vegetables are eaten by 8.8% of people of higher education and only by 3.1% of persons with vocational education. These differences result undoubtedly from better economical status of higher educated people. Higher financial possibilities and consciousness of fruit and vegetables advantages for human health caused that this group more often eats these food products than the others.

The place of residence has no significant effect on the level of fruit and vegetables consumption, although villagers somewhat less often than the respondents from larger cities eat these food products.

Motivation for consumption

No rational diet program can be implemented without the need to increase fruit and vegetables consumption [Kowrygo and Sawicka 1997]. This goal can be achieved only if consumers are aware of proper dietary requirements. This is why a question related to motivation for fruit and vegetable consumption has been included into the questionnaire. The results are presented in Fig. 1. Up to 54% of respondents declare that they eat fruits and vegetables because they like it, while 41% of people do it because these food products are healthy. For elder people, the advantageous health effect predominate (50%). The prophylactic effect of nutrients present in both of these food groups is also appreciated among highly educated people and residents of large cities.

The respondents who eat fruit and vegetables not often than once a day were asked why they cannot do it more often. Their answers are presented in Fig. 2. Every second respondents (56%) said that they see no necessity of doing it more often. More than one fifth (20.4%) of the respondents have indicated no taste for doing it. Similar number of the respondents (17.2%) said fruit and vegetables are too expensive. High prices decided

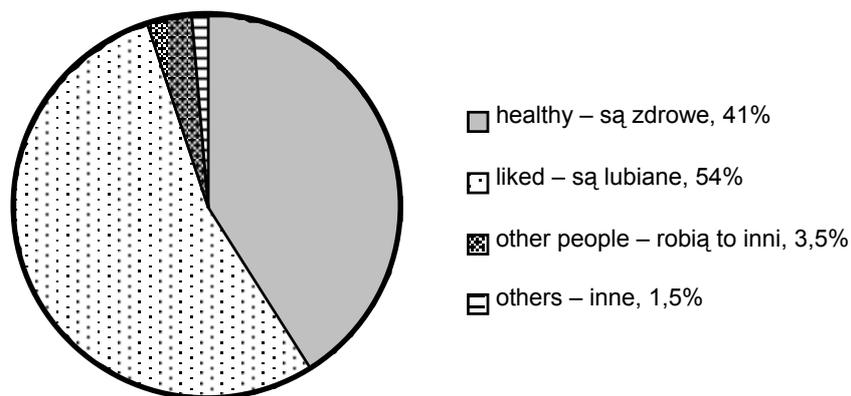


Fig. 1. Motivation for fruit and vegetable consumption
Rys. 1. Motywacje spořycia owoców i warzyw

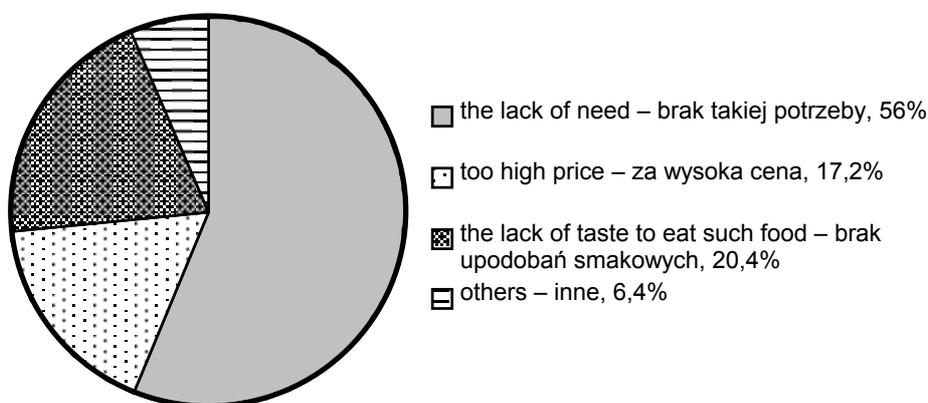


Fig. 2. Motivation for fruit and vegetable consumption less often than once a day
Rys. 2. Motywacje spořycia owoców i warzyw rzadziej niż raz dziennie

on fruit and vegetable consumption among females and elder people, while males indicated no taste to eat such food (31%). Younger people (up to 24 years of age) more often than elder people has shown no necessity for increasing of fruit and vegetables consumption. The same applies to people of primary and vocational education level and town residents. Among city residents the low consumption of these food products resulted mainly from its high prices, but according to Mitek et al. [1998] the same cause was found for villagers.

Preferred fruits and vegetables

Most of the respondents (more than one third) prefer apples. This result is consistent with other examinations carried out in Poland [Stepka 2001, Trębacz 2001]. Bananas (54%) and strawberries (52.5%) were very popular too. Among vegetables tomatoes

(73.5%), cucumbers (51%), carrot (50.5%), as well as cabbage (42%) were most often consumed.

For preferences statistically significant differences depending of gender have been found; females chose bananas, grapes, as well as carrot and tomatoes, while males more often take currants and oranges, as well as cabbage and cucumbers. The reason was probably a lower acceptance of bitter taste by females, causing that they eat less vegetables than males [Czapski 1999].

Some age related preferences have been found too. The study showed that young people more often eat bananas and grapes, while elder people prefer strawberries and plums. The respondents at age below 24 preferred tomatoes, while elder ones chose cabbage.

The income level also decided on fruit and vegetables choice. The respondents of higher income more often chose bananas and other exotic fruits (i.e. peaches, kiwi, pineapples) while those of lower income – domestic fruits (mainly apples). The obtained results of fruit choice depending on the income level differ from the data gathered by investigators in Poznań [Trębacz 2001], according to which buyers of lower income significantly more often chose bananas and those at better financial position preferred grapes and mandarins. The results pertaining vegetable consumption showed that better earning persons chose most often tomatoes and cauliflower, while the respondents of lower income preferred carrot and cucumbers.

An analysis of fruit consumption profile showed that apples, bananas, strawberries and grapes make about 74% of all consumed fresh fruits in the Beskid Sądecki region, while tomatoes, cucumbers, carrot and cabbage contributed in 72.5% of vegetable consumption. This fact clearly indicates that consumption of fruit and vegetables in the Beskid Sądecki region is restricted to a narrow range group, similarly as in the whole territory of Poland [Cieślak et al. 2001, Rynek... 2000, Stępka 2001, Trębacz 2001].

The form and time of consumption

The examinations carried out in the Nowy Sącz region have indicated that the respondents eat primarily fresh fruits and vegetables. Every second person (55%) prefers this form of consumption (see Fig. 3), while more than one fifth of the respondents choose vegetables (23%). A large number of people (58%) eat fresh vegetables in salads. Despite of increasing worldwide demand for fruit and vegetable juices, we still have a relatively low consumption level of this product category. It was found that 30% of population living in the Beskid Sądecki prefers fruit juices, while vegetable juices are chosen by only 14% of the respondents. The consumption pattern depends on such factors as taste (42%), habit (38%) and nutrient value (25.5%) of these products, as well as easy-to-use qualities (10%). Similar factors decided on the consumption pattern among people living in Warsaw [Kowalczyk 1999]. Apple juice (30.5%) and orange juice (28.5%) are major products chosen by the residents of the Beskid Sądecki from a wide variety of juices available on the market. Among vegetable juices the respondents prefer carrot juice, while the demand for beet and tomato juices is lower and reach 15% and 14.5%, respectively.

Females prefer orange and grapefruit juices, while males most often choose grape and apple juices. Among vegetable juices, females prefer carrot (60.9%), while males more often choose tomato juice. These differences are of statistical significance. The examinations indicate that in total 11% and 0.5% of the respondents never drink vegetable and fruit juices, accordingly.

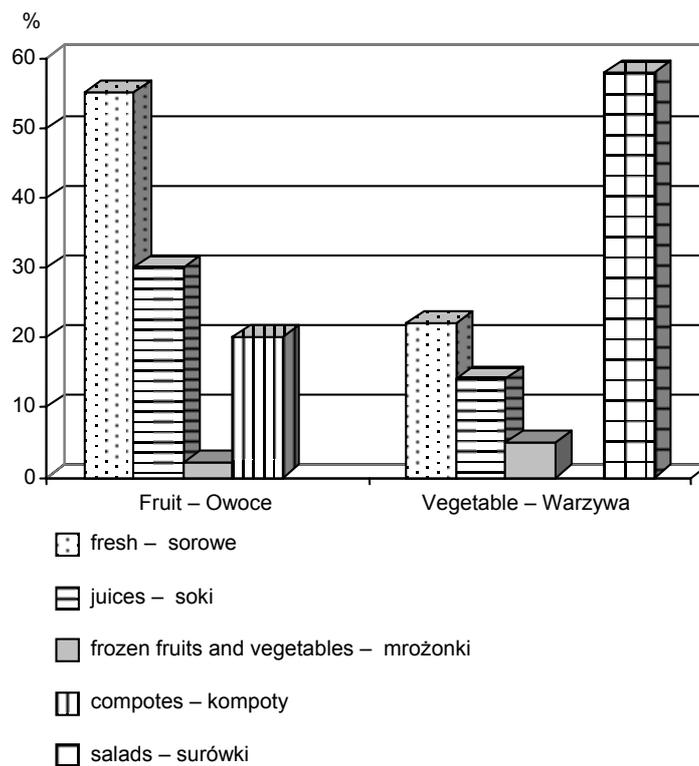


Fig. 3. The form of fruit and vegetable consumption
Rys. 3. Forma spoźycia owoców i warzyw

The consumption of other processed products such as compotes and frozen fruits is of low significance. The respondents at age above 50 much more frequently compared to younger people choose compotes. Only 2.5% of respondents showed frozen fruits as main form of consumption of these food products. A bit more, 5% of respondents consumed frozen vegetables.

Females (65.1%) more often than males (46.4%) chose fresh fruits. Males preferred juices, frozen fruits and compotes.

The form of fruit and vegetables consumption depended on financial conditions of the respondents; those of higher income more often chose fruit and vegetable juices, while those of lower income – fruit compotes and fresh vegetables.

It was observed that respondents consumed fruit most often as a snack among main meals (74%) or on dessert (42.5%). 14% of respondents consumed during supper, but only 10.5% for breakfast. Two thirds of respondents consumed vegetables for dinner (lunch). Every third person treated them as a snack and a few consumed vegetables at breakfast (14.5%) and supper (16.5%) (Fig. 4).

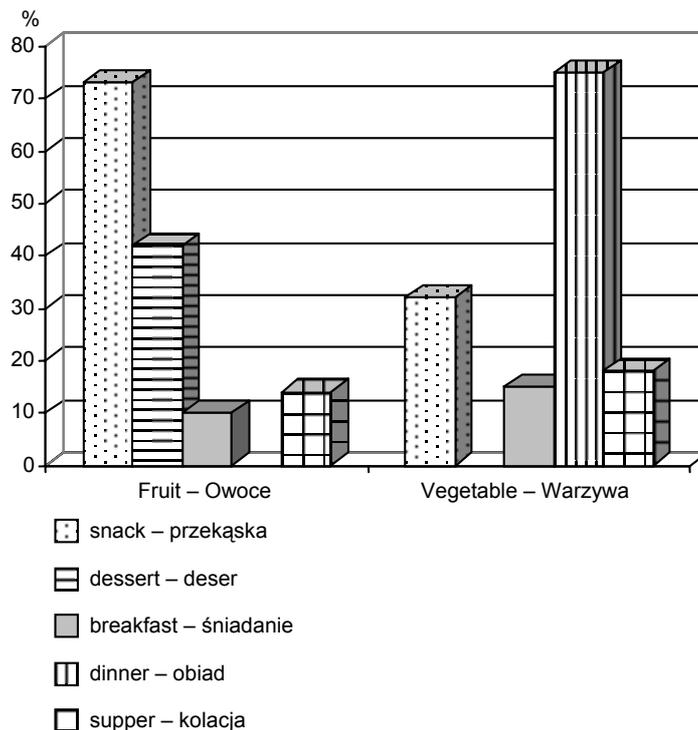


Fig. 4. The time of fruit and vegetable consumption
 Rys. 4. Pora spożycia owoców i warzyw

CONCLUSION

An analysis of results has indicated a very low and highly restricted range of fruit and vegetable consumption in the Beskid Sądecki region compared to recommended values. Fruit and vegetables are treated mainly as gustatory and diversifying meals additives, less often they are consumed at breakfast or supper. The most anxious is the fact that large group of respondents see no necessity of consuming fruit and vegetables more often. In such situation the most important thing is to carry out a wide scale campaign to inform and propagate consumption these food products so that “the nutritionist recommendations that fruit and vegetables shall be eaten 5 times a day” could not become words without cover.

REFERENCES

Budżety gospodarstw domowych z lat 1989-1998. 2000. GUS.
 Cieślak E., Florkiewicz A., Filipiak-Florkiewicz A., 2001. Spożycie warzyw i owoców w Polsce w latach 1989 – 1998. Żyw. Człow. Metab. 28, 775-779.

- Czapski J., 1999. Wykorzystanie owoców i warzyw w produkcji żywności funkcjonalnej. *Żywność* 4 (2), 91.
- Greń J., 1987. *Statystyka matematyczna*. PWN Warszawa.
- Kowalczyk J., 1999. Uwarunkowania zachowań konsumentów na rynku soków-wyniki badań. *Przem.Ferm. Owoc. Warz.* 3 (12), 61.
- Kowrygo B., Sawicka E., 1997. Zmiany w spożyciu owoców i warzyw w Polsce w latach 90. *Żywn. Technol. Jakość* 3 (12), 61.
- Mitek K.M., Przewoźniak K., Kuźma J., Zatoński W., 1998. Spożycie owoców i warzyw w Polsce w latach 1996-1997. *Przem. Spoż.* 4, 10-13.
- Rynek owoców i warzyw. 2000. Ministerstwo Rolnictwa i Rozwoju Wsi. Raporty Rynkowe 16, 41-43.
- Rynek owoców i warzyw, stan i perspektywy. 1997. Wyd. Inst. Ekonomiki Roln. Gosp. Żywn. 10, 43.
- Stępka G., 2001. Jemy mniej kapusty. *Hasło Ogród.* 4, 28-29.
- Świątklik J., 2001. Produkcja, spożycie i przetwórstwo owoców i warzyw w Polsce. *Przem. Ferm. Owoc. Warz.* 11, 35.
- Trębacz A., 2001. Polacy lubią jabłka. *Hasło Ogród.* 4, 14-17.

CZĘSTOTLIWOŚĆ SPOŻYCIA OWOCÓW I WARZYW W BESKIDZIE SĄDECKIM

Streszczenie. Badania przeprowadzono w celu oszacowania częstotliwości spożycia owoców i warzyw przez mieszkańców Beskidu Sądeckiego. Ponadto zbadano preferencje gatunku i formy spożycia tych produktów w zależności od płci, wieku i wykształcenia. Zaobserwowano, że tylko 35,5% respondentów spożywało owoce codziennie, podczas gdy 4% rzadziej niż raz w tygodniu, bądź wcale. Warzywa spożywane były jeszcze rzadziej niż owoce. 54% respondentów brało pod uwagę preferencje smakowe, natomiast 41% względy zdrowotne. Dla osób starszych najistotniejszą kwestię stanowił wpływ owoców i warzyw na zdrowie. Podobne rezultaty otrzymano badając konsumentów o wyższym wykształceniu oraz mieszkańców dużych miast. Jednak co druga osoba spożywająca owoce i warzywa rzadziej niż raz dziennie uważała, że nie czuje potrzeby, by robić to częściej. Ponad jedna piąta respondentów (20,4%) wskazywała na brak upodobań smakowych do spożywania tej grupy produktów, podobna ilość (17,2%) stwierdziła, że owoce i warzywa są za drogie.

Słowa kluczowe: owoce, warzywa, częstotliwość spożycia, badana ankietowe

Accepted – Zaakceptowano do druku: 20.07.2004 r.

For citation – Do cytowania: Cieślak E., Topolska K., Antkiewicz P., 2004. *The frequency of fruit and vegetable consumption in the Beskid Sądecki region. Acta Sci. Pol., Technol. Aliment.* 3(2), 163-170.