

Eating habits and the occurrence of old age diseases – preliminary reports

Nawyki żywieniowe a występowanie chorób wieku starczego – doniesienia wstępne

Marzena Agnieszka Humańska, Mirosława Felsmann, Aneta Wieczorek

Laboratory of Basic Clinical Skills and Medical Simulation, Nicolaus Copernicus University in Torun,
Collegium Medicum in Bydgoszcz

Abstract

Introduction. There are many factors that influence the way the elderly eat. Previously acquired eating habits are the most important ones. **Aim of the work.** Analysis of the relationship between eating habits and the occurrence of diseases of old age. **Materials and methods.** The research was conducted among the elderly living in Torun. Following scales and questionnaires were used in the study: Mini Nutritional Assessment (MNA) scale, the author's questionnaire survey containing questions about dietary habits. Variables relations evaluation was conducted using the chi test of independence and Cramer's V. Significance level $p \leq 0.05$ was decided to be statistically significant. The study group consisted of 100 people – 80 women and 20 men, aged 60 and over. People aged between 60-69 and 70-79 were dominant in the group. Body Mass Index (BMI) ranged between 25-30, which means that about half of the respondents were overweight or obese. When it comes to nutritional status according to the MNA scale, 32.5 % female and 20% male respondents obtain inappropriate results. **Results.** There was a significant statistical relationship between fish consumption and the incidence of coronary heart disease. Diabetes was more common in people who are overweight or obese. There has been shown the relationship between snacking between meals, eating sweets and the occurrence of overweight or obesity. There was presented a significant correlation between increased BMI and the incidence of diabetes. **Conclusion.** Intensification of diabetes is associated with the occurrence of overweight and obesity, which is the result of snacking between meals and eating sweets. Coronary heart disease usually appeared in people who consume fish occasionally, or do not eat them at all. (Gerontol Pol 2017; 25; 95-98)

Key words: geriatrics, nutrition, aging, diet

Streszczenie

Wstęp. Na charakter i sposób odżywiania się osób starszych ma wpływ wiele czynników. Najważniejsze z nich to wcześniej nabyte nawyki żywieniowe. **Cel pracy.** Analiza zależności pomiędzy nawykami żywieniowymi a występowaniem chorób wieku starczego. **Materiał i metody.** Badania przeprowadzono wśród osób starszych na terenie Torunia. Do badań wykorzystano: skalę oceny stanu odżywienia (MNA), autorski kwestionariusz ankiety, zawierający pytania dotyczące nawyków żywieniowych. Badanie zależności zmiennych wykonano przy pomocy testu niezależności chi-kwadrat oraz współczynnika V Cramera. Przyjęto poziom istotności $p \leq 0,05$ za statystycznie istotny. Grupę badawczą stanowiło 100 osób- 80 kobiet i 20 mężczyzn, powyżej 60 roku życia. Wśród kobiet jak i wśród mężczyzn dominowały osoby w wieku 60-69 lat i 70-79 lat. Wskaźnik BMI zarówno u płci żeńskiej jak i męskiej wynosił w granicach 25-30, czyli około połowa badanych wykazywała nadwagę lub otyłość. Wśród badanych osób w zależności od płci- 32,5 % kobiet i 20 % mężczyzn wykazywało nieprawidłowy wynik oceny stanu odżywienia według skali MNA. **Wyniki.** Wykazano istotną statystycznie zależność między spożywaniem ryb a zachorowalnością na chorobę niedokrwienną serca. Cukrzyca występowała częściej u osób z nadwagą lub otyłością. Wykazano zależność między podjadaniem między posiłkami, spożywaniem słodczy a występowaniem nadwagi lub otyłości. Wykazano istotny statystycznie związek między podwyższonym BMI a zachorowalnością na cukrzycę. **Wnioski.** Intensyfikacja cukrzycy związana jest z występowaniem nadwagi i otyłości, na które wpływają podjadanie między posiłkami i spożywanie słodczy. Choroba niedokrwienna serca najczęściej pojawiała się u osób spożywających ryby okazjonalnie bądź niespożywających ich w ogóle. (Gerontol Pol 2017; 25; 95-98)

Słowa kluczowe: geriatrya, odżywianie się, starzenie się, dieta

Introduction

An appropriate diet is one of the main factors deciding about proper functioning of an organism, no matter how old the person is. It may delay the natural aging process that progresses with age with various intensity. Insufficient intake of high-energy protein, vitamins' and minerals' deficiencies and obesity are the main nutritional problems of the elderly. There are many factors that have an influence on the way the elderly eat [1,2]. Previously acquired eating habits are the most important ones [1]. Eating habits are ones of the most difficult to change as they are strengthened by being repeated. Currently, there is a strong emphasis on changing eating habits. On the one hand, there is a need to improve health in the society in which diseases caused by inappropriate eating take their heavy toll, and on the other hand there is a pressure from ubiquitous advertising related with a consumerist way of life [3,4]. Not only are eating habits closely related to the processes of aging occurring in human body, but they also play an important role in maintaining health. Too little or too much nutrient intake has an impact on increasing morbidity and mortality among the elderly [3,5]. The knowledge of eating habits of the elderly is very important to investigate the relation between the diet, nutritional status and diseases' occurrence. It enables to recognize patients in danger of malnutrition and those threatened with too much nutrient intake, which causes many diseases related to the diet, for example diabetes, obesity, ischemic heart disease, osteoporosis [3,6,7].

Aim

Analysis of the relationship between eating habits and the occurrence of diseases of old age.

Materials and methods

The research was conducted among elderly people being taken care of in Daily Care Home, residents of the Care Home and the students of the University of the Third Age in Toruń. Only people who had signed a written consent took part in the research. Everyone had been informed about the aim of the research and its scientific character. The study group consisted of 100 people – 80 women and 20 men, aged 60 and over. Most women were between 60-69 years of age and between 70-79 years of age, they constituted respectively 43.8% and 33.8% of the respondents. Among 20 male respondents there were 30% between 60-69, 30% between 70-79

years of age and 35% between 80-89 years of age. Over a half of female and male respondents were widows/widowers and they constituted 56% of all group. 26% of respondents were married and 7.0% were divorced. Unmarried women/men and cohabiting partners constituted respectively 9.0% and 2.0% of examined population. 64% of the respondents lived alone, including 65% women and 60% men. The rest, 35% of women and 40% of men declared living with the family.

In order to conduct the research there had been obtained the consent from the Bioethical Committee in Nicolaus Copernicus University Ludwik Rydygier *Collegium Medicum* in Bydgoszcz. Questionnaires and scales used in the study are as follow [8]:

1. The Mini Nutritional Assessment (MNA) scale; consists of four parts: anthropometric data, general assessment, diet assessment and patient's subjective self-assessment. Test interpretation: 24 points: good nutritional status, 17-23.5 points: the risk of malnutrition, < 17 points: malnutrition.
2. Self-constructed questionnaire including questions regarding eating habits and sociodemographic data. There was also measured patients' waist-hip ratio (WHR) as it helps to differentiate two types of obesity the android and the gynaecoid one. $WHR = \text{waist circumference [cm]} / \text{hip circumference [cm]}$. Results' interpretation: android obesity can be recognized when WHR index for women is ≥ 0.8 , for men ≥ 1.0 , and gynaecoid obesity when WHR index for women is < 0.8 , and for men < 1.0 .

Results

BMI of the research group was as follows: 48.8% of women were overweight, 33.8% were of normal weight, 15% were obese and 2.5% were underweight. When it comes to men, 55% were overweight, 25% were of normal weight, 16% were obese and no one underweight. Among the respondents, according to sex, 32.5% of women and 20% of men demonstrated inappropriate results of nutritional status in accordance to MNA scale.

All overweight and obese respondents snacked between the meals (100%), 50% underweight respondents and only 12.5 of people with appropriate BMI admitted to eating snacks. There was indicated a statistically significant relationship between BMI and snacking between meals ($p = 0.000$). The higher BMI, the higher frequency of snacking. There was demonstrated a statistically significant relationship between BMI and the frequency of eating sweets ($p = 0.000$). Up to 54% of overweight people ate sweets every day and 40% several times a week. Moreover, 43.8% of obese people ate sweets every day

or a few times a week. Respondents with appropriate BMI most often did not eat sweets at all.

There was shown a statistically significant relationship between incidents of diabetes and BMI in the respondents ($p = 0.017$). It was more common in overweight (8%) or obese people (31.3%). Only 3.1% respondents with appropriate BMI had diabetes and no underweight people suffered from this disease.

Ischemic heart disease was most frequent in people eating fish occasionally or did not eat fish at all (in both groups 47.7% of people suffered from ischemic heart disease). 25.9% of people who ate fish every day and 45.7% of those who ate them several times a week did not suffer from ischemic heart disease. The study showed a statistically significant relationship between the frequency of fish intake and ischemic heart disease morbidity ($p = 0.000$). The less frequently the respondents ate fish, the more often they suffered from ischemic heart disease.

Discussion

The research demonstrated that there is a relation between snacking between meals, eating sweets and overweight or obese in elderly people. The results coming from the research are confirmed by different authors. In their research, Cymerys M. and Olek E. were assessing eating habits and lifestyle of people with android obesity. According to their results, snacking between meals was common among the respondents. Almost half of them (48%) admitted that they snacked every day. 29% of the respondents admitted that they have eaten snacks quite frequently. Most of them ate sweets – about 54%, then fruits – about 25%, and sandwiches – about 12% of the patients [9,10]. Trichopoulou A. and co-authors in their study regarding the quality of the way of eating in elderly people also indicated that snacking between meals was a common and dangerous phenomenon among the elderly (67.3% of women and 58% of men), as it encourages overweight and obesity. 21.1% of the studied population was overweight and almost half was obese – 45.2% [15]. The result of this research correlates with own research. Own research results, as well as results of other authors prove that constant snacking between meals leads to an excessive consumption of calories, and as a consequence, to being overweight and obese. For many people snacking seems to be harmless, however, after a while it becomes involuntary. Elderly people most frequently reach for sweet snacks, such as cookies, cakes and buns, rarely for salty snacks like for example breadsticks. Most frequently the situation is connected with the lack of physical activity and boredom. Con-

stant sitting in front of the television set encourages bad eating habits and lack of concentration during eating causes eating more as the brain does not record the sense of satiety.

Presented research showed a correlation between increased BMI and diabetes morbidity. Diabetes was more common in overweight or obese people. Therefore, overweight or obese people suffered from diabetes more often than those with appropriate weight or underweight. Own research corresponds with the study of other authors. In Field A.E. and co-authors research it was displayed that the risk of diabetes (type II) is 30-40 times larger in people with BMI > 35 kg/m² compared to people with BMI < 22 kg/m² [11]. These researches correlate with own study as overweight and obesity are a strong determinants of the risk of diabetes even if there are no other risk factors. In Pupek-Musialik D. and co-authors study, it was demonstrated that diabetes occurred mostly in overweight or obese people. Fatty tissue is accumulated in excess in abdominal area, which generates insulin resistance and the excess of fatty acids that accelerates emergence of diabetes [12]. It was confirmed by own research.

Own research indicated that there has been a relation between fish intake and ischemic heart disease morbidity. Ischemic heart disease was more common in people who ate fish occasionally or did not eat fish at all. Own research was proven by other authors. Gacek M. conducted research regarding fish intake among elderly Poles and Germans. Both groups were eating fish relatively often with statistically significant vantage of eating fish by Germans. It was revealed that ischemic heart disease refers to 1/3 of Poles and only 5.3% of Germans [13]. The research of Trochopoulou A. and co-authors determined that long-term fish intake has an advantageous influence on the lipid profile and hypertension, as well as on blood glucose level in people living in Mediterranean countries. It was proven by Seven Countries Study initiated by A. Keys. The author proved that the healthiest diet is the Mediterranean one, with great fish intake, which prevents from ischemic heart disease [14,15]. In the study of Anastasios S. Dontas and co-authors, there was also shown a statistically significant relation between fish intake and ischemic heart disease morbidity in the elderly. Higher fish intake reduces the risk of cardiovascular diseases [16]. The results from own research indicated that fish intake among study population has been high due to tradition of eating fish on Fridays and during fasts, instead of meat. People who live in Care Homes eat fish since the menu included this product, therefore, it was imposed on them. Additionally, high fish intake may also

be caused by proximity of fish shops that entice elderly people with many promotions and discounts.

Conclusion

Food habits of older people have an impact on the occurrence of diseases of old age.

Intensification of diabetes is associated with the occurrence of overweight and obesity, which affects snacking between meals and eating sweets. Coronary heart disease usually appeared in people who consume fish occasionally, or do not eat them at all.

Conflict of interest

None

References

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