

# Eating attitude in open urban female population in moderately urbanized Siberian city depending on social status

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**Objective.** *To study eating attitude in women aged 25–64 years in an open urban population depending on education and marital status.*

**Materials and methods.** *A simultaneous epidemiological study was carried out on a representative sample taken from the electoral lists of Tyumen city and included women aged 25–64 years (the response amounted to 70.3%). Eating attitude was determined using the WHO questionnaire "Knowledge and Attitude towards Health" and social status — using marital status and education level.*

**Results.** *The study showed that mostly younger women followed a diet to stay healthy. Depending on social status, the most favorable eating attitude was observed in women who had completed higher education and had a life partner.*

**Conclusion.** *Our study that was conducted in an open population of moderately urbanized Siberian city shows the importance of introducing the principles of a healthy diet in high-risk groups of the population – single women with low education level, mainly of middle age.*

**Key words:** *epidemiological study, women population, eating attitude, social status.*

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## Introduction

Many fundamental studies from experimental researches to multifactorial international trials have shown the connection between diet and atherosclerosis and coronary artery disease (CAD) incidence and mortality rates. It was concluded that changes in nutritional composition of food and its amount played the key role in the development of cardiovascular diseases (CVD) [1]. Numerous epidemiological studies confirmed the connection between fat intake and atherosclerotic disease frequency, blood cholesterol levels, CAD incidence and mortality rates.

Epidemiological studies that were carried out at the end of the 20<sup>th</sup> century—early 21<sup>st</sup> century showed that social status plays an important role in CVD development. According to the large cross-sectional studies, family provides different types of support, including emotional and economical. Of note is that family can have opposite effects on males and females. Findings show that women are more affected by the stress from taking care of the family compared with stress at work [3]. Education status and marital status were found to be associated with CAD prevalence and mortality rates. Lower mortality rates were identified in women who equally participated in making decisions and had friendly relationship with their husbands [4]. Family support is considered an important component of social support, as it can help relieve stress and correct behavioral risk factors [3, 5, 6]. At the same time, marriage is considered to have fewer positive effects on women compared with men as they have different family roles. The lowest prevalence of arterial hypertension is identified in women who have never been married. The lowest prevalence of excess weight is also reported in single women [7, 8].

Prospective studies have confirmed the association between somatic, behavioral risk factors, such as irrational diet, and social status. Inverse association between social status and mortality was shown for more economically developed counties [4, 9, 10]. Siberian population studies showed that women had more responsible attitude towards their health. Nevertheless, cardiovascular death relative risk (RR) tended to be higher in married women compared with single ones. RR was significantly higher in less educated women [13, 14].

Therefore, it is important to study behavioral risk factors in women of different social statuses in order to develop prevention programs focused on various social classes in open populations [13, 14].

## Objective

The aim of this study was to investigate eating attitude in women aged 25–64 years in an open urban population depending on education and marital status.

## Materials and methods

We conducted a cross-sectional epidemiological study that involved women from Tyumen central administrative district. A representative sample was formed using the random number generation method from the electoral lists of Tyumen city and included 1000 women aged 25–64 years (250 people for every decade of life 25–34, 35–44, 45–54, 55–64 years). The response rate was 70.3%. Eating attitude was determined using the WHO questionnaire "Knowledge and Attitude towards Health" [9]. Marital status was determined by two parameters: presence or absence of a life partner. Education level was determined by three parameters: primary, secondary or higher education.

The study was conducted in accordance with the principles laid down in the Declaration of Helsinki. Study protocol was approved by local ethical committee. Written informed consent was obtained from all participants prior to being enrolled.

Statistical analysis was completed using the IBM SPSS Statistics 21.0 software. Age adjustment was performed by direct standardization based on the age structure of women in the Russian Federation aged 25–64 years. We compared different age groups with age-adjusted values, and values between different social status groups. In order to assess statistical significance of the differences we used Pearson's chi-squared test ( $\chi^2$ ). A p-value less than 0.05 was considered statistically significant.

## Results

About 40% of working age women in an open urban population followed specific diets only occasionally and 25% of women believed that having a healthy diet was important but kept eating irrationally; 12.3% of women failed healthier diets, 17.6% refused to acknowledge that eating healthier was necessary and only 8.6% of Tyumen women decided to change their diets in order to be healthier and currently stick to rational diet. In different age groups there was no statistically significant difference in negative attitude towards healthy diet, unsuccessful or irregular attempts to follow a specific diet, as well as inability to follow a healthy diet despite acknowledging its importance. We identified statistically significant rising

Table 1. Eating attitude in women aged 25–64 years of an open Tyumen population

Question/ Attitude	25–34		35–44		45–54		55–64		Age-adjusted value	
	n=122	%	n=210	%	n=156	%	n=215	%		
Have you tried to change your eating habits?										
1. I do not need to follow a specific diet	18	14,8	34	16,2	26	16,7	44	20,5	17,6	
2. I need to follow a healthier diet but I do not do it	31	25,4	47	22,4	43	27,6	48	22,3	25,0	
3. I failed to follow a healthier diet	10	8,2	27	12,9	21	13,5	25	11,6	12,3	
4. I follow a healthier diet inconsistently	45	36,9	88	41,9	55	35,3	84	39,1	39,8	
5. I have successfully changed my eating habits in order to stay healthy	18	14,8	15	*7,1	11	*7,1	14	*6,5	8,6	

Note: \* — statistically significant differences between the younger age group (25–34 years) and other age groups,  $p < 0,05$ ; n — number of people questioned

tendency to change diet in order to stay healthy in the younger age group (25–34 years). More people in their 20s had healthier eating habits compared with the whole population (14.8% — 6.5%,  $p < 0.05$ ), as well as with people aged 35–44 ears (14.8% — 7.1%,  $p < 0.05$ ) and with people aged 45–54 years (14.8% — 7.1%,  $p < 0.05$ ). (Table 1)

In groups with different education level statistically significant difference was identified only between the participants with primary and higher education. More women with primary education tended to refuse to follow a healthy diet compared with those who had completed secondary (50.0% — 16.1%,  $p < 0.05$ ) and higher (50.0% — 17.6%,  $p < 0.05$ ) education. Women who had completed only primary education were not ready to change their eating habits in order to improve their health compared with those who had completed secondary and higher education (5.9% — 10.4%,  $p < 0.05$ ). (Figure 1)

There was no statistically significant difference in negative attitude towards improving eating habits between groups with different marital status as well as between those who were ready to change their diet or followed a new diet inconsistently. We

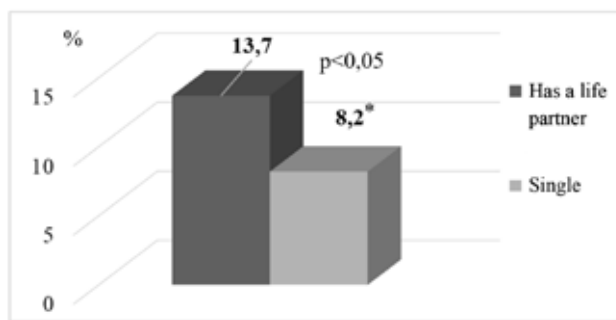


Figure 1. Eating attitude and marital status in women aged 25-64 years in an open Tyumen population

identified statistically significant rising tendency of the questionnaire answers from women who had a life partner to show that they had made unsuccessful attempts to follow a healthier diet (5.9% — 10.4%,  $p < 0.05$ ) or had successfully changed their diet in order to be healthy ((9.3% — 6.1%,  $p < 0.05$ ). (Figure 2)

### Discussion

Our study shows that in an open Tyumen population aged 25–64 years 60% of women, mostly in their 20s, made attempts to change their diet.

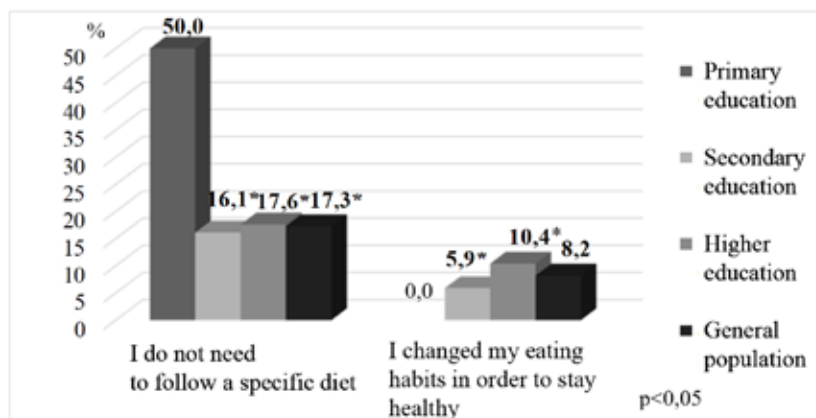


Figure 2. Eating attitude and education level in women aged 25-64 years in an open Tyumen population

Taking into account the results of our previous studies we can conclude that for most Tyumen women fats were the main source of energy and made up 39.3% of daily calorie intake. The participants consumed mostly saturated fatty acids (SFAs) and monounsaturated fatty acids (MUFAs), and polyunsaturated fatty acids (PUFAs) made up the minority of fats in their diet [16]. According to the WHO recommendations adults should get only up to 30% of total calories from fats. Most authors also suggest that fats should make up no more than 30% of the daily calorie intake and SFAs should make up no more than 10% (13.5% in Tyumen population) [1].

The previous findings show that compared with other age groups younger women consumed the lowest amounts of fats. It could be explained not only by SFAs but also by UFAs consumption that was the lowest in this age group ( $14.2 \pm 1.1$  g). Dairy products, vegetable oil and animal fat were the main source of fats in younger women. The minimal amount of fats was consumed from seafood. According to the previous studies there was a lack of vitamins and some minerals in Tyumen population in general and especially in younger women. In this group there was a deficit of all studied parameters of daily ration, except phosphorus and copper. This puts the younger women at a greater risk of CVD and other non-concomitant chronic diseases [16]. These results are consistent with the present study findings that younger women tend to follow a healthy diet and have rational eating habits.

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In order to develop an approach to active prevention it is important to study population awareness of the leading CVD risk factors and attitude towards CVD prevention [12]. The highest awareness of CVD risk factors in Tyumen population was identified in those who had completed higher education regardless of its type. These findings are consistent with other studies [8]. Findings from the previous study carried out on Tyumen population showed the highest awareness of risk factors in married individuals and in widows, the lowest — in divorced. Single individuals were moderately aware of CVD risk factors. These findings can be explained by the fact that today people get most information from TV and those who live with their families have more opportunity to spare some time for television. Married people also prioritize health of their families and therefore are more interested in disease prevention [5].

## Conclusion

According to the present study young women who had completed higher education and those who had a life partner tended to follow healthier diet.

The tendencies that we identified in an open urban Siberian population determine the need to introduce healthy eating habits to high risk groups such as single poorly educated middle-aged women.

**Conflict of interests:** None declared.

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