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MENARCHE IN GIRLS OF THE ROMA POPULATION IN TUZLA CANTON, BOSNIA AND HERZEGOVINA

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ABSTRACT

Introduction: During the past hundred years, menarche has been noticed to occur much earlier. This secular trend is explained by the earlier reaching of critical body mass and the improvement of living standards. The time of menarche onset depends on the girl's body mass, genetic factors, social environment factors, standard of living, altitude, environment. The aim of the research was to investigate trends in the onset of menarche in girls of the Roma population within the Tuzla Canton.
Subjects and methods: The research was conducted on girls of the Roma population, chronologically aged from 10 to 15 years, students of six elementary schools from grades V-IX, from the Tuzla Canton. The research was conducted using the questionnaire/survey method.
Results: In was determined in our research that the youngest girl from the Roma population had menarche at the age of 9.58, while the oldest was at the age of 17.2. In our region, the average age of menarche is 12 years. In our research, the largest number of respondents got menarche at the age of 10-11.9, 33 or 55.0% of them, then 12 or 20.0% of them at the age of 12-13.9, and only 3 or 5.0% of the respondents got menarche at that age 14 and more. As a greater number of girls had menarche at the same age as their mothers, the genetic conditioning of menarche is confirmed.
Conclusion: The most of respondents from the Roma population in Tuzla Canton had menarche between 10 and 11.9 years of age. Adolescent girls living in rural settlements reached menarche a little later (12-13.9 years) compared to the respondents living in urban settlements (10-11.9 years).

Key words: menarche, Roma population

INTRODUCTION

Regardless the fact that puberty period is hard to limit in terms of time, one specific date which must definitely be separated is the time of the first menstrual cycle, menarche. Prior to menarche, there might occur other signs of sexual maturity in smaller or bigger degree, such as growth of breasts and pubic hair. Average time of menarche is between 10 and 14 years of age, but according to Tunner's studies, normal period is considered from 10 to 16 years of age, where the average is 13 years of age [1].
During the past hundred years, menarche has been noticed to occur much earlier. This secular trend is explained by the earlier reaching of critical body mass and the improvement of living standards. Every 10 years, menarche occurs 3-4 months earlier, so girls have menarche a year earlier than their mothers. In countries with a high economic standard and a high level of health care, this trend is being gradually stopped [2].
The time of menarche onset depends on the girl's body mass, genetic factors, social environment factors, standard of living, altitude (menarche occurs earlier at higher altitudes), environment (girls from urban areas get menarche earlier than girls from the rural areas). It is believed that critical body mass in girls leads to metabolic changes at the level of mass or body surface, which affects the hypothalamus and leads to corresponding hormonal changes. In addition to body mass, bone maturity is also a good indicator of development, which, unlike body mass, reaches the same final values in all healthy girls [3]. The aim of the research was to investigate trends in the onset of menarche in girls of the Roma population with in the Tuzla Canton.

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SUBJECTS AND METHODS

The research was conducted on girls of the Roma population, chronologically aged from 10 to 15 years, students of six elementary schools from grades V-IX, from the Tuzla Canton.
The research was conducted using the questionnaire/ survey method. The survey questionnaire was made for the purposes of this study and included all the questions that helped us reach the final conclusions. The survey was voluntary and anonymous, the girls filled out the questionnaire at home with the help of their mothers. 60 respondents aged 10 to 15 were included in the period from January to June 2021.

RESULTS

Table 1. Descriptive statistics of main features of the respondents

Parameter	n	%	p
1. Place of residence			
a) Urban	30	50.0	NS
b) Rural	30	50.0	NS
2. Age in time of survey			
a) 10-11.9	22	36.7	NS
b) 12-13.9	27	45.0	NS
c) 14 and more	11	18.3	<.05
3. Nutrition			
a) malnourished	8	13.3	<.05
b) ideal	27	45.0	NS
c) overweight and obese	25	41.7	NS
4. Did they have menarche			
a) yes	48	80.0	NS
b) no	12	20.0	<.05
5. Menarche age			
a) 10-11.9	33	55.0	NS
b) 12-13.9	12	20.0	NS
c) 14 and more	3	5.0	<.05
d) I do not know	12	20.0	NS

It was not statistically significant in the age group of up to 13.9 years (45.0% vs 36.7%), while a significant difference was found in respondents aged 14 and more (45.0% vs 18.3%; 36.7% vs 18.3%) (Table 1).

Table 2. Distribution of parameters for girls per place of residence

Parameter	Urban n / %	Rural n / %	p
1. Age in time of survey			
a) 10-11.9	15 50.0	7 23.3	<.05
b) 12-13.9	12 40.0	15 50.0	<.05
c) 14 and more	3 10.0	8 26.7	<.05
3. Nutrition			
a) malnourished	8 26.7	0 0	<.05
b) ideal	15 50.0	12 40.0	<.05
c) obese	7 23.3	18 60.0	<.05
4. Did they have menarche			
a) yes	20 66.7	28 93.3	<.05
b) no	10 33.3	2 6.7	<.05

Parameter	Urban n / %	Rural n / %	p
5. Menarche age			
a) 10-11.9	13 43.4	20 66.8	<.05
b) 12-13.9	6 20.0	6 20.0	NS
c) 14 and more	1 3.3	2 6.6	<.05
d) I do not know	10 33.3	2 6.6	<.05

A significant difference was found in all examined parameters, except for the menarche age between 12-13.9 (Table 2).

Table 3. Frequency distribution of specific variables in relation to girls' place of residence

Parameter	Urban n / %	Rural n / %	p
1. Age of mother's menarche			
a) 10-11.9	10 33.3	18 60.0	<.05
b) 12-13.9	10 33.3	10 33.3	NS
c) 14 and more	/ /	/ /	NS
d) I do not know	10 33.3	2 6.7	<.05
2. Practicing sport			
a) yes	9 30.0	3 10.0	<.05
b) no	12 40.0	10 33.3	NS
c) sometimes	9 30.0	17 56.7	<.05
3. Physical activity			
a) active / training	10 33.3	3 10.0	<.05
b) recreational	20 66.7	27 90.0	<.05
4. Knowledge about sexually transmitted disease			
a) da	24 80.0	6 20.0	<.05
b) ne	6 20.0	24 80.0	<.05
5. Knowledge about protection			
a) yes	16 53.3	6 20.0	<.05
b) no	14 46.7	24 80.0	<.05

Based on the analysis of specific variables, no significant difference was found in the age of mother's menarche from the age of 12 and in the analysis of practicing sports, while the difference in the other analysed variables was significant (Table 3).

DISCUSSION

In was determined in our research that the youngest girl from the Roma population had menarche at the age of 9.58, while the oldest was at the age of 17.2. Similar to our results, an assessment of menarche age in Zagreb from 1973 indicated the heterogeneity of the population when it was observed that there were girls who did not have menarche before the age 17.5. Conversely, data from the same population group from 1991 showed that menarche occurs in a narrower range, and that all girls had menarche before the age of 16. Less variability is found in developed countries, e.g. in Spain and Sweden, girls at the age of 16.5 have menarche in 100% of cases, while the assessment of the age of menarche onset in Belgrade showed that girls at the age of 14.5 had menarche in 100% of cases [4].

In our region, the average age of menarche is 12 years, with 95% of girls having it between 10.5 and 14.7 years of age [5].

In our research, when it comes to the occurrence of menarche in girls of the Roma population, the survey results show that 27 or 45.0% of girls were aged 12-13.9, 22 or 36.7% were aged 10-11.9, while the fewest surveyed girls were 14 or older, 11 or 18.3% of them. The largest number of respondents got menarche at the age of 10-11.9, 33 or 55.0% of them, then 12 or 20.0% of them at the age of 12-13.9, and only 3 or 5.0% of the respondents got menarche at that age 14 and more. Statistically, the age of 10-11.9 was singled out as a significant period for menarche (33 or 55.0%).

Hulanicka and Waliszko show that the age of menarche gradually decreased in the period from 1955 to 1978, after which there was a slowdown in the trend, followed by a reverse trend. Economic and social changes since 1989 in Poland have resulted in differently expressed secular changes in the age of menarche in rural and urban areas [6]. Namely, in rural areas, a significant decline in the age of menarche was recorded from 13.88 to 13.42 years, while in urban girls the age of menarche decreased from 13.18 to 13.04 years [7].

The positive secular trend of pubertal maturation was particularly pronounced in Mediterranean countries, where in Italy the average age of menarche dropped to only 11.9 years (11.4-12.4 years). The menarche age of 13.15 years in the Netherlands stabilized as early as 1980 [8].

At the time of data collection from the survey, 15 or 50.0% of girls from urban areas were aged 10-11.9, while 15 or 50.0% of girls from rural areas were aged 12-13.9. There is a significant difference between the ages of the surveyed girls in urban and rural areas.

In Madrid, the phenomenon of menarche shifting to an earlier age is generally present, whereby girls from urban areas have menarche earlier than their peers from rural areas (12.79 versus 12.90 years). In that research, it was stated that there is a significant difference in the occurrence of menarche in girls who live in rural areas compared to girls who lived in urban areas, in fact socioeconomic conditions influence the occurrence of menarche [9]. The same applies to the research on menarche in the area of Živinice municipality, which showed a statistically significant influence of native origin on the length of the premenarchal period [10]. The respondents from the rural area had on average a slightly longer premenarchal period (M=12.18 years) than the respondents from the city, where the average length of the premenarchal period was M=11.88 years [11].

In a cohort study conducted in Russia, urban women had an earlier menarche than rural women [12]. The mother's menarche age is a good predictor of the daughter's menarche age in non-obese girls and BMI is an important factor affecting the occurrence of menarche [13].

In our research, a statistically significant difference was determined in the quantitative characteristics of the variable age of the mother's menarche in relation to the environment: 10 or 33.3% of girls from urban areas do not know the age of their mother's menarche, while 2 or 6.7% of girls from rural areas do not know this information. As a greater number of girls had menarche at the same age as their mothers, the genetic conditioning of menarche is confirmed.

Menarche is a turning point for adolescent girls. The timing of menarche is affected by genetics, social status and nutritional status (e.g. height, weight and body mass index [BMI]) and affects future health (e.g. obesity and breast cancer). There have numerous studies on menarcheal trends among adolescent girls in China, but few have investigated the relation between growth status and menarche time. A study examining the relation between age at menarche and growth status among girls in western China determined that there were statistically significant differences in body mass index between premenarcheal and postmenarcheal girls of the same age, and those differences were related to socioeconomic factors. The girls who reached menarche, especially those aged 13-14, were significantly taller (P <0.01) and had a higher BMI (P <0.01) than the girls of the same age group who did not reach menarche, so it was concluded that BMI is associated with the time of menarche, though socio-economic factors are also important [14].

Girls from high socio-economic class families had a significantly lower mean menarcheal age in urban and rural areas. The mean age of menarche was significantly higher in girls who participated in vigorous sports activities in an urban area compared to their non-sporting colleagues [15].

Our research showed that the girls from urban areas engage in sports much more often than the girls from rural areas, while the opposite is true with occasional sports activities, i.e. occasionally, the girls from rural areas play sports more often than the ones from urban areas.

The most of respondents from the Roma population in Tuzla Canton had menarche between 10 and 11.9 years of age. Adolescent girls living in rural settlements reached menarche a little later (12-13.9 years) compared to the respondents living in urban settlements (10-11.9 years).

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