

# The birth rate in adolescent girls in Kosovo

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**AUTHORS' CONTRIBUTION:** (A) Study Design · (B) Data Collection · (C) Statistical Analysis · (D) Data Interpretation · (E) Manuscript Preparation · (F) Literature Search · (G) Funds Collection

## SUMMARY

**Introduction and Objective.** Teenage pregnancy and birth have always been complex issues. In addition to health-related problems, there are also legal and social aspects of teenage pregnancy. In the world, there are thousands of couples who conceive and give birth without a plan. This happens for many reasons, such as: the lack of sexual education, the lack of information about contraception, high cost of contraception, poverty, the lack of education, rural origin, etc. These factors directly or indirectly affect an increase in pregnancies and births in this age group. The fertility rate in adolescent girls is the number of births per 1,000 girls aged 15–19 years. The main purpose of this study was to determine the birth rate among teenage girls in Kosovo.

**Material and Methods.** This was a retrospective study. The data were collected from a database of the Kosovo Agency of Statistics. The analysis involved a nine-year period (2007–2015). The participants were girls aged 15 to 19 years who have given one or more births. The data were calculated using the MedCalc statistical software.

**Results.** In Kosovo, during nine years (2007–2015), there were a total of 277,596 live births, of which 9,200 (31.3%) were births given by teenage girls. For this period, the adolescent birth rate was 33 per 1,000 girls aged 15 to 19 years,  $P < .0001$  (95% confidence interval (CI) of observed proportion; 30.09 to 36.01). The average age of the study participants was 17.47 years, (SD  $\pm$  1.09);  $P < .0001$  (95% confidence interval CI for mean; 16.90 to 18.03). This study shows that the number of births among teenage girls varied in 2007–2015, but a general downward trend was observed. There were differences in the percentage of pregnant teenage girls depending on their place of residence and level of education.

**Conclusion.** The number of births among teenage girls varied in 2007–2015, but a general downward trend was observed. Also, differences were noted in the percentage of teenage births depending on the place of residence and level of education. The probability that a teenage girl from a village gives birth at this age is twice as high as in the case of a teenage girl from a city. The probability that a teenage girl with low education gives birth at this age is 5 times higher than in the case of a teenage girl with a higher level of education.

**Keywords:** Teenage girls; Pregnancy; Birth rate; Complications

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## INTRODUCTION

The World Health Organization (WHO) defines a teenager as a person aged from 10 to 19 years. Adolescence is the period of transition from the juvenile age to adulthood. It begins with puberty and ends when adulthood is reached. In this period, significant anatomical and physiological changes occur in young girls; they develop, mature and pass into adulthood. During adolescence, they experience physiological and biological changes in terms of the maturation of the hypothalamic-pituitary-gonadal axis and gonadal function resulting in full sexual maturity and fertility. Adolescence is usually associated with the psycho-social aspect of youth, and it is linked with the onset of adult-age models in terms of socio-sexual behavior. The hormonal changes that occur during puberty are accompanied by emotional and psychological changes. These circumstances might lead to faster initiation of sexual activity, which is undoubtedly associated with certain risks brought by age. In Western Europe, sexual activity begins early, and worldwide, one-third of girls under 16 years are sexually active, and many of them may have more than two sexual partners. Teenage girls that start sexual activity early may have unwanted pregnancies, get infected with a sexually transmitted disease, have problems in relations with their partners, drop out of school, be aggressive, dissatisfied or use tobacco, alcohol and drugs. In Kosovo, marriages are traditionally made at a younger age, and therefore pregnancy and delivery are planned and desired by many couples. On the other hand, there are also couples who conceive and give birth without a plan. This happens for a number of reasons, such as: the lack of sexual education, the lack of information about contraception, high cost of contraception, poverty, the lack of education and rural origin, etc. These factors directly or indirectly affect an increase in the number of pregnancies and births in this age group.

Teenage pregnancy can often be associated with a higher risk for health. Births in this age

group are associated with major fetal-maternal complications, such as: abortion, preterm births, intrauterine growth restriction (IUGR), low birth weight, fetus with congenital malformations, pre-eclampsia, complicated labor, instrumental delivery, third- or fourth-degree lacerations of the urogenital system, an increase in the number of Caesarean deliveries, neonatal complications and the need for neonatal intensive care. To sum up, births in adolescence, cause increased maternal and neonatal morbidity and mortality. It is not clear whether only young age is responsible for these medical complications or there are other biosocial factors, such as: socioeconomic conditions, insufficient food supply, smoking, drug abuse or sexually transmitted diseases, which are typical of these social groups. In addition to health problems, legal and social aspects of teenage pregnancy must be considered as well. Legally, girls should not become pregnant before the age of sixteen years. However, if this happens, a girl has no right to decide by herself whether to end the pregnancy or to continue it. The decision is made by parents or legal guardians, and any decision made without their agreement is deemed illegal. Teenage pregnancy is also associated with social problems, including lower chances for education or employment, resulting in serious social and cultural consequences.

## OBJECTIVE

The main purpose of this study was to determine the birth rate among teenage girls in Kosovo.

## MATERIAL AND METHODS

The study was retrospective. The data were collected from a database of the Kosovo Agency of Statistics. The analysis involved a nine-year period (2007–2015). The participants were girls aged from 15 to 19 years who gave one or more births. The data were calculated using the MedCalc statistical software. The final results were presented as prevalence rates. Also, the P-value was calculated using the Pearson (R) Calculator. Moreover, odds ratio (OR), standard error and 95% confidence interval (CI) were calculated according to Altman, 1991. This research was approved by the Ethics Committee of Obstetricians and Gynecologists of Kosovo.

## RESULTS

In Kosovo, during nine years (2007–2015), there were a total of 277,596 live births, of which 9,200 (31.3 percent) were births given by teenage girls (Tab. 1). For this period, the adolescent birth rate was 33 per 1,000 girls aged from 15 to 19 years;  $P < .0001$  (95% CI of observed proportion; 30.09 to 36.01) (Tab. 2). The average age of the study participants was 17.47 years ( $SD \pm 1.09$ );  $P < .0001$  (95% CI for mean; 16.90 to 18.03). This study shows variability in the number of births among teenage girls in 2007–2015, but a general downward trend was observed (Fig. 1).

### Differences by residence

There were differences in the percentage of teenage girls who gave birth depending on the place of residence; 64.70% of the girls were from a village, while 35.30% were from a city; odds ratio (OR) = 1.82 (95%CI; 0.83 to 4.02) (Fig. 2). The probability that a teenage girl from a village gives birth at this age is twice as high as in the case of a teenage girl from a city.

### DIFFERENCES BY THE LEVEL OF EDUCATION

Also, there was a difference in the percentage of teenage girls who gave birth depending on the level of education; 82.35% had low education, while 17.65% had a higher level of education; odds ratio (OR) = 4.82 (95% CI: 2:05 to 11:30) (Fig. 3). The probability that a teenage girl with low education gives birth at this age is 5 times higher than in the case of a teenage girl with higher levels of education.

## DISCUSSION

Pregnancy and births among teenage girls have always been complex problems. In the world, there are thousands of couples who conceive and give birth without a plan. This happens for many reasons, such as: the lack of sexual education, the lack of information about contraception, high cost of contraception, poverty, the lack of education and rural origin, etc. These factors directly or indirectly cause an increase in the number of pregnancies and births. The fertility rate among adolescent girls is the number of births per 1,000 girls aged 15–19 years. This rate varies from country to country. In 2014, the birth rate in the United States was 24.2 births per 1,000 girls [1], while in England

and Wales, it reached 23.3 per 1,000 girls aged 15–17 years. Birth rates in adolescent girls also differ by race, age group, culture, country, etc. In 2014, Hispanic adolescent females aged 15–19 years gave 38 births per 1,000 teenage females. Among black teenage females, there were 34.9 births per 1,000 girls, while among white girls there were 17.3 births per 1,000 teenage girls [2].

Countries with the highest teenage fertility rate in 2014 were: Niger with 204 births per 1,000 girls aged 15–19 years, Mali with 175 births per 1,000 girls aged 15–19 years, and Angola with 167 births per 1,000 women aged 15–19 years [3]. Countries with the lowest teenage fertility rates in 2014 were: Korea, Dem. People’s Rep. with 1 birth per 1,000 girls

aged 15–19 years, Korea, Rep. with 2 births per 1,000 girls aged 15–19 years and Switzerland with 3 births per 1,000 girls aged 15–19 years [4]. The countries with the teenage fertility rate similar to that in Kosovo are: Morocco with 32 births per 1,000 girls aged 15–19 years, Botswana with 34 births per 1,000 girls aged 15–19 years, and Romania with 35 births per 1,000 girls aged 15–19 years [4].

According to our research, in Kosovo, the adolescent birth rate was 33 per 1,000 girls aged 15–19 years during the analyzed nine-year period (2007–2015). A general downward trend was observed. The probability that a teenage girl from a village gives birth at this age is twice as high as in the case of a teenage girl from a city. The probability that a teenage girl

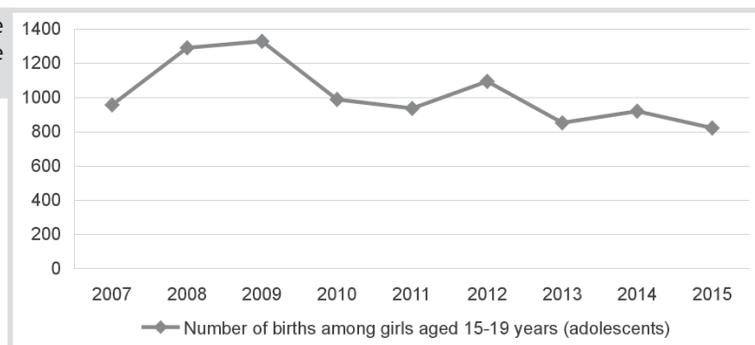
**Tab. 1.** Number and percentage of births among teenage girls in the nine-year period

Year	Total number of live births	Number of births in girls aged 15–19 years (adolescents)	Percentage
2007	33112	958	2.9
2008	34638	1292	3.7
2009	34240	1330	3.9
2010	33751	990	2.9
2011	34262	937	2.7
2012	27743	1096	3.9
2013	29327	853	2.9
2014	25929	921	3.6
2015	24594	823	3.3
Total	277596	9200	3.31%

**Tab. 2.** The birth rate among teenage girls in the nine-year period

Year	Total number of live births	Number of births in girls aged 15–19 years (adolescents)	Birth rate per 1,000 girls aged 15–19 years
2007	33112	958	29
2008	34638	1292	37
2009	34240	1330	39
2010	33751	990	29
2011	34262	937	27
2012	27743	1096	39
2013	29327	853	29
2014	25929	921	36
2015	24594	823	33
Total	277596	9200	33 per 1,000 women ages 15-19

**Fig. 1.** The general trend in the number of births among teenage girls for the period 2007–2015



with low education gives birth at this age is 5 times higher than in the case of a teenage girl with a higher level of education.

In general, early sexual activity of teenage girls without proper knowledge about the necessity and possibility of using contraceptives is considered by many authors to be the main factor affecting teenage pregnancies and births [5–8]. In 1994, Robinson R.B. described groups of teenage girls with higher risk for early sexual activity, resulting in pregnancy and child-birth;

- a. Very young adolescents (younger than 14 years old), whose physical development and behavior makes a potential pregnancy possible;
- b. Adolescent girls who are victims of rape, incest, etc.;
- c. Mentally retarded girls;
- d. Sexually uninhibited adolescent girls who have previously been pregnant;
- e. Adolescent girls who seek more physical closeness with the opposite gender.

In most developed countries, teenage pregnancy is considered a „social disease”, and is an ever-increasing social problem. Many authors report an increasing endemic level of pregnancies in adolescents [9–11]. Pregnancy and birth among teenage girls are associated with major complications such as: development of severe pre-eclampsia and eclampsia [12–16], anemia during pregnancy [17], preterm birth [18,19], fetopelvic disproportion [20,21], intrauterine growth restriction (IUGR) [22–24], Caesarean delivery, high perinatal mortality [25,26], and high rate of maternal mortality [27].

### CONCLUSION

In Kosovo, during the analyzed nine years (2007-2015), the adolescent birth rate was 33 per 1,000 girls aged 15–19 years. In this study, the number of births among teenage girls varied in 2007–2015, but a general downward trend was observed. Also, differences were noted in the percentage of births among girls

Fig. 2. Differences by residence

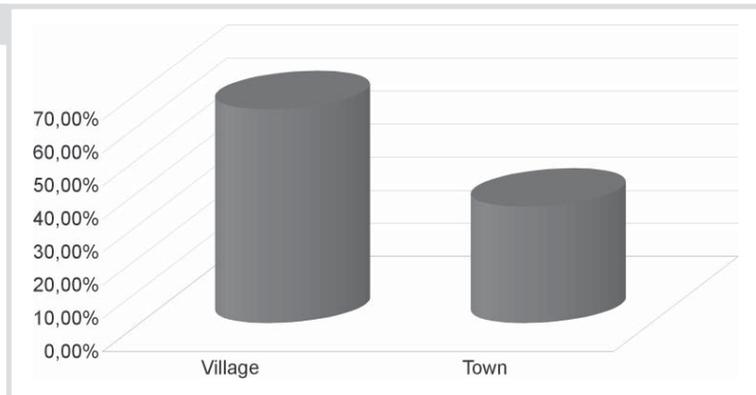
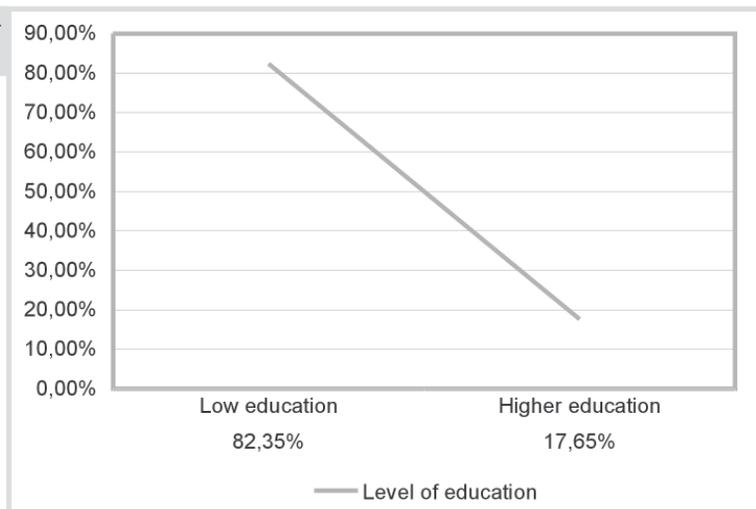


Fig. 3. Differences by level of education



depending on the place of residence and level of education. The probability that a teenage girl from a village gives birth at this age is twice as high as in the case of a teenage girl from a city.

The probability that a teenage girl with low education gives birth at this age is 5 times higher than in the case of a teenage girl with a higher level of education.

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