



## SOCIOCULTURAL DETERMINANTS IN ADOLESCENT PREGNANCIES: EVALUATION OF CONTRACEPTION, BREASTFEEDING AND BIRTH OUTCOMES

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### ABSTRACT

**Introduction:** Adolescent pregnancies are expressed as pregnancies occurring in this age group. We evaluated the sociocultural characteristics, obstetric outcomes, contraception and breastfeeding status of early-middle and late adolescent pregnant women.

**Methods:** The research was carried out by retrospective research of electronic and printed medical patient records. All patient files who gave birth in our clinic in Turkey, between 2017-2022 were examined. Inclusion criteria for the study were defined as being 19 years of age and younger and having a vaginal or cesarean delivery. Exclusion criteria from the study were defined as missing or inaccessible medical records. 10-16 years of age were considered as early-middle adolescent and 17-19 years of age as late adolescent. A total of 206 adolescent pregnant women were included in the study. The patients were divided into two groups as early and late adolescents. Their socio-demographic characteristics, obstetric outcomes, contraception and breastfeeding status were compared.

**Results:** Marriage rate was higher in the late adolescent group ( $p<0.001$ ). Contraception status of both groups was similar. There was a strong positive correlation between educational status and contraception. ( $r:0.648$ ;  $p<0.001$ ). Breastfeeding duration was higher in late adolescents ( $13.3\pm5.9$  vs  $10.6\pm6.6$ ,  $p<0.001$ ). There was no difference between the two groups in terms of obstetric outcomes.

**Conclusions:** As the educational status of adolescent pregnant increases, their contraception status also increases regardless of age. This situation may be multifactorial. Prevention of adolescent pregnancies can be reduced by increasing the education level.

**Key Words:** Adolescent, breast feeding, contraception, pregnancy.

### 1. INTRODUCTION

Adolescence is defined as the transition period from childhood to adolescence. The World Health Organization (WHO) defined the age range of 10-19 as adolescence (1). Adolescence is divided into three periods: early adolescence (10-13 years), middle adolescence (14-16 years), and late adolescence (17-19 years) (2,3).

Adolescent pregnancies are expressed as pregnancies occurring in this age group. Adolescents make up 20% of the world's population and 85% live in developing countries. Adolescent birth rates are observed at varying rates according to different parts of the world. While the highest adolescent birth rate among all world countries is found in Nigeria (250/1000), Turkey ranks 113th in this ranking (30.9/1000). While the adolescent birth rate in the United States was 34.3 per 1000 births in

2011, it decreased significantly to 22.3 in 2015. The main reason for this decline is the widespread use of contraception in recent years (4). It also differs between the countries of the world in terms of the causes of adolescent pregnancy. While premarital sexual experience, unintended pregnancies and volitional abortions are more common in developed countries, early marriages and related early pregnancies are more common in developing countries such as Turkey due to sociocultural structure, low education level and traditions (5-7).

More frequent obstetric complications such as preterm birth, abortion, low birth weight, congenital anomalies, preeclampsia, and high maternal and infant mortality rates cause adolescent pregnancies to be considered as risky pregnancies (8-11). In addition, WHO (2014) reported that babies born to adolescent mothers have a higher risk of morbidity

and mortality than babies born to women aged 20-24 (1).

Although pregnancy rates and causes vary between countries, adolescent pregnancies constitute an important health problem in both developed and developing countries.

This study aims to evaluate the outcomes, contraception, lactation and sociocultural characteristics of adolescent births performed in a university hospital in western Turkey.

## 2. MATERIALS AND METHODS

### 2.1. Collecting data

The study is a retrospective study. The research was carried out by retrospective research of electronic and printed medical patient records. All patient files who gave birth in our clinic between 2017-2022 were examined. Inclusion criteria for the study were defined as being 19 years of age and younger and having a vaginal or cesarean delivery. Exclusion criteria from the study were defined as missing or inaccessible medical records. 10-16 years of age were considered as early-middle adolescent and 17-19 years of age as late adolescent. The patients were called by phone from the contact information in the hospital records. Place of birth, number of siblings, duration of breastfeeding, method of protection, age of spouse, whether there is a consanguineous marriage, marriage status, education information were asked. Age, gravida, parity, week of birth, type of birth, presence of episiotomy and dehiscence, birth weight, APGAR 1st and 5th minute results, obstetric and birth complications, prepartum and postpartum hemoglobin values, newborn referral need were examined and the results were recorded. The results of both groups were compared.

#### 2.1.1. Statistical Analysis

The conformity of the variables to the normal distribution was examined by visual (histogram) and analytical methods (Kolmogorov Smirnov test). Continuous data collected in the study mean, standard deviation; Categorical data were expressed by descriptive methods such as ratio and percentage. Mann Whitney U test for the comparison of continuous variables between groups in the analyzes made according to the age groups of the patients; Chi-square test was used for comparison of categorical variables between groups. Correlation coefficients and statistical significance were calculated with Pearson test for all numerical variables and Spearman test for ordinal

variables. Values with a P value below 0.05 were considered statistically significant. SPSS Statistics Ver. for all statistical analysis and calculations. 22.0 program was used.

## 3. RESULT AND DISCUSSION

Between 2017 and 2022, the total number of births in our clinic was 16589, and it was determined that 217 adolescent pregnant women were delivered. 11 cases were excluded from the study due to the lack of data records. 206 cases were evaluated for analysis. The mean age of the patients was  $17.2 \pm 0.86$  years. 57 (27.7%) of the pregnant women were under the age of 17 and 149 (72.3%) were 17 years or older. There was a difference between the two groups under 17 years old and over 17 years old in terms of marriage status, breastfeeding duration and spouse age (Table 1). While 86.7% of the pregnant women aged 17 and over were married, 57.9% of the pregnant women under the age of 17 were married ( $p < 0.001$ ). The duration of breastfeeding for pregnant women aged 17 and over was  $13.38 \pm 5.9$  months, while the duration of breastfeeding for pregnant women younger than 17 was  $10.67 \pm 6.6$  months ( $p < 0.001$ ). While the mean age of the spouses of the pregnant women aged 17 and over was  $24.5 \pm 2.1$  years, it was  $23.7 \pm 2.7$  years for those under 17 years of age ( $p: 0.008$ ).

When the birth-related parameters of adolescent pregnant women were evaluated according to age groups, no difference was found between the groups ( $p > 0.05$ ) (Table 2).

While there was a low positive correlation between gestational age and breastfeeding duration ( $r: 0.267$ ;  $p < 0.001$ ), no correlation was found between using contraception ( $r: 0.087$ ;  $p: 0.215$ ). While no correlation was found between education status and duration of breastfeeding ( $r: 0.058$ ;  $p: 0.409$ ), a good positive correlation was found with using contraception ( $r: 0.648$ ;  $p < 0.001$ ) (Table 3).

Adolescent pregnant women constituted 1.24% of the total number of births in our clinic between 2017 and 2022. Depending on the socioeconomic and cultural differences in the world, the incidence of adolescent pregnancies varies between 3.2% and 42%. In our country, this rate is around 6% (12,13). According to these findings, the incidence of adolescent pregnancy between the dates specified in our research region was found to be lower than in Turkey and the world. It can be said that the reason for this is that our clinic is located in the western part of the country and it serves a relatively better sociocultural population.

**Table 1.** Comparison of maternal and newborn characteristics by age group.

	Early-Middle adolescent	Late adolescent	
Maternal characteristics	n(%)	n(%)	p
<b>Educational status</b>			
Illiterate	2(3.5)	4(2.7)	
Primary school	29(50.9)	73(49)	
Middle school	23(40.4)	68(45.6)	0.755
High school	3(5.3)	4(2.7)	
<b>Marriage status</b>			
No	24(42.1)	26(17.4)	
Yes	33(57.9)	123(82.6)	<0.001*
<b>Consanguineous marriage</b>			
No	44(77.2)	117(78.5)	
Yes	13(22.8)	32(21.5)	0.836
<b>Method of contraception</b>			
No	35(61.4)	88(59.1)	
Condom	13(22.8)	34(22.8)	
Oral contraceptives	3(5.3)	7(4.7)	
Intrauterine devices	6(10.5)	20(13.4)	0.953
	<b>Mean±SD</b>	<b>Mean±SD</b>	
<b>Gravidity</b>	1.12±0.33	1.2±0.46	0.338
<b>Parity</b>	0.11±0.31	0.13±0.36	0.653
<b>Gestational age (week)</b>	38.33±3.07	39.01±2.18	0.053
<b>Delta hemoglobin (g/dL)</b>	0.85±0.59	0.92±0.77	0.364
<b>Breastfeeding duration (month)</b>	10.67±6.6	13.38±5.9	<0.001*
<b>Age of husband</b>	23.7±2.7	24.5±2.1	0.008*
<b>Number of siblings</b>	4.56±1.78	4.64±1.9	0.627
<b>Newborn characteristics</b>			
	<b>Mean±SD</b>	<b>Mean±SD</b>	
Birth weight	3110.6±485.9	3181.2±481.9	0.538
APGAR 1. min	8.74±0.84	8.83±0.71	0.275
APGAR 5. min	9.81±0.71	9.87±0.56	0.604

In the early-middle adolescent pregnant group, the status of being unmarried was significantly higher than the late adolescent pregnant group. ( $p < 0.01$ ). Marriages made without a civil marriage in our country cause the adolescent gestational age to decrease to younger ages. Although the normal marriage age is 18 according to the Turkish Civil Code No. 4271 in our country, this law states that men and women who have completed the age of 17 can marry with the written consent of their parents or guardians (14). However, in our country, the fact that the people continue their traditional behaviors about marriage despite the opposition of the laws causes an increase in adolescent pregnancies.

In our study, no significant difference was found between the two groups in terms of educational status, but this may be due to the fact that we evaluated adolescent pregnant women within themselves.

Adolescents have not completed the developmental stage and have not reached full maturity in terms of the skeletal system. Therefore, it has been predicted that adolescent women give birth to premature and low birth weight infants, resulting in higher neonatal and infant mortality (5). While Fraser et al. found the rate of intrauterine growth retardation to be significantly higher in adolescent pregnancies, another study found no significant difference between adolescent and adult pregnancies in terms of intrauterine growth retardation (15,16). In another study, it was reported that low birth weight infants were more common in adolescent births, whereas infant APGAR scores were similar to those in adult births (17). In our study, similar to the literature, no significant difference was found between age groups in terms of APGAR score, preterm birth and infant birth weight.

Although there are results in the literature showing that cesarean section rates are higher in adolescent

**Table 2.** Comparison of birth parameters by age groups.

	Early-Middle adolescent n(%)	Late adolescent n(%)	p
<b>Type of delivery</b>			
Vaginal	50(87.7)	115(77.2)	0.09
Cesarian section	7(12.3)	34(22.8)	
<b>Episiotomy</b>			
No	25(43.9)	61(40.9)	0.704
Yes	32(56.1)	88(59.1)	
<b>Dechirure</b>			
No	56(98.2)	146(98)	1.000
Yes	1(1.8)	3(2)	
<b>Indication of cesarian section</b>			
Non-progressing travail	2(28.6)	10(29.4)	0.753
Cephalopelvic disproportion	1(14.3)	7(20.6)	
Breech presentation	1(14.3)	5(14.7)	
Fetal distress	1(14.3)	4(11.8)	
Prior cesarean section	2(28.6)	8(23.5)	
<b>Obstetric complications</b>			
No	55(96.5)	145(97.3)	0.753
Abruption placenta	2(3.5)	4(2.7)	
<b>NICU admission</b>			
No	54(94.7)	141(94.6)	0.976
Yes	3(5.3)	8(5.4)	

NICU: Neonatal Intensive Care Unit

**Table 3.** The relationship of age and education level with breastfeeding duration and contraception.

Parameters	Correlation coefficient	p
<b>Age</b>		
Breastfeeding duration	0.267	<0.001*
Contraception	0.087	0.215
<b>Educational status</b>		
Breastfeeding duration	0.058	0.409
Contraception	0.648	<0.001*

pregnant women, there are also studies claiming the opposite (18,19). The World Health Organization recommends that the primary cesarean section rate should not be more than 15% (20). In our country, according to the health performance and quality directive, the rate of primary cesarean section should not exceed 20% in training hospitals and 15% in other hospitals (21). In our study, no significant difference was found between the two age groups in terms of cesarean section rate. However, it can be said that the reason for the high cesarean section rates is that many patients in our clinic were referred to our hospital due to their low socioeconomic level, limited educational opportunities and high obstetric risk.

According to a study conducted in Malawi, adolescents are at higher risk for certain pregnancy and peripartum complications compared to women in older age groups. However, it was concluded that these results were more related to the peripartum

care received and were not specific to maternal age alone (22). Similar to this study, there was no obstetric complication rate increasing with age as a result of our study.

In all countries, adolescent mothers have a lower rate of initiation and continuation of breastfeeding than adult mothers, and many adolescents continue to breastfeed for less than 6 weeks (23–25). In addition, according to studies, more than half of adolescents who start breastfeeding stop breastfeeding within the first month, while only 18.7–22.6% continue to breastfeed for 6 months (26–30).

In the literature, economic status, marital status, social support, mother and spouse support, pain, cultural influences, lack of knowledge, negative experiences, breastfeeding intention, attitude towards breastfeeding, and self-efficacy are stated as factors affecting breastfeeding (31,32). Although studies investigating the relationship between

different periods of adolescence and breastfeeding are insufficient in the literature, there are studies comparing mothers of reproductive age and adolescent mothers in terms of breastfeeding. In a study conducted in England, comparing the breastfeeding rates of mothers in the first six weeks postpartum, it was determined that adult mothers breastfed 5 times more than mothers under 20 years of age (33). Santo et al. (2007) found that in Brazil, adolescent mothers were 1.5 times more likely to abandon exclusive breastfeeding before 6 months of age compared to adult mothers (34). In our study, the duration of breastfeeding was significantly shorter in middle-adolescent pregnant women compared to late-adolescents, and there was a positive and significant correlation between age and duration of breastfeeding. These results show that the duration of breastfeeding increases with age, which is consistent with the literature.

The incidence of contraception in adolescence is quite low when compared to adulthood and varies according to countries. The most important reason for the differences between countries in the rate of contraception use is the success of sexual education in childhood. In countries that understand the importance of sexual education and can develop a policy on this issue and implement it successfully, the rate of contraception use increases in direct proportion and accordingly, the rate of unwanted pregnancy decreases (35).

As a result of our study, a strong positive correlation was found between educational status and protection rates, which once again emphasizes the importance of education on contraception.

#### 4. CONCLUSION

As a result, in addition to the necessity of closely monitoring the antenatal follow-up of adolescent pregnancies, this group should also be supported and educated in terms of breastfeeding counseling and contraception methods. Adolescent pregnancies bring not only health problems but also social consequences. It is vital to take the necessary steps to prevent adolescent pregnancies before they occur.

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**Ethical Statement:** The retrospective study was approved by the local ethics committee with decision number 696 on 14.09.2022.

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