

Original Studies

Perinatal Outcomes and Risk Factors of Turkish Adolescent Mothers

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Abstract. *Study Objective:* Adolescent pregnancy is considered a high risk for both the mother and infant. The aim of this study was to determine obstetric and neonatal outcomes and risk factors in adolescent pregnant women and to compare perinatal outcomes among the teen age groups and between adolescent and adult women.

Design: Retrospective study including adolescent pregnant women and adult women.

Setting: A public maternal hospital.

Main Outcome Measures: This retrospective cohort study included 945 teenagers who gave birth at year 2004 in a maternity hospital in Izmir. Dependent variables included perinatal and maternal outcomes. Independent variables were miscellaneous socio-demographic characteristics and obstetric complications. Chi-square, Fisher exact test, and *t*-tests were used for the comparison of the adolescent group and adult women.

Results: Overall, adolescents accounted for 11.8% of all deliveries in hospital. 99.7% of teenagers were unemployed, and 59.8% of those had no health insurance. 81.5% of the pregnant adolescents were nulliparous. 27.5% of teenagers gave birth by cesarean delivery. The rates of preterm birth and low birthweight of teen mothers were 18.2% and 12.1%, respectively. Twenty-eight percent of women had some obstetric and neonatal complications. The rate of preterm delivery was higher in adolescent mothers; however, cesarean delivery rate was higher in adult women ($P = 0.000$, $P = 0.0002$ respectively). Absence of health insurance, less education, and non-official marriage were significantly higher in pregnant women aged 17 years or younger compared with women aged 18–19 years (for all, $P = 0.000$). However, there was no statistically significant difference between the adolescent age groups regarding perinatal complications.

Conclusion: The rates of pregnancy and the rates of adverse obstetric and neonatal outcomes were considerably higher in teenagers.

Key Words. Adolescent pregnancy—Prevalence and risk factors—Perinatal outcomes

Introduction

Although teen birth rates have decreased over the past decade, adolescent pregnancy continues to be a challenging public health issue around the world. Adolescent pregnant women have substantially higher maternal and perinatal morbidity and mortality than adult women.^{1–5} Together with biological immaturity, factors such as unintended pregnancy, inadequate perinatal care, poor maternal nutrition, and stress may cause adverse obstetric and neonatal outcomes in pregnant adolescents. Socio-economic, cultural, geographic and racial factors may also contribute to poor pregnancy outcomes.^{6–10} Pregnancy-induced hypertension, inadequate maternal weight gain during pregnancy, anemia, placenta previa, abruptio placentae, operative vaginal delivery, cesarean delivery, abortion, stillbirth, preterm delivery and low birth weight are more common in pregnant adolescents compared with pregnant adults. However, some studies have reported that adolescent pregnancy was not associated with increased risks of adverse perinatal outcomes compared with adult pregnancy.^{11,12} In Turkey, the proportion of young population is very high and the median age at first marriage is nearly 20. The prevalence of pregnancy among women aged 15–19 years was 8.0% in a study carried out in 2003, in Turkey. In that study, regional differentiation was observed and the rate of teen pregnancy was 13% in West Anatolia.¹³

The objective of this study was to evaluate obstetric and neonatal outcomes of adolescent pregnant women who delivered at a maternity hospital and to

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compare perinatal outcomes among teen age groups and between adolescent and adult women.

Materials and Methods

This retrospective cohort study was performed by analysis of the patients' files and birth records of adolescent pregnant women who delivered at a maternity hospital in year 2004. 26.1% of the pregnant women at the Izmir metropolitan area in the Aegean region gave birth in this hospital. This public health facility is not a referral hospital. Hence, the rate of high-risk pregnancy is same as in the general population. The hospital provides obstetric, gynecologic, and family planning services, and covers management of women who are usually living in a low socio-economic status.

The variables of the study were determined as the following:

Dependent variables included perinatal and maternal outcomes. The perinatal outcomes were neonatal complications, Apgar scores at 1 minute and 5 minutes, gestational age and birth weight. Maternal outcomes were maternal complications during hospitalization for delivery and the mother's hematocrit levels. Independent variables were age, marital status, maternal birth place (assessed as an immigration variable), working status, health insurance, cigarette smoking during pregnancy, and complications during pregnancy.

Low birth weight was defined as an infant weighing less than 2500 g, and a premature baby was defined as an infant delivered at < 37 completed weeks of gestation.

Teen mothers are grouped into three age categories; 12–14 years, 15–17 years and 18–19 years. However, because of the small number of teen mothers aged 12–14 years (only 6 subjects), two of the age groups (12–14, 15–17) were pooled together in a single group, of 12–17 years old.

SPSS 11.0 program was used for data analyses. Comparisons of adolescent and adult women, and of groups of adolescent women were evaluated by chi-square, Fisher exact test, and *t*-tests.

Results

Files of all adolescent women were successfully evaluated. Nine hundred forty-five out of 8034 pregnant women who delivered at the maternity hospital in year 2004 were 19 years old or younger. Overall, the rate of adolescent pregnancy in this hospital was 11.8%. Mean age of adolescent pregnant women was 18.1 (range 12 to 19, SD: ± 1.01). The socio-demographic characteristics of adolescent pregnant women are summarized in Table 1.

Table 1. Socio-demographic Characteristics of Adolescent Pregnant Women

Characteristic	Number	%
Age		
≤17 years old	219	23.2
≥18 years old	726	76.8
Place of Birth		
Izmir	282	29.3
East-South East Anatolia	323	34.3
Other	340	36.4
Education		
Uneducated	212	22.4
≥Primary school	733	77.6
Marital status		
Officially married	629	66.6
Married (religious)	309	32.7
Single	3	0.3
Widow	4	0.4
Occupation		
No	942	99.7
Yes	3	0.3
Health insurance		
Yes	380	40.2
No	565	59.8
Total	945	100.0

Nearly one fourth of the adolescent pregnant women were 17 years old or younger. Only 6 (0.6%) subjects were between 12 and 14 years of age. 70.7% of women were born outside the Izmir province, and 34.3% immigrated from East and South East Anatolia, in Turkey. One hundred and thirty of the adolescent pregnant women were not officially married, and 99.7% were unemployed (housewives); 59.8% of the women had no health insurance or had a medical insurance facility which provides health services from the Turkish government only for poor people (called “yesilkart”).

Some obstetric outcomes were compared among adolescent and adult mothers. The rate of preterm delivery is higher (18.2% vs 2.1%), and the rate of cesarean delivery was lower (27.7% vs 37.4%) in the adolescent mothers ($P = 0.000$, $P = 0.0002$, respectively), see Table 2. Eighty-one percent of adolescent women were nulliparous, 14.6% had two births,

Table 2. Some Characteristics of Births in Maternity Hospital

Characteristics	Adolescents' Births (n = 945)		Adult Women's Births (n = 7089)		P*
	Number	%	Number	%	
Preterm delivery	172	18.2	152	2.1	0.000
Stillbirth	13	13.7	106	1.5	0.816
Cesarean delivery	262	27.7	2648	37.4	0.0002
Operative delivery	33	3.4	223	3.1	0.696
Multiple pregnancy	8	0.8	27	0.4	0.13**

* χ^2

**Fisher exact test

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