

# Adolescent pregnancy in West Turkey

## *Cross sectional survey of married adolescents*

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### ABSTRACT

**Objectives:** The purpose of this research was to determine both the fertility characteristics of married adolescent women in Denizli province center and the adolescent pregnancy rate and also some factors that could occur with adolescent pregnancy.

**Methods:** This cross-sectional study was conducted in the Denizli province center in the year 2001. According to the Turkish Demographic Health Survey 1998 statistics, the percentage of married adolescents between 15-19 years of age who have begun to give birth is 9.3-10.2%. The sample size of 3471 was determined using EPI INFO software. To reach this sample size, 5 of the 25 health clinics in Denizli province center were chosen by simple random sampling method.

**Results:** Approximately 6.4% of the adolescents were married, 4.9% had been pregnant as an adolescent, 4.8%

had delivered a baby, 23.3% of the married adolescents had never been pregnant, 23.3% were pregnant with their first child, and 51.2% were mothers; 76.7% had been pregnant one or more times. The majority of the married adolescent women in the research group (57.2%) do not use any method of family planning, followed by 15.7% who use an intrauterine device. Age, lower degree of education (less than 8 years) and unemployment were identified as risk factors for adolescent pregnancy.

**Conclusions:** The results of this study suggest that although the frequency of adolescent pregnancy in the region is lower than the mean value in Turkey, it is higher compared with other countries. Age, education <8 years and unemployment are risk factors for adolescent pregnancy.

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Adolescence is accepted as the transition period from childhood to adulthood, the beginning of puberty from the aspect of maternal health, and extends until 19 years of age. In this period, the child achieves physical, psychological and social maturity. The World Health Organization defines the period between 10-19 years of age as the adolescent period, and between 15-24 years old as the period of youth.<sup>1,2</sup> Adolescent pregnancies have been recognized as a serious world health problem since the 1960s.<sup>3,4</sup> As with

many other health problems there are social, cultural and economic causes and negative consequences of this problem. Studies have shown that race, ethnic group, marital status, whether or not continuing education, and social insurance are important factors in the frequency of adolescent pregnancy.<sup>5-7</sup> In addition, adolescent pregnancy has been reported to be related to physical factors such as decrease in age of menarche, frequency of sexual relationships and psychological and behavioral factors, such as physical

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or sexual exploitation, exposure to domestic violence or pressure.<sup>4,6,8,9</sup> Early pregnancy is an obstacle to the education of women and their social and economic status throughout the world. Motherhood at a young age increases the risk of maternal death; the children of young mothers have an increase in mortality and morbidity.<sup>1,7</sup> Complications that arise most frequently in adolescent pregnancy, pregnancy-induced hypertension, preterm birth, anemia, and in very young adolescents, difficult delivery, postpartum hemorrhage, frequently seen in developing countries malnutrition in maternal and postpartum periods, and in addition, human immunodeficiency virus and other sexually transmitted diseases increase the maternal mortality and morbidity.<sup>1,7,10-13</sup> Studies have shown an increase in mortality in adolescents <15 years of age.<sup>7,10</sup> According to the Turkish Demographic Health Survey (TDHS) 1998 statistics, the percentage of married adolescents between 15-19 years of age who have begun to give birth is 9.3%.<sup>14</sup> This is quite a high rate and shows how important this problem is for our country. Very few studies have been carried out in our country on the subject of adolescent pregnancy and almost all of these have been conducted with married adolescents.<sup>15-16</sup> In view of the fact that premarital sex and pregnancy are socially and culturally unacceptable in our country; thus, unmarried adolescents have no records of pregnancy.

The purpose of this research was to determine both the fertility characteristics of married adolescent women in Denizli province center and the adolescent pregnancy rate and also some factors that could occur with adolescent pregnancy.

**Methods.** This cross-sectional study was conducted in the Denizli province center in the year 2001. Health care services were socialized in Turkey in 1960. There is a health care clinic for every 5-10,000 people and all care given at these health clinics is free. At least one general practitioner physician, midwives (one midwife for every 2000 people), at least one nurse, health officers, and environmental health technicians work in every health clinic. Preventive and therapeutic services are given in an integrated manner in the health clinics. Midwives make home visits every day. They make home visits to monitor women between the ages of 15-49, pregnant and postpartum women and 0-5 year old children in their own regions. This monitoring is prepared by the Health Ministry and recorded on special monitoring cards, which have been developed for every group. This monitoring is carried out more frequently for risk groups (adolescent married women and adolescent pregnant women, malnourished infants

and children, and so forth), and the physician is kept informed. All services are supervised first by the health clinic physician, and information and forms are sent to the province health ministry every month. In recent years, health care services are being privatized in our country and now some services provided in health clinics are charged for. However, when this research was carried out (in the year 2001) all health services were free. There are no health care clinics specifically designated for adolescents in Turkey. All children in Turkey <5 years old are monitored by the midwives in the neighborhood public health clinics but when these children begin at school at 6 years old, the monitoring ends. Unfortunately, there are no school health services in our country. In some private schools they have a physician and nurse. Legally, the school health care services are the responsibility of the physicians at the public health clinics, but their list of job responsibilities is so vast (preventive, therapeutic, rehabilitation services as well as forensic medicine, environmental health, and so forth), that their monitoring of school age children is generally not carried out. Thus, there is no one specifically meeting the preventive health care needs of adolescents in our country. However, the Health Care Ministry is currently carrying out some projects supported by the European Union the WHO. Denizli is a province in western Turkey with a population of 284,000 and with a concentration of textile factories. The west region is the most densely settled, the most industrialized, and the most socio-economically advanced region. The educational level of Denizli inhabitants is higher and the ratio of unemployment in Denizli is lower than the mean of Turkey.<sup>17</sup> However, families with low socioeconomic level who are not able to send their daughters to school generally send them to work in the textile factories until they get married. The population of women who live in Denizli province between the age of 15 and 19 years is 17,278 people. According to TDHS-1998 statistics, the percentage of married adolescents between 15-19 years of age who have begun to give birth is 9.3%.<sup>14</sup> The sample size of 3471 was determined using this number in the EPI INFO program. To reach this sample size, 5 of the 25 health clinics in Denizli province center were chosen by simple random sampling method. All of the women between the age of 15 and 19 years old (4041 people) who lived in these health clinics regions were included in the study. In the research group, 6.4% of the 4041 adolescents were married (262 women) and 3.3% (134 women) had at least one live birth (were mothers); 1.5% (61 women) were pregnant with their first child. In summary, 4.8% of the 4041 adolescents (195 women) had begun to give

birth were new mothers and 4.9% (201 women) had had an adolescent pregnancy.

Data were collected using the health clinic records, "Household Determination Form", "Monitoring Form for Women 15-49", "Prenatal-Postpartum Monitoring Card" and an information form that we prepared. The dependent variable of this research was adolescent pregnancy and the independent variables were age, educational status, occupational status, spouse's age, spouse's educational status, blood relative of husband, age when married, health care insurance, birth characteristics of adolescents and method of family planning used by adolescent married couples. While preparing the tables and for the statistical analysis these independent variables were grouped in this manner: Educational status - those with middle school or less education and those with high school and higher level of education; Employment Status - unemployed and employed; Some factors that we used in the research are defined thus (all definitions were carried out according to TDHS): Mothers - women who had at least one live birth; New mothers - women who had at least one live birth or who were pregnant with first child; Adolescent pregnancy - women who had been pregnant at least once (ending in live birth, fetal death, or abortion). Data obtained in the study were analyzed in the SPSS version 10.0 by  $\chi^2$  analysis, t-test and logistic regression analysis as appropriate. The t-test was used to compare the mean age at marriage and mean age of husbands between married adolescents who have and have not been pregnant. Both bivariate and multiple logistic regression analyses were used to determine the risk factors of adolescent pregnancy. Risk factors significantly affecting adolescent pregnancy was tested in logistic regression (multivariate) analysis independent risk factors were identified.

The ethical committee of the Pamukkale University Faculty of Medicine and Denizli Directorate of Health approved the study protocol.

**Results.** Of the adolescent women in the research group 4.9% had an adolescent pregnancy. Examination of some of the socio-demographic characteristics of the research group shows that 84% of the women were >18 (51.9% were 19 years, 32.1% were 18 years, 14.9% were 17 years, and 1.1% were 16 years old) and there were no 15-year-old married adolescent girls. The majority (65.5%) of the women in the research group were primary school graduates, 19.5% were secondary school and 12.3% were high school graduates. The percentage of those illiterate was 1.1% and the percentage of university graduates was 0.8%. The majority of married adolescents in

the study were housewives (80.9%) and 33.6% had no social insurance. Approximately, 48.9% of the adolescent women in the study had never had a live birth, 48.9% had one live birth, and 2.2% had 2 live births (**Table 1**).

A statistically significant difference was detected between married adolescents who have and have not been pregnant with regard to their education level and employment status ( $p < 0.05$ ) (**Table 2**). In the research of adolescents, no significant difference was found between those who have been and have not been pregnant regarding educational status of husband, occupation of husband, age of husband, age when married and whether or not their husband is a blood relative ( $p > 0.05$ ) (**Table 2**). The factors identified in the bivariate analysis as significantly associated with pregnancy were incorporated in to multivariate analysis (logistic regression analysis). The results of the analysis were as follows: the risk of adolescent pregnancy was 3.3 times higher among women who had an education level of secondary school or lower than in those with a higher education level; 2.8 times higher among unemployed women than in employed ones (**Table 3**). The majority of the married adolescent women in the research group (57.2%) do not use any method of family planning, followed by 15.7% who use an IUD, 13.0% who use withdrawal, 12.1% who use condom and 2% who use birth control pills (**Table 4**).

**Discussion.** A comparison of these data with the TDHS results, and Denizli with the results from the western provinces, shows that Denizli has a lower rate than both Turkey's western region and the mean of city centers but it is higher than in many other countries; for example Japan, Western Europe country.<sup>18-21</sup> Another comparison of these data (births per 1000 females age 15-19 years) with the middle east region were Syria 44, Iraq 45, Iran 77, Egypt 62, Libya 102, and Saudi Arabia 114. Denizli has lower rate than Iran, Egypt, Libya and Saudi Arabia but higher than Syria and Iraq.<sup>20</sup> The education status of the pregnant adolescent and their husband were risk factors for adolescent pregnancy in this study. Many studies investigating the risk factors for adolescent pregnancy suggest that the frequency of adolescent pregnancy decreases as the education status of the husband/partner increases.<sup>5,16,19,20</sup> A study by Singh at al<sup>20</sup> including data from 40 developing countries showed that the longer the education period of primary school, the lower the frequency of adolescent marriage and pregnancy.<sup>20</sup> Our study revealed that unemployment of the adolescent was a risk factor for adolescent pregnancy. A study by Trent including

**Table 1** - Birth characteristics of adolescents in the research group.

Pregnancy history	n (%)
Those never pregnant	61 (23.3)
Those twice pregnant	61 (23.3)
Mothers (those who carried pregnancy to delivery)	134 (51.2)
Those with history of abortion	3 (1.1)
Those with history of abortion and currently pregnant	3 (1.1)
<b>Total</b>	<b>262 (100.0)</b>
<i>Number of pregnancies</i>	
No pregnancies	61 (23.3)
1 pregnancy	173 (66.0)
2 pregnancies	25 (9.5)
3 pregnancies	2 (0.8)
4 pregnancies	1 (0.4)
<b>Total</b>	<b>262 (100)</b>
<i>Number of live births</i>	
No live births	128 (48.9)
1 live birth	128 (48.9)
2 live births	6 (2.2)
<b>Total</b>	<b>262 (100.0)</b>

data from 50 developing countries demonstrates that higher levels of development and higher rates of women's labor force participation are related to lower fertility rates.<sup>21</sup> Although Denizli is one of the best provinces for having developed industry, low unemployment and good education and health indicators it is significant that it also has a high rate of adolescent pregnancy. Other than the TDHS data the situation in eastern Turkey is not known in detail. However the most important result of this study is the determination that one of Turkey's most developed provinces has a high rate of adolescent pregnancy. This finding in addition to the socioeconomic status of those in adolescent marriages and with adolescent pregnancies shows a close relationship with the cultural make-up. This study emphasized that even if the socioeconomic status is good society's acceptance of girls' marrying at a young age is the basic problem. The majority of the married adolescent women in the research group (57.2%) do not use any method of family planning. There is an unmet need for family planning in our country for 20.0% of the women between 15-19 years.<sup>14</sup> It is necessary for adolescents to have easy access to safe and effective birth control methods and this service needs to be provided regardless of their marital status or economic situation. This problem is complex. Sometimes the basic problem poverty, sometimes culture.<sup>1</sup> Until the year, 1997 the mandatory education in Turkey

**Table 2** - Comparison of some socio-demographic characteristics of married adolescents who have and have not been pregnant.

Parameters	Adolescents who have been pregnant n (%)	Adolescents who have not been pregnant n (%)	P-value
<i>Age</i>			
16	1 (0.5)	2 (3.3)	0.144
17	28 (14.0)	11 (18.0)	
18	62 (30.8)	22 (36.1)	
19	110 (54.7)	26 (42.6)	
<i>Education level</i>			
Second school and lower	179 (89.5)	48 (78.7)	0.028
High school and higher	21 (10.5)	13 (21.3)	
<i>Employment status</i>			
Unemployed	170 (84.6)	42 (68.9)	0.006
Employed	31 (15.4)	19 (31.1)	
<i>Husband's education level</i>			
Second school and lower	142 (75.9)	42 (71.2)	0.464
High school and higher	45 (24.1)	17 (28.8)	
<i>Social Insurance</i>			
Yes	138 (68.7)	45 (73.8)	0.446
No	63 (31.3)	16 (26.2)	
<i>Blood relative of husband*</i>			
Yes	10 (5.2)	1 (1.6)	0.469
No	183 (94.8)	60 (98.4)	
Husband's age	24.8 ± 3.8	24.7 ± 2.9	0.815
Age when married	17.1 ± 1.0	17.7 ± 1.5	0.418

**Table 3** - Determinants for adolescent pregnancy.

Variable	Odds ratio	95% CI
Adolescent's education level (Secondary school or lower)	3.3	1.4 - 7.7
Employment status (Unemployed)	2.8	1.4 - 5.6
Age	1.7	1.1 - 2.4
Model - Adolescent's education level, employment status, age. CI - confidence interval		

was 5 years primary school. Since 1997 it has been increased to 8 years. Although it is called mandatory primary school education, there are no sanctions against families who cannot send their child to school after 5 years. Because if the basic problem is poverty, the government and school director cannot apply to force to parents. But if the basic problem is parents not to esteem to their daughter, the government and school director can apply to force. If the mandatory education increasing to 11 years it may be an effective solution to the prevention of adolescent pregnancy, and because premarital sex and pregnancy are socially and culturally unacceptable in our country. In this situation, girls who are required to complete their education will be nearing the end of adolescence and then get to married. In countries, as in our country, where adolescent marriage is not contrary to societal values, particularly in rural areas, girls are frequently married at an early age.<sup>1,3,22-24</sup> In addition, adolescents are under social pressure; their families demand children after they are married. Furthermore, having a child means gaining a social status for those women; particularly women having a son are highly esteemed and respected by their husbands and their families. For this reason those who marry in adolescence are frequently become parents immediately.<sup>1,3,22</sup> A basic solution to adolescent pregnancy is to decrease adolescent marriages.

In conclusion, the results of this study suggest that although the frequency of adolescent pregnancy in the region is under than the mean value in Turkey, it is higher than in many other countries. Moreover, the use of family planning methods is very low among married adolescent females. Age, education less than 8 years and unemployment are associated factors for adolescent pregnancy. The fact that marriage of young girls in our country is acceptable and is considered a normal phenomenon socially and

**Table 4** - Family planning method used by married adolescents.

Family planning method used	n (%)
Intrauterine device	40 (15.7)
Withdrawal	33 (13.0)
Condom	31 (12.1)
Pill	5 (2.0)
No method used	146 (57.2)
<b>Total</b>	<b>255* (100.0)</b>
*Information not obtained from 7 individuals.	

culturally creates a serious problem. Besides, due to poverty, families are reluctant for the schooling of girls and desire to get them married as soon as possible to avoid the economic burden they lay on the family. There is a vital need for raising public awareness on the detrimental effects of early marriage while developing policies based on eliminating social inequalities to reduce poverty and to support families for the schooling of girls. A combined effort of all educated individuals, particularly medical staff and teachers is required to provide public education and to raise awareness. We suggest that, policies based on eliminating social inequalities and interventions to raise the social status of women will contribute to the reduction of adolescent pregnancies.

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