

Pregnancy, Health, and Birth Related Problems of Pregnant Adolescents

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Abstract

Background: This study was conducted in order to identify the problems of pregnant adolescents related to general health, pregnancy, and birth; and to raise awareness among pregnant adolescents on healthy pregnancy and birth practices.

Method: This is a cross-sectional study held in the Bağlar Health Center region, Diyarbakir. The data were acquired from the interview forms of 125 pregnant adolescents identified from among the health center records. The pregnant women were visited twice at their homes before and after birth. The required information related to pregnancy and delivery was collected, pregnant women were clinically examined and their blood and urine samples were collected.

Results: Results of the investigation revealed that 83,2% of the pregnant adolescents were in their late adolescent years, that 46,4% had primary or further level education, and that 48% were consanguineously married. Adolescents were found to have married within an average of 3,5 years after their first periods, and within an average of $16,9 \pm 1,2$ age, and to have gotten pregnant in an average of 3 months after getting married. Half of the adolescents with multiple pregnancies were identified to have repeat pregnancies within one year after the first birth. 20,8% of the adolescents did not receive any prenatal care and 24,8% continued smoking during pregnancy. Of the pregnant women, 71,2% did not use iron preparations, and 38,5% were found to be anemic. Of the pregnancies monitored, 84,8% ended in natural births, while 12% ended in caesarian births, while 2,4% resulted in miscarriage, and 0,8% ended in stillbirths. Incidence of prematurity was 7,4% in adolescent mothers and the rate of infants born with low birth weight was 11,7%. The relation between pregnancy durations of less than 37 weeks and birth complication was considered significant. Sixty percent of the pregnant women did not make any changes in their nutritional habits during pregnancy, and consequently, 40% of adolescents had poor pregnancy weight gain.

Conclusion: Marriage in adolescence brings along adolescent pregnancy, which puts child and maternal health at risk. Assuming that adolescent marriages cannot be prevented, studies aiming postponing adolescent pregnancies should be attached importance in especially primary health centers, and awareness on reproductive health, family planning, and nutrition should be created among adolescents.

Keywords: Adolescence, pregnancy, birth

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Introduction

World Health Organization (WHO) defines persons within the 10-19 age range as the "adolescent" and those within the 15-24 age range as the "young".¹ Despite the efforts to limit the adolescence age group to specific age groups, it is hard to define this period within definite age limits, as gender, ethnic nature, socio-cultural development, economic power, genetics, and environmental conditions are considered to be effective in adolescent development process. While the frequency of adolescent pregnancies varies greatly in different countries, adolescent pregnancy rate is generally higher in developing countries. Having children at early ages prevents educational, social, and economic development of women, besides increasing maternal mortality risk, and morbidity and mortality of children to be delivered.^{2,3,4}

Each year, 63 out of 1000 adolescents give birth and 17 million infants are born. The risk of first year mortality among these infants is twice as much when compared to the infants born to adult mothers. Again, the risk of mortality in pregnant adolescents due to complications related to pregnancy and birth is 2 to 5 times higher. Each year, 70.000 young adolescent mothers die due to complications related to pregnancy and giving birth.² Approximately 1,5 million young people between the ages of 10 and 24 live in the world.⁵ Turkey is a country with a young population. According to the Turkey Demographic and Health Survey (TDHS) held in 2003; adolescents between the ages of 10 and 19 comprise 19,7% of the population. The share of those who get their first marriages between the ages of 15 and 19 is 33,7 percent. The highest adolescent fertility rate is in Eastern Anatolia with a rate of 9,0%. The results of the same study reveal that childbearing rapidly increases with age. While the rate of childbearing at the age of 16 is 1,0%, this rate goes up to 3,0% at the age of 17, to 8,0% at the age of 18, and up to 17,0% at the age of 19. When the realities of the Southeastern Anatolia Region are taken into consideration, adolescent pregnancies are observed to be more frequent in rural areas and in the shanties situated in regions with a low socio-economic level of cities.⁶ All of these pregnant women are married and have orderly lives. Pregnancies are planned either by young couples or by elderly family members, and are intended ones. On the other hand, adolescent pregnancies in the Western countries come up as unintended pregnancies, related mostly to unmarried persons who have irregular lives. For this reason, it would not be a correct approach to compare pregnant adolescents in the Western countries with those in Turkey. Therefore, each country has to familiarize itself with its own pregnant adolescents.

This study was performed to identify the problems of pregnant adolescents related to pregnancy, health, and delivery; and to raise awareness among pregnant adolescents on healthy pregnancy and birth practices.

Materials and Methods

This is a descriptive cross-sectional study, held in the Baglar Health Center region of Diyarbakir. The data were collected via interview forms of 125 pregnant adolescents who were registered in the health center as of 25 February 2004. Pregnant women were visited once before and once after delivery at their homes; necessary information on pregnancy and delivery was collected, pregnancy examinations were performed, and their blood pressures were measured. Blood samples were taken from the pregnant women and tested for hemoglobin levels, and glucose and albumin levels were measured in urine samples. BMIs were calculated measuring body weights at the beginning and at the end of the pregnancy. Pregnant women were classified as underweight (19,9), normal weight (20,0 - 24,9), and moderately overweight (25,0-29,9) according to their BMIs.⁷ In the evaluation of the data, percentages were calculated for intermittent variables, and arithmetic means and standard deviations were calculated for constant variables. In the cross-table where the frequency distributions are shown, Chi-square analysis was performed.

Result

Some socio-demographic features of the 125 pregnant adolescents included in the study are presented in Table 1. Accordingly, the mean age of the pregnant women was $18,3 \pm 0.85$. Of the adolescents, 83,2 % were identified to be at their late adolescent years during their pregnancy in 2004. Examination of their educational status revealed that 53,6 % did not have any education at all, while 46,4 % had primary and high school education. Of the young women, 87,2 % have stated that they got married on their own will. When the social security status of the adolescents were examined, fifty-two percent of them did not have any social security, 28,8 % were covered by the health care program for poor citizens without charges (green card for health care), and the social security system of 15,2 % was the Social Security Organization (SSK). The study revealed that 48% of the pregnant women were consanguineously married, and that 28 % of them were married to a first degree relative.

Table 1. Descriptive Features of the Pregnant Adolescents Included In the Study

<i>Features</i>	<i>Number</i>	<i>%</i>
Age	16	5 4.0
	17	16 12.8
	18	36 28.8
	19	68 54.4
Educational status	Illiterate	47 37.6
	Literate	20 16.0
	Primary School	45 5
	Secondary School	8 6.4
	High School	5 4.0
Age of spouse	18-19	5 4.0
	20-24	58 46.4
	25-29	50 40.0
	30-34	10 8.0
	+35	2 1.6
Educational status of spouse	Illiterate	5 4.0
	Literate	11 8.8
	Primary School	61 48.8
	Secondary School	15 12.0
	High School	29 23.2
Occupation of spouse	Higher Education	4 3.2
	Unemployed	71 56.8
	Temporary worker	30 24.0
	Permanent worker	10 8.0
	Tradesman	12 9.6
Degree of affinity with	Student	2 1.6
	None	65 52.0
	First degree	35 28.0
	Second degree	14 11.2
Social security	Distant	11 8.8
	None	67 53.6
	Green card	36 28.8
	Bağkur (Social Security Organization for the Self- employed)	2 1.6
Reason for earlyage marriage	SSK	19 15.2
	Civil Servant Retirement Fund	1 0.8
	On the own wish	109 87.2
Total	By her family's wish	16 12.8
		125 100.0

Examination of gynecologic and sexual life histories of pregnant adolescents revealed a mean age at first pregnancy of $17,2 \pm 1,1$ (Table 2). Adolescents were found to have married within an average of 3,5 years after their first periods, and to have gotten pregnant in an average of 3 months after getting married.

Table 2. Gyneeologie and Sexual Life Histories of Adoleseent Pregnant Women.

<i>Features</i>	
Age at first period	13.3 ± 1.2
Age at marriage	16.9 ± 1.2
Age at first pregnancy	17.2 ± 1.1

Pre-pregnancy weights of adolescents were found out according to their own statements, their BMIs were calculated using these figures, and the classification was made according to the BMI values recommended for adolescent girls. However, as 35 of the pregnant women were not aware of their pre-pregnancy weights, they were excluded from the classification. Of the 87 pregnant adolescents, 64,1 % had normal weights, 20,7 % were underweight, and 15,2 % were overweight (Table 3).

Table 3. Height and Body Mass Indexes (BMI) of Pregnant Ado/escents in the Study.

<i>Features</i>	<i>Number</i>	<i>%</i>	<i>Mean</i>
<i>Height (n= 125)</i>			
S 150cm	9	7.2	158.3 ± 5.62
> 150cm	116	92.8	
<i>BMI (kg/mL) (n= 92)</i>			
S19.5 (Underweight)	19	20.7	
19.51-24.5 (Normal)	59	64.1	
24.51-29.9 (Slightly overweight)	14	15.2	21.9 ± 2.72

The features related to previous pregnancies of the adolescent pregnant women are given in Table 4. Accordingly, 77,1 % of the 35 pregnant women with multiple pregnancy histories had their first pregnancy, while 22,9 % had their second pregnancy. Of these women, 48,6 % had repeat pregnancies in the first 12 months and 31,4 % had repeat pregnancies in the first 13–24 months following their former pregnancies. Of the pregnant adolescents, 45,7 % had not received any Prenatal Care (PC) and 38,5 % had deliveries at home without attendance of any health professional in their previous pregnancy.

Table 4. Features Related to the Previous Pregnancy of the Pregnant Adolescents

<i>Features</i>	<i>Number</i>	<i>%</i>
Order of the pregnancy in 2004 (n=125)		
First pregnancy	90	72.0
Second pregnancy	27	21.6
Third pregnancy	8	6.4
Period from the first pregnancy to the current pregnancy (n=35)		
0-12 months	17	48.6
13-24 months	11	31.4
+25 months	7	20.0
Status of receiving prenatal care in previous pregnancy (n=35)		
No prenatal care	16	45.7
1 to 5 times	13	37.2
6 times or more	6	17.1
Health problems emerged in the previous pregnancy (n=35)		
None	16	45.7
Severe emesis	3	8.6
Bleeding	2	5.8
Urinary tract infectian	2	5.8
Genital tract infectian	1	2.8
Miscarriage	9	25.7
Preeclampsia	1	2.8
Eclampsia	1	2.8
Place of previous delivery (n=26)		
At home with health professional attendance	1	3.8
At home without health professional attendance	10	38.5
At hospital	15	57.7
Time of previous deliveries (n=26)		
Term	23	88.5
Pre-term	3	11.5

Data on the pregnancies of the adolescents in 2004 are presented in Table 5. Accordingly, the last pregnancy was the first pregnancy of 72,0% of the women and second or third pregnancies of 28,0% of the women. Of the 125 pregnant women, 68,0 % received PC 1 to 5 times, and 11,2 % received PC 6 or more times. While no health problems emerged in 77,6 % of the women in their last pregnancies, others had some problems mentioned in the Table. The study findings show that 24,8 % of the pregnant women continued smoking during pregnancy, while 28,8% received iran support, and 25,6 % received vitamin and mineral support.

Table 5. Data on Pregnancies of the Adolescents in 2004

<i>Features</i>	<i>Number</i>	<i>%</i>
Order of the pregnancy in 2004 (n=125)		
First pregnancy	90	72.0
Second pregnancy	27	21.6
Third pregnancy	8	6.4
Status of receiving prenatal care		
No prenatal care	26	20.8
1 to 5 times	85	68.0
6 times or more	14	11.2
Health problems emerged in the current pregnancy		
None	97	77.6
Severe emesis	3	2.4
Bleeding	8	6.4
Urinary tract infection	6	4.8
Genital tract infection	1	0.8
Renal problems	2	1.6
oligohydramnios	1	0.8
Preeclampsia	6	4.8
Fetal anomaly	1	0.8
Smoking habits		
Never-smoker	81	64.8
Former smoker who quit upon pregnancy	13	10.4
Continued smoking during pregnancy	31	24.8
Use of iron preparation		
No	89	71.2
Yes	36	28.8
Use of vitamin preparation		
No	93	74.4
Yes	32	25.6

Apart from 3 pregnant women who had miscarriage, examination findings of the last pregnancies of 122 adolescents are shown in Table 6. It can be seen in the Table that 38.5% of the pregnant women had hemoglobin levels under 11g/d, which means they were anemic; that 96.7% had systolic hypertension, while 95.1% had diastolic hypertension.

Data related to the last deliveries of the adolescents are given in Table 7. Of the pregnancies, 84.8% resulted in natural birth and 71.3% occurred at a hospital setting. Of the adolescents, 92.6% delivered their babies on time, whereas 7.4% experienced early delivery.

Table 6. Clinical Examination and Laboratory Findings of Ado/escents.

<i>Features</i>		<i>Number</i>	<i>%</i>
Anemia	None	75	61.5
	Yes	47	38.5
Systolic hypertension	None	118	96.7
	Yes	4	3.3
Diastolic hypertension	None	116	95.1
	Yes	6	4.9
Pretibial edema	None	104	85.2
	1+	14	11.5
	2+	4	3.3
Proteinurea (Albuminurea)	None	7	5.7
	Trace	99	81 ... 1
	1+	11	9.0
	2+	5	4.1
Glycosurea	None	120	98.4
	Yes	2	1.6
Total		122	100.0

Distribution of delivery complications according to certain risk factors related to adolescents are given in Table 8. Distribution of the complications did not vary according to the age of mother, number of pregnancies, PC status, and height ($p > 0.05$), while birth complications were more frequent in premature births ($p < 0.01$).

Table 7. Data on the Last Pregnancies of the Adolescents.

<i>Features</i>		<i>Number</i>	<i>%</i>
How pregnancy ended (n=125)	Miscarriage	3	2.4
	Normal birth	106	84.8
	Caesarian	15	12.0
	Stillbirth	1	0.8
Place of delivery (n=122)	At home	35	28.7
	At hospital	87	71.3
Problems encountered during delivery (n=122)	None		
	Premature	96	78.7
	Fetal stress	9	7.4
	Cephalo pelvic disproportion	4	3.3
	Breech	7	5.7
	Kol geliş	3	2.5
	Fetal anomaly	1	0.8
	2	1.6	
Delivery week (n=122)	Early (36 weeks	9	7.4
	On time (at 37-	113	92.6

Table 8. Distribution of Birth Complications in Adolescents According to Certain Risk Factors.

<i>Risk factor</i>	<i>Birth complication</i>				<i>Total Number</i>	<i>%</i>	<i>p value</i>
	<i>None</i>		<i>Yes</i>				
	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>			
<i>Age of mother</i>							
16-17	17	81.0	4	19.0	21	17.2	0.78
18-19	79	78.2	22	21.8	101	82.8	
<i>Number of pregnancies</i>							
1	22	81.5	5	18.5	27	22.1	0.72
2	7	87.5	1	12.5	8	6.6	
3							
<i>PC</i>							
No prenatal care	20	83.3	4	16.7	24	19.7	0.11
1-5	68	81.0	16	19.0	84	68.9	
6 times or more	8	57.1	6	42.9	14	11.5	
<i>Height of Mother</i>							
≤ 150 cm	8	88.9	1	11.1	9	7.4	0.44
> 150 cm	88	77.9	25	22.1	113	92.6	
<i>Duration of pregnancy</i>							
≤ 36 weeks	10	71.4	4	28.6	14	11.5	0.00
37-40 weeks	85	85.9	14	14.1	99	81.1	
41 weeks							
Total	96	78.7	26	21.3	122	100	

Table 9 presents total weights mothers gained during pregnancy. Weight gain of 56.4% of the 87 pregnant women during pregnancy appeared insufficient, who carried their pregnancies to term and whose pre-pregnancy weights were known.

Table 9. Pregnancy Weight Gains of Mothers.

	<i>number</i>	<i>%</i>
<i>Weight gain during pregnancy (n=122)</i>		
Does not know pre-pregnancy weight	36	28.8
13 kg	50	40.0
14-18 kg	20	16.0
19 kg and ī	19	15.2
Total	122	100.0

Examination of changes in nutritional habits of pregnant adolescents and their consumption of iodine salt revealed that 60.0% of the pregnant women did not make any changes in their nutritional intakes during pregnancy and that 91.2% used salt without iodine in meals (Table 10).

Table 10. Nutritional Changes of Adolescents during Pregnancy and Consumption of Iodine Salt

<i>Features</i>	<i>Number</i>	<i>%</i>
Changes in nutritional habits due to pregnancy		
No change was made	75	60.0
Change was made	50	40.0
Kind of salt used		
Iodine Salt	6	4.8
Salt without iodine	114	91.2
Both	5	4.0
Total	125	100.0

Birth weights of the infants are provided in Table 11. Of 120 infants born alive, 11.7% had low birth weight, while 88.3% had weight within normal ranges.

Table 11. Birth Weights of infant.

<i>Features</i>	<i>Number</i>	<i>%</i>
Birth weights of infants (n=120)		
<2500 gr	14	11.7
≥2500 gr	106	88.3

Discussion

This study aimed to investigate complications of pregnancy and birth, perinatal problems, and risk factors increasing these problems in pregnant adolescents. Descriptive features of 125 adolescent pregnant women included in the study (Table 1) revealed that 53,6% did not get any education at all, with only 10,4% having received education at secondary school or higher level. In the Turkey Demographic and Health Survey (TDHS) held in 2003, the rate of uneducated adolescents between the ages of 15 and 19 was found 26.6% .⁶ The rate of 51.8% uneducated women found for the Eastern Anatolia Region in the same study is very close to the findings of this study. Great majority of the adolescents (87,2%) stated that they preferred to get married at an early age. Of the pregnant women, 48,0% in total were consanguineously married, 28,0% being married to first degree and 11,2% to second degree relatives. The TDHS held in 1998 found that while the rate of consanguineous marriages in Western Anatolia was 16,3%, this rate was 39,2% in Eastern Anatolia.⁸ The Public Health Project held within the Southeastern Anatolia Project (SEAP) in 2002 found that the rate of consanguineous marriages was 47,8% in the rural areas, whereas it was 40,1 % in urban areas.⁹ Of the adolescents who gave birth in 1997 in Diyarbakir Birth Center Hospital, 44,6% were consanguineously married.¹⁰ In another study held on adolescents in 2001, the rate of consanguineous marriages was given 49,5% .¹¹

Of the pregnant adolescents, 28,8% had green card, the social security system of 15.2% was the SSK, and 52% did not have any social security. In the SEAP Public Health Project, it was found that 53,0% of the family heads in the rural areas of Diyarbakir and 31,6% in the urban areas did not have any social security.⁹ Our investigation sample is in parallel with the rural areas in the Southeastern Anatolia Region.

Median age of first marriage, which means the beginning of pregnancy risk, is 20,0 in overall Turkey, whereas it is 19,0 in the eastern part. According to the same study, of the women between the ages of 15 and 19, 8.0 % started childbearing behavior.⁶ In this study, mean age at first marriage was found 16.9 ± 1.2 years, whereas mean age at first pregnancy was found 17.2 ± 1,1 (Table 2). In a study on adolescents in Ankara, mean age at first marriage was found 16.4 ± 0.9, and the mean

age at first pregnancy $16,8 \pm 0,5$, whereas the same rates were reported as $16,8 \pm 1.18$ and $17,0 \pm 1,0$, respectively, in Izmir.^{12,13} The fact that age at first marriage and first pregnancy was younger when compared to that in overall Turkey in this study and in other studies on adolescents is due to only adolescents being included in these studies.

Mean height of the pregnant women was 158,3 cm, with 7,2% being under 150 cm, when the height and prenatal BMIs of them were examined. Of the BMIs of the adolescents, 64,1% was considered to be in normal ranges, and 20,7 % to be underweight (Table 3). These results are in accordance with those in overall Turkey.⁶ Birth interval defines the period between two subsequent births. Research showed that children born within 24 months after the previous birth had higher risk of disease and mortality when compared to those born after longer periods.^{1,14,15} Of the pregnant women included in the study, 48,6% got pregnant again within 12 months, while 31,4% had repeat pregnancies within 13 to 24 months (Table 4). The shortest birth interval was found in women aged between 15 and 19 with a period of 23 months in the TDHS held in 2003.⁶ The fact that birth intervals of the pregnant women was shorter when compared to that in overall country can be explained by very low degree of education of pregnant women and lack of knowledge on sexuality and family planning.

One of the most important services in the protection of child and maternal health is PC. PC should start at the earliest stage possible from the detection of pregnancy and should continue with regular intervals until delivery in accordance with the mother's needs. Of the 125 pregnant women included in the study, 20,8% did not receive any prenatal care. Of the 35 adolescents with multiple pregnancies, 45,7% did not receive any PC in their previous pregnancies (Table 4). In two studies held in the Southeastern Anatolia Region, the rates of pregnant women between the ages of 15 and 19 not having received any PC were found %39,3 and %36,1.^{10,13} Anemia in pregnancy is known to cause an increase in maternal and fetal mortality and morbidity, an increase in risk of Low Birth Weight (LBW), a weakening in immune system, and a drop in working capacity.¹⁶⁻¹⁸

In this study, 38,5% of the pregnant adolescents was found to be anemic and only 28,8% was found to be using iron preparations regularly. Incidence of anemia in pregnant women were found 38,8% in the Karataş Health Center, Adana; 39,1% in Hasköy region, Ankara; and 33,3% in pregnant adolescents in a shanty region in Diyarbakir.¹⁹⁻²¹ The rate of anemia in pregnant women is 14% in developed countries.²² Widespread anemia in our case can be explained by the inadequacy of PC services, inadequate consumption of food rich in iron, and insufficient consumption of iron preparations.

Many studies have shown that problems such as anemia, preeclampsia, gestational diabetes, preterm birth, and increased perinatal mortality occur in adolescent pregnancy.²³⁻²⁵ Similar pregnancy problems were identified in this study, as well. Preeclampsia, in particular, attracts more attention when compared to other problems (%4,8). One study showed that the rate of preeclampsia in adolescent pregnancies was significantly higher than that in adult pregnant women.^{3,23} When the fact that preeclampsia complications can be prevented with PC is taken into consideration, the importance of PC in adolescents is confirmed with this finding once more. Two of the perinatal factors rendering adolescent pregnancies risky in terms of infant health are LBW infants and premature births. Birth weights lower than 2500 grams and pregnancies lasting shorter than 37 weeks are very closely related to newborn morbidity and mortality.^{3,26,27} Premature birth rate in the general population is between 7- 10 %, and LBW rate is 8,0 %.^{27, 28} In this study, premature birth rate was in normal ranges, with a 7,4 % incidence. However, it is interesting that the rate of LBW infant birth is 11,7%. Some studies held in Turkey revealed that both LBW infants and premature birth rates were significantly higher in adolescents.^{23,24,29}

In this study, 28,7% of the births were found to have been given at home. In the DHS held in 2003 in Turkey, it was shown that 20,8% of the adolescent births in overall country and 45,5 % of the births in the eastern region occurred at home and with attendance of local midwives in nearly all of them.⁶ The rate of home births was found to be higher than Turkey average, but was lower when compared to the previous births of the adolescents 38,9 %. This can be due to emphasizing the importance of birth at a hospital setting and their being directed to hospital for birth during the visits. The relation between the age of pregnant women and birth complications was shown in many studies.^{23, 24, 30} In this study, very close ages of the cases prevented presenting such a correlation. As 20,7% of the adolescents were found to be underweight at the beginning of the pregnancy, and as the majority of the pregnant women 60,0 % did not make any changes in their nutritional habits during pregnancy, and as they had poor nutritional intakes during pregnancy, 40,2 % of the weight gain during pregnancy of mothers were found to be inadequate (Table 9). Pregnant adolescents need to gain at least 4 kg more weight to give birth to infants in similar weights to those of adult women.^{31,32} A weight gain of 14 to 18 kg was assumed to be adequate in the study. Accordingly, 40,0 % of the pregnant women were identified to have gained inadequate weight (13 kg and under). In the study by School and Hediger³³, which included 696 pregnant adolescents, it was shown that when the adolescents gained 9 kg or less, risk of infant births with LBW increased, while a 50 % decrease in the risk occurred when the weight gain was 10-14 kg. In many studies, infants born to adolescent pregnant women with similar nutrition habits to that of adult pregnant women had lower body fat percentages when compared to those born to adult mothers.^{33,34}

A high rate of 11,7 % for infants born with LBW in this study can be explained by the fact that the pregnant women were adolescents as well as with inadequate weight gain of 40,0 % of the pregnant adolescents during pregnancy. Inadequate weight gain in adolescents can be correlated with the fact that 60,0 % of the pregnant women made no changes in their nutritional intakes during pregnancy and with inadequate nutritional intake in general. Iodine deficiency is one of the main reasons of preventable mental retardation and is a group of diseases affecting the person negatively for a lifetime starting from the perinatal period. The risk groups, which suffer from the most negative and destructive effects of iodine deficiency, are women in child-bearing age, pregnant women, infants, and children.^{35,36} In this study, the salt consumed by 91,2 % of the pregnant women was without iodine (Table 11). This can be explained by the lack of knowledge of the pregnant women on iodine deficiency and by cheaper cost of salt without iodine.

Conclusion

Early age marriages and related adolescent pregnancies are still a significant problem in the Southeastern Anatolia Region. The majority of the adolescents are uneducated and got married at an early age by their own wish. Marriage at a young age brings along adolescent pregnancy and child and maternal health is endangered. Pregnant adolescents usually get inadequate PC and delivery complications were found to be more frequent in those who did not get PC. It was concluded that most of the adolescents did not make any changes in their nutritional intakes during pregnancy and that their intake of food constituting important sources of nutrition that must be taken during pregnancy were inadequate. The rate of infants with LBW born to these mothers was found to be more than expected, as adolescents were underweight at the beginning of the pregnancy and due to inadequate weight gain during pregnancy. Assuming that adolescent marriages cannot be prevented, studies aiming to postpone adolescent pregnancies should be attached importance especially in primary health centers and adolescents should be advised on reproductive health, family planning, and nutrition. PC services should be offered more effectively and controlled within primary health services. Pregnant adolescents should be educated both individually and in groups on nutrition, and

all the pregnant adolescents should be informed on the importance of breast milk and breastfeeding. The most appropriate social, educational, and psychological settings should be created for the mother and the infant after delivery, as well, and mother's adaptation and appropriate care of the infant should be provided.

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