Factors Affecting Poor Contraceptive Awareness of Turkish Adolescent Pregnant Women Followed Up in a Tertiary Maternity Hospital

Üçüncü Basamak Bir Doğumevinde Takip Edilen Türk Ergen Gebelerin Yetersiz Kontraseptif Bilgilerini Etkileyen Faktörler

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ABSTRACT Objective: To investigate contraceptive awareness and socio-demographic characteristics of Turkish married adolescent pregnant women (APW). **Material and Methods:** APW (n= 157) were compared to 107 pregnant women who had married after age 20. The age at menarche, marriage age, height, weight, body mass index (BMI), smoking habit, awareness for and use of contraceptive methods, educational and work status, and husband's age and educational status were evaluated by a questionnaire. Groups were compared by Chi-square and Student's t tests where appropriate. **Results:** Use of contraception among APW and control subjects before pregnancy was 12.1% and 51.4%, respectively (p= 0.000). Awareness for any contraceptive method among APW was lower than in the control group (p< 0.05). APW and their husbands were less educated (p< 0.05). Two of the APW were employed (1.3%), whereas 17 (15.9%) women in the control group were working (p= 0.001). APW were married to older men (p= 0.000). Consanguineous marriages among APW (17.9%) were significantly higher. Forty-two per cent of APW were living in extended families. **Conclusion:** Education of APW and their husbands on the importance of antenatal care and contraceptive methods will prevent complications associated with adolescent pregnancy. Establishment of a special service for adolescents as in our hospital will be useful.

Key Words: Adolescent; contraception; demography; pregnancy in adolescence

ÖZET Amaç: Evli, Türk ergen gebe kadınların (EGK'nin) kontraseptif bilgilerini ve sosyodemografik özelliklerini araştırmak. **Gereç ve Yöntemler:** EGK (n= 157) ile 20 yaşından sonra evlenen 107 gebe kadın karşılaştırıldı. Menarş yaşı, evlenme yaşı, boy, ağırlık, vücut kitle endeksi (VKE), sigara alışkanlıkları, kontraseptif yöntemler hakkındaki bilgiler ve bu yöntemlerin kullanımı, eğitim ve çalışma durumları, kocalarının yaş ve eğitim durumları bir soru formu ile değerlendirildi. Gruplar uygunluklarına göre Ki-kare ve Student t testleri ile karşılaştırıldı. **Sonuç:** EGK'lerde gebelikten önce kontraseptif kullanımı %12,1, kontrol grubunda ise %51.4 idi (p= 0,000). EGK'ler arasında herhangi bir kontraseptif yöntemi bilme oranı, kontrol grubuna göre daha azdı (p< 0.05). EGK'ler ve kocaları daha az eğitimliydi (p< 0,05). EGK'lerin 2'si (%1.3) çalışırken, kontrol grubundan 17 kadın (%15.9) çalışıyordu (p= 0,000). EGK'ler kendilerinden yaşça daha büyük erkeklerle evliydi (p< 0.000). EGK'ler arasında akraba evliliği oranı (%17,9) anlamlı ölçüde daha yüksekti. EGK'lerin %42'si kaynanalarıyla yaşıyordu. **Yorum:** EGK'lerin ve kocalarının antenatal bakımın önemi ve kontraseptif yöntemler hakkında eğitilmeleri, ergen gebeliklerle ilişkili komplikasyonları önleyebilir. Bizim hastanemizde olduğu gibi, ergenlerle ilgili ayrı bir hizmet biriminin kurulması yararlı olabilir.

Anahtar Kelimeler: Ergen; gebelikten korunma; demografik faktörler; ergen gebelik

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Adolescent pregnancies are considered problem pregnancies in many western countries for both medical and social reasons.[1-4] Adolescent pregnant women (APW) are reported to have increased risk of abortions, poor maternal weight gain, hypertensive disorders and delivery of

low-birth weight infants, as medical problems.[5] Most of the adolescent pregnancies occur among unmarried adolescents and are unwanted pregnancies in western countries.[1] Significant differences are reported in socio-demographic factors influencing adolescent pregnancies as in marital status, living in parents' home, lower employment, and leave of school.[4]

The aim of this study was to examine the difference in awareness for contraception of Turkish APW compared to adults, and to compare socio-demographic characteristics of the two groups.

MATERIAL AND METHODS:

One hundred and fifty seven Turkish adolescent pregnant women who presented to the Adolescent Gynecology Unit of our hospital were compared to 107 pregnant women who had married after age 20. Adult pregnant women were selected among patients who took their prenatal visits at the Pregnancy Unit of our hospital. All women enrolled in the study were married.

The age, menarche age, marriage age, height, weight, body mass index (BMI), smoking habit, awareness for and use of contraceptive methods, educational and work status, and husband's age and educational status were evaluated by a questionnaire (Figure 1). As we described in the questionnaire, the awareness of women for contraceptive methods simply represented the methods heard by the women. The findings were compared to the results of the Turkey Demographic and Health Survey 2003.

Contraceptive Knowledge of Adolescent Pregnant Women

Name:
Age: Age at menarche: Age at marriage:
Duration of marriage (months): Level of education:

Social status:
Working Student At Home

Use of contraception before pregnancy:
No Yes (if yes, how many months)

Family status:
Living in extended family Living in nuclear family

Knowledge about contraceptive methods *	**Present**	**Absent**
Coitus interruptus (withdrawal)		
Periodic abstinence (calendar method)		
Condom (for men)		
Cervical cap		
Oral contraceptive (birth control pills)		
Monthly injections		
3-monthly injections		
Intra uterine device (spiral)		
Tubal ligation		
Vasectomy (for men)		
Subcutaneous implants		

Obstetric history:

G:	P:	A:	d&c:	Stillbirth:	Neonatal death:	Living:
Blood group:	Smoking:	Absent:	present (….number/day)			
Height:	Weight:					

Medical history:

hypertension:	diabetes mellitus:	heart disease:	goitre:
blood dyscrasia:	renal disease:	musculo-skeletal disease:	other:

Husband

Name:	Age:	Occupation:	Level of education:
Blood group:	Smoking:	Absent	Present (….number/day)
Consanguinity:	Absent	Present	(first- or second-degree or distant relatives)

FIGURE 1: The form used in the study.

* First, we asked the participant which methods she knew to prevent her to become pregnant. Then we asked the other methods listed, after briefly explaining the method. We did not ask how well or how exactly she knew any specific method.

The study was approved by our hospital's Institutional Review Board and was in accordance with the ethical standards of the Helsinki Declaration on human subjects testing.

Groups were compared by Chi-square and Student's t tests where appropriate. P<0.05 was considered statistically significant difference.

RESULTS

The mean age of APW was 18.33±0.74 (16-19) years. There were three pregnancies at the age of 16 (1.9%), sixteen pregnancies at 17 (10.2%), sixty-two pregnancies at 18 (39.5%), and seventy-six pregnancies at 19 (48.4%). The mean age of women in the control group was 24.95±3.79 (20-38) years, and only three women (2.8%) were above 35 years of age.

The mean age at marriage among APW and the control group was 17.24 ± 1.02, and 22.24 ± 3.00 years, respectively.

The mean height, weight and body mass index (BMI) in the APW group were 1.61 ± 0.05 m, 62.57±8.36 kg, and 24.05 ± 2.86, respectively, whereas in the control group they were 1.61 ± 0.05 m, 67.12±7.08 kg, and 25.82 ± 2.57, respectively. While the mean heights did not differ between groups, the mean weights (p= 0.000) and the mean BMI values (p= 0.000) were significantly different.

The mean age at menarche was 13.15 ± 1.32 years and 13.36 ± 1.41 years in the in APW and the control groups, respectively; this difference was not significant (p= 0.81).

Smoking habits did not display a significant difference between the groups with fifteen women in the APW (9.6%) and twelve women in the control group (11.2%) smoking (Chi-square, p=0.66). In addition, there was no difference in the numbers of cigarettes smoked per day (t test, p=0.15).

Nineteen APW (12.1%) had used any contraceptive method before pregnancy, whereas the corresponding number was fifty-five in the control group (51.4%); this difference was significant (Chi-square, p=0.000). The results were presented in Table 1.

Awareness for various contraceptive methods between the groups was presented in Table 2. Awareness of APW for contraceptive methods was inferior to that in adult pregnant women, and this difference was significant.

Educational levels also displayed a significant difference between groups; the results were presented in Table 3. Chi-square analysis was used for each variable to compare the groups excluding the first two rows, since some cells were null. As shown in the table, the ratio of adult women who had high school and university degree was significantly higher than that in APW.

There was a similar difference in the educational levels of their husbands also; the results of the comparison were presented in Table 4. The number of husbands with university degree was higher among adult pregnant women than among APW.

While only two women in the adolescent group (1.3%) was employed, 17 women in the adult group (15.9%) have been currently working; this difference was significant (Chi-square test, p=0.000).

The mean age of husbands of APW and adult pregnant women was 6.51 ± 2.37 years and 2.92 ± 3.29 years, respectively with the difference reaching statistical significance (t test, p= 0.000).

TABLE 1: Comparison of groups by age, body mass index, smoking habit and usage of contraception before the current pregnancy.

	Adolescent mean ± SD	Adult mean ± SD	p
Age (years)	18.33 ± 0.74	24.95 ± 3.79	0.000*
Age at menarche (years)	13.15 ± 1.32	13.36 ± 1.41	0.81
Age at marriage (years)	17.24 ± 1.02	22.24 ± 3.00	0.000*
Weight (kg)	62.57 ± 8.36	67.12 ± 7.08	0.000*
Height (m)	1.61 ± 0.05	1.61 ± 0.05	0.85
Body mass index (kg/m^2)	24.05 ± 2.86	25.82 ± 2.57	0.000*
Cigarettes smoked per day	3.73 ± 2.46	5.41 ± 3.52	0.15
Smoking habit (number/percent)	15/157 (9.6%)	12/107 (11.2%)	0.66
Contraceptive usage before pregnancy (number/percent)	19/157 (12.1%)	55/107 (51.4%)	0.000**

* t-test, statistically significant.

** Chi-square, statistically significant.

TABLE 2: Comparison of adolescent and adult pregnant women's awareness for a specific contraceptive method.

Contraceptive methods	Awareness for contraceptive Methods Between The Groups Adolescent n= 157		Adult n= 107		p
	n	%	n	%	
Periodic abstinence	12	7.6	48	44.5	0.000*
Coitus interruptus	83	52.9	68	63.6	0.08
Condom	118	75.2	98	91.6	0.00*
Oral contraceptives	139	88.5	98	91.6	0.42
Monthly injections	48	30.6	67	62.6	0.000*
3 monthly injections	44	28	61	57	0.000*
Intrauterine device	144	91.7	97	90.7	0.76
Tubal ligation	59	37.6	74	69.2	0.000*
Vasectomy	30	19.1	47	43.9	0.000*
Subcutaneous implants	12	7.6	37	34.6	0.000*
Cervical cap	3	1.9	17	15.9	0.000*

* The awareness ratios of adolescent and adult groups differ significantly for α=0.05. (Chi-square test.).

TABLE 3: Comparison of adolescent and adult pregnant women by their educational levels.

Educational level	Groups Adolescent Pregnant women n= 157		Adult Pregnant women n= 107		p
	n	%	n	%	
Illiterate	1	0.6	-		-
Literate	6	3.8	-		-
Primary school	63	40.1	31	29	0.09
Middle school	58	37.0	15	14	0.000*
High school	28	17.9	49	45.8	0.000*
University	1	0.6	12	11.2	0.000*

* Statistically significant difference. (Chi-square test).

TABLE 4: Comparison of educational levels of adolescent and adult pregnant women's husbands.

Educational Levels of Husbands	Groups Adolescent Pregnant women n= 157		Adult Pregnant women n= 107		p
	n	%	n	%	
Primary school	52	33.1	11	10.3	0.000*
Middle school	27	17.2	35	32.7	0.004*
High school	70	44.6	44	41.1	0.57
University	8	5.1	17	15.9	0.003*

* Statistically significant difference. (Chi-square test).

Twenty-eight couples (17.9%) among adolescents and six couples (5.6%) among adults were relatives; this difference was significant (p= 0.000, Chi-square). Fifteen adolescents (9.6%) were first-degree relatives, 8 (5.1%) were second-degree relatives, and 5 were distant relatives. All six couples in the adult group were distant relatives.

Sixty-six couples of adolescents (42%) were living in extended families, in which APW were living with their parents in law. However, only 16 couples of adults (15%) were living in extended family; this difference was significant (p=0.000, Chi-square).

DISCUSSION

We have established a special service for adolescents at our hospital since 2005, and we have been providing health service for both married and unmarried adolescent women, whether pregnant or not. In 2005, the percentage of married adolescent women at 15-19 years of age followed up at the Adolescent Gynecology Unit of our hospital was 17.75% and 0.9% of adolescent women in the 14-15 age group, 9.5% of women in the 16-17 age group, and 26.1% of women in the 18-19 age group were married. The rates of pregnant adolescent Turkish women in our hospital were 0.3% in the 14-15 age group, 7% in the 16-17 age group, and 26.1% in the 18-19 age group.

According to the 2003 Turkey Demographic and Health Survey (TDHS 2003), 11.9% of women aged 15-19 are married. In addition, 0.2% of women at the age of 15, 1.3% of women at the age of 16, 5.3% of women at the age of 17, 11.4% of women at the age of 18, and 20.7% of women at the age of 19 are married and have children. The percentage of women at this age group with at least one abortion is 4.5%.[6]

The numbers in our study group were higher than the results of TDHS 2003 although the difference was small.

In Turkey, 65% of married women aged 15-19 years, are using any contraceptive method, while only 33.7% are using a modern contraceptive method.[6] However, after 25 years of age usage of any contraceptive method is above 90%.[6]

According to our observations, only 12.1% of APW used any contraceptive method before pregnancy and this was very low when compared to the results of TDHS 2003. The same was true for the control group (Table 5).

Comparison of awareness for contraceptive methods in Turkey revealed that 98% of women aged 15-19 years and more than 99% of women aged 20-49 years knew any contraceptive method.[6] In the Central Anatolia region, awareness among 446 women was reported as 99.6% for any contraceptive method and 99.4% for any modern contraceptive method according to the TDHS 2003 results. Intrauterine device, oral contraceptive pills, condom, tubal ligation, and injectable contraceptives are the most widely known methods (between 83 to 98%) whereas the least known method is female condom (13%).[6] Percentage of adolescent Turkish women who gave birth or who is pregnant is directly correlated to their level of education. Among illiterate or literate adolescent Turkish women, 14.5% is pregnant or has given birth, whereas only 3% of adolescent women who graduated from high-school is pregnant or has given birth.[6]

In our study, the most widely known contraceptive methods in both groups were intrauterine device, oral contraceptive pills and condom; however, the rate of awareness for these methods did not exceed 91.6%, which is lower than the rates in TDHS 2003. Awareness for contraceptive methods among APW was the worst. In Table 5, awareness and usage of contraceptive methods among adolescent and adult women in our study and in TDHS 2003 were compared.

The level of education among APW was significantly poorer than in the adult counterparts, which was strongly associated with poor contraceptive awareness.

In our hospital, APW visits comprised 5% of all pregnant outpatient visits during the year 2001.[7] Of 24098 deliveries within the same year, the rate of deliveries of APW was 4.83%.[8] These figures show that most APW (96.6%) followed up prenatally delivered at our hospital. The gestational age of APW at delivery and birth weight of their infants were not different than in adults.[8]

A report from a Turkish university hospital showed that perinatal outcome in adolescent pregnancies was not different than in adult counterparts, if they had received adequate prenatal care.[9] A prospective study from Nigeria also showed that poor obstetric outcome of teenage pregnancy was related to non-utilization of prenatal care rather than their biological age.[10]

In Turkey, overall, 77% of pregnant women were reported to take prenatal care; however, only 53.9% took an adequate number of prenatal visits (> = 4 visits during pregnancy).[6] There is a significant difference in the utilization of prenatal care in different regions of Turkey. For example, the uptake of prenatal care in the Marmara region is 92%, whereas it is 57% in the Eastern region of Turkey.[6] The educational level is directly related to the up-

TABLE 5: Comparison of awareness for and usage of contraceptive methods between our study groups and comparable groups of women in TDHS 2003.

			Age Groups			
		Study	15-19 (%)	Number of Women	20-24* (%)	Number of Women
Awareness for contraceptive methods**	Any method	TDHS 2003	98.4	237	99.8	1019
	Any modern method	TDHS 2003	98	237	99.5	1019
	Any method	Our study	91.7	157	91.6	107
Usage of contraceptive methods	Any method	TDHS 2003	65	237	82.6	1045
	Any modern method	TDHS 2003	33.8	237	56.7	1045
	Any method	Our study	12.1	157	51.4	107

* In our study the median age of the adult women was 24. Therefore, we compared our results to women aged 20-24 in the TDHS 2003.

** Analyses related to awareness for contraceptive methods presented in TDHS 2003, simply represents the methods heard by the women6. We did the same, in our study.

take of antenatal care. Of illiterate or literate Turkish women, 54.3% received antenatal care, whereas 98.9% of Turkish women who graduated from high school received antenatal care, according to the TDHS 2003. The percentage of adolescent pregnant women using prenatal care facilities are even less.[6]

However, the numbers in our hospital show significant differences from those in TDHS 2003. Mısırlıoğlu et al. reported that 71.3% of women who gave birth at our hospital received adequate prenatal visits (> = 4 visits during pregnancy) during their last pregnancies and 95.4% of the same group of mothers took prenatal visit at least once during their last pregnancies.[11]

One study from Egypt showed that, of the married adolescent pregnant women living in squatter areas of Alexandria, only 22% were receiving antenatal care. Determinants of non-use were adolescence, illiteracy, and previous miscarriage/stillbirth.[12]

A study from Spain, comparing the biological and psychosocial risks of pregnancy between groups of adolescents and adults showed that sociodemographically, significant differences were obtained in marital status (more unmarried adolescents), living in parents' home, lower employment and leave of school. No differences were reported for birth or health status of the neonate. In adolescents there was significantly more breastfeeding compared with adult mothers (61.6% and 34%, respectively). They concluded that pregnancy in adolescence appeared to constitute a psychosocial problem rather than a biological risk.[4]

In Turkey, almost all pregnancies occur within marriage and smoking among pregnant women is 15%.[6]

Consanguineous marriages among APW were significantly higher than in adult counterparts in our study (17.9% vs. 5.6%, respectively). Mısırlıoğlu et al. reported that consanguineous marriages among women who gave birth at our hospital were 16.3% and consanguineous marriages among illiterate women or those who received less than 8 years of education were 19.7%, whereas this rate was 10.4% for women educated >8 years.[11]

As adolescents may experience sexual activity without adequate knowledge about contraception, unplanned or unwanted pregnancies are major problems of this age group.[13] In our study, we showed that a group of married adolescent Turkish pregnant women had inadequate awareness for and utilization of contraceptive methods. In addition, their educational levels were inferior to the level of their adult counterparts. Husbands of APW were shown to be much older than the APW, and they were less educated too. A very small number of the adolescents were employed and 42% of APW were living in extended families. This suggested that many of the pregnancies of APW were unwanted or unplanned, because of their relative lack of decision-making power compared to adult pregnant women. Besides, their knowledge about the risks of pregnancy was poor.

To prevent adolescent pregnancies, education of women before and after marriage is important. Postponing pregnancy after adolescence will decrease risks both for the mother and the neonate.[5,14]

Education of APW and their husbands about pregnancy, importance of antenatal care, breastfeeding and contraceptive methods will prevent the complications associated with adolescent pregnancy. Educational programs are needed to provide information and knowledge to young men and women to make sound informed decisions. A special service for reproductive health of adolescents as in our hospital will be very helpful for this purpose. In addition, national policies should be developed to improve the level of education of girls, to increase the number of employed women and to provide adequate information on reproductive health in school curriculum.

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