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## Smoking status of pregnant women in Elazig, an eastern province of Turkey

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### ABSTRACT

This study was conducted to determine the smoking situation of pregnant women in Elazig. Pregnant women registered at 173 family medicine centers in all the districts of Elazig comprise this descriptive research. 12.3% (n=77) of pregnant women had smoked regularly before pregnancy, 84.6% (n=531) of them stated that they never smoked and, 3.2%(n=20) had quit smoking before pregnancy. 87.7% (n=551) of pregnant women stated that they did not smoke at all during pregnancy, 4.2% (n=26) continued smoking during pregnancy, 6.7% (n=42) quit smoking as soon as they learned of their pregnancy, and 1.4% (n=9) smoking for a while and then quit smoking during pregnancy. 72.5% (n=37) of pregnant women who quit smoking, did so by themselves without any advice, 21.6% (n=11) by nurse advice and 5.9% (n=3) by doctor advice. 35.0% of pregnant women stated that they were exposed to second-hand smoking during pregnancy. The rate of smoking during pregnancy increased with decreasing income (p<0.05). The rate of smoking in pregnant women is low. The rate of pregnant women taking advice from health personnel about smoking cessation is low. The risk of smoking during pregnancy should be dwelt on by health personnel and relevant education should be given to pregnant women.

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### 1. Introduction

It was reported that the smoking rate among men is 37.3% and women is 10.7% in our country (Turkish Statistical Institute Health Survey, 2013). In our country, 110.000 people die due to tobacco related diseases each year (Doğanay et al., 2012). Tobacco is the most common addictive substance. Unlike other addictive substances, cigarette smoke may affect other living things in the environment. There are toxic substances in cigarette smoke that threaten the health of individuals who occupy the same environment with the smoker such as polycyclic aromatic hydrocarbons, aromatic amines, nitrosamines, heavy metals, pesticide residues, and radioactive elements. The fetus being

subject to detrimental substances originating from the mother using tobacco by means of the placenta is a special example of this threat (Toyran, 2005).

Smoking is a very common addiction in society. 90% of smokers start smoking before the age of 20 and while the number of male smokers is declining the number of female smokers is increasing (Ozmen, 2004). Smoking during pregnancy is a very serious health problem in our country and in many other countries as well. In a study into smoking during pregnancy in the USA in 2002, 11.4% of pregnant women were determined to smoke. Smoking during pregnancy requires several measures due to both preventing the growth of healthier generations and leading to maternal and infant

problems (Ozmen, 2003; Marakoglu and Sezer, 2003; Dawn and Nan, 2005)

There are many studies about increasing the amount of daily tobacco use during pregnancy being in direct proportion to increases in the delivery of low birth weight infants, preterm delivery and risk of abortion (Cook and Strachan, 1999; Agrawai, 2010). Yeltekin et al. (2005) declared that exposure to cigarette smoke during pregnancy had an adverse effect on birth weight. This study was conducted to determine the smoking situation of pregnant women in Elazig.

## 2. Material and methods

### 2.1. Design

This cross-sectional survey study was done between March and April 2015. The research population included pregnant women registered at 173 family medicine centres in all the districts of Elazig who had routine check-ups between the dates determined for the conduct of this research. The survey was offered to 692 pregnant women but it was only administered to 628 since participation was voluntary. The response rate was 90.7%. The surveys were administered in face-to-face interviews by trained pollsters. The survey included questions about socio demographic information and the pregnant women's opinions about childbearing and childbirth methods as well as smoking. The comprehensibility of the questionnaire was verified by a pilot test with 15 pregnant women who were not included in the research and was revised accordingly.

### 2.2. Statistical analysis

The data obtained from the research were recorded to SPSS package program and checked for errors. Tables and statistical analyses were analysed using this program. The statistical analysis used percentages, means and chi-square tests depending on the quality of the variables. Means include their standard deviations and  $p < 0.05$  was used as the threshold of significance.

### 2.3. Ethics

The T.C. Public Health Institution had approved ethical permission for this study.

## 3. Results

The mean age of pregnant participants was  $28.82 \pm 5.43$  (min=17, max=45) years, the mean marriage age of participants was  $22.29 \pm 0.165$  (min=14, max=39) years and average parity was  $1.11 \pm 1.08$  (min=0, max=6) delivery. 55.6% of pregnant women had elementary education, 91.1% were housewives, 67.2% had 1500 TL or lower income, and 76.8% resided in a city centre. The feature of the socio demographic characteristics of the participants are presented at Table 1. The smoking status or exposure to smoke of the participants before

and after their pregnancy is presented at Table 2. 72.5% (n=37) of pregnant women who quit smoking, did so by themselves without any advice, 21.6% (n=11) by nurse advice and 5.9% (n=3) by doctor advice. When smoking cessation reasons were examined, 96.0% (n=603) of pregnant women replied "I thought smoking would be harmful for my baby", 0.4% (n=25) "because of nausea and vomiting". Moreover, 80.4% (n=505) of pregnant women who quit smoking during pregnancy didn't intend to resume smoking, 19.6% (n=123) intended to resume smoking after pregnancy. The comparison of the socio demographic and obstetric features of the smoker and non-smoker participants are presented at Table 3. The mean number of cigarettes smoked daily by pregnant women who smoked during pregnancy was  $6.58 \pm 5.16$  (min=1, max=20) pcs. When educational background was examined, while the proportion of smoking among illiterate pregnant women was 2.3% (n=1), this proportion was 4.3% (n=25) among pregnant women who had a primary-school degree or above ( $p > 0.05$ ). The rate of smoking during pregnancy increased with decreasing income ( $p < 0.05$ ). Moreover, when the smoking rates were compared in accordance with age, while the proportion of smoking during pregnancy was 5.6% (n=11) among those 25 younger, this proportion was 3.5% (n=15)

**Table 1.** Features of the socio demographic characteristics of the pregnant women

Socio demographic characteristics	n	%
<b>Age of pregnant women</b>		
17-26	233	37.1
27-31	341	54.3
37 and over	54	8.6
<b>Educational levels of pregnant women's</b>		
Illiterate	44	7.0
Primary school graduate	349	55.6
High school and above	235	37.4
<b>The educational levels of pregnant women's husbands</b>		
Illiterate	11	1.8
Primary school graduate	266	42.4
High school and above	351	55.9
<b>Pregnant women's jobs*</b>		
Housewife	536	91.1
State official	73	11.6
Self-employed	19	3.0
<b>Income levels of pregnant women**</b>		
1500 TL and lower	422	67.2
1501-3000 TL	131	20.9
3001 TL and higher	75	11.9
<b>Marriage age</b>		
18 $\geq$	121	19.2
19-34	499	79.5
35 $\leq$	8	1.3

\* Tailors and hairdressers are considered to be self-employed

\*\* 1 \$=2.8 TL (Turkish Lira)

**Table 2.** The features of smoking status and exposure to smoke of the participants

	n	%
<b>Smoking status</b>		
<b>Smoking before pregnancy</b>		
Smoked daily	77	12.3
Quit before pregnancy	20	3.2
Never smoked	531	84.6
<b>Smoking during pregnancy</b>		
Smoked during pregnancy	26	4.1
Quit during pregnancy	42	6.7
Kept up smoking for a while and then quit smoking during pregnancy	9	1.4
Never smoked	551	87.7
<b>Status of intending to resume smoking after pregnancy*</b>		
Smoked during pregnancy and intended to keep up smoking	26	4.1
Intended to resume smoking after pregnancy	42	6.7
Not intended to resume smoking after pregnancy	9	1.4
Never smoked	551	87.7
<b>Status of exposure to second-hand smoking</b>		
Exposed	220	35.0
Not exposed	408	65.0
<b>Exposure to second-hand smoking through whom (n=220)</b>		
Husbands	194	30.9
Relatives	25	4.0
House guests	1	0.1

\*Only pregnant women who quit smoking during pregnancy

among those aged 26 or older ( $p>0.05$ ). 2.6% ( $n=5$ ) of pregnant women who experienced their first pregnancy smoked during pregnancy, while 4.8% ( $n=21$ ) of pregnant women who experienced their second or more pregnancies smoked during pregnancy ( $p>0.05$ ). 4.2% ( $n=26$ ) of pregnant women who went for a check-up regularly during pregnancy smoked during pregnancy, while pregnant women who did not go for a check-up did not smoke at all during their pregnancy ( $p>0.05$ ). All of the participants answered the harms of smoking on health. Their answers was classified at Table 4.

#### 4. Discussion

Overall 250 million women smoke tobacco all over the world. Prevalence of smoking among women in developed countries is 22% and 9% in developing countries. Evidence indicates that women find it harder to quit smoking than men. Tobacco companies target women (Mackay and Ericsen, 2002; Mackay and Amos, 2003). 12.3% of pregnant women who attended our study were determined to smoke regularly before pregnancy. In the Global Adult Tobacco Survey that was conducted in our country in 2012, it was determined that smoking prevalence among women was 13.1% (Turkish Statistical Institute, 2014). In a report prepared by WHO in (2014) the proportion of women

aged 15 and over who smoked regularly every day was 13%.The Turkish Statistical Institute stated that the proportion of every day smoking among women aged 15 and over was 10.7% (Turkish Statistical Institute Health Survey, 2013). These results correspond with our study. The prevalence of smoking among pregnant women was 4.1% in our study. The prevalence of smoking among pregnant women was 3.0% in a similar study conducted in Afyonkarahisar, 6.2% in Edirne and 3.0% in Erzurum (Semiz et al., 2006; Kılıçarslan, 2008; Taşkiran, 2009). Of pregnant women was found that the rate of smoking cessation by physician or nurse advice and assistance was low. In the study of Marakoglu and Sezer (2003), they stated that the rate of smoking cessation through the advice and assistance of nurses or doctors was low among pregnant smokers. In a study conducted in Istanbul in 2013 it was determined that the rate of smoking cessation by physician or nurse advice and assistance was low (Aydin and Ergul, 2015). This case shows us that routine check-ups of pregnant women had not been done regularly and properly or decent questioning and enlightenment about smoking tobacco were not conducted during routine check-ups. In our study, 96.0% of pregnant women stated that they had quit smoking with the thought that smoking would be harmful to the baby and 0.4% of pregnant women stated that they quit smoking because of nausea and vomiting. Another study determined that 70.4% of pregnant women quit smoking with the thought that smoking would be harmful to the baby, 22.2% quit because of nausea and aversion and 7.4% quit because of both reasons (Marakoglu and Duygu, 2007). A study performed by Kocak et al. (2015) determined that the rate of pregnant women who quit smoking with the thought that smoking would be harmful to the baby was 77.6%, and the rate of pregnant women who quit smoking both with the thought that smoking would be harmful to the baby and because of nausea was 8.7%. Both of these studies mentioned above correspond with our study in terms of the high rate of quitting smoking with the thought that smoking would be harmful to the baby. The proportion of exposure to second-hand smoke among pregnant women who attended the study was 35.0%. In the study of Demirkaya, it was proved that 26.0% of pregnant women were passive smokers in 2004 (Özmen, 2004). In the study conducted in Brazil the proportion of passive smoking during pregnancy was determined as 35.9% by Nakamura et al. (2004). These findings are similar to ours. There are many factors that affect the growth and development of the fetus, and among these smoking and exposure to second-hand smoke are crucial in terms of their prevalence and avoidability (Di Franza and Lew, 1995; Andres and Day, 2000). There are numerous studies stating that pregnancy complications increase with smoking tobacco. These complications can be sorted

**Table 3.** Smoking status during pregnancy according to sociodemographic characteristics

Smoking status during pregnancy	Smoker		Non-smoker		Total		Test
	n	%	n	%	n	%	
<b>Age</b>							
25>	11	5.6	184	94.4	195	31.1	$\chi^2=1.60$
26 and over	15	3.5	418	96.5	433	68.9	p=0.205
<b>Place of residence</b>							
City center	20	4.1	462	95.5	482	76.8	$\chi^2=0.01$
Rural region	6	4.1	140	95.5	146	23.2	p=0.983
<b>Education status</b>							
Illiterate	1	2.3	43	97.7	44	7.1	$\chi^2=0.41$
Primary education and above	25	4.3	559	95.7	584	92.9	p=0.812
<b>Income groups</b>							
1500 TL and below	24	5.7	398	94.3	422	67.2	$\chi^2=8.03$
1501-3000 TL	2	1.5	129	98.5	131	20.9	p=0.018
3001 TL and above	0	0.0	75	100	75	11.9	
<b>Profession</b>							
Housewife	22	4.1	515	95.9	537	85.5	$\chi^2=0.01$
Employed	4	4.4	87	95.6	91	14.5	p=0.895
<b>Number of pregnancy</b>							
1	5	2.6	186	97.4	191	30.4	$\chi^2=1.60$
2 and above	21	4.8	416	95.2	437	69.6	p=0.206
<b>Status of abortion</b>							
Yes	5	3.7	129	96.3	134	21.3	$\chi^2=0.07$
No	21	4.3	473	95.7	494	78.7	p=0.789
<b>Status of going to regular check-up</b>							
Yes	26	4.2	591	95.8	617	98.2	$\chi^2=0.48$
No	0	0	11	100	11	1.8	p=0.522
<b>Stillbirth in previous pregnancies</b>							
Yes	2	8.0	23	92.0	25	4.0	$\chi^2=0.97$
No	24	4.0	579	96.0	603	96.0	p=0.323
<b>Paying attention to sleeping pattern</b>							
Yes	11	2.6	407	97.4	418	66.6	$\chi^2=7.16$
No	15	7.1	195	02.9	210	33.4	p=0.007

as increased risk of abortion, prenatal growth failure, premature rupture of membranes, premature birth, stillbirth, placenta previa and decollement placenta (Olsen, 1992; Ananth et al., 1996; Mathews, 2004). In addition to this, there are studies indicating that infants whose mothers were exposed to environmental tobacco smoke, although they did not smoke themselves, have similar symptoms to infants whose mothers smoked tobacco (Olsen, 1992; Goel et al., 2004). Side-stream smoke that is inhaled from second-hand smokers contains all the same carcinogens that smokers inhale directly and because it is not filtered it contains one hundred times the amount of carcinogens of main-stream smoke. Consequently, although they do not smoke, pregnant women who are exposed to environmental tobacco smoke and their infants are affected by tobacco in the same way as pregnant women who smoke tobacco and their infants (Windham et al., 2000; Hofhuis et al., 2002).

When some traits of pregnant women were compared according to smoking status, there was no

significant correlation between smoking status and age, place of residence, education level, or working status. There was a significant difference between smoking status and income levels, and sleeping patterns. Smoking rate increased with increasing education level but correlation between them was not statistically significant. In a study conducted in Sivas, the smoking rate was found to be highly statistically significant in pregnant women who had high education levels (Marakoglu and Sezer, 2003). When income and rate of smoking in pregnancy were compared, smoking rate was found to be highly statistically significant in pregnant women who had lower income. There are studies that correspond with our study and indicate that smoking rate increases with decreasing income level in the literature (Lantz et al., 1998; Karatay and Kubilay, 2004).

Consequently, it was determined that there were mothers who had smoked before pregnancy and also smoked and had been exposed to second-hand smoking during pregnancy, who had some knowledge about the

**Table 4.** Answers to the question “what is the harm of smoking on health?”

	n	%
Lung problems	274	43.7
Mental and growth deficiency	27	4.3
Low birth weight infant	24	3.8
Threatened abortion	15	2.3
Harmful for mother	12	1.9
Treatment of premature birth	18	2.8

harmful effects of smoking on the health of both the baby and mother and in spite of this knowledge smoking was kept up during pregnancy. It was also determined that there were pregnant women who quit smoking during pregnancy but intended to resume smoking after

pregnancy and they were unable to get proper support or advice from doctors or nurses for smoking cessation. It is obvious that not to start smoking is the most efficient method. The gestation period is an important opportunity for women who are addicted to smoking to quit. Thus, in-service training programs should be prepared for health personnel, and more importance must be placed on relaying information during routine check-ups about the subject and being supportive about smoking cessation to increase the rate of smoking cessation of addictive pregnant women. It should not be forgotten that such efforts will reduce perinatal mortality and morbidity and contribute to the creation of healthier society in both physical and psychological terms.

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