

Prevalence of smoking and factors affecting smoking behaviour during pregnancy: A sample from Tekirdağ

Levent Cem Mutlu^a, Gamze Varol Saraçoğlu^b

Abstract

Objective: Smoking during pregnancy leads to serious health problems in the mother and the foetus. In our study, we determined the prevalence of smoking during pregnancy and associated factors in Tekirdağ. **Methods:** This cross-sectional study was carried out in 2009 in, Tekirdağ. The sample size was calculated as 762 pregnant women. A probability sampling technique was used for sampling; the response rate was 98.3%. **Results:** The rates for daily and occasional smokers, respectively, were found to be 8.0% and 2.8% in our sample. The total rate of smoking prevalence during pregnancy was found to be 10.8%. Among women who did not smoke during pregnancy, 35.8% were exposed to passive smoke in their homes; 17.5% of pregnant women quit smoking, and 61.8% of these women were able to quit without medical support. We also found that the partner's smoking status, household income had a considerable effect on the smoking behaviour of pregnant women. **Conclusions:** Primary Health Care Units (PHCUs) must provide information on the dangers of smoking to pregnant women and offer encouragement and support to those who wish to quit. Those who successfully quit should also be helped to avoid postpartum smoking relapse, to which end awareness campaigns and programs need to be developed.

Key Words: Pregnancy, smoking, prevalence

Gebelikte sigara içme prevalansı ve sigara içme davranışını etkileyen etmenler: Tekirdağ örneği

Özet

Amaç: Gebelikte sigara kullanımı anne ve bebekte ciddi sağlık sorunlarına yol açar. Çalışmamızın amacı Tekirdağ ilinde gebelikte sigara kullanım prevalansını ve gebelerde sigara kullanımını etkileyen etmenleri belirlemektir. **Yöntem:** Kesitsel tipte olan çalışma Tekirdağ ilinde 2009 yılında gerçekleştirildi. Çalışmada örneklem büyüklüğü 762 gebe olarak belirlendi. Örneklem grubu seçilirken olasılıklı örnekleme yöntemleri kullanıldı. Anket geri dönüş hızı %98.3'tü. **Bulgular:** Gebelikleri sırasında her gün en az bir ve günde birden az sigara içme hızı sırasıyla %8.0 ve %2.8'di. Gebelik süresince sigara içme prevalansı %10.8 bulundu. Sigara içmeyen gebelerin %35.8'inin evlerinde pasif sigara dumanına maruz kaldıkları belirlendi. Kadınların %17.5'i gebelik nedeniyle sigarayı bırakmıştı, bunların %61.8'i tıbbi destek almadığını belirtti. Çalışmada ek olarak eşin sigara içme durumunun ve hane halkı toplam gelirinin gebe kadınların sigara içme davranışını etkilediği bulundu.

^a Assist. Prof. MD., Namık Kemal University Medical Faculty, Dept. of Pulmonary Medicine, Tekirdag

^b Assist. Prof. MD., Namık Kemal University Medical Faculty, Dept. of Public Health, Tekirdag

Corresponding Author: Gamze Varol Saraçoğlu, Namık Kemal University Medical Faculty, Dept. of Public Health, Değirmenaltı Yerleşkesi, Kampüs Cd. No:1, C Blok. Merkez, Tekirdag. Tlf: 0282-2505501; Faks: 0282-2509928; E-mail: varolgamze@hotmail.com

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Sonuç: Birinci basamak sağlık kurumları gebe kadınları gebelikte sigara içmenin tehlikeleri konusunda bilgilendirmeli, sigarayı bırakma yönünde cesaretlendirmeli ve desteklemelidir. Sigarayı bırakmış gebelere de farkındalık eğitim ve programları ile doğum sonrası yeniden başlamayı engelleyecek yönde yardımcı olunmalıdır.

Anahtar Kelimeler: Gebelik, sigara içme, prevalans

Introduction

Tobacco smoking constitutes a major public health concern in the world. According to the World Health Organization (WHO), tobacco use is one of the leading causes of preventable death worldwide. Every year, approximately 6 million deaths occur globally due to tobacco consumption. WHO reports indicate that up to 250 million women worldwide are smokers. The percentage of women smokers is estimated at 22% in developed countries and at 9% in developing countries. The highest rate of smoking (44%) is reported in women between 24 and 45 years of age.¹⁻² According to the Global Adult Tobacco Survey (GATS) 2010, smoking prevalence was 31.2%. The prevalence was higher among men (47.9%) than women (15.2%).³

Tobacco use during and after pregnancy or exposure to tobacco, can cause major health problems in the foetus, the newborn and the child. Among the negative potential effects of smoking during pregnancy are intrauterine developmental retardation, low birth weight, premature birth and placenta previa. In the long term, neurodevelopmental disorders and childhood cancers occur.⁴⁻⁶ The harmful effects of tobacco use during pregnancy are directly related to the number of cigarettes smoked.⁴ While the harmful effect of smoking during pregnancy is common knowledge, only 20% to 40% of pregnant women are able to quit smoking.⁷⁻⁸

Maternal smoking during pregnancy has been causally associated with the Sudden Infant Death Syndrome (SIDS), but these studies measured maternal smoking after pregnancy, along with paternal smoking and household smoking generally. The effects of second hand smoke (SHS) exposure after birth and maternal smoking during pregnancy cannot be readily separated in many of these studies, but SHS

exposure from paternal smoking alone may not have the complicating consequences of maternal smoking during pregnancy.

The effects that exposure to tobacco smoke has on the airways in utero may also play a role in the increased risk of lower respiratory tract illnesses due to postnatal exposure. Tests of Lung function shortly after birth have shown evidence of in utero airway damage in infants of mothers who smoked during the pregnancy, and this damage may increase the likelihood of developing more-severe respiratory infections later. In utero exposure to SHS may also result in such consequences. Assessment of airway responsiveness shortly after birth has shown that infants whose mothers smoke during pregnancy have greater airway responsiveness than do infants whose mothers do not smoke. Maternal smoking during pregnancy also reduces ventilatory function measured shortly after birth. These observations suggest that in utero exposure from maternal smoking may affect lung development, perhaps reducing airway size. Additionally, childhood asthma is considered to have a strong genetic basis, and SHS exposure may increase or hasten the incidence in a genetically predisposed subgroup of the population.

Second hand tobacco smoke is one of the main pollutants of indoor air. According to Global Adult Tobacco Survey (GATS)-Turkey data, 30.5 million (59.7%) adults reside in 'smoking homes'.³ Thus, a large number of pregnant non-smoking women are exposed to the negative effects of second hand tobacco smoke in their own homes. Turkey is known for a high prevalence of smoking.³ While it is widely known that smoking or being exposed to smoke during pregnancy can lead to major health problems in the mother and the foetus,⁴⁻⁶ only a limited number of studies on smoking

prevalence in pregnancy have been carried out in Turkey. The rates of smoking in pregnancy cited in these non-community-based studies vary from 3% to 37%.⁹⁻¹⁷ In our study, we determined the prevalence of smoking during pregnancy and the factors that affect smoking behaviour in pregnant women.

Materials and Methods

This study was a cross-sectional study to find the prevalence of smoking during pregnancy. There are 81 Primary Health Care Units (PHCUs) in the province of Tekirdağ. The total number of pregnant women registered in the pregnant- puerperal records was 5,248. In order to determine the sample size, we calculated a 25% prevalence, a 95% confidence level with a $\pm 3\%$ margin of error and 20% plus for reserves, making the sample size 762. The target population was stratified and weighted based on registered pregnant women according to PHCU records. Individuals interviewed were chosen using the systematic sampling method. Acceptance criteria were based on being pregnant and being willing to participate in the research. The total response rate of the survey was 98.3%.

Data were collected by interviewers using a questionnaire. The questionnaire was filled out by trained midwives in face-to-face interviews. The questionnaire consisted of 22 questions. The first six questions focused on demographic characteristics, while the remaining 16 concerned the use of health care, exposure to second hand smoke and the effects of smoking during the pregnancy on the mother and the foetus. Questions about smoking habits were prepared according to the Tobacco Questions of the WHO. In each participating PHCU a midwife was chosen, given survey training and then interviewed the participants face to face and filled out the surveys, which took totally 20 minutes.

Demographic and socioeconomic characteristics

Participants were asked to state their age, occupation, their educational status and their partner's, previous pregnancies, place of residence, household income and social class.

The answers for the educational status question were categorized as: 'illiterate', 'literate, primary school graduate', 'literate, high school graduate', and 'literate, college/university graduate'. The income level was evaluated based on the official minimum wage in Turkey at the time of the research. For the comparison analysis, answers were specified as "below minimum wage", "minimum wage", "twice the minimum wage", "triple the minimum wage", and "above thrice minimum wage". Socioeconomic status was determined based on the poverty threshold of \$4.3 US a day, set by the Turkish Statistical Institute.¹⁸ Below that threshold was categorised as "below poverty level" and above as "above poverty level". The social class of participants was determined according to their profession and job, based on the classification of Boratav.¹⁹

Smoking status

The prevalence of smoking presented during pregnancy was classified as "current tobacco smoker" and "non-smoker". Current tobacco smokers were categorised into "daily smokers" and "occasional smokers". Occasional smokers were divided into two groups as "former daily" and "never daily". Non-smokers were categorised as "former daily smokers" and "never daily smokers". Never daily smokers were divided into two groups "former occasional" and "never". We also asked open-ended questions about the effects of smoking during pregnancy on the mother and the foetus.

Health care use

We asked if the participants had applied to any medical centres due to the pregnancy, if their smoking status was questioned and if they were given information on the effects of smoking during pregnancy.

Second-hand tobacco smoke

We asked whether the participants were exposed to second hand tobacco smoke in their homes or workplace. We also inquired whether their partners, anyone else living in their home or their co-workers smoked when they were in the same room together.

Ethics

Necessary permissions were obtained from the Ministry of Health via the Provincial Directorate of Health. Every participant was provided with information about the research and was only included in the study after they had given their consent. Participants were not compensated in any way.

Statistical analysis

The data obtained were analysed using SPSS 18.0 software. Student's t-test and the chi-square test were used to compare smoking habits during pregnancy and related variables. Determination of the parameters that can possibly influence smoking behaviour in pregnant women used multivariate logistic regression analysis. All statistical analyses used a 95% confidence interval (CI).

Results

Out of the 762 subjects in the sample, 749 who were willing to participate in the study were included in the research.

General demographic and economic characteristics

The mean age of the participants was 26.82±5.17 years; 83.3% of participants (n=624) were housewives. Of the 749 participants, 5.3% were illiterate, 59.3% were primary school graduates, 21.1% had graduated from high school and 11.9% were college or university graduates. While 49% of participants (n=367) stated that their household income was at the level of the minimum wage, 24.6% chose the "twice the minimum wage" answer option (Table 1).

Table 1. Educational and income levels in the sample group

| Sociodemographic characteristics | (n , %) |
|---|----------------|
| Maternal education | |
| Illiterate | 40, 5.3 |
| Literate | 18, 2.4 |
| Primary school | 444, 59.3 |
| High school | 158, 21.1 |
| University | 89, 11.9 |
| Partner's education | |
| Illiterate | 7, 0.9 |
| Literate | 22, 2.9 |
| Primary school | 402, 53.7 |
| High school | 217, 29.0 |
| University | 101, 13.5 |
| Household income | |
| Below minimum wage | 89, 11.8 |
| Minimum wage | 367, 49.0 |
| Twice the minimum wage | 184, 24.6 |
| Thrice the minimum wage | 62, 8.3 |
| Above thrice the minimum wage | 47, 6.3 |

Pregnancy checkups

While 4.8% of participants (n=36) said they had not yet been examined by a doctor regarding their pregnancy, 43.9% (n=329) reported going to a private practice office, 24.6% (n=184) to a private hospital, 18.6% (n=139) to a state hospital and 8.1% (n=61) to a primary health care centre. Of those who had been examined by a doctor, 30.6% (n=223) were not asked about their smoking status. Of those who were asked, 78.9% were asked in a primary health care centre, 75.5% in a private practice office, 65.2% in a private hospital and 46.6% in a state hospital. A significant difference was found among the various health care providers as to whether or not the applicants were asked about their smoking status (p<0.001).

Of those who had been examined by a doctor for their pregnancy, 27.8% (n=300) reported that they had not been informed about the negative effects of smoking on the mother and the foetus. Among those who

were informed, 85.4% were informed in a primary health care centre, 65.2% in a private practice office, 53.2% in a private hospital and 37.6% in a state hospital. There was a difference among health care providers as to whether or not the applicants were informed about the dangers of smoking during pregnancy ($p < 0.001$).

Knowledge of the effect of smoking in pregnancy on the health of the mother and the child

When asked "Does smoking or being next to someone smoking while pregnant have any effects on the health of the mother and the child?", 89.7% ($n=672$) stated that there was a negative effect, 8.9% ($n=67$) stated that they had no knowledge of any effect, 1.0% ($n=7$) said there was no effect and 0.4% ($n=3$) stated that there was a positive effect.

Among those who stated that there was a negative effect, respiratory problems were mentioned by 28.3% ($n=190$), developmental retardation and low birth weight were mentioned by 25.3% ($n=170$) and general harmful effects on the health of the child were mentioned by 20.8% ($n=140$).

Second-hand tobacco smoke in pregnancy

Of the 749 participants, 57.4% ($n=430$) were living with non-smoking partners, 25.5% ($n=191$) reported that their partners smoked when they were in the same room, 14.3% ($n=107$) stated that their smoking partners were careful not to smoke when they were in the same room and 2.8% ($n=21$) reported that their partners quit smoking due to their pregnancy. Overall, the partners of 39.8% of participants ($n=298$) were smokers, while 13.4% ($n=100$) of participants stated that someone else they shared a home with smoked next to them.

Among pregnant women who did not smoke during the pregnancy, 35.8% ($n=239$) were reportedly exposed to second hand tobacco smoke in their homes. Of the 125 women who worked, 16.0% ($n=20$)

reported being exposed to second hand tobacco smoke in the workplace.

Smoking behaviour during pregnancy

Of the 749 participants, 305 (40.7% ever smokers) reported having smoked at least once in their entire life. Smoking frequency of "at least one cigarette daily for six month or longer" prior to pregnancy was reported by 28.3% ($n=212$). When this group was asked whether pregnancy had affected their smoking status, 17.5% ($n=131$) said they quit smoking, 8.4% ($n=63$) said they started smoking less, 2.3% ($n=17$) reported no change and 0.1% ($n=1$) said they started smoking more. Overall, 10.8% of participants ($n=81$) smoked during the pregnancy. The average number of cigarettes smoked per day during the pregnancy was 5.6 ± 6.0 (median: 3.5) (Table 2).

The smoking behaviour during the pregnancy was evaluated. The prevalences of smoking daily or occasionally were found to be 8.0% and 2.8% respectively (Figure 1).

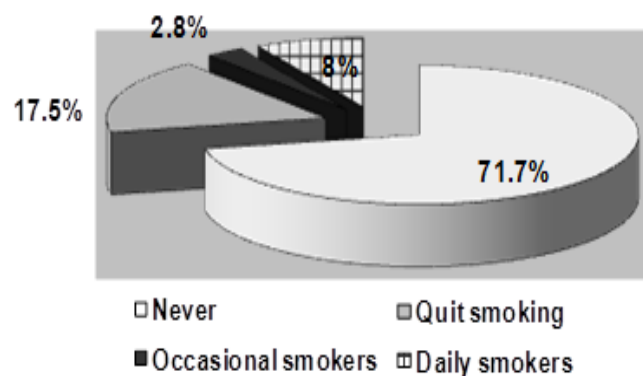


Figure 1. Smoking behaviour in pregnancy

In order to determine the factors that can possibly influence smoking behaviour during pregnancy "non-smoking" and "smoking" groups during pregnancy were compared. Significant differences were found for some socio-demographic characteristics such as the maternal and partner's education, poverty, income level and partner's smoking status (Table 3).

Table 2. Smoking status during pregnancy

| Smoking status | n | % / mean |
|---|-----|-------------------------|
| Smoked at least once in entire life | 305 | 40.7 |
| The prevalence of current tobacco smokers during pregnancy | 81 | 10.8 |
| Smoking status during pregnancy (n=81) | | |
| Daily smokers | 60 | 74.1 |
| Occasional smokers | 21 | 25.9 |
| Age smoking started | | 18.2±3.6 |
| The mean number of daily cigarette consumed before pregnancy | | 8.9±6.9 / (median: 7) |
| Effect of pregnancy on smoking status (n=212) | | |
| Quit | 131 | 61.8 |
| Reduced | 63 | 29.7 |
| No change | 17 | 8.0 |
| Increased | 1 | 0.5 |
| The mean number of daily cigarettes consumed during pregnancy | | 5.6±6.0 / (median: 3.5) |

When the “never” and the “current smokers” groups were compared in terms of factors that could influence smoking behaviour, significant differences were found in the partner’s educational status, poverty, income level and the partner’s smoking status. Those participants whose partners were smokers were 8.15 times more likely to smoke than the rest (Table 4).

In the multivariate logistic regression model, “never” and the “daily +occasional smokers” groups were compared in terms of factors that could influence smoking behaviour.

Maternal and partner’s education status has no significant effect on smoking behaviour in regression model. However partner’s positive smoking status 8.24 times (95%CI: 4.7-14.4) and being above the

poverty level 2.01 times (95%CI: 1.1-3.67) increased the risk of smoking during pregnancy (Table 5).

Discussion

The smoking prevalence during pregnancy varies from country to country. According to WHO, the percentage of women smokers is 22% in developed countries and 9% in developing countries, and a portion of women smokers continue to smoke during pregnancy.^{1,7} GATS has reported that the prevalence of smoking at least once a day in women aged between 15 and 44 years in Turkey is 25.3%.³ Similarly, this rate among women of reproductive age in our study was 28.3%.

Table 3. Sociodemographic factors that can influence smoking status in pregnancy

| Characteristics | Total (n) | Did not smoke during pregnancy (%) | | Smoked during pregnancy (%) | | p |
|-----------------------------------|--------------|---------------------------------------|----------------------------|---------------------------------|----------------------------|------------------|
| | | Never (n=537) | Quit smoking (n=131) | Occasional smokers (n=21) | Daily smokers (n=60) | |
| Age | 749 | 27.19±5.26 | 27.57±5.00 | 26.83±5.54 | 26.76±5.81 | >0.05 |
| Maternal education | | | | | | |
| Illiterate/Literate | 56 | 72.2 | 5.4 | 8.9 | 14.1 | 0.007 |
| Primary school | 444 | 72.9 | 15.3 | 2.5 | 9.2 | |
| High school, University | 249 | 68.7 | 24.9 | 2.8 | 1.6 | |
| Partner's education | | | | | | |
| Illiterate/Literate | 29 | 48.3 | 13.8 | 6.9 | 31.0 | <0.001 |
| Primary school | 402 | 74.4 | 14.4 | 2.7 | 8.5 | |
| High school, University | 318 | 70.4 | 20.8 | 3.1 | 5.7 | |
| Previous pregnancies | | | | | | |
| None | 340 | 69.4 | 21.8 | 2.3 | 6.5 | >0.05 |
| 1+ | 409 | 73.6 | 13.9 | 3.2 | 9.3 | |
| Social class | | | | | | |
| Employer/self employed | 25 | 64.0 | 28.0 | 8.0 | 0.0 | >0.05 |
| White-collar employee | 44 | 65.9 | 27.3 | 4.6 | 2.2 | |
| Blue-collar employee | 58 | 70.7 | 17.2 | 5.2 | 6.9 | |
| Marginal, Unemployed | 622 | 72.4 | 16.5 | 2.2 | 8.9 | |
| Place of residence | | | | | | |
| Urban | 512 | 69.7 | 18.8 | 3.3 | 8.2 | >0.05 |
| Rural | 237 | 76.4 | 14.3 | 1.7 | 7.6 | |
| Poverty | | | | | | |
| Below poverty level | 294 | 71.5 | 23.1 | 2.3 | 3.1 | <0.001 |
| Above poverty level | 449 | 71.5 | 14.0 | 3.1 | 11.4 | |
| Household income (USD\$)# | | | | | | |
| 335 ≥ | 113 | 70.8 | 24.8 | 2.7 | 1.7 | <0.001 |
| 336 - 670 | 183 | 72.1 | 21.9 | 2.2 | 3.8 | |
| 671 ≤ | 453 | 71.7 | 13.9 | 3.1 | 11.3 | |
| Partner's smoking status | | | | | | |
| Non-smoker | 456 | 78.3 | 18.4 | 0.4 | 2.9 | <0.001 |
| Smoker | 293 | 61.5 | 16.0 | 6.5 | 16.0 | |

(1 USD \$= 1.48 Turkish Liras)

Table 4. Smoking prevalence (Never smoked vs current smokers) during pregnancy according to sociodemographic characteristics

| Characteristics | Smoking Status | | p | OR (95% CI) |
|----------------------------------|----------------|-----------------|------------------|-----------------------------|
| | Never | Current smokers | | |
| | Mean±SD | Mean±SD | | |
| Age | 26.6±5.1 | 27.4±5.0 | >0.05 | 1.00 (0.96-1.05) |
| Maternal education | n, % | n, % | | |
| Illiterate/ literate | 48, 75.0 | 12, 25.0 | | 2.18 (0.98-4.89) |
| Primary school | 338, 82.5 | 52, 17.5 | >0.05 | 1.26 (0.77-2.07) |
| High school, University | 151, 86.8 | 17, 13.2 | | 1.00 |
| Partner's Education | n, % | n, % | | |
| Illiterate/ literate | 25, 60.0 | 9, 40.0 | | 4.09 (1.68-9.98)** |
| Primary school | 305, 83.0 | 45, 17.0 | 0.005 | 1.26 (0.77-2.07) |
| High school, University | 207, 86.0 | 27, 14.0 | | 1.00 |
| Previous pregnancies | | | | |
| None | 222, 84.7 | 30, 15.3 | >0.05 | 1.00 |
| 1+ | 315, 81.9 | 51, 18.1 | | 1.22 (0.77-1.94) |
| Social class | | | | |
| Employer/self employed | 10, 80.0 | 1, 20.0 | | 1.00 |
| White-collar employees | 25, 84.0 | 4, 16.0 | >0.05 | 1.23 (0.26-5.92) |
| Blue-collar employees | 38, 81.6 | 6, 18.4 | | 0.94 (0.31-2.82) |
| Marginal, Unemployed | 463, 83.2 | 70, 16.8 | | 1.11 (0.47-2.62) |
| Place of residence | | | | |
| Urban | 363, 81.0 | 61, 19.0 | >0.05 | 1.00 |
| Rural | 174, 87.4 | 20, 12.6 | | 1.62 (0.96-2.72) |
| Poverty | | | | |
| Below poverty level | 194, 90.2 | 17, 9.8 | 0.001 | 1.00 |
| Above poverty level | 343, 79.0 | 64, 21.0 | | 2.45 (1.43-4.20) |
| Household income(USD\$)# | | | | |
| 335 ≥ | 72, 91.7 | 5, 8.3 | | 1.00 |
| 336 - 670 | 122, 89.3 | 12, 10.7 | 0.002 | 2.92 (1.21-7.01)* |
| 671 ≤ | 343, 79.0 | 64, 21.0 | | 1.31 (0.48-3.61) |
| Partner's smoking status | | | | |
| Non-smoker | 318, 94.0 | 18, 6.0 | <0.001 | 1.00 |
| Smoker | 211, 65.9 | 63 34.1 | | 8.15 (4.73-14.05)*** |

* p<0.05, ** p<0.01, ***p<0.001, # (1 USD \$ = 1.48 Turkish Liras)

Table 5. Multivariate regression model

| Regression model | OR | 95% CI | |
|---|---------------------------------|-------------|------------|
| | | Lower | Upper |
| Comparison between "Never" and "Current smokers" groups | Partner's smoking status | | |
| | ▪ Non-smoker | 1.00 | |
| | ▪ Smoker | 8.24 | 4.70 14.45 |
| | Poverty | | |
| | ▪ Below poverty level | 1.00 | |
| | ▪ Above poverty level | 2.01 | 1.10 3.67 |

Several studies that have been carried out in Turkey have cited the following rates of prevalence of smoking during pregnancy: 32% in a 1986 study of 500 pregnant women at the Istanbul Medical Faculty Department of Obstetrics and Gynaecology; 37% in a 1988–1989 study in Samsun; 3% in a 1991–1992 study of 2,000 pregnant women in Erzurum; 16% in a 1999 study at the Department of Obstetrics and Gynaecology of the Uludag University Medical Faculty; 17% in a 2003 study at the Sivas Maternity Hospital; 7.3% in a 2004–2005 study of 600 pregnant women at the maternity ward of the Konya Selcuk University; 19.1% in a 2006 study in Manisa; 20.5% in a study of 457 working women in Edirne and 23% in a 2008 study in Burhaniye.⁹⁻¹⁷ The fact that Turkey's prevalence rates of smoking in pregnancy vary widely among studies can be attributed to the varying dates of the studies, the differences in smoking habits among various regions of Turkey and the hospital-based nature of the studies. In contrast, our study is community-based and covers the entire province of Tekirdağ. The 2003 Turkey Demographic and Health Survey (TDHS) reports a 15% prevalence rate of smoking during pregnancy,²⁰ while the 2008 TDHS report cites an 11.4% rate.²¹ A meta-analysis of smoking during pregnancy revealed a prevalence rate of 12–25% in the USA, 13–36% in various European countries and 13–31% in other countries.⁷⁻²² In our study, 10.8% of women continued to smoke during pregnancy. Surveys that study rates of smoking prevalence rely on the accuracy

and honesty of participants, whose responses do not always necessarily reflect the facts.²³⁻²⁴ Some studies that have compared the responses of the participants to their urine nicotine levels have shown that reported prevalence rates can be lower than actual ones by 3–5%.²⁴⁻²⁸ The primary limitation of our study is its dependence on the responses of the participants.

According to the studies that have been carried out in Turkey and worldwide, the main factors that influence smoking behaviour during pregnancy are low maternal age, low socioeconomic level, many children and living with smoking partners.^{4,29-30} Similarly, we found that the partner's smoking status, and household income have a considerable effect on the smoking behaviour of pregnant women. On the contrary, maternal age has no significant effect. In our study, those living with smoking partners were found to be 8.15 times more likely to smoke. In a few study it was reported that, pregnant women living with smoking partners were about 2.3 to 7.0 times more likely to smoke.³¹⁻³³ The presence of smokers in the same home has been shown to influence the ability of others to quit.⁴

There is a lot of evidence that a significant number of women can be helped to quit smoking early in pregnancy with effective, low intensity interventions. The literature strongly supports the efficacy of 5 to 15 minute counselling sessions about cessation, delivered by trained providers and accompanied by pregnancy-specific self

help materials.³⁴⁻³⁵ In our study, 69.4% of women who applied to medical centres due to pregnancy were asked about their smoking status, and 72.2% of those asked were informed about the possible effects of smoking on the mother and the foetus. According to the results, the rate of application to medical centres for pregnancy monitoring was low. Primary health care centres were the most frequent to inquire about the smoking status of the pregnant women and to inform them about the dangers of smoking, followed by private practice centres, while state hospital clinics did this the least frequently. According to the data of the Ministry of Health, the numbers of doctors in Turkey increased by 49.5% from 1999 to 2008, while the number of patients increased by 132%.³⁶ The low attention paid by state hospital doctors to individual patients can be explained by their excess workload.

Observational studies show that 20–40% of pregnant women quit smoking for the duration of pregnancy, most of them in the early stages.¹⁻⁴ In our study, 17.5% of pregnant women quit smoking, and 61.8% of those who quit did it without any medical support. In general, pregnancy is the biggest factor in quitting smoking among women; however, the percentage of women who quit is still much lower than desired. According to WHO, pregnancies and new born children are opportunities for re-evaluations to change life styles and gain healthy behaviours, including not smoking.³⁵

Second hand smoke is a major public health problem worldwide. There is clear and significant evidence that second hand tobacco smoke during pregnancy leads to health complications in the mother and the foetus, such as low birth weight, pulmonary function deficits and the sudden infant death syndrome, as listed in the WHO Tobacco Atlas.² In our study, 57.4% of pregnant women were living with non-smoking partners, 25.5% reported that their partners smoked with them in the same room, 14.3% stated that their smoking partners were careful not to smoke with them in the same room and 2.8% reported their partners quit smoking due to their pregnancy. Overall, the prevalence of

smoking in partners of participants was 39.8%, while 13.4% of participants stated that someone else they shared a home with smoked next to them. Among pregnant women who did not smoke during pregnancy, 35.8% were reportedly exposed to passive smoke in their homes. Out of 125 women who worked, 16.0% reported being exposed to smoke in the workplace.

As a conclusion, the 10.8% prevalence rate of smoking during pregnancy in the province of Tekirdağ is lower than the average rates reported in Turkey, USA and various European countries. The rates for pregnant women who were able to quit smoking due to pregnancy without any help were as high as 61.8%. We attribute this to the fact that up to 30% of women who applied to medical centres about their pregnancy were asked about their smoking status, informed about the dangers of smoking during pregnancy and encouraged to quit.

Recommendations

The Tobacco Control Law (TCL) in July 2009 does not include private premises such as homes or private cars as complete smoke-free places. Passing smoke free legislation is not enough. Many people in homes or private cars were still exposed to SHS. Specific programs, such as educational training both for men and women, are needed to protect children and pregnant women in homes and private cars/areas.

Most importantly, our results show that tobacco control programs must focus on: the spouse or partner of the pregnant women smoker. Educational programs or strategies should include not only the pregnant women but also the spouse or the partner to provide smoke free homes.³⁵

More smoking cessation services are needed throughout the country as well as professional staff to maintain these services. The smoking status of people should be checked by health care professionals at every appointment, and smokers, particularly those with health problems and pregnant women, should be offered a cessation method. According to the Agency

for Health Care Policy and Research Guidelines: the 5 As (Ask, Advise, Assess, Assist, Arrange) should be used. These steps can be completed in five to 10 minutes in the health care provider's office prior to or during pregnancy.^{34,35}

Even more effective health warnings, particularly for pregnant women, should be put on cigarette packages and all the messages should be changed. Vigorous media campaigns and public conferences should be organized to increase awareness about the dangers of smoking for pregnant women.

Finally, local and national mechanisms for the advancement of women, nongovernmental organizations, institutes engaged in the field of empowerment (health, economic and human rights) must be involved with Tobacco Control Programs (TCP).³⁶ Sharing the scientific evidence should be the mechanisms acting on government policies to help raise educational levels, reduce poverty and inequities.

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