



Original Research Article

Factors Related to Smoking in a Sample of Pregnant Women in Baghdad City

Muna Abdul Kadhum Zeidan

College of Health and Medical Technologies, Middle Technology University, Baghdad, IRAQ

E-mail:muna_al_1982@yahoo.com

Accepted 2 February, 2017

Abstract

Smoking during pregnancy is significant health problems. Smoking is related to different adverse health effects consist of chronic respiratory diseases in children sudden infant death syndrome. To determine the rate of smoking in a sample of Pregnant women. To identify factors associated with the smoking habits (Maternal age, maternal education ,maternal occupation, gestational age, parity, socio economic status, health problems, and stress). A cross-sectional study conducted in Baghdad in Al- Karkh teaching hospital and Bab-Almoadham primary health center. Sampling was (non-probability convenient) & sample size was 276. The study started from 1st of June 2015 to 1st of October 2015. Data was collected by questionnaire to obtain socio- demographic information. The result shows that mean age of the subjects was 29.02 ± 6.7 years, and the 49.6% were housewives; about (34.4%) of pregnant women in the sample were smokers. About (43.5%) of the pregnant women with smoker were mainly at 2nd trimester of their pregnancy, 'the frequency of women who had more than one baby was higher among smokers than among non-smokers', about (62.8%) of the subjects were low socio economic status. Analysis of results by (chi-square test) show that (maternal occupation, parity, socio economic status, health problems, and stress) were significant factors associated with anemia. This study shows the rate of smoking during pregnancy was 34.4%, factors that were associated with higher rate of smoking were unemployment, parity, smoking was more related with low socio economic status, health problems and stress.

Key Words: Smoking, Factors, Pregnant women.

العوامل المرتبطة بالتدخين في عينة من النساء الحوامل في مدينة بغداد

الخلاصة

التدخين أثناء الحمل هو مشكلة صحية عامة كبيرة. ويرتبط التدخين أثناء الحمل مع مختلف النتائج الصحية الضارة بما في ذلك متلازمة موت الرضع المفاجئ والأمراض التنفسية المزمنة لدى الأطفال. الهدف من الدراسة هو تحديد معدل التدخين لعينة من النساء الحوامل، وللتعرف على العوامل المرتبطة بالتدخين (مثل العمر، تعليم الام، مهنة الام، عمر الحمل، عدد الاطفال. الحالة الاجتماعية والاقتصادية، المشاكل الصحية، الضغط النفسي).

دراسة مقطعية اجريت في بغداد في مستشفى الكرخ التعليمي والمركز الصحي في باب المعظم لعينة غير عشوائية (غرضية) وحجم العينة كان 276. حيث جمعت المعلومات والبيانات باستخدام استبانة معدة مسبقا للحصول على المعلومات الاجتماعية والديموغرافية لكل امرأة. اظهرت الدراسة ان متوسط اعمار عينة الدراسة هو 29.02 ± 6.7 سنة، وحوالي 49.6% من العينة كن ربات بيوت، وحوالي 34.4% من العينة كن مدخنات، وحوالي 43.5% من النساء الحوامل والمدخنات؛ كانت بشكل رئيسي في الثلث الثاني من مرحلة الحمل، وعدد النساء اللاتي انجبن اكثر من طفل واحد اغلبهن مدخنات مقارنة بغير المدخنات. وحوالي 62.8% من العينة كانوا مستواهم الاقتصادي متدني. بعد تحليل النتائج بطريقة (مربع كاي) تبين وجود ترابط معنوي واضح بين التدخين (مهنة الام، عدد الاطفال، تدني الحالة الاقتصادية، المشاكل الصحية، الحالة النفسية).

اظهرت الدراسة ان حوالي ٣٤,٤% من العينة كن مدخنات وتبين تبين وجود ترابط معنوي واضح بين التدخين (مهنة الام، عدد الاطفال، تدني الحالة الاقتصادية، المشاكل الصحية، الحالة النفسية).

الكلمات المفتاحية: التدخين، العوامل، نساء حوامل.

Introduction

Smoking very important health problems most countries in the world. According to cause of preventable mortality in some countries [1,2]. The public health society makes focus on efforts to educate the population around the risks of smoking. These dangers are harmful. Many studies have found that females who smoked throughout pregnancy had higher exposed for pre mature birth, birth and spontaneous abortion, low birth weight, and newborns deaths [3,4]. As well as, "death syndrome" in infants, and "respiratory diseases" in children has been linked to mother's smoking behind birth and fetus exposure to those half hand smoke [5]. Smoking lead to a threat both to the mother's and her newborns expect. Tobacco causes for many complications consist of miscarriage caused by tobacco, deaths caused by disturbances in the perinatal period and newborns requiring admission to the intensive care unit for newborns [6], low birth weight [7,8], and mortality resulting from "sudden infant death syndrome" [8]. Cigarette smoking lead to increase the danger of in fertility and delayed pregnancy [9], and adverse pregnancy outcomes, for example, placental abruption, stillbirth, premature birth [10] Smoking pregnant mothers of preterm birth also raises the risk [11]. Smoking responsible of death in many countries females are higher smokers and the cigarette is cause for nearly five million mortality a year [12]. The percentage of men smokers are higher than female. It has shows decline in prevalence in developed countries[13].

Accompanied by many of Mother factors and father related to smoking during gestation; such as, female who smoke throughout pregnancy are more young, [14], have an economic position of social lower and the low level of education low income [15], and the pregnancy more unplanned [16] of the female who did not smoking by pregnancy. Similar to a study done in London, they are less likely to engage in behaviors associated with health or to feel responsible for the health of children [17] pregnant women who smoke. And it increased differences in smoking rates, according to the mother's life in Denmark [18].

Materials and Methods:

A cross-sectional study design was used. The study was conducted in Al-Karkh teaching hospital and Bab-almoatham primary health center. The sample was selected (non probability convenient sampling), pregnant women were selected with the exception of those who fulfilled the pre defined criteria of pregnancy induced hypertension, preeclampsia, eclampsia or chronic hypertension, gestational diabetes which include 276 samples.

The study has started from 1st June to 30th October 2015. The data were collected by direct interview using special questionnaire. Information included socio demographic data (age, education and occupation), obstetrical history (gestational age and parity) and socio economic status.

Socio-economic status scales (SESS): SES is defined in terms of a standard sociological paradigm consisting of three components: (a) occupation ; (b) education;

and (c) income. The income component for this study is difficult to be obtained directly from the patients or their family. But the investigator attempts to calculate through the following objective indicators: Crowding index; house ownership; house expenses (properties) and possession of a car. Each item has scored according to its importance and its score ranged from (150-89 and less) as the following: High score = 150-121, Middle score = 120-90, Low score = 89 & less [20].

Results

Table (1) shows that (276) pregnant women that were in age group (25-29) years & mean age of them was (29.02± 6.7) years. As for education (32.6 %) were primary education, and about (49.6%) were housewives and

Cigarette – smoking : consisting of three groups : (a) non – smoker (did not smoke throughout the pregnancy) ; (b) smoker ; (c) and passive smoker (had a household member who smoked ten cigarettes per day) [21].

Statistical analysis: data was analyzed by SPSS package version 18, X² test was used for significance of association (p – value of < 0. 05 was considered significant).

about (34.8%) of pregnant women have 1-3 child , about 43.5% were non smokers and 34.4% were smokers.

Table 1 : Distribution of sample - according to , age , education , occupation, parity, and smoking habits

Age (years)	No. = 276	%
<20	24	8.7
20-24	56	20.3
25-29	71	25.7
30-34	62	22.5
35-39	63	22.8
Mean age (29.02± 6.7)		
Education	No. = 276	%
illiterate	32	11.6
read & write	60	21.7
Primary school graduate	90	32.6
intermediate school graduate	35	12.7
secondary school graduate	40	14.5
Collage graduate	19	6.9
Occupation	No. = 276	%
Worker	91	33
House wife	137	49.6
Student	48	17.4
parity	No. = 276	%

Having no children	52	18.8
1-3	128	46.4
≥4	96	34.8
Smoking habits	No. = 276	%
smokers	95	34.4
non smokers	120	43.5
passive smokers	61	22.1

Table (2) shows the not significant association between maternal smoking and age in this study. The age (25-29) years are more susceptible to smoking during pregnancy and percentage was (47.2%).

Table 2: Distribution of the study group by smoking habits and age

Age (years)	Smoking habits				p. value
	smokers	Passive smokers	Non smokers	Total	
<20	5 17.9%	12 42.9%	11 39.2%	28 100%	$\chi^2 = 1.57$ $p = 0.2099$ NS (p – value of < 0.05 was considered significant)
20-29	45 36.6%	20 16.2%	58 47.2%	123 100%	
30-39	45 36%	29 23.2%	51 40.8%	125 100%	
Total	95 34.4%	61 22.1%	120 43.5%	276 100%	

"% = percentage", " χ^2 = chi - squared test", "P = probability - level", "S = significant"

Table (3) shows the relationship between smoking habits and maternal occupation as for occupation out of 136 housewife, 37 (27.3%) were smokers, and

61(44.8%) were nonsmokers. (Results are non-significant as p - value was > 0.005).

Table 3: Distribution of the study group by smoking habits and maternal occupation

Occupation	Smoking habits				p. value
	smokers	Passive smokers	Non smokers	Total	
Worker	28 30.8%	18 19.8%	45 49.5%	91 100%	$\chi^2 = 1543$ $p \leq 0.001$ H.S (p – value of < 0.05 was considered significant) .
House wife	37 27.3%	38 27.9%	61 44.8%	136 100%	
Student	30 61.2%	5 10.2%	14 28.6%	49 100%	
Total	95 34.4%	61 22.1%	120 43.5%	276 100%	

"% = percentage", " χ^2 = chi-squared test", "P = probability level", "H.S= highly significant"

Table(4) shows the no association of smoking habits and pregnancy trimester in this study the gestational age of the most pregnant with

smokers were at 1st (≤ 12 weeks). (Results are non significant as p - value was > 0.005).

Table 4 : Distribution of the study group by smoking habits and pregnancy trimester

Gestational age	Smoking habits				p. value
	smokers	Passive smokers	Non smokers	Total	
1 st (≤ 12 weeks)	38 29.5%	37 28.7%	54 41.9%	129 100%	$\chi^2 = 1.59$ $p = 0.613$ NS
2 nd ($\leq 13-24$ weeks)	40 43.5%	18 19.6%	34 37.0%	92 100%	
3 rd (≥ 25 weeks)	17 30.9%	6 10.9%	32 58.2%	55 100%	
Total	95 34.4%	61 22.1%	120 43.5%	276 100%	

"% = percentage", " χ^2 = chi - squared test", "S = significant"

Table (5) shows that relationship between smoking habits and parity. The study sample it presents that there was a non significant relationship between the two factors at ($p>0.00$), through using the chi-square test

about 130 pregnant women were with parity 1-3 and out of these 67 (51.6%) were smokers, of these 58 (44.6 %) were non smokers.

Table 5: Distribution of the study group by smoking habits and parity

Parity	Smoking habits				p. value
	smokers	Passive smokers	Non smokers	Total	
having no children	20 38.5%	18 34.6%	14 26.9%	52 100%	$\chi^2 = 16.17$ $p \leq 0.001$ H.S(p – value of < 0.05 was considered significant)
1-3	67 51.6%	5 3.8%	58 44.6%	130 100%	
≥ 4	8 8.5 %	38 40.4%	48 51.1%	94 100%	
Total	95 34.4%	61 22.1%	120 43.5%	276 100%	

"%= percentage", " χ^2 = chi-squared test", "P= probability level", " H.S= highly significant"

Table (6 :) That pregnant women with socio economic status had higher rate of smoking (62.8%) And non smokers (27.7%) high-

significant difference were found as p- value ≤ 0.000).

Table 6 : Distribution of the study group by smoking habits and socio economic status

Socioeconomic Status	Smoking habits				p. value
	smokers	Passive smokers	Non smokers	Total	
Poor	59 62.8%	9 9.6%	26 27.7%	94 100%	$\chi^2= 32.26$ $p \leq 0.001$ H.S(p – value of < 0. 05 was considered significant) .
moderate	27 20.5%	33 25.0%	72 54.5%	132 100%	
good	9 18.0%	19 38.0%	22 44.0%	50 100%	
Total	95 34.4%	61 22.1%	120 43.5%	276 100%	

"%= percentage ", " χ^2 = chi-squared test", "P= probability level", " H.S= highly significant"

Table (7) showed that pregnant women with health problems had higher rate of smokers (54.8%) while (31%) were non-smokers.

high, significant difference were found as (p - value $\leq 0. 000$).

Table 7: Distribution of the study group by smoking habits and health problems

Health problems	Smoking habits				p. value
	smokers	Passive smokers	Non smokers	Total	
Yes	69 54.8%	18 14.3%	39 31.0%	126 100%	$\chi^2= 32.38$ $p \leq 0.001$ H.S(p – value of < 0. 05 was
No	26 17.3%	43 28.7%	81 54.0%	150 100%	
Total	95 34.4%	61 22.1%	120 43.5%	276 100%	

"%= percentage ", " χ^2 = chi-squared test", "P= probability level", " H.S= highly significant"

Table (8) showed that that pregnant women with stress had higher percentage of smokers

(51.6%) (high- significant difference were found as p- value ≤ 0.000).

Table 8: Distribution of the study group by smoking habits and stress

Stress	Smoking habits				p. value
	smokers	Passive smokers	Non smokers	Total	
Yes	66 51.6%	33 25.8%	29 22.7%	128 100%	$\chi^2= 44.13$ $p \leq 0.001$ S(p – value of < 0. 05)
No	29 19.6%	28 18.9%	91 61.5%	148 100%	
Total	95 34.4%	61 22.1%	120 43.5%	276 100%	

% = percent ", " χ^2 = chi - squared test", " P = probability level ", " S = significant"

Discussion

It has long been known mother's smoking throughout pregnancy to be a danger factor for morbidity and mortality of newborns, including low birth weight, shortened pregnancy, premature birth, birth weight [22].

In this study, most of the pregnant women belongs to the age 25-29 years and the mean age of pregnant women was 29.02 ± 6.7 years. The finding of the present study is agreement with findings reported in Istanbul [23], in Brazil [24], in Japan [25], and in Switzerland [26], and in Canada [27], they have identified the mothers current age was positively associated with smoking with p-value <0.000 . This could be explained by the extreme ages of reproductive years are well known risk factors for smoking during pregnancy.

This study shows that about (49.6%) of pregnant women were housewives, this result confirms the finding in Turkey [28], found a high percentage (79.4%) of the pregnant women were housewives this could be a possible reason for women having health problem during their pregnancy [29]. 34.4% of the subjects were smokers while (43.5%) were non-smokers and (16.5%) had passive smokers disagrees finding were reported in Canada [27], in Brazil [24], in US [30], they found (55.4 %) are non-smokers, (25.5%) were smokers, a possible explanation for this may be due to the contrast in time and place of the studies and selection of study population. Gestational age variables strongly associated with smoking in pregnancy p – value <0.000 , similar finding were reported in Canada [27], found that the prevalence of smoking in the 3rd trimester were (10.5%). This may be due to failure to attend ante natal classes and stressful events pre and during pregnancy [27].

Parity have significant association with smoking in pregnancy with p– value <0.000 this result confirms the finding in Brazil [24], and in Switzerland [26], they found significant association between parity & smoking p – value (0.002), this could be a possible reason for women having low health education and gave birth to a healthy child [31,32].

Smokers during pregnancy had a higher frequency of reporting low socio economic status, similar finding were reported in Japan [25], in Switzerland [26], and in Canada [27], they found Smokers during pregnancy was related to low socio-economic status, And may be because females had a higher frequency to continue smoking economic problems [25]. The present study shows that pregnant women who had smokers had higher rate of health problems about (54.8%), this result confirms the finding in Brazil [24], found that women who smoked during pregnancy had a higher frequency of complications for examples placenta previa, and, premature birth, ectopic pregnancy, and birth weight, low birth weight, and mortality of newborns, and weakness of the child's physical growth, and this may be due to drug use is a growing problems that is related to significant morbidity mother and fetus [33].

The present study shows that pregnant women who had smokers had higher rate of stress about (51.6%), this result confirms the finding in Brazil [24], in Switzerland [26], and in Canada [27], they found that stress have significant association with smoking during pregnancy, And this may be due to starvations and not have the job in these societies may be important causes for these higher frequency [34].

Conclusions

This study shows the frequency of women who had more than one baby was higher among smokers than among nonsmokers', factors that were associated

with higher rate of smoking were unemployment, parity, smoking was more related with low socio economic status, health problems and stress.

References

- 1- Kolas T, Nakling J, Salvesen KA. Smoking during pregnancy increases the risk of preterm birth among parous women. *Acta Obstet Gynecol Scand* 2000;79:644–8.
- 2- Burguet A, Kaminski M, Abraham-Lerat L, Schaal JP, Cambonie G, Fresson J, et al. The complex relationship between smoking in pregnancy and very preterm delivery: results of the Epipage study. *BJOG* 2004; 111:258–65.
- 3- Shah NR, Bracken MB. A systematic review and meta analysis of prospective studies on the association between maternal cigarette smoking and preterm delivery. *Amer J Obst Gynecol.* 2000; 182(2): 465-72.
- 4- DiFranza JR, Lew RA. Effect of maternal cigarette smoking on pregnancy complications and sudden infant death syndrome. *J Family Practice.* 1995; 40(4): 385-94.
- 5- Ventura SJ, Hamilton BE, Matthews TJ, Chandra A. Trends and variations in smoking during pregnancy and low birth weight: evidence from the birth certificate, 1990-2000. *Pediatrics.* 2003 May; 111 (5 Part 2): 1176-80.
- 6- Adams EK, Miller VP, Ernst C, Nishimura BK, Melvin C, Merritt R: Neonatal health care costs related to smoking during pregnancy. *Health Econ* 2002, 11:193-206.
- 7- Bachir R, Chaaya M: Maternal smoking: Determinants and associated morbidity in two areas in Lebanon. *Matern Child Health J* 2008, 12:298-307.
- 8- Salihu HM, Wilson RE: Epidemiology of prenatal smoking and perinatal outcomes. *Early Hum Dev* 2007, 83:713-720.
- 9- Centers for Disease Control and Prevention (CDC): Smoking during pregnancy--United States, 1990-2002. *MMWR Morb Mortal Wkly Rep* 2004; 53:911-915.
- 10- Ng SP, Zelikoff JT: Smoking during pregnancy: Subsequent effects on offspring immune competence and disease vulnerability in later life. *Reprod Toxicol* 2007; 23:428-437.
- 11- Tucker J, McGuire W. Epidemiology of preterm birth. *BMJ* 2004;329:675–8.
- 12- World Health Organization -WHO; 2008 [Access: 2009 December 08]. WHO Report on the Global Tobacco Epidemic - The global tobacco crisis. Available from: http://www.who.int/tobacco/mpower/mpower_report_tobacco_crisis_2008.pdf.
- 13- Ministério da Saúde (BR), Instituto Nacional do Câncer, Secretaria de Vigilância em Saúde. Inquérito domiciliar sobre comportamentos de risco e morbidade referida de doenças e agravos não transmissíveis: Brasil, 15 capitais e Distrito Federal 2002-2003 – Tabagismo. Rio de Janeiro (RJ): INCA; 2004.
- 14- Moussa K, Ostergren PO, Grahm M, Kunst AE, Eek F, Essén B. Socioeconomic differences in smoking trends among pregnant women at first antenatal visit in Sweden 1982-2001: increasing importance of educational level for the total burden of smoking. *Tob Control* 2009;18(2):92–97.
- 15- Ergin I, Hassoy H, Tanik FA, Aslan G. Maternal age, education level and migration: socioeconomic determinants for smoking during pregnancy in a field study from Turkey. *BMC Public Health* 2010;10:325.
- 16- Orr ST, James SA, Reiter JP. Unintended pregnancy and prenatal behaviors among urban black women in Baltimore, Maryland: the Baltimore preterm birth study. *Ann Epidemiol* 2008;18(7):545–551.
- 17- Haslam C, Lawrence W. Health-related behavior and beliefs of pregnant smokers. *Health Psychol* 2004;23(5):486–491.

- 18-Egebjerg Jensen K, Jensen A, Nøhr B, Krüger Kjaer S. Do pregnant women still smoke? A study of smoking patterns among 261,029 primiparous women in Denmark 1997-2005. *Acta Obstet Gynecol Scand* 2008; 87(7): 760–767.
- 19- Giordana de Cássia Pinheiro da Motta, Isabel Cristina Echer, Amália de Fátima Lucena. Factors Associated with Smoking in Pregnancy. *Rev. Latino-Am. Enfermagem* 2010; 18(4):809-15.
- 20- Tiwari S, Kumar A. Development of standardization of a scale to measure socio-economic status in urban and rural communities in India. *Indian. J Med*, 2005; 122:309-314.
- 21- Fenercioğlu AK, Yıldırım G, Karatekin G, Gökler N. The relationship of gestational smoking with pregnancy complications and sociodemographic characteristics of mothers. *J Turkish-German Gynecol Assoc* 2009; 10: 148-51.
- 22-Ingvarsson RF, Bjarnason AO, Dagbjartsson A, Hardardottir H, Haraldsson A, Thorkelsson T. The effects of smoking in pregnancy on factors influencing fetal growth. *Acta Paediatr* 2007; 96: 383-6.
- 23-Fatih BOLAT, zge EREN, Güher BOLAT, Emrah CAN, Serdar CMERT, Hasan Sinan USLU, Asiye NUHOĞLU, Maternal smoking during pregnancy and effects on neonatal anthropometry: a prospective study, 2012; 42 (6): 999-1005.
- 24-Giordana de Cássia Pinheiro da Motta Isabel Cristina Echer Amália de Fátima Lucena. Factors Associated with Smoking in Pregnancy. 2010; 18(4):809-15.
- 25- Harumi Bawdo, Masanobu Yamakawa, Tohru Yoshida. Factors related to the continuation of smoking among pregnant women: a cross-sectional study in a Japanese city. *JHEP*, 2013; 21(2):135-141.
- 26-Arnaud Chioloero, Pascal Bovet, Fred Paccaud. Association between maternal smoking and low birth weight in Switzerland: the EDEN study. *SWISS MED WKLY* 2005 ; 135 : 525 – 530 .
- 27-Ban Al-Sahab , Masarat Saqib, Gabriel Hauser and Hala Tamim. Prevalence of smoking during pregnancy and associated risk factors among Canadian women: a national survey. Al-Sahab et al. *BMC Pregnancy and Childbirth* 2010, 10:24.
- 28-Dilek Aslan, Meltem Şengelen, Pelin Çağatay. Factors Related to Smoking Status of Pregnant Women Aged 15-49 in Turkey. *Turk Toraks Derg* 2014; 15: 27-32.
- 29- Nesimi A, Mustafa O, Aytul Z., Fehmi O. Anaemia prevalence and its affecting factors in pregnant women of Is parta Province. *Biomed Res (India)* 2004; 16 (1): 11-14.
- 30-Schneider S, Maul H, Freerksen N, Potschke-Langer M: Who smokes during pregnancy? An analysis of the German perinatal quality survey 2005. *Public Health* 2008, 122: 1210-1216.
- 31-Torrent M, Sunyerb J, Cullinand P, Basagañab X, Harrisd J, Garcíac O, et al. Smoking cessation and associated factors during pregnancy. *Gac Sanit.* 2004; 18(3): 184-9.
- 32-McLeod D, Pullon S, Cookson T. Factors that influence changes in smoking behaviour during pregnancy. *N Z Med J*, 2003 [Access: 2007 August 09]; 116(1173). Available from: <http://www.nzma.org.nz/journal/116-1173/418/>.
- 33-Haller DL, Miles DR, Dawson KS. Victimization and perpetration among perinatal substance abusers. *J Interpers Violence* 2003; 18:760-780.
- 34-Godel JC, Pabst HF, Hodges PE, Johnson KE, Froese GJ, Joffres MR: Smoking and caffeine and alcohol intake during pregnancy in a northern population: Effect on fetal growth. *CMAJ* 1992, 147:181-188.