

## Cigarette Smoking, Illicit Medicine, Substance and Alcohol Abuse among Pregnant Women: A Cross Sectional Study from Iran

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### Abstract

**Background:** The aim of this study was to investigate the prevalence of illicit medicine abuse among pregnant women who referred to the general teaching hospital in Tehran.

**Materials and Methods:** A non-randomized sample of 2189 eligible pregnant women, which were at 2nd and 3rd trimester, were visited for 2nd prenatal care or subsequent consultation and being confident regarding the time of taking illicit medicine, were enrolled from 15 teaching obstetric clinics, located in Tehran, during August and September 2004. A self administered questionnaire that was consisted of questions regarding demographic characteristics, obstetric history, illicit medicine taking, substance and alcohol abuse by pregnant women and their family members'/ friends' during current pregnancy, was used to collect data. Data were analyzed by SPSS, version 13.

**Results:** 2189 pregnant women with the mean age of 26±5.5 years studied in this study. Of all, 967(44.9%) were prime gravid and 464(21.2%) carrying unwanted pregnancy, 116 ones (5.29%) had taken medicine at first trimester, among them 114 participants (98.3) used unsafe medicine.

In all, 16 individuals (0.7%) smoked cigarette, 3 participants (0.2%) abused substance. The rate of alcohol abuse was 0.2% among studied participants, 11% among participants' husbands and 15.7% among participants' family member. Of all, 641 participants' husband (29.3%) were smoker.

**Conclusion:** Although this study showed insignificant rate of substance abuse among studied women, the high percent of these women exposed to non prescribed illicit medicines and passive smoking during their first trimester of their pregnancy that should be considered strongly.

**Keywords:** Illicit Medicine Abuse, Substance Abuse, Alcohol Abuse, Passive Smoking, Pregnancy

### Introduction

Illicit medicine abuse is a major area of interest to clinicians as well as public health and social authorities, and also it is one of the major concerns during the pre-conceptional period and throughout pregnancy, due to its potential effects on the embryo and fetus (1). Every year more than 500 new types of drugs enter the drug stores (2). In addition, many pregnant women use different kinds of medicines throughout pregnancy (3) without their physician prescription (4). Nowadays, environmental factors such as illicit medicine abuse have got a significant role in congenital anomalies. In other hands these effects are more prominent if these drugs were not prescribed by physician. Previous survey has been done in Uromieh, Iran, showed that out of 175263 live birth, from 1988 to 1993, 9520 newborns (5.43%) had congenital malformations, of which 722 (7.58%) newborns' mothers had taken illicit medicine that were different with of others signifi-

cantly (5).

Cigarette smoking may negatively affect on reproductive process subsequently resulted in adverse pregnancy outcome such as ectopic pregnancy and abortion (6). A recent study has been conducted in Tehran, Iran reported that among 3734 pregnant women referred to 15 main teaching hospital, 45 individuals (1.2%) smoked cigarette during pregnancy that resulted in low birth weight (7).

Alcohol and other substances taken by pregnant women can harm the fetus (8, 9). Pregnant women who continue substance abuse during pregnancy often give birth premature (10) and low birth weight newborns (11), and also newborns with congenital malformation (12). In addition, alcoholic pregnant women and substance abusers and who live in this social context have experienced more anger and blame, which may lead to a lack of efficient prenatal care. In recent years, more attentions have been paid

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to this health problem and models of treatment have been developed (13,14) which have been proved to be clinically and economically effective (15-17), but despite these efforts and evidences for a wide range of negative consequences of illicit medicine use and substance abuse for the pregnant women and their fetus, specific research and programs addressing these high risk group have not been considerable in Iran yet. In other hand, country – specific utilization patterns can not be reliably generalized to other countries, because utilization patterns differ widely by geography due to differences in drug approval policies, prescribing patterns, pricing and reimbursement policies. Furthermore, utilization patterns differ within each country due to continually drug input/ output to / from markets and safety/ efficacy information being changed constantly (18). Thus, in Iran, we do not have our own real data regarding current illicit medicine use and substance abuse during pregnancy. Additionally, it is assumed that Iranian women are less likely to abuse substance in comparison with women from other country. The aim of this study was to investigate the prevalence of illicit medicine abuse, cigarette smoking, alcohol and substance abuse among pregnant women that referred to the main and general teaching hospital in Tehran.

## Materials and Methods

This was a cross sectional study in which, a non-randomized sample of 2189 pregnant women were enrolled from 15 obstetric clinics of teaching hospitals affiliated to three public universities in Tehran, Iran, during August and September 2004. To collect data, convenient sampling was used, so each eligible pregnant woman who refer to prenatal clinic for the 2nd prenatal care or subsequent consultation, was between 12th and 42nd week of her pregnancy and also was confident regarding the time of taking illicit medicine/abusing any substance drug or smoking cigarette, was asked to fill out a self administered anonymous questionnaire. Of all 17 clinics affiliated to the universities, two clinics disagreed to participate in the study. The number of annual prenatal care visits of 15 obstetric clinics was obtained from their annual reports and then 2500 questionnaires were distributed in the clinics proportionately. Women referring for 1st prenatal care, who were at 1st trimester of their pregnancy and those whose pregnancies were not confirmed were excluded from the study. From 2500 questionnaires distributed, 201 women rejected to take part in the study and 110 ones filled the questionnaire incompletely, so the response rate of study was 85.8%. In fact, 14.2% of the

subjects refused to answer the distributed questionnaire and the study was conducted with 2189 pregnant women. The questionnaire was consisted of questions regarding demographic characteristics regarding age, education years, parity, weeks of pregnancy at the time of investigation and obstetric history of subjects, illicit medicine use, substance and alcohol abuse by women and their family members/ friends during current pregnancy. In this study, subjects who answered “no” to the questions such as” If they were currently an daily smoker ; If they were currently illicit medicine user / alcohol drinker or substance abuser” were defined as nonsmokers/ no illicit drug users and nondrinkers. If these questions were answered “yes”, the subsequent questions regarding the time of usage during the current pregnancy were asked. In this study , currently smokers or abuser meant who smoked cigarette daily or abused illicit drug/ substance drug as usual. Data were analyzed by SPSS, version 13.

The aims and procedures of the study were explained for all participants and then written consent form was signed by any women who were willing to participate in the study. The ethic committee of Tehran University of Medical Sciences approved this study.

## Results

2189 pregnant women who were at 2nd and 3rd trimester of pregnancy participated in this study. Table 1 shows some obstetric and demographic characteristics of participants.

Out of all participants, one hundred and sixteen (5.29%) had taken medicine in first trimester of their pregnancy without physicians’ prescription. Among all no prescribed used medicine, one hundred and fourteen subjects (98.3%) used unsafe medicine. Acetaminophen was the commonest medicine that was used by seven hundred and nine participants (32.4%) in the study.

Table 2 shows the different times of first trimester of pregnancy in which the illicit medicines were used by participants.

According to this table, among all who took illicit drugs (n=116) the majority of participants (n=53, 45.7%) used these medicines between weeks 9th and 12th of pregnancy. Of all participants, 16 individuals (0.7%) smoked cigarette, and 3 participants (0.2%) abused substance. The rate of alcohol abuse was 0.2% among studied participants, 11% among participants’ husbands and 15.7% among participants’ family member. Of all, six hundred and forty one participants’ husband (29.3%) smoked cigarette during their current pregnancy.

**Table 1: Demographic characteristics and Obstetric history of subjects (n= 2189)**

	Mean (SD)	Range	N (%)
<b>Age (years)</b>	26 (5.5)	12-46	
<b>Education (years)</b>			
Pregnant woman	9.5 (3.6)		
Pregnant woman's husband	9.7 (3.5)		
<b>Gravidity</b>			
First			967 (44.9)
Second or more			1222(55.1)
<b>Number of live birth</b>			
0			1138 (52.2)
1 or more			1051(47.8)
<b>Weeks of pregnancy</b>	31.1(8.4)	5-42	
<b>Unwanted pregnancy</b>			
Yes			464 (21.2)
No			1725(78.8)
<b>Previous infertility problem</b>			
Yes			168 (7.8)
No			2021(92.2)
<b>Place of Prenatal care</b>			
Private clinic			654 (33.4)
Teaching hospital			1302 (66.6)
<b>Prenatal care by:</b>			
Physician			1361 (65.5)
Midwives			131(6.3)
Others			566 (21.9)
No care			131(6.3)

**Table 2: Time of illicit medicine utilization in first trimester of pregnancy (n= 2189)**

Weeks of Pregnancy	N	%
1-4	31	26.7
5-8	32	27.6
9-12	53	45.7
Total	116	100

There was significant relationship between participants' husbands education ( $p=0.001$ ), previous infertility ( $p=0.049$ ), wanted pregnancy ( $p<0.0001$ ) with illicit medicines abusing. The rate of illicit medicine and substance abuse was lower among pregnant women with higher educated husbands, previous infertility problem and wanted pregnancy.

## Discussion

It is generally accepted that illicit medicine abuse in pregnancy is one of major health problem, because of its potential effects on the embryo and fetus. This study revealed that about 5% of mothers took medicines in their first trimester of pregnancy without physicians' prescription. A research in Michigan University showed averagely 3.1% of studied pregnant had taken medicines without physicians' recommendation (8). Another survey on 294940 pregnant women in California revealed that 5.2%

of pregnant women used non prescribed medicines throughout their pregnancy period (9). Since in our study we investigated the rate of non prescribed illicit medicine abuse in first trimester of pregnancy, the comparison between our study and others' in which illicit medicine utilization assessed throughout the pregnancy, is discussable. However this study showed the rate of illicit medicine use in our study is much more than other studies. There are other researches based on interviews with women regarding drugs used during pregnancy in which the researchers pointed out, pregnant women may not always disclose use of all drugs during pregnancy, so the accuracy of interview-based utilization records is questionable (18). In other hands, in present study, the pregnant women in second and third trimester of their pregnancy were interviewed regarding willfully illicit medicine use in first trimester, so they might not remember this utilization, so in this study recall information bias is a kind of limitation. Additionally, women may not always clear use of all illicit medicine during pregnancy, so the researchers assumed some underestimation of illicit medicine utilization rate. Because of these limitations, the researchers suggest prospective studies in which, they can provide detailed prescription information collected prospectively.

The present study showed the majority of willfully used drug were unsafe in pregnancy. A study has been conducted in U.S showed nearly two-thirds of women received a prescription drug during their pregnancy period and of those 5% received a drug with X category according FDA classification for which risks of fetal harm have been proved (18). In our study the commonest drug was Acetaminophen whereas Joshua and co-workers revealed in their study Iron supplement was the most commonly prescribed drug (18). According to FDA classification, Acetaminophen is not fully safe in pregnancy especially in first trimester, so dissemination of correct information among Iranian pregnant women and health care providers are recommended.

The results of this study revealed that the prevalence of substance abuse including cigarette smoking among Iranian pregnant women is much less than what have been reported in other studies (10, 19, 20). Even though, reduction in substance abuse may occur during pregnancy, but some women may not alter their drug abuse patterns until pregnancy is diagnosed, so a large number of fetuses may be exposed to illicit substance in uterus (20). However, substance abuse in pregnancy is associated with significant maternal and fetal morbidity and adverse pregnancy outcomes (19), so women who acknowledge use of illicit substance during

pregnancy should be counseled and offered necessary treatment.

The results of this study showed just 0.02% of studied pregnant women stated they consumed alcohol during the first trimester of their pregnancy. Because alcohol consumption is forbidden in Iran, thus it might be argued that, this prevalence of alcohol use that reported by interviewed women, may not be accurate rate and it could be underestimated. However, this feature of alcohol use by pregnant women who live in an Islamic country is considerable and should be paid more attention to be assessed in future researches.

Although the rate of substance abuse (opium drugs and cigarettes) by the pregnant women participated in present study was low. This study showed passive cigarette smoking among Iranian pregnant women was common. Owj and co-worker reported that passive smoking in women is more prevalent than the smoking among women themselves. These authors added exposure to passive smoking may exert same effects as the direct smoking so that smoking one cigarette in a closed room raises formaldehyde content ten fold which could be hazardous for women such as lower fertilization rate (6).

## Conclusions

Although this study showed the rate of substance abuse among pregnant women who referred to general hospitals in Tehran, was not significant, the high percent of these women exposed to non prescribed illicit medicines and passive smoking during their first trimester of their pregnancy that should be considered strongly.

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The authors declare that there is no conflict of interest for this study.

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