



# Addiction Among Mothers Referring to Medico-Legal Centers in Fars for Legal Abortion due to Fetal Causes: A Seven- Year Review

Fatemeh Ghodrati,<sup>1</sup> Narjes Saadatmand,<sup>2</sup> and Marzieh Akbarzadeh<sup>3,\*</sup>

<sup>1</sup>PhD, Department of Theology, Faculty of Humanities Science College, Yasouj university, Yasouj, Iran

<sup>2</sup>MSc, Department of Midwifery, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, IR Iran

<sup>3</sup>Maternal-Fetal Medicine Research Center, Department of Midwifery, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, IR Iran

\*Corresponding author: Marzieh Akbarzadeh, Maternal -Fetal Medicine Research Center, Department of Midwifery, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, IR Iran. Tel: +98-7116474250, Fax: +98-711647425, E-mail: akbarzadm@sums.ac.ir

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## Abstract

**Background:** Substance abuse results in multiple complications for both the mother and the fetus during pregnancy.

**Objectives:** The present study aimed at evaluating the frequency of mothers' addiction in legal abortion with fetal causes in Fars forensic centers.

**Methods:** This was a descriptive-analytical study with a sample size of 1664. The data including demographic characteristics, obstetric variables, and causes of fetal abortion were recorded. The data were analyzed by SPSS16, using analysis of the mean, median, and chi square test.

**Results:** The rate of addiction was reported to be 40.7% in the study population. This study estimated the prevalence of cigarette smoking, drugs, alcohol and other chemical substances as 31.9%, 5.9%, and 2.9%, respectively. Mother addiction had a significant association with maternal age ( $P \leq 0/001$ ). Mothers of babies with genetic defects smoked cigarette (63.7%), used narcotics (64.8%), and alcohol and other drugs (63.9%).

**Conclusions:** Cigarette was the most common addiction in mothers. Thus, promoting mothers' awareness and knowledge should be an educational priority.

**Keywords:** Addiction, Abortion, Legal, Mother, Fetus, Forensic Medicine

## 1. Background

Although substance abuse is lower in women than in men, its negative consequences on physical, mental, and family health seem to be more evident in women (1).

Women's addiction is considered as a community-based trouble rather than a personal or family harm (2). Women are one of the most vulnerable society groups, so addiction and its social diversions can impact them both directly and indirectly (3). In the United States, the report of drug use was as follows: cigarettes: 30.3%, alcohol: 74.2%, and other substances: 7.5%. This prevalence changed into 19%, 12.4%, and 3.3% during pregnancy. Global birth defects were estimated to be 134,000, 774,000, and 503,000 in those smoking cigarette, using drugs, and alcohol, respectively (4, 5).

A study showed that about 3% of the surveyed individuals had the experience of heroin consumption at least once during their life; this rate was estimated to be 0.6% in women (all women were addicted to heroin) (6).

About 2.7% of the patients admitted to Fasa addiction treatment clinics were women. In this study, age at the onset of drug abuse was less than 22 years in 25% of women (7). A study done in Tehran found that the highest incidence of addiction was seen in 24 to 33 year-old group (8).

Addiction is becoming a global problem in Iran. On the other hand, few studies have been done on the correlation between maternal addiction and legal abortions.

## 2. Objectives

This study aimed at investigating the correlation between mothers' addiction and fetal causes. The participants were selected from those who referred to Fars forensic medicine centers during 2007 and 2013.

## 3. Methods

This was a descriptive-analytical and epidemiological study. The study population included all documents related to legal abortion (with personal and judicial appeals)

that were referred to the forensic medicine center in Shiraz during 2007 and 2013. The total sample size included 1664 cases (339 cases with maternal abortion and 1,325 with fetus causes). However, 14 records in the field of fetal case of abortion were incomplete and were not included in the fetal causes. Thus, sample size was 1,311 instead of 1,325. Nonetheless, the rest of the 14 records were complete, and thus were not removed from the sample size. Approval to conduct this study was obtained from Shiraz University of Medical Sciences and forensic organizations. Checklists and predesigned questionnaires were used. The participants' descriptive data including demographic status, obstetric variables, and fetal cause of abortion were recorded in the questionnaires and then analyzed by SPSS16 using the mean, median, standard deviation, and chi square test.

**Ethical considerations:** The research proposal was approved by Student Research Committee of Shiraz University of Medical Sciences (proposal No. 7745). Participants' information was kept confidential.

#### 4. Results

The most frequent ages for addiction were 25 to 30 years (4.31% (n = 522), 8.4% (n = 140) were younger than 20 years, and 4.8% (n = 70) were over 40 years. About fathers, 3.2% (n = 58) were younger than 20 years, the highest rate of addiction (28.1%; n = 468) was seen among the 30 to 35 year-old group, and 9.3% (n = 154) were over 40 years. The rate of addiction was reported to be 40.7% in the study population. This study estimated the prevalence of cigarette smoking, drugs, and alcohol and other chemical substances as 31.9%, 5.9%, and 2.9%, respectively. Smoking was more common among those aged 40 and older compared to others (42.9%); also, alcohol consumption was more common at the age of younger than 20 years (8.6%) (Table 1).

No significant correlation was found between maternal addiction and fetal abnormalities (p: 0.9). The mothers of babies with thalassemia smoked cigarette (33.8%), used narcotics (29.6%), and alcohol and other drugs (41.7%). Trisomy frequency increased by alcohol consumption (11.1%) and thalassemia (41.7%). Narcotics abuse was more common in patients with central nervous system disorders (25.1%). Mothers of babies with genetic defects smoked cigarette (63.7%), consumed narcotics (64.8%), and alcohol and other drugs (63.9%) (Table 2).

#### 5. Discussion

Based on data analysis, the rate of addiction was reported to be 40.7% among mothers who had legal abortion, while cigarette was the most common dependency.

The prevalence of cigarette smoking, alcohol, and other substances was 30.3%, 47.2%, and 7.5%, respectively. This record was 19%, 12.4%, and 3.3% during pregnancy. Global report on birth defects indicated that 134,000 of mothers smoke cigarette and 503,000 drink alcohol, respectively (4, 5). Cigarette was the most common dependency among mothers, which was in the same line with the results of this study.

Smoking was more common among those aged 40 and older compared to others. According to a study in Fasa, 25% of addicted women were younger than 22 (7). In another study in Tehran, mothers' addiction was reported among 24 to 33 year-old groups (8). According to a study in Thailand, the mean age of addicts admitted to treatment centers was 35 years and female to male ratio was 1 to 7 (9).

According to the result of some studies on pregnant women in Portugal and Italy, the age of opium abusers ranged from 20 to 25 years. The study done by Brown et al. revealed that cannabis and other opiates account for 50% and 28% of drug-related admissions, respectively (10, 11). Considering the difference between the above results and our study, it may be concluded that drug exposure (because of addiction of the father, the mother, or both) in families and the tendency to abuse drugs at the early age were 2 important factors that led to addiction of the participants. No significant correlation was found between mothers' addiction and fetal abnormalities in our study (P = 0.9), however, addiction was correlated with mothers' diseases. The correlation between potential teratogenic effects of maternal smoking during pregnancy and the contradictory findings have been examined in some studies. According to a survey, the risk of cleft palate increases by maternal smoking during pregnancy (12), while smoking exposure increases the risk of cleft lip and palate (13). The correlation between maternal smoking and heart failure has been reported in another study; they also reported about 10% relative increase in the risk of suffering congenital heart defects (14). In another survey, maternal smoking was found to be associated with an almost 3 times increased risk of congenital heart defects (OR 2.80; 95% CI 1.76 - 4.47) (15). However, no negative effect was reported in that study (16). Maternal alcohol consumption during pregnancy may have damaging effects on the central nervous system and other developing embryo and fetus organs, depending on the dose, duration, and the stage of fetal development. The alcohol toxic effects on the embryo were observed in many animal species (17). In this study, since it was a retrospective study, the fetus abnormality was not comparable between addicted and non-addicted mothers. In addition, various substances including alcohol, drugs, and cigarettes were not separately surveyed in the 2 groups. Therefore, more case-control studies are sug-

**Table 1.** The Correlation Between Kind of Addiction (Narcotic, Drinking alcohol and medical Drug and Smoking) with Maternal Age in Fars Forensic Centers (2007 - 2013)<sup>a</sup>

Age Kind of addiction	Mother Age						Total	P Value
	Under 20	20 - 25	25 - 30	30 - 35	35 - 40	Upper 40		
Un usage	71 (50.7)	288 (64.4)	334 (64)	172 (55.3)	102 (58.6)	20 (28.6)	987 (59.3)	Pearson Chi-Square Value: 95.318 df:15 P Value ≤ 0.001
Smoking	53 (37.9)	133 (29.8)	154 (29.5)	107 (34.4)	53 (30.5)	30 (42.9)	530 (31.9)	
Narcotic	4 (2.9)	16 (3.6)	25 (4.8)	21 (6.8)	16 (9.2)	17 (24.3)	99 (5.9)	
Drinking alcohol and medical drug	12 (8.6)	10 (2.2)	9 (1.7)	11 (3.5)	3 (1.7)	3 (4.3)	48 (2.9)	
Total	140 (100)	447 (100)	522 (100)	311 (100)	174 (100)	70 (100)	1664 (100)	

<sup>a</sup>Values are expressed as No. (%).

**Table 2.** The Correlation Between Kind of Addiction (Narcotic, Drinking Alcohol and Medical Drug and Smoking) with Fetal Cause of Abortion in Fars Forensic Centers (2007 - 2013)

Fetal Disease	Addiction				Total	P Value
	Un Usage	Smoking	Narcotic.	Alcoholic Drink and Medical Drug		
Genetic <sup>a</sup>	508 (63.3)	256 (63.7)	46 (64.8)	23 (63.9)	833 (63.5)	Pearson Chi-Square Value: 0.67, df: 3; P Value: 0.9
Non-genetic <sup>b</sup>	294 (36.7)	146 (36.3)	25 (35.2)	13 (36.1)	478 (36.5)	
Total	802 (100)	402 (100)	71 (100)	36 (100)	1311 (100)	

<sup>a</sup>Genetic: trisomy, CNS defect, thalassemia.

<sup>b</sup>Non-genetic: urogenital, skeletal, abdominal and metabolic anomalies, multiple anomaly and etc.

gested to investigate the correlation between mother's addiction, fetal abnormalities, and maternal disease.

### 5.1. Conclusions

Addiction rate was reported to be 40.7%, and cigarette smoking was the most common addiction in mothers (31.9%). Smoking was more prevalent among older populations. Promoting mothers' awareness and knowledge about addiction and its consequences should be an educational priority. Also, developing the culture of special care for addicted pregnant women and consulting services to provide knowledge of drugs, their side effects, and the withdrawal steps must be considered by health planners. In addition, screening plans must be developed for alcohol or cigarette abuser mothers by primary care service providers. Finally, it is of high importance to perform more fundamental interventions such as starting educational strategies at schools and providing educational sessions for adolescents before pregnancy.

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### Footnotes

**Authors' Contribution:** Marzieh Akbarzadeh and Fate-meh Godrati prepared the first draft of the manuscript, made critical revisions to the paper, and translated it into English. Narjes Saadatmand performed sampling and data analysis.

**Conflict of Interest:** None declared.

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