Research Article

A seven-year study about the epidemiology of smoking, alcohol, drugs and psychotropic consumption along with legal abortion in cases referred to forensic medicine centers in Fars since 2007-2013

Ghodrati F[1], Saadatmand N[2], Zarenezhad M[3], Akbarzadeh M[4]

[1]Fatemeh Ghodrati, Department of Theology, Faculty of Humanities Science College, Yasouj University.Yasouj. Iran. [2]Narges saadatmand, Department of Midwifery, Student Research Committee of Shiraz, Gachsaran Branch, Islamic Azad University, Gachsaran.Iran. [3]Mohammad Zarenezhad, Legal Medicine Research Center, Legal Medicine Organization, Tehran, Iran. [4]Marzieh Akbarzadeh, Maternal –Fetal Medicine Research Center, Department of Midwifery, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran.

Address for Correspondence: Maternal –fetal Medicine Research Center, Department of Midwifery, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran. E-mail: akbarzadm@sums.ac.ir

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Abstract

Introduction: Smoking, alcohol, and drugs consumption has increased among the women of child-bearing age. This rise and its negative consequences on the children's health have been considered by planners and WHO health centers. This study aimed to examine the prevalence of smoking, alcohol and drugs consumption among women of childbearing age who received abortion permission with either maternal or fetal causes from forensic medicine centers. **Method:** This is a descriptive-analytical study which was conducted during the years 2007- 2013. The total sample size was 1,664, of which 339 and 1325 had maternal and fetal abortion causes, respectively. The items registered in the questionnaire included demographic and obstetric variables, maternal or fetal causes of abortion, the simultaneous use of hookah and cigarettes, alcohol, psychotropic substances and drugs. The data were analyzed using descriptive statistics in SPSS software, version 11.5. **Results:** The most frequent age for women was between 25 and 30 years (31.5%). The legal abortion rate was 8.5% among women aged under 20 years old. The prevalence of substance consumption was 40.7% among women with either maternal or fetal cause abortion. It was estimated that 78.3% belonged to cigarette and hookah, 14.62% to drug and psychotropic and finally 5.31% to alcohol beverage consumption. **Conclusion:** In Iran, legal abortion approval is either by maternal or fetal causes. According to this study, the coincidence of pregnancy with cigarette and hookah consumption has the most prevalence. Substance abuse prevention, treatment, and control policy are one of the essential matters related to the care both before and during pregnancy.

Keywords: Abortion, Alcohol, Cigarettes, Drugs, Psychotropic.

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Introduction

Women's health is not only the issue of human right but also its impression on family and society health is notable [1-2]. The prevalence of pregnancy in the world is about 180 million cases annually [3]. Despite the high ratio of natural birth (96 percent), even a subtle neglect can endanger both maternal and fetal health [4].

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Women's fertility and their maternal role functions can mainly affect the women's health. The long-term health of women and their family members (particularly children) is associated with their health in the child-bearing age [4].

Natural fertility formation requires maternal biological maturity, immunity against preventable diseases, control of metabolic and chronic disorders, timely care and sufficient nutrients [5]. Many of pregnancy risk

factors can seriously threaten the health of the mother and fetus. Addictive substance abuse is a social problem during pregnancy, not only for its devastating effects on fetal and maternal health but also for its dependency which leads to fetus and infant care reduction and family breakdown [6].

Drug consumption during pregnancy is the common concern among health officials around the world. It leads to prenatal complications, cognitive defects, and disorders. There are a constant change and controversy about drugs (such as tobacco, alcohol, cocaine, heroin) exposure implications in the literature [7]. Crime United Nations and Counter Narcotics Office reported that drug consumption is increasing in 2011. They announced nearly 16 million people as the prevalence rate of opium consumption [8]. According to American Academy of Pediatrics and American College of Obstetricians and Gynecologists surveys in 2012, at least 10% of the embryos are exposed to one or more types of the drugs [9].

According to the review study which was conducted by Department of Mental Health Research and National Research Center of Medical Sciences, opioid-addicted women are estimated at 100 to 150 thousand people in Iran. The number of women who inject drugs is estimated to be between 4 and 9 thousand. Besides, the real concern is about the increasing number of heroin-addicted women [10]. Another study estimated the number of opioid-addicted pregnant women as 1.4% in Iran [11].
Deputy Head of Iran's anti-narcotics organization reported an increase of 15% in the addicted women death cases. They also announced that women constitute 3.9 percent of the drug addicted population. The statistics show an increase of 16% in the population of deadly addicted women from 2012 to 2013. "The adverse results of drug abuse include domestic violence (65%), divorce (55%), child abuse (30%), death (25%), quarrel and violence 25 %"[12] .

Some studies aimed to describe the prevalence of substance use among pregnant women and its association with complications during pregnancy, delivery, postpartum and fetus and baby health in Czechoslovakia. In 2000-2009, 1,008,821 mothers were reported to have delivery, out of which 60502 were recorded as cigarette smokers, 1528 as alcohol users and 1836 as other illegal substances. The direct relationship was found between substance use and fetal abortion only in smokers. The probability of drastic complications in smoker mothers-, illicit drug users, and alcohol abusers was reported as 40%, 13%, and 5%, respectively.
The study indicated no any association between substance use and problems during childbirth. Alcohol and illegal drugs use was along with the rise in the probability of puerperium complications. There was a significant negative correlation between fetal/newborn health and cigarette smoker-mothers. Alcoholic mothers during pregnancy were primarily encountered with fetal health status immediately after delivery, congenital anomalies, stillbirth or need for treatment of endangered newborns. The probability of infant hospitalization after discharge, his transfer to infant home and infant death was high among infants of mothers using substance during pregnancy. Therefore, the association between the complications during pregnancy, delivery, puerperium, and health status of newborns and substance use of mothers during pregnancy was found mainly in cigarette smokers. A significant association was reported between alcohol abuse and maternal-fetal health complications (not serious). No any correlation was found between illegal drugs and the indices in this study [13].

Drug abuse leads to preterm delivery, spontaneous abortion, post-partum bleeding, and delivery complications [14]. Long-term effects of exposure to tobacco during pregnancy include miscarriage, ectopic pregnancy, and placental insufficiency in mothers [15]. On the other hand, neonatal complications include low birth weight, intrauterine growth retardation, perinatal deaths, placental abruption, fetal congenital abnormalities, and fetal distress [16-17]. Intrauterine death syndrome, growth restriction, prematurity, stillbirth, neonatal abstinence syndrome and Sudden Infant Death Syndrome are just some of its fetal effects [14].

Moreover, these women are much more vulnerable to the increased risk of medical problems such as malnutrition, anemia, urinary tract infections and sexually transmitted infections, hepatitis, HIV and problems related to infection [14].

The average birth weight of babies born to addicted mothers was 2255 g which revealed a significant difference by non-addicted mothers ($P < 0.0001$). The average APGAR scores at the first minute were 7.6 ± 1.1 and 8.6 ± 1.1 among the infants from addicted and non-addicted mothers, respectively [18]. In another study, mother's addiction resulted in asphyxia and

cerebral, physical problems, lower Apgar score and lower birth weight [18]. Utero-exposure to drugs was along with increased rate of respiratory infections, asthma, ear and sinus infections in childhood.

In addition, these children experience more irritability, difficulty in focusing their attention, and behavioral problems. Therefore, embryo evaluations are significantly necessary to identify those who are in danger, which is in relation with the maternal and infant cares. According to the study which was conducted on 956 cases with fetus abortion at 30 selected clinics in America between 2008-2010; the factors such as ATOD (5%), wine drinking (84%) and drug abusing (61%) accounted for fetal abortion (however, 88% of drug abusers had the consumption frequency of more than once a week). Two-thirds of tobacco consumers didn't blame tobacco use as the cause of their own miscarriage [19].

According to another study, the intake of caffeine (more than 300 mg daily) both before and during pregnancy results in an increase of abortion rate for 31%. Alcohol consumption both before and during pregnancy leads to increase of spontaneous abortion rate by 30% (RR 1.30; 95% CI: 0.85-1.97).

It was found that cigarette smoking is along with almost 3-fold increased risk of congenital heart defects [20]. The constant concerns about the effects of alcohol and drug use during pregnancy are always intertwined with the debates about abortion and unwanted pregnancy [19,21].

According to the study which was conducted on opium-addicted pregnant women in Iran, there was a significant difference in the complications such as: placental abruption, preterm delivery, preeclampsia, premature rupture of membranes, intrauterine growth retardation, vivid fetal malformations, low Apgar score in the first and fifth minutes, and a decrease in weight, height and head circumference among infants born to addicted mothers compared with the control group (non-addicted mothers) [22].
Illegal marriage and previous induced abortion were reported as significant risk factors affecting pregnancy outcomes in women [23]. In our country, the necessity of induced abortion and its approval (before spirit insufflation) goes for the following conditions: maternal health risks, fetal malformation, rape, and intensive poverty based on the evidence, but exactly after spirit insufflation, it will be an absolute prohibition by most jurists. Despite many studies on the philosophy of the necessity of abortion and its ethical approach [24-26], fewer studies have focused on maternal addiction to alcohol, cigarette and opium along with fetal legal abortion.

This study aimed to conduct a seven-year research about the epidemiology of smoking, alcohol, drugs and psychotropic consumption along with legal abortion in cases referred to forensic medicine centers in Fars during the years 2007-2013.

Method

This was an analytic epidemiological study conducted using cross-sectional approach. The study population consisted of all judicial documents related to personal and legal abortion requests which had been referred to forensic medicine center in Shiraz during the years 1392-1386. The total sample size was 1,664, of which 339 and 1325 had maternal and fetal abortion causes, respectively. After the approvals process from Shiraz University of Medical Sciences and the Department of Forensic Medicine, all the documents were studied by referring to the Forensic examination centers.
Also, checklists and other pre-compiled questionnaires were accomplished.

The items were registered in the questionnaire including demographic and obstetric variables, and maternal or fetal causes of abortion. The data were analyzed using descriptive statistics in SPSS software - version 11.5.

Results

The most frequent age for women was between 25 and 30 (31.5%). The legal abortion rate was 8.5% among women under 20 years of age (Table-1).

Table 1: Frequency distribution of legal abortions according to age of mother

Age	<20	20-25	25-30	30-35	35-40	>40	Total
Frequency	142	445	524	309	175	69	1664
Percent	8.5	26.75	31.5	18.6	10.5	4.15	100

The most frequency for abortion approval was reported among those below 20years old (14.6%) in 2012, 20-25-year-old (38.27%) in 2007. The abortion frequency in 25-40-year-old mothers was 36%, 22.2%, and 20.2%, respectively in 2000. (Table-1).

Table 2: Frequency distribution of legal abortion according to maternal age since 2007 to 2013

Year		Maternal Age						Total
		20>	20-25	25-30	30-35	35-40	40<	
2007	Frequency	5	31	19	17	5	4	81
	Percent	(6.17)	(38.27)	(23.45)	(21)	(6.17)	(4.93)	(100)
2008	Frequency	24	76	60	44	18	8	230
	Percent	(10.43)	(33.04)	(26.1)	(19.13)	(7.82)	(3.47)	(100)
2009	Frequency	30	122	102	56	20	12	342
	percent	(8.7)	(35.7)	(29.82)	(16.4)	(5.85)	(3.5)	(100)
2010	Frequency	20	34	120	77	70	26	347
	percent	(5.8)	(7)	(34.6)	(22.2)	(20.2)	(7.5)	(100)
2011	Frequency	20	105	80	64	40	5	314
	percent	(6.4)	(33.45)	(25.5)	(20.4)	(12.8)	(1.5)	(100)
2012	Frequency	22	34	58	23	7	6	150
	percent	(14.6)	(22.6)	(38.6)	(15.3)	(4.6)	(4)	(100)
2013	Frequency	21	43	85	28	15	8	200
	percent	(10.5)	(21.5)	(42.5)	(14)	(7.5)	(4)	(100)

The prevalence of substance consumption was 40.7% among women with either maternal or fetal cause's abortion. It was estimated that 78.3% belonged to cigarette and hookah, 14.62% to drug and psychotropic cases and finally 5.31% to alcohol beverage consumption (Table-3).

Table 3: Frequency distribution of Legal abortion according to history of use the certain substances

Use of special materials	Smoking & else	Narcotics and psychotropic pills	Alcoholic drinks	Medical drugs	Total
Frequency	530	99	36	12	677
Percent	78.3	14.62	5.31	1.7	100

The highest frequency was reported for alcoholic beverages consumption (7.7%) in 2013 while other substances were the most frequent one in 2000. The highest prevalence of cigarette smoking was 82.2% in 2000 (Table-4).

Table 4: Frequency distribution of Legal abortion according to history of use the certain substances in couples since 2007 to 2013

Use of materials / Year		Smoking & else	Narcotics and psychotropic pills	Alcoholic drinks	Medical drugs	Total
2007	Frequency	42	15	3	1	61
	Percent	68.85	24.6	4.9	1.65	100
2008	Frequency	25	18	4	1	48
	Percent	52.1	37.5	8.3	2.1	100
2009	Frequency	84	20	4	1	109
	Percent	77.06	18.35	3.6	0.91	100
2010	Frequency	120	20	4	2	146
	Percent	82.2	13.7	2.73	1.4	100
2011	Frequency	82	8	5	2	97
	Percent	84.5	8.25	5.15	2.06	100
2012	Frequency	80	10	7	2	99
	Percent	80.8	10.1	7.1	2.02	100
2013	Frequency	97	8	9	3	117
	Percent	82.9	6.85	7.7	2.6	100

Discussion

In this retrospective study, an investigation was done on those referred to Fars forensic center to apply for abortion approval with maternal and fetal causes.

According to this seven-year survey, about 677(40.7%) people, out of 1664 cases who referred to forensic centers, were addicted to cigarette, alcohol, drugs, and psychoactive substances. Also, the most prevalence was related to cigarette and hookah consumption. Floyd and colleagues reported drug abuse as the most remarkable factor which compromises both the health of pregnant women and their children in the UK. After alcohol, tobacco was reported as the second most common substance among pregnant women and elderly people.

Substance abuse, both before and during pregnancy period, was the predictor of prenatal drug consumption. The recommendation is to screen those mothers with either alcohol or cigarette consumption in women's primary health care to be identified as the high risk or endangered pregnant women who must be planned in advance [27] .

According to the next study which was done on 170 infants by mothers addicted to psychoactive substances during 1999-2008, the Poly drug abuse was associated with abortion history. In this study, no any addiction to cannabis and Poly drug was reported [28]. Young Norway Longitudinal Study investigated a possible link between abortion and dependence on nicotine, alcohol, cannabis and other drugs consumption between the ages of the 15-27 year during 11 years. Moreover, abortion occurrence was along with high rates of drug abuse and its related problems.

Alcohol and cannabis consumption were reduced in those who had pregnancies resulting in birth. The most prominent difference between these two studies was about the abortion permission which was obtained by means of maternal or fetal causes while substance abuse was not considered as an acceptable reason in this regard. This study didn't aim to examine the link between abortion and substance abuse [29]. According to available statistics, such as the United Nations Statistics Office on Drugs and Crime (UNODC) in 2003, an increase of changing consumption patterns from traditional opiate drugs (e.g. opium) into the

synthetic substances was reported [30-32]. Despite the lack of accurate and exact statistics, according to some studies, 6/9% of the country's drug addicts are women.

Health department estimated the male/female ratio of addiction as 8/1 [33]. Also, because more women work outside home, they can easily have access to various drugs. Unlike the opium consumption which can cause laziness, women can use the substances such as a crack despite their active and energetic presence in the society. It's important to pay more attention and concern about fetal-maternal care and drug abuse prevention, treatment and control in the care before and during pregnancy [34].

In this study, diploma was the highest level of education (42/6 percent) and the rest were under diploma. According to the study which was conducted in 2000-2009, about 1008821 pregnant women were assessed; the average age of the mothers using addictive substances was less than non-users of drugs for 0.5-3 years. They were younger and less educated. More than 82 percent of the mothers had lower education (a primary or secondary school without a diploma) [13] .

Studies have shown the link between the education level and the decision to abort unwanted pregnancies. Abortion was reported more among low-literate women [35]. Substance abusing women have numerous social problems and limitations that illiteracy can be one of them. Therefore, it is important to explain the necessary information to the women (and spouses or sexual partners) in writing and verbal form to ensure that the information is understood [36].

Giving information and advice about the drug complications may not be the only sufficient intervention for drug-dependent pregnant women. Also, it can't encourage her to seek further consultations and treatments. The appropriate therapeutic relationship between the staff and pregnant women causes them to feel confident in the pregnancy care workers. This confidence leads to constant treatment.

Conclusion

This seven-year survey on women with legal abortion authorization under fetal-maternal causes indicates that 40.7% had substance dependency. Among them, cigarette and hookah consumers were the most. Although the association between fetus abortion and its related causes is not examined in this study, it's important to pay more attention and concern about fetal-maternal care and drug abuse prevention, treatment and control in the care both before and during pregnancy

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