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Legal Abortion with Maternal Causes Referred to Medico-Legal Centers in Fars: A Seven Years Review of Epidemiological Evidence in 2007-2013

Narjes Saadatmand [1,5], Fatemeh Ghodrati[2], Mohammad Zarenezhad[3] and Marzieh Akbarzadeh[4*]

[1]Department of Midwifery, Student Research Committee, Shiraz University of Medical Sciences, Shiraz, Iran

[2]Department of Theology, Faculty of Humanities Science College, Yasouj University, Yasouj, Iran

[3]Legal Medicine Research Center, Legal Medicine Organization, Tehran, Iran

[4]Maternal –Fetal Medicine Research Center, Department of Midwifery, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran

[5]School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran

[*]**Correspondance:** Marzieh akbarzadeh, Maternal –Fetal Medicine Research Center, Department of Midwifery, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran, Tel: 0711-6474250; Fax: 0711-647425; E-mail: akbarzadm@sums.ac.ir

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Abstract

Introduction and aim: Maternal mortality is one of the most significant global health indicators, and abortion is one of its leading causes. Abortions are principally prohibited except in cases where the mother's life is in danger. This study has been done based on the maternal causes of abortion.

Method: In this study, medical records of the cases referred to Shiraz legal medicine centers including 1664 files from 2007 to 2013 were investigated. Our data collection form consisted of two sections aiming to gather their biographic characteristics and the maternal causes of the abortion through a checklist.

Results: The highest frequency of the mothers' age was 25 to 30 years old (31.5%), and that of their spouse was the age 30 to 35 years (28.6%). Family marriage ratio and rate gravidity were 60.8% and 40.4% (673 cases), respectively. 59.45% had no history of abortion. Furthermore, fetal and maternal causes were 79.6% and 20.4%, respectively. Blood disorders and thalassemia were the most common factors following heart disorders (19.46%). The majority of the fetuses were between 17-20 weeks (29.4%).

Conclusion: Maternal cardiac disease was the most common reason of therapeutic abortion both in this study and other countries' studies. Therefore, health educational programs on definitive contraception's should be held for them.

Keywords: Fetal abortion; Maternal causes; Legal abortion; Legal medicine

Introduction

Medical Ethics have been an important principle in medical issues, which has a specific feature among all branches of professional ethics due to its particular status. Illegal abortion is one of the most significant issues in medical ethics, which is considered as immorality [1]. Basically, the rise in the authorized therapeutic abortion ratio provides a ground for abortion legislation to be transferred from the crime scope to the health and welfare field [2]. Nowadays, legality of abortion varies from country to country [3]. In 1992, Iran passed a law according to which fetal abortion before soul inspiration is approved so that the mother's life is protected [4]. Abortion national committee suggested 49-items legislation about certain maternal and fetal abortion indications and it was faced with welcome reactions. According to the new abortion bill passed by the Islamic Consultative Assembly (parliament), abortion before ensoulment (four months after conception) was permitted in Iran by the mother's own consent only in the case of the birth of malformed or mentally retarded child or putting mother in haraj (intolerable difficulty), and to save the mother's life [5].

Indications for abortion are as follows: pregnancy risks for the mothers' life, abortion before ensoulment, by women request and consent, and if curettage as well as its medicine induction does not endanger the women's health more than the pregnancy itself. Clearly, women or men's consent is not essential in emergency conditions or for saving the mothers' life [6]. According to the fatwa issued by our supreme leaders, the abortion of fetus in families suffering severe mental, social and economic problems associated with major Thalassemia is permitted before ensoulment [7]. In medical terminology, abortion is defined as the removal of the products of conception from the uterus before the fetus is sufficiently developed to survive or, in other words, before the 20th week of pregnancy [8].

Its prevalence is 1 out of 10 pregnancies. It is mostly probable before 12 weeks since saving the fetus before the first trimester reduces the chance of abortion [9].

Unfortunately, the practice of fetal abortion is expanding and has become a black and underground issue in spite of its emerging threat for physical and mental health, which increase the tendency of suicide and isolation among women. Different countries seek for its reduction as a means to achieve less illegal abortion induced mortality, so there is a challenging debate about the abortion from the moral and legal point of view [10]. Today, advances in medical science make the determination of fetus's physiological and genetic abnormalities possible even during pregnancy. According to this, the Islamic parliament founded the approved the therapeutic abortion law in 2005 [11]. Expanding debauchery and promiscuity in the Islamic society is one of the challenges and obstacles which we face in dealing with fetal abortion; however, the statistics imply the opposite. The studies, which were conducted in our country, demonstrated that the prevalence of abortion among married women is more than 92% [12]. Currently, more than two-thirds of the world's population is living where it's possible to apply for legal abortion. According to global statistics, the annual occurrence of undesired pregnancy is about 75 million, among whom 45 million decide to stop it and attempt fetal abortion. According to global statistics, approximately 585 thousand women lose their lives due to pregnancy complications, and illegal abortion is responsible for about its 20% [13]. It is estimated that about 120 million women are faced with unwanted pregnancy due to lack of using modern family planning methods in developing countries. As a result, 1 out of every 5 pregnancy cases is unwanted, and about a half million young women lose their lives due to pregnancy and labor process. According to global statistics, the annual occurrence of pregnancy is about 175 million. The unintended pregnancy rate is 75 million, among which 45 million women attempt fetal abortion [14-16]. Deaths due to unsafe abortion remain close to 12% of all maternal deaths in Asia. As experience shows, many of the induced abortions are carried out under hazardous conditions due to the legal restrictions in our country. They refer to hospitals mostly pursued by serious abortion complications. Therefore, many of the induced abortions will never be recorded and certified. Based on the Department of Health and Medical Education estimates, the annual abortion rate is 80000 in Iran [17]. Women lose their lives due to intentional abortion every three minutes. Deaths followed by induced abortions occur mainly in countries where abortion is illegal. Although there are no exact official statistics for the illegal fetal abortion ratio in Iran, WHO announced that Asia was responsible for 55% of cases in 2011 [18]. The number of mothers who referred to Forensic Medicine Center in Tehran to apply for medical abortion (physical) grew 8% in 2012 compared to 2011. The number of candidate for abortion was one thousand and 818 people in 2014, one thousand and 684 people in 2012, and four thousand and 202 people in 2000; this shows an 8.18% rise compared to 1999. These numbers suggest the concealed and illegal abortion as the highest proportion of abortions. The estimated number of legal abortion is five women daily while it is 684 people for the illegal one [19]. The Forensic Medicine reported 150-350 thousand fetal abortion during a year in Iran. To illustrate the point, consider one thousand abortions in a day. Depression, grief, isolation and guilt are of its prominent consequences after physical complications. Also, the reasons for abortion include women or men's aging process, no contraception after marriage, unplanned pregnancy, and unwillingness to fertility. Religious beliefs have been reported as the main obstacle for abortion [20]. The most common division of abortion is the spontaneous, criminal and therapy miscarriage [21]. The maternal causes for the permitted abortions are heart disease, so called "functional cardiac failure," particularly the class II - IV and the one irreversible to class II; gastrointestinal disease such as pregnancy fatty liver; kidney, pulmonary, hematological, and infectious diseases such as HIV-AIDS virus when entering into the disease stage, joint, neurosurgery, neurology, surgery, orthopedic, renal surgery diseases; and skin diseases such as pemphigus vulgaris, severe psoriasis [22]. Regarding the lack of studies in this field, this study was designed to investigate the maternal indications for legal abortions refering to Forensic Medicine Center in Fars during 2007- 2013.

Method

This is a cross-sectional, descriptive-analytical, epidemiology survey. The study population consisted of all documents related to personal and legal abortion requests, which had been referred to forensic medicine center in Shiraz during the years 2013- 2007. The total sample size included 1664, out of which maternal and fetal causes were 339 and 1325, respectively.After obtaining the written permission from Shiraz University of Medical Sciences and the Department of Forensic Medicine, the researcher referred to Forensic clinical examination centers to explore all the documents, and accomplished the questionnaires and checklists. We registered the mothers' demographic characteristics and disease in addition to their obstetric variables in the questionnaires. Finally, data were analyzed using SPSS, version 11.5 and descriptive statistic tests.

Results

The total sample size was 1664, which were classified based on their referring year (Table 1). Women who were 25-30 years old had the most frequency (31.5%), while the least of them were in the age range of 40 years old (4.15%). The most and least frequencies among men were 30-35 and below 20 years-old, respectively. Furthermore, the highest level of education for women and men was diploma (6.42 percent) and elementary-middle school (6.39 percent), respectively. Most of the women were housewives (67%), and most of the men were self-employed (46.3%). The distribution of frequencies for marriage status revealed that 60.8% of them had family marriage. Findings on the distribution of abortions by parity indicated that the majority of women had their first pregnancy and abortion (45.56%). About 59.45% had no history of abortion, and 12.5% had pregnancy and abortion over 4 times (Table 2a and b).

Table 1 Frequency distribution of Legal abortion according to year licensing since 2007to 2013.

Year	Frequency (percent)
2007	81(4.9)
2008	230(13.82)
2009	342(20.5)
2010	347(20.85)
2011	314(18.9)
2012	150 (9.01)
2013	200 (12.01)
Total	1664 (100)

Table 2a Distribution of legal abortions based on reason Licensing.

Kind	Maternal	Fetal	Total
N(%)	339 20.4	1325 79.6	1664 100

Table 2b Frequency distribution of legal abortion according to gravid and previous abortion since 2007to 2013.

Gravida	G1	G2	G3	G4	≤G5	Total
N (%)	673 40.4	480 .8528	254 15.3	125 .57	132 .937	1664 100
Abortion	No Ab	Ab1	Ab2	Ab3	Ab4≤	Total
N (%)	989 59.45	393 23.6	149 8.95	98 5.8	35 2.1	1664 100

According to the distribution of abortion license reasons, maternal causes count for 20.4% which include cardiac causes (19.46 percent), kidney causes (7.6 percent), liver causes (5.01 per cent), cancers (5.01 percent), immune system disease (17.01 percent), blood disease and thalassemia (24.18 percent), hypertension (10.61 percent), diabetes (7.96 percent), cerebrovascular disease (2.95 percent), and depression (2.95 percent).

According to the distribution of abortion by past medical history in spouse and their families, the most frequent diseases in women were thalassemia and blood causes (23.7 percent), thyroid disease (21.72 percent), diabetes and metabolic causes (20.9 percent), and hypertension (19.2 percent). On the other hand, this prevalence in men was thalassemia and blood causes (31.3 percent), hypertension (27.7 percent), diabetes, and metabolic causes (15.63 percent).

According to the distribution of medical history in the couple's families, the most frequencies include history of child with thalassemia (36.75 percent), record of family anomalies (24.2 percent), and history of abortion in herself or family (13.96 percent). About 71.94% referred to legal medicine centers by person, and 28.06% by judicial application. Ethical considerations in this study included observing medical morals in research, trustworthiness; also the subjects were all assured of the confidentiality of their personal information (questionnaire accomplishment was anonymous with biography information).

Discussion

The unintended fertility rate accounts for 34 per cent in Iran [23]. Legislators approved the legal therapeutic abortion as the effective clue to prevent the possible future troubles for mother, fetus, and community [24]. According to results, the most request rate for therapeutic abortion was 347 people (20.85%) in 2000, while the lowest was 81 cases (4.9%) in 2007. The most common maternal reason for therapeutic abortion was the cardiac disease. Its prevalence in Sadr et al.'s study (2004) which was done in the national Legal Medicine center, This study (2003-2007) which was done in Sannandaj, and Pasha and Aminian's study were 21.2%, 29.4% and 17%, respectively; this was consistent with our study results (19.46%) [21,25,26]. Dadpur et al.'s study which was performed in 2008-2010 revealed the most abortion ratio in 2009 (35.2%), and the least in 2008 (13.1%). The mean age for women was 26.6 ± 6.1. Fetal and maternal causes for abortion were 87.5% and 12.5%, respectively [27]. Piel et al. [28] study which was performed on 103 patients reported 21.5 weeks (range 7.7-34.7) as the mean pregnancy age (7 percent after 24 weeks and 35 percent before 14 weeks). Data analysis announced the following reasons for the maternal factors: Mother's disease (22%), her psycho-mental disease and severe addiction to drugs (21%), psychiatry reasons (21%), obstetric complications (mainly pre-eclampsia) before the viability of the fetus (20%), and sexual assaults (16%) (which was mostly under legal age), multi-reasons (16%). Regarding the importance of its early detection, it seems necessary to boost the awareness of the health care personnel and mothers in childbearing age about the therapeutic abortion indications caused by both maternal and fetal factors. It seems that the differences and similarities could be due to the distinctive level of informing, education, and also the time, regional and environment variations. The prevalence of maternal causes was reported less than 12% in Staraki and colleague's study, while it was 20.4% in this study. This can root in the lower marriage age in Staraki's study, which is contrary to the major cities [28-30]. In this study, the highest request for therapeutic abortion was among women between 25-30 years old and men between 30-35, while the least was for the age over 40 in women and below 20 in men. In Nashly et al.'s study, the pregnant women were between 17-35 years old and fathers were in the 22-39 age range. In one study, the highest age range was 30-35 years old and those below 18 were in the lowest rate. In a study, the women's age was between 20-29 years [12,21,31].

Pazol et al. [9] conducted a study about abortion care for adolescents in the United States in 2001-2010. Women were in the age range of 15-44 in this study, and the adolescents between 15-19 years old had the highest ratio for abortion (16.4%) [9]. A national study aimed to explore the maternal mortality estimate about the abortion prevalence as follows. The abortion ratio for ages between 15-19 years old was 19%,

20-14 years old was 33%, and above 25 years was 25%. Therefore, teenagers and adolescents have the most frequency ratio in abortion. Also, the first trimester of pregnancy had the peak abortion proportion [32]. In this study, those in the age range of 25-30 had the most prevalence, which was not compatible with the national study's findings. Since this age range is the most susceptible and high risk time for fertility, it seems necessary to offer more precise advice and care about pregnancy for them. Expanding women's access to trained providers and orienting the women and health care providers with legal restrictions can reduce the risks of unintended maternal death and illegal abortion complications [33,34].

In Sri Lanka, fetal abortion is not only done to save the mother's life but also it is considered as an offensive crime. In this study, 65.8% of the participants declared that they were aware of the fetal abortion legislations, 25.6% stated no awareness, and 8.3% had no confidence to answer it. In anotherextensive investigation, just 11.2% had precise knowledge about it. Therefore, it is necessary to educate the mothers about this issue [35]. Findings by mothers' education revealed that the majority had high-school and diploma level of education, while the least were above bachelor degree in this present study. In Pasha et al. [26] study, the most and least levels of education were below diploma (60%) and above bachelor degree (30%), respectively. Veisy proved that the abortion rate rise with education level. In one study, 36.2% were illiterate and 5.2% had university degree [13,21,26]. In fact, higher education will result in more awareness about abortion and its complications, and women with higher education appear to prevent the occurrence of unwanted pregnancy. The study which was done in Turkey showed that illiterate women had the highest incidence of abortion [36]. It is the health authorities' responsibility to design more training programs for less educated women than those with higher education. The effects of woman's education level on their attitude about intentional abortion were explored in another study. Their findings revealed no significant relationship between these two factors. Abortion advocators were 42% and 40% in women below diploma and above diploma, respectively. Among abortion opponents, 58 percent were under diploma and 60 percent were above it. About 34 percent of employees and 45 percent of householders agreed with abortion. On the other hand, 66% of the employees and 55% of the householders were its proponent, so it was not consistent with our study findings [37]. More precise follow-up by gynecologists is recommended for early detection of spirit insufflation in lower educated women in addition to further education about the checkup times to evaluate the fetus and mother's health status. In this study, the most women were housewives and then employee. In Pasha et al.'s [26] study, they were mainly householder (82%) and employee (18%). In a study, the householder ratio was 92.2%, and that for employees was 7.1%.

Islāmic countries mostly consider abortion issue based on Islāmic principles. We have different legislations and prevalence ratio for legal and illegal abortion in different Islāmic countries [38,39] (Table 3). Studies report an annual abortion ratio of 29 per 1,000 for women in pregnancy time, and its annual incidence is 890000, totally [40]. Many government and private organizations are conducting investigations on this subject (fetal abortion) [41]. Muslim jurists are unanimous in declaring that fetal abortion is prohibited after fetus complete formation in Islāmic countries. In Arabic countries, legal abortion is allowed only through fetal abnormality [42,43].

Table 3 Distribution of legal abortion on maternal causes.

Total	Depression	Diabetes	Hyperte nsion	Blood&talas semia	Immunity	Cancer	Hepatic	Kidney	Heart	Maternal disease
339	10	27	36	82	58	17	17	26	66	N(%)
100	95.2	96.7	61.10	18.24	1.17	01.5	01.5	6.7	46.19	

Conclusion

Requests for therapeutic abortion are expanding. Therefore, further interventions seem necessary to improve the awareness of the community and health society and expand the women's access to contraception methods. According to our study's findings, cardiac disease is the most reason among maternal causes for abortion request; we can promote the use of contraception methods through education and health policies. Also, more interaction is recommended between the Ministry of Health and Forensic Medicine Organization to improve pregnancy health which leads to healthier births besides the reduction in the material and spiritual expenses both on families and society.

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