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# Preconception care in therapeutic abortion applicants

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## Abstract:

**BACKGROUND:** Some risk factors that would lead to therapeutic abortion do even exist before pregnancy and could be resolved or corrected through appropriate interventions. The present study was conducted to evaluate the condition of preconception care among therapeutic abortion applicants.

**MATERIALS AND METHODS:** This research was a descriptive, cross-sectional study that was conducted on 200 applicants for therapeutic abortion at the Forensics Medicine Center of Isfahan (Iran) who were selected convenience sampling from October 2014 to March 2015. Data were gathered using a researcher made checklist. Data were analyzed using SPSS version 16 through descriptive statistics and Chi-square and independent *t*-test.

**RESULTS:** Eighty-five percent of the participants were applicants for therapeutic abortion due to fetal problems, and the other 15% were due to maternal issues. About 41.7% of participants with fetal problems and all of the participants with maternal issues had not received preconception care. In 93.3% of the applicants with maternal issues, the disease existed before the pregnancy. About 48.2% of participants needed genetic counseling, but 28.6% had not received any.

**CONCLUSIONS:** Results showed that in most of the participants, the risk factor for therapeutic abortion existed before the pregnancy. Providing preconception care along with the elimination of risk factors before the pregnancy could prevent some of the pregnancies with the indication of therapeutic abortion.

## Keywords:

Counseling, Forensics Medicine Center, Iran, preconception care, therapeutic abortion

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## Introduction

In many countries, abortion is still an ethical controversial issue. This issue mostly is about the contrast between embryo's right for living and mother's right for choosing.<sup>[1]</sup> Currently, the laws and policies about abortion vary in different countries. In Iran, the only authorized cases of abortion are therapeutic abortions. Therapeutic abortion is terminating the pregnancy before fetal viability for maintaining mother's health or due to congenital disorders.<sup>[2]</sup> After passing the law of therapeutic abortion in Iran (2005), major changes occurred in encountering cases of abortion. According

to this law, in existence of indication of therapeutic abortion (maternal or fetal) and by referring at the right time, a pregnant woman could have a safe abortion after definitive diagnosis by three experts and authentication of forensics center. Considering this law, conducting an abortion without the authentication of the forensics center is illegal.<sup>[3]</sup> After passing this law, the rate of unsafe abortions and consequently damages to the health of mothers and also its high costs for the economic system of the country have decreased.<sup>[4]</sup> Hence, it seems that by passing the law of therapeutic abortion in Iran beneficial arrangements have been made to prevent the birth of abnormal infants, terminate pregnancies for keeping mothers'

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health and also reducing the rate of unsafe abortions and their consequences. It must be considered that this procedure has physical and mental complications for the mother and her family. Some of its complications are adverse mental consequences,<sup>[5]</sup> the possibility of uterine perforation, infection, hemorrhage, amniotic fluid embolism, and reaction to anesthetic drugs which some of these complications would become more severe as the gestational age increases.<sup>[6]</sup> Some of the risk factors that would lead to therapeutic abortion could be diagnosed before pregnancy and eliminated or corrected through appropriate interventions. Preconception care is a fundamental part of health cares and includes a series of evaluations and intervention that are developed to determine and modify medical, behavioral, and social risks related to the health of women and their pregnancies' consequences and must be conducted before pregnancy. In fact, pregnancy should be planned, and evaluation of mother's condition and necessary interventions should be performed before pregnancy to improve and guarantee the results of pregnancy and the health of mother and infant.<sup>[7]</sup>

Results of a study that was conducted in Sanandaj (Iran) in 2011 for evaluating the reasons for therapeutic abortion showed that most of the maternal reasons for therapeutic abortion including vascular diseases have existed before pregnancy<sup>[4]</sup> and could be prevented through educational and health measures. Moreover, another study that was aimed to discuss the demographic characteristics of therapeutic abortion applicants due to congenital anomaly in 2011 in Tabriz (Iran) showed that from 603 pregnant women who were applicants for therapeutic abortion, 35% had consanguineous marriage.<sup>[8]</sup> Results of these studies revealed that some of the risk factors of therapeutic abortion could have been diagnosed before pregnancy. But so far, no studies have been conducted to evaluate the rate of referring for preconception monitoring by therapeutic abortion applicants and the condition of performed educations, counseling, and interventions for them to determine, eliminate, or modify the risk factors of therapeutic abortion.

Therefore, the aim of this study was to determine the condition of providing and receiving preconception care in women who referred for therapeutic abortion.

## Materials and Methods

This research was a descriptive, cross-sectional study that was conducted on 200 applicants for therapeutic abortion. The study population included all the applicants for therapeutic abortion who referred to the Forensics Medicine Center of Isfahan (Iran) from October 2014 to March 2015. During this period, 220 women were applicants for therapeutic abortion, and

200 of them were selected for this study. The inclusion criteria were in-person referral for taking permission for therapeutic abortion and being able to remember all the matters related to receiving preconception cares in past. All the applicants for therapeutic abortion who had the inclusion criteria, regardless of receiving or not receiving the permission for therapeutic abortion, were selected for the study through convenience sampling after providing informed consent. Data were gathered through questionnaires and interviews. The present study was approved by the Ethics Committee of Isfahan University of Medical Sciences by No. 393518. Data gathering tool was four researchers made checklists. At first, considering the reason for abortion to be maternal or fetal, checklist no. 1 or no. 2 was completed. These checklists included questions about demographic characteristics, whether the pregnancy was planned, and the condition of preconception cares for planned pregnancies. Then, the checklist for receiving preconception cares considering the fields of education, counseling, and intervention were completed by those who referred for preconception cares. This checklist included nine questions based on 3-point Likert scale (completely, somewhat, and not at all) to evaluate the training and counseling before pregnancy and seven yes/no questions to evaluate preconception interventions. Those participants who had planned pregnancies but did not refer for receiving preconception cares completed a checklist about their reasons for not receiving preconception cares which included five questions.

Data were analyzed using SPSS version 16 (SPSS inc, Chicago, IL, USA). Data were described through frequency distribution tables, mean, and standard deviation and were analyzed through Chi-square and independent *t*-tests.

## Results

From 200 applicants for therapeutic abortion, 170 were due to fetal problems and 30 were caused by maternal problems. Participants' frequency distribution of personal and demographic characteristics (qualitative and quantitative) divided by the reason for therapeutic abortion are shown in Tables 1 and 2.

Among applicants with maternal indication, 28 women (93.3%) had diagnosed their disease before pregnancy and 2 (67%) during pregnancy. From 96 wanted pregnancies with fetal indication, 56 women (58.3%) had referred for preconception cares and 40 (41.7%) had not. Among applicants with maternal indication, only one pregnancy was planned who did not refer for preconception cares. The condition of received preconception cares considering the field of education and counseling is shown in Table 3. For example, about

**Table 1: Individual Characteristic (quantitative) of therapeutic abortion applicants**

Individual characteristics	Mean (SD)	
	Fetal causes	Motherhood causes
Female age	34.43 (6.50)	30.89 (6.50)
Male age	34.98 (6.60)	36.60 (7.70)
Pregnancy rank	2.39 (1.40)	3.23 (1.30)
Interval with previous pregnancy	4.00 (4.50)	5.00 (4.10)
Gestational age	15.50 (4.80)	9.00 (3.20)

SD = Standard deviation

**Table 2: Individual Characteristic (qualitative) of therapeutic abortion applicants**

Individual characteristics	n (%)	
	Fetal causes	Motherhood causes
Female education		
Illiterate	11 (6.50)	4 (13.30)
Tips and less	43 (25.30)	11 (36.70)
High school and diploma	70 (41.20)	11 (36.70)
Collegiate	46 (27.00)	4 (13.30)
Total	170 (100)	30 (100)
Female occupation		
Homemaker	145 (85.30)	2 (93.30)
Employee	25 (14.70)	2 (6.70)
Total	170 (100)	30 (100)
Male occupation		
Self-employment	115 (68.00)	22 (73.30)
Employee	45 (26.60)	8 (26.70)
Other	10 (5.40)	0
Total	170 (100)	30 (100)
Place of life		
Urban	144 (84.70)	22 (73.30)
Rural	26 (15.30)	8 (26.70)
Total	170 (100)	30 (100)
Wanted or unwanted pregnancy		
Wanted	96 (56.50)	1 (3.30)
Unwanted	74 (43.50)	29 (96.70)
Total	170 (100)	30 (100)

**Table 3: Frequency distribution of preconception educating and counseling in applicants with fetal causes that received preconception care**

Educating and counseling items	n (%)		
	Not given	Incomplete	Complete
Nutrition	14 (25.00)	34 (60.70)	8 (14.30)
Exercise	5 (8.90)	24 (42.90)	27 (48.20)
Rest	7 (13.00)	28 (48.10)	21 (38.90)
Weight adjustment	21 (38.20)	31 (54.50)	4 (7.30)
Sexual activity	7 (12.70)	24 (41.80)	25 (45.50)
Sexual transmitted diseases	28 (50.90)	15 (25.50)	13 (23.60)
Smoking	4 (7.10)	15 (26.80)	37 (66.10)
Drug consumption	14 (25.00)	33 (58.90)	9 (16.10)
Personal hygiene	9 (16.10)	36 (64.30)	11 (19.60)

the education and counseling for nutrition before pregnancy, 25% of participants mentioned completely,

60.7% somewhat, and 14.3% not at all. Score of 1 was assigned to cases of completely and somewhat and score of 0 for not at all. The most educated items were, respectively, about necessary weight adjustment, appropriate nutrition, drug consumption sexually transmitted diseases, and personal hygiene.

The condition of preconception interventions is shown in Table 4. From 56 women who received preconception cares, 17 needed treatment, 14 needed drugs before pregnancy, and 27 needed genetic counseling. Regarding the reasons for not referring for preconception cares, the most common reason was lack of awareness about the need for preconception cares and then economic issues and the cost of care. Studying the relation between referring for preconception cares and demographic characteristics of women with planned pregnancy using independent *t*-test revealed that referring for preconception cares had no significant relation with woman's age ( $P = 0.18$ ) and man's age ( $P = 0.26$ ). Furthermore, the results of Chi-square test showed that there was no significant relation between referring for preconception cares and woman's educational level ( $P = 0.09$ ), woman's job ( $P = 0.17$ ), man's job ( $P = 0.18$ ), and the place of residence ( $P = 0.6$ ).

## Discussion

Since according to the law of therapeutic abortion in Iran, abortion is possible until the 19<sup>th</sup> week of pregnancy, results showed that most of the participants referred for therapeutic abortion at the right time. Results of the present study showed that more than half of the applicants with fetal problems and most of the applicants with maternal problems had an unwanted pregnancy, which seems significant. It must be noted that unwanted pregnancy in this study is defined as a pregnancy that has never been desired, planned for, been untimely, or at least one of the spouses would not want it. A meta-analysis that was conducted on 49 studies to evaluate the prevalence of unwanted pregnancies in Iran revealed that one-third of all pregnancies in Iran are unwanted.<sup>[9]</sup> In a study that was conducted in America, the rate of unwanted pregnancies was estimated to be 41.4%.<sup>[10]</sup> Unwanted pregnancy is a problem that would endanger all the physical, mental, and social aspects of reproductive health. Considering the limitations of therapeutic abortion law in Iran and the high prevalence of unwanted pregnancy among applicants for therapeutic abortion, the possibility of not granting permission to some of these applicants and therefore proceeding with illegal abortion and its consequences is predictable. Hence, it seems necessary to take more effective measures about planning for pregnancy and providing accurate preconception cares. Results of the present study showed that most of the applicants

**Table 4: Frequency distribution of preconception intervention in applicants with fetal causes that received preconception care**

Intervention items	n (%)
Disease treatment	
Yes	15 (26.80)
No	2 (6.30)
Had no medical problem	39 (69.60)
Drug prescription if needed	
Yes	11 (19.60)
No	3 (5.40)
Requires no medicine	42 (75.00)
Drug change if needed	
Yes	10 (17.90)
No	6 (10.70)
Not needed	40 (71.40)
Genetic counseling	
Yes	11 (19.60)
No	16 (28.60)
Not needed	29 (51.80)
Folic acid prescription	
Yes	54 (96.40)
No	2 (3.60)
Vaccination	
Yes	35 (62.5)
No	21 (37.5)
Blood and urine test	
Yes	50 (89.20)
No	6 (10.80)

with the maternal reason for therapeutic abortion have diagnosed their problems before pregnancy; this means that most of the mothers have got pregnant despite their knowledge about their problem. In these women, getting pregnant could be caused by ignoring the serious complications of the disease and its effect on pregnancy's results by themselves or their health-care providers. Results of a study that evaluated knowledge and attitude of women with chronic diseases about preconception health showed that knowledge of women about the potential effect of chronic diseases on pregnancy's results and reproductive health was weak and equally their desire to modify or improve healthy behaviors before pregnancy was low.<sup>[11]</sup> Since some of the mother's diseases are considered absolute contraindication to pregnancy and some other relative contraindication, using the most effective and reliable contraception method is of great importance among this group so that unwanted pregnancies and dangers that would threaten the health of mother and the next generation would be prevented. It seems that it is necessary for private and public health centers that are responsible for the treatment of women with chronic diseases to pay more attention in this field and by sensitization of women and their families about this matter and conducting necessary follow-ups prevent unwanted pregnancy in these women. Results of the present study showed that

from all the wanted pregnancies among applicants with fetal reasons, about half of the women did not refer to receive preconception cares and among applicants with maternal cause only one had wanted pregnancy who also did not refer for receiving preconception cares. Results of a study that reviewed the rate and nature of receiving preconception cares in women with chronic diseases revealed that the rate of receiving preconception cares in women with chronic diseases was 18.1%.<sup>[12]</sup> Result of the present study about the rate of referral for preconception cares among women with chronic diseases was very lower than that. A study that reviewed the effect of planning for pregnancy and preventive measures on neural tube defects in women with a malformed fetus who referred for receiving preconception care resulted that only 13.8% of women who gave birth to infants with neural tube defects had referred for receiving preconception cares.<sup>[13]</sup> Results of our study about the referral of women with a fetal indication for therapeutic abortion to receive preconception care were different from the results of this study. The cause of this difference could be in the difference between the study population and environment and the nature of the study. The most common cause for not referring to receive preconception care was a lack of awareness about the need for these cares and the high costs of care. The cost of care is considered as the cost of visiting a physician, cost of transportation, and probable costs of diagnostic, therapeutic, and pharmacological measures before pregnancy, which some of them are not free of charge and only provided at private centers. Results of a study showed that not having insurance is one of the obstacles to receiving care before and during pregnancy.<sup>[14]</sup> If not having insurance would be considered as economic problems and a part of cost of care, then our results would be similar to the results of this study. Another research that studied perceived barriers to preconception care from general physicians' point of view showed that time limitation not referring by women to receive preconception care and the cost of care were the obstacle to providing preconception care by general physicians.<sup>[15]</sup> If not referring would be due to lack of awareness, then the results of our study were similar to the results of this study. It seems that preconception care has not found its place among public opinion yet and is not taken as serious as prenatal care. Preconception care is one of the most important parts of women's care during the reproductive age that would improve women's health through evaluating pregnancy's risk factors, education, counseling, and diagnostic measures.<sup>[16]</sup> Considering the results of the present study, it seems necessary to sufficiently inform and educate families about the importance of preconception cares. Results of our study showed that a few number of applicants who referred for preconception cares received complete education and counseling about different issues of pregnancy and

among them counseling and educating about smoking cigarettes, exercising, and appropriate sexual activity were, respectively, the least attended issues. Regarding nutrition, more than half of the participants had received a moderate level of education and counseling. Results of a review study showed that Vitamin B12 deficiency before pregnancy could cause neural tube defects and increased Vitamin E consumption through foods or supplements would increase the risks for congenital heart defects.<sup>[17]</sup> This study has shown the importance of nutrition before pregnancy in cases that might lead to abortion. In the present study, most of the participants had received a moderate level of education and counseling about weight adjustment before pregnancy. Regarding drug consumption, about one-sixth of the participants have received no education and counseling at all. Considering the extensive use of over the counter drugs, food supplements, herbal drugs, weight loss products and sports supplements among women of the reproductive age, and lack of information about their safety or risk for teratogenicity, it is necessary for health-care providers to provide essential information in this regard to women of reproductive age.<sup>[18]</sup> In a study that reviewed smoking pattern before pregnancy and the risk for congenital heart defects, results showed that smoking cigarette before pregnancy would increase the risk for congenital heart defects,<sup>[19]</sup> but in the present study about two-thirds of the participants who referred for preconception cares did not receive any education and counseling about smoking cigarette before pregnancy.

Results of the present study regarding preconception interventions showed that most cases who needed treatment and prescription of special drugs before pregnancy have received appropriate intervention. A study that evaluated preconception interventions in infertile couples resulted that in 38.24% of cases their diseases were not treated before pregnancy,<sup>[20]</sup> but this number is much lower in our study. However, considering the negative effects of most diseases on the results of pregnancy, it is expected that therapeutic measures would be performed for anybody who refers for receiving preconception care. For example, studies have shown that controlling diabetes before pregnancy would decrease 70% of congenital abnormalities and 69% of prenatal deaths and controlling epilepsy and phenylketonuria before pregnancy would improve maternal, fetal, and neonatal outcomes.<sup>[21]</sup> In the present study, folic acid was not prescribed for 3.6% of women who referred for receiving preconception cares. Results of a study about preconception care in infertile couples showed that folic acid was not prescribed for 20.1% of them.<sup>[20]</sup> Results of the present study showed much lower percent, but considering the importance of prescribing folic acid and its low cost, it is expected that this measure should be conducted for everybody who refers for

receiving preconception cares. In fact, prescribing folic acid is one of the most important parts of preconception interventions. Benefits of consuming folic acid before pregnancy for preventing neural tube defects have been proved.<sup>[22]</sup> Furthermore evidence for proving the effect of folic acid on decreasing cleft lip and cleft palate are increasing.<sup>[23]</sup> Another important part of preconception cares is evaluating the need for genetic counseling and referring to genetic counselor if necessary. Genetic counseling is an effective measure to prevent congenital abnormalities. Furthermore, due to high prevalence of consanguineous marriages in Iran, health-care providers have an important role in referring couples for genetic counseling before pregnancy.<sup>[24]</sup> Results of our study showed that about 40% of participants who referred for receiving preconception care needed genetic counseling, but this measure was just conducted for about one-third of them. It seems that passing the law of therapeutic abortion has made some of health-care providers to believe that instead of referring couples for genetic counseling, they could get pregnant and in case of any abnormality, they could have therapeutic abortion later. However, considering the limitations of therapeutic abortion law, including the age of pregnancy and the type of abnormality in fetus, and also considering the physical and mental consequences of abortion, referring patients for genetic counseling seems essential. Another result of this study showed that there was no significant relation between referring for preconception cares and the age of man and woman, woman's educational level, man's and woman's job, and their place of residence. Results of a study that was conducted in China found a significant relation between referring for preconception care and living in the city, having higher educational levels, being nulliparous, and being aged from 20 to 30 years old.<sup>[25]</sup> Another study that was conducted in the Netherlands resulted that tendency toward preconception care was significantly higher among women who were older, had higher educational levels, and had higher parity.<sup>[26]</sup> Not observing any significant relation in the present study could be caused by the differences in study population, studied samples, and sample size. Since preconception cares could decrease the number of complicated pregnancies that in turn would increase the demand for therapeutic abortion, not using preconception services by the studied samples could mean that the studied population had a low economic and social condition.

Inaccessibility to participants' health records and not being able to cite their statements was one the limitations of the present study.

## Conclusions

Results of the present study showed that in most of the applicants for therapeutic abortion, maternal or fetal

risk factor has existed before pregnancy. Considering the physical and mental consequences of therapeutic abortion and the costs of getting a permission and conducting abortion and also other related complications including attempt for illegal abortion, giving birth to an abnormal infant and threatening mother's health and on the other hand, the importance and positive effects of preconception care on pregnancy outcomes, it is necessary for the health system to pay more attention to evaluation of risk factors before pregnancy, providing appropriate education and counseling and performing necessary interventions. It seems that performing these measures could be effective on reducing the demands for therapeutic abortion.

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### Conflicts of interest

There are no conflicts of interest.

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