The Incidence of Induced Abortion in Tehran, Iran: Current Levels and Correlates

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CONTEXT

Abortion is illegal in Iran and many women who face an unplanned pregnancy undergo clandestine, unsafe abortions. In the face of scarcity of information on abortion for Iran, updated information on the incidence of abortion is needed to assess the incidence of abortions in Iran.

METHODS

This study utilizes data from the 2009 Tehran Survey of Fertility, conducted in a sample of 2934 married women aged 15-49 in Tehran, to estimate abortion rates and ratios at population and subgroup levels and to explore the reasons of abortions.

RESULTS

The lifetime abortion rate in Tehran is estimated to be one per six married women of reproductive age, and about 9 percent of pregnancies end in abortions. Annually, 11,543 abortions are estimated to be obtained by married women of the reproductive age in Tehran. The mean age of women at abortion is 33.5 years. The probability of abortion is higher among women who are less religious, wealthier, employed, and among those who are childless or have two children. Findings suggest the existence of a male imposition in seeking an abortion. Reasons for abortions indicate that 84% of abortions in the city of Tehran are most likely illegal, and birth spacing and limiting are the main reasons for seeking abortions. About two-third of aborted pregnancies resulted from failures in withdrawal, the pill, and condoms.

CONCLUSIONS

The information presented in the study can help policy makers in reproductive health to identify subgroups in particular need of services and counseling to prevent unintended pregnancy.

Introduction

In Iran, induced abortion (hereafter 'abortion') is strictly prohibited except when a woman's life is endangered or her fetus is diagnosed by recognized physicians with certain diseases or defects approved by the Legal Medical Organization of Iran[1]. Outside of these conditions, a woman who wants to terminate an unwanted pregnancy has to go for a clandestine and possibly unsafe abortion. The extent of maternal mortality and health risks associated with unsafe abortions remain uncertain in Iran due to data limitations. Nonetheless, indirect estimates indicate that 5 percent of pregnancy-related maternal deaths are due to post-abortion complications in Iran[2]. Moreover, many women who are admitted to the hospital for post-abortion care are faced with serious abortion side effects, including nausea, vomiting, diarrhea, lower abdominal cramps, extensive vaginal bleeding, infection and psychological distress[3].

Beyond these general findings, policymakers and program planners require accurate information on abortion levels and patterns to assess the extent to which women experience undesired pregnancies and the need for allocation of resources for contraceptive services and supplies. The last indirect assessment of abortion levels for Iran and its provinces was conducted based on data collected nearly a decade ago[1]. According to that study, the lifetime abortion rate in Iran was estimated to be one per four married women of reproductive age which translated to 73,000 abortions per year. The estimated abortion rates varied widely among Iran's provinces, depending largely on regional levels of religiosity and modern contraceptive use. The investigators speculated that abortion rates would decline if women using traditional methods adopted modern contraceptives or were informed about using an emergency contraceptive if faced with an unwanted pregnancy. Updated information on the incidence of induced abortion is needed to assess recent levels and correlates of the incidence of abortions in Iran.

This article uses the most recent retrospective abortion data to estimate recent abortion rates and ratios for the overall population of Tehran, and to examine variations in the abortion ratios according to the women's demographic and socioeconomic characteristics.

Data and Methods

Data

The main source of data in this study is the Tehran Survey of Fertility (TSF) which was conducted by the author in August 2009 in the city of Tehran, the nation's capital. The survey was modeled similarly to a standard DHS survey which collected a wide range of data, including a complete history of births, contraceptive use, and abortions, as well as data on fertility intention, breastfeeding, and the socio-economic and demographic characteristics of women and their husbands. The survey was administered to a population of currently married women aged 15-49 residing in 22 residential districts of the city of Tehran, through face-to-face interviews conducted by more than 30 trained and experienced female interviewers. A representative sample of 3000 currently married women aged 15-49 was selected, employing a two-stage stratified cluster random sampling design. However, the interviewers could only complete interviews with 2934 women, out of which 244 married women reported that they have had at least one induced abortion in their lifetime. These 244 women, who experienced a total of 311 abortions in their lifetime, are the focus of this study.

Methods

The findings of this study are based on the percentage distribution of abortions and four different measures of abortion, including age-specific abortion rates, the total abortion rate, the general abortion rate, and abortion ratios. While abortion rates will be computed for the overall female population, the percentage distribution of abortions and abortion ratios will be calculated across subgroups of women. Age-specific abortion rates are defined as the number of abortions per 1,000 women in each five-year age group, and the total abortion rate is the number of abortions that a woman aged 15-49 would be expected to have during her lifetime if she experienced the prevailing period age-specific abortion rates. Moreover, the annual general abortion rate refers to the number of abortions performed annually per 1,000 women aged 15-49. This study will calculate these three measures based on the number of abortions in the last year preceding the survey. The fourth measure is the abortion ratio, which is the number of abortions per 100 known pregnancies, defined as the number of live births plus the number of induced abortions. Given the availability of data on the dates of abortions and dates of births in years and months, abortion ratios were calculated for five calendar periods between 1981 and 2009. It should be

noted that the percentage distribution of abortions simply reflect the distributions of women in the population of Tehran and does not necessarily show that one subgroup of women is more likely to perform an abortion than another. By contrast, the abortion ratios computed for various calendar periods and across different subgroups of women show variation across periods and subgroups in the probability that pregnant women will choose abortion. Therefore, the abortion ratio is a good measure for comparing abortion behavior of women with different characteristics within the population of Tehran.

This study is the first of its kind to provide direct estimates of abortion levels for the whole population and subpopulations of Tehran. However, survey-based abortion estimates have always been argued to be incomplete as some women do not report their abortions, especially through face-to-face interviews[4]. A measure of confidence in survey data is required to compare survey-based estimates with relevant external, registered statistics. Since there exist no registered, external statistics on abortion in Iran which the survey abortion data for Tehran can be compared with, it would be difficult to assess the completeness of abortion data collected by the survey. At the absence of any reliable data on abortion in Iran, however, the current survey is the most reliable source of abortion data, providing useful information on abortion in Iran that would otherwise be underrepresented.

Whether a woman obtains an abortion may be related with a number of her demographic and socioeconomic characteristics. This study examines associations between abortion and eleven of the women's demographic and socio-economic characteristics, including *age at abortion*, *parity*, measured by 'number of live births', *fertility preference*, measured by 'ideal number of children', respondent's and husband's *education* , calculated by the 'number of years of schooling', *ethnicity*, women's *employment status*, *religiosity*, measured by a Likert-format attitude question as to 'importance of religion in life', *income*, measured indirectly by household's monthly expenditure in U.S. dollars, and the *residential district*. A high abortion level in any subgroup can be an indication that women in this group have great difficulty in preventing an unwanted pregnancy or have an increased probability of choosing abortion to terminate an unplanned pregnancy. This article estimates the abortion ratio for different subgroups of women.

The abortion ratios calculated for socioeconomic and demographic subgroups of women are based on abortions reported in the five years preceding the survey, to minimize bias from retrospective reporting. Limiting analyses to abortions in the five years prior to the interview also lessens the possibility of changes in the characteristics since the abortion. Since information on the selected women's characteristics (except a woman's age at abortion) are as of the time of the interview, however, the possibility of some inconsistency should be taken into account while interpreting findings, especially for fertility preferences, which often change over time.

Findings

The results are presented in four parts. First, we show the overall levels of estimated abortion rates and ratio, and women's mean age at abortion for the whole population residing in the city of Tehran. Then, socioeconomic and demographic variations in the estimated abortion ratios will be illustrated. At the end, the study will describe reasons for abortions and contraceptive behaviors of women at the time that they became pregnant.

Overall abortion levels

Abortion rates. Table 1 shows the estimated age-specific abortion rates, the total and general abortion rates, the abortion ratio, and women's mean age at the abortion based on the abortions performed in the last year preceding the interview, namely from August 2008 to July 2009, for the whole population of Tehran. The estimated age-specific abortion rates indicate that the incidence of abortions among women living in the city of Tehran begins at the age of 20 and reaches its peak between the ages of 30-34, and thereafter it decreases. The abortion rates are highest among women in their mid 30s, followed by the second largest rate belonging to women aged 35-39. Thus, the age-specific abortion rates show an inverted-U pattern with the age of women (Figure 1). The incidence of abortion among adolescents in Tehran is non-existent. This is largely due to the fact that sexual activities among Iranian women generally begin after marriage, which is now postponed to later ages due to various socio-economic constraints. Abortion rates are generally lowest for women aged 40 and older.

---Table 1 and Figure 1 about here ----

The total abortion rate for the city of Tehran is estimated at 0.16 abortions per woman aged 15-49. This means that on average every six women of reproductive age will have one abortion in their lifetime if they experience the prevailing period age-specific abortion rates. Moreover, the estimated general abortion rate (5.5 abortions) indicates that about 6 abortions are obtained annually by 1000 women aged 20-49 living in the city of Tehran. According to the 2006 Iran census, the number of women aged 20-49 living in the city of Tehran is 2,098,790 (Statistical Centre of Iran, 2006). Therefore, this study estimates that women aged 20-49 residing in the city of Tehran undergo 11,543 abortions annually.

Abortion ratio. This study has estimated an overall abortion ratio at 8.7 abortions per 100 pregnancies in the last year preceding the survey for the city of Tehran. That is, about 9 percent of pregnancies in the city of Tehran end in abortions. A measure of confidence in the survey can be an overall abortion ratio at 9.6 abortions per 100 pregnancies that was calculated based on the total number of live births (107,569 births) registered by the Civil Registration Office of Iran[5] in the last year before the survey (August 2008-July 2009) for the city of Tehran plus the estimated number of abortions (11,534 abortions) by this study. The discrepancy between the two ratios (8.7 and 9.6 abortions per 100 pregnancies) is less than one percent, suggesting that the abortion data collected by TSF is not far from complete, and the small inconsistency between the ratios can be likely attributed to sampling errors and underreporting in the incidence of abortions. The abortion ratios calculated according to women's characteristics in the following section will provide further insights into the nature of the incidence of abortion.

Correlates of the incidence of abortion

The decision of a woman for undergoing an abortion is associated with a number of demographic and socioeconomic characteristics[6]. The socioeconomic and demographic characteristics of women and their husbands influence their decision for obtaining an abortion mainly through three main direct determinants of abortion: the probability of undergoing an abortion in the event of contraceptive failure, their fertility preferences, and the effective use of contraceptive methods to achieve their preferences[7]. This study examines associations between abortion and women's demographic characteristics, including age at abortion, parity, and fertility preference, and their

socioeconomic features, including education, employment, religiosity, ethnicity, income and residential district. These characteristics are assumed to influence a woman's decision to obtain an abortion, either by themselves or as indicators of their social and economic situation. For instance, we expect a higher probability of abortion among women who are less religious, wealthy, highly educated, and employed. Moreover, women's reasons for why they obtain an abortion and their contraceptive behavior at the time of conception will be examined in order to enhance our understanding of the factors associated with the incidence of abortion.

Table 2 illustrates the percentage distribution of abortions and estimated abortion ratios across subgroups of women who have had at least one abortion in the five-year period preceding the interview. The percentage distributions show the distribution of women who obtained abortions in the population of Tehran, whereas abortion ratios represent the probability of undergoing an abortion.

---*Table 2 about here*---

Demographic Characteristics

Age at Abortion. The percentage distribution of abortions by age indicates that the highest proportions of abortions occur among women aged 30-34 and 35 and older (Table 2). The proportion is smaller among women aged 20-24 and 25-29, and the incidence of abortion among adolescents is non-existent. Moreover, the average age at abortion among women living in Tehran is 33.5 years, and half of the abortions occur among women aged 20 to 33 (Table 1). Over the past three decades, along with increasing abortion ratios, women's age at abortion has been increasing monotonically from the age of 22.5 before 1990 to 28.6 in 1992-99 and to 32 years in the past five years preceding the survey (Figure 2). One of the reasons for such an increasing trend could be a rise in the age at marriage and a growing preference for a small family size.

--- Figure 2 about here ---

The estimated abortion ratios by age at abortion range from 3.8 abortions per 100 pregnancies among women aged 25-29 to 20 abortions per 100 pregnancies among women aged 35 and older. Moreover, the abortion ratios according to age-groups follow a monotonically increasing pattern in which the ratio is the lowest (zero) among teenagers and rises steadily with age. A similar

pattern was observed in other Asian countries, especially countries in Central Asia with a Muslim majority population. By contrast, in other countries and regions, the relationship between the abortion ratio and women's age at abortion is a U shape, where the ratio declines after the teenage years, reaches its lowest point among women aged 20-24 or 25-29, and then rises to its highest level among women aged 40 and older (Figures 3a-3b). In Tehran, however, the highest proportion of pregnancies that end in abortions is found among women aged 35 and older.

---Figures 3a and 3b about here---

Parity. The distribution of abortions by parity (number of live-born children at the interview) varies widely (Table 2). Childless women obtain fewer than 10% of abortions. More than half of abortions are obtained by women who had two live-born children at the time of the interview. Results on abortion ratio, however, show a different perspective on the association between abortion and parity. Nulliparous women and those with two children each end an equally high proportion of their pregnancies (10.6%) by abortion, compared to women with one child and those with three or more children.

Fertility preference. Similar to the parity, more than half of abortions are obtained by women who prefer to have two children, and one third of other abortions occur among those who favor one child. Nonetheless, the estimated abortion ratios by fertility preference show an inverse relationship between abortion and the ideal number of children, where the ratio is the highest (9%) among women preferring one child and drops steadily with a rise in the ideal number of children.

Socioeconomic Characteristics

Education. Couples' levels of schooling can also influence their decision for obtaining an abortion. Percentage distributions of abortions by educational attainment largely reflect the distribution of women or their husbands according to educational attainment in the population of Tehran and therefore reveal little about differentials by education. By contrast, abortion ratios by education give a better indication of differences in the incidence of abortion by schooling and show two varied patterns across women's and husband's education (Figure 4). Ratios calculated

for women's schooling show an inverted U-shaped relationship between abortion and women's schooling, in which the incidence of abortion increases with number of years of education and reaches its peak among women with some secondary schooling (8.7%) and declines steadily thereafter. In contrast, the relationship between abortion and husband's educational attainment is a U shape, in which the ratio declines from primary schooling and reaches its lowest points among women whose husbands have had 6-12 years of schooling, and then rises to its highest level (9.1%) among women whose husbands have had some postsecondary education.

---Figure 4 about here---

Employment. The distribution of abortions by women's employment status mainly reflects the distribution of women by employment status in the population. It indicates that a large proportion of abortions are obtained by unemployed women. The abortion ratios according to women's employment, however, present a different pattern, where the proportion of pregnancies that end in abortion is 16 percent greater among employed than unemployed women. A similar finding was also found a decade ago in the whole population of Iran[8].

Religiosity. The percentage distribution of abortion by religiosity show that the majority of abortions (89.5%) are obtained by women who believe religion is very or somewhat important in their life. As with education, the distribution of abortions by religiosity mainly reflects the distribution of women in the population. The results on abortion ratios, however, show an inverse relationship between incidence of abortion and the degree of religiosity. The calculated abortion ratios by religiosity range from 6.7 abortions per 100 pregnancies among women who believe religion is 'very' important in their life to 8.2 and about 11 abortions per 100 pregnancies among those who view religion as 'somewhat' or 'not too important' in their life, respectively.

Ethnicity. The distribution and ratios of abortions vary substantially by ethnicity of women and their husband (Table 2). Though patterns of the relationship between abortion and ethnicity of spouses are quiet similar, variation in abortion is slightly stronger for husbands' ethnicity. The Gilak and Mazandarani women accounted for only 9.2% of abortions but have the highest abortion ratio (10.4 abortions per 100 pregnancies). Similarly, women with a Gilak or Mazandarani husband accounted for 13.2% of abortions in Tehran but have the highest abortion

ratio (16.4 abortions per 100 pregnancies). The highest prevalence rate of withdrawal use observed among Gilak and Mazandarani ethnic groups in Iran can partly explain their high abortion ratios.

Income. Assuming that household expenditure and income are positively correlated, this study has used information on households' monthly expenditure to measure quartiles of income in Tehran. In Iran where abortion is illegal and hence safe, clandestine abortion services are scarce, only affluent women who can afford the fees of a private doctor will obtain a safe abortion, and poor women either will adjust to their unintended pregnancy or risk their health and life in seeking out unsafe, clandestine services. Thus, it is expected that the probability of undergoing an abortion increases with household income level. The percentage distribution of abortions by income indicates that more than three in five abortions take place among women in the third and fourth quartiles of income. The abortion ratios also give a relatively similar perspective, in which abortion ratios monotonically increases from 4 abortions per 100 pregnancies in the first quartile to about 12 abortions per 100 pregnancies in the fourth income quartile.

Residential District. Residential districts of Tehran were categorized into three groups (Northern, Central and Southern) based on a cluster analysis of couples' schooling and household monthly expenditure. Generally, northern and southern districts encompass households with the highest and lowest socioeconomic statuses respectively, while households with an average socioeconomic status reside in the central districts. The percentage distributions of abortions by residential districts indicate that women in central and northern districts obtain 43% and 29% of abortions respectively. This is largely because of the distribution of women by residential districts in the population of Tehran, but the estimated abortion ratios unveil an expected pattern of the incidence of abortion according to residential districts. While women in the central districts obtain 8 abortions per 100 pregnancies, the highest and lowest proportions of pregnancies that end in abortions are found among women residing in the northern (10 abortions per 100 pregnancies) and southern (about 6 abortions per 100 pregnancies) districts, respectively.

Reasons for Abortion

Exploring the reasons that women give for why they obtained an abortion will provide further insight into the underlying social, economic, and health circumstances which influence the incidence of abortion in Tehran. Table 3 presents percentage distributions of abortions by the most important reason for abortions, according to year of performing the abortion. The reasons were grouped into three broad categories: health-related, fertility-related, and socioeconomic reasons.

---Table 3 about here---

Fertility-related reasons. Consistent with the findings from 27 countries[9], the desire to stop or to postpone childbearing, or to space the next pregnancy is the most common reason given by women seeking an abortion in the five years preceding the survey in Tehran. The main reasons given by women for undergoing about half of abortions (47.3%) were in the fertility-related cluster of reasons (Table 3). Limiting births was the most important reason given for seeking almost 36% of abortions, whereas spacing births and postponing childbearing stood in the second and third ranks of the main fertility-related reasons for abortion. Moreover, about 7 percent of abortions were obtained for 'postponing childbearing'. These abortions are mainly the pregnancies that took place prior or during engagement, wherein couples were not officially married and they were not ready to begin their new common life. Thus, if women face a pregnancy prior or during their engagement, which is not socially acceptable, they will either proceed quickly with a wedding ('shotgun marriage'), or seek an abortion.

Health-related reasons. Risk to maternal health, fetal defects and vaginal bleeding during a pregnancy were respectively the main reasons for seeking 35% of abortions in five years prior to the interview. The category of health-related reasons should be looked at with some cautions in the context of Iran, where abortion is illegal and permitted only if mother's or fetus' health is at risk. An important area of uncertainty is whether the potential health risk to the mother or the fetus has been identified by only the woman herself or by three expert physicians and a legal physician, appointed by the judiciary. According to the therapeutic abortion law[1], only in the later scenario a legal abortion can be granted to the woman, while in the former situation, the abortion is considered as illegal. Since a serious threat to maternal health or fetal health can be acceptable reasons for abortions according to the abortion law, many women may report these

two reasons for their illegal abortions because they are socially acceptable and provide a legal or moral justification for their possible illegal abortions. To deal with this issue, we collected information about the reasons for abortions in the survey by using an informant method, where all respondents in the sample were asked whether they knew a woman among their neighbours, friends or relatives who had an abortion during the last year preceding the survey. The respondents who knew a woman with an abortion (666 women) were again asked: "What was her main reason for the abortion?" The results in Table 4 show that the category of health-related reasons becomes less important (19%), compared with the corresponding category in Table 3 (32%). By contrast, informants reported timing of births and controlling family size as the reasons for a much higher proportion of abortions (61%), compared with a corresponding category in Table 3 (47%). Assuming that abortions obtained for non-health-related reasons are illegal, the results taken from the informant method in Table 4 indicate that more than 80% of abortions in the city of Tehran are most likely performed illegally and clandestinely.

---*Table 4 about here*---

Socioeconomic reasons. The last cluster of reasons for an abortion came third overall in importance. Poverty and economic difficulties, hindering to afford to properly care for a child, and spousal relationship problems, including divorce, separation, or a partner's drug addiction, were the most important reasons given for obtaining 21% of all abortions in the five years preceding the survey. Among socioeconomic reasons for seeking an abortion, the importance of women's economic situation is highly pronounced in the period 2005-09.

Contraceptive and Abortion

Contraceptive behaviors at the time of conception of the fetus which was aborted is examined in this section in order to gain a better understanding of the contraceptive behaviors of women that lead to an induced abortion. A woman who has an abortion was either not using a method at the time of conception or was using one incorrectly and it failed to prevent pregnancy.

--- *Table 5 about here*---

Table 5 presents the percentage distribution of abortions in the five years preceding the interview by contraceptive methods used at the time of conception. Overall, 84% of abortions resulted from contraceptive method failures, and women who obtained the other 16% of abortions were

not using any contraceptive method when they became pregnant. Of all induced abortions coming from method failures (64) 53 percent come from withdrawal, 19 percent from the pill, and 13 percent from condoms. This clearly indicates that the majority of abortions resulted from contraceptive failures, related to the incorrect use of withdrawal, the pill and condoms.

Discussion and Conclusion

The findings presented in this study provide new estimates of abortion incidence at the population and subgroup levels in the city of Tehran, the nation's capital, containing about 15 percent of Iran's population. In the face of dearth of information on abortion for Iran, where abortion law is highly restrictive, this is the first study which has estimated abortion levels at population and subpopulation levels in Iran, utilizing rich retrospective data from the survey conducted in a sample of married women aged 15-49 in the city of Tehran during August 2009.

The overall estimates indicate that more than 11,500 abortions are performed annually in Tehran, and 9 percent of pregnancies that occur among women living in Tehran end in abortions. Contrary to most countries in which incidences of abortion are concentrated largely around the middle of the childbearing years, namely among women in their 20s[6], the estimated abortions in Tehran show that women in their 30s are usually the most likely to obtain an abortion. Moreover, the incidence of abortion among adolescents in Tehran is non-existent. This is partly because matrimony is the only legally and socially acceptable pathway to both the initiation of sexual activity and childbearing in Iran. In addition, recent young generations would postpone their marriage to later ages because of various socio-economic constraints. Taken together, therefore, the high mean age at abortion (about 34 years) in Tehran can be attributed to the rise in the age at marriage and a strong tendency for stopping childbearing or spacing births in the mid 30s. Contrary to many Western European and American countries, where an inverted U-shaped relationship between abortion ratios and women's age at abortion indicates high abortion rates among adolescents[6], the abortion ratio is lowest among adolescents in Tehran. This pattern was also found among many Asian countries, especially the countries with a majority Muslim population. One possible reason for this disparity can be higher levels of non-marital sexual

activity and unwanted pregnancy among women in the non-Asian countries and a greater motivation for postponing childbearing until they can complete their education or secure a job.

A possible prevalence of shotgun marriages (pregnancy-induced marriages) among adolescents and women in their 20s in Tehran can also partly explain why the incidence of abortion is none or lower among adolescents and those in their 20s, respectively. The results of this study showed that a number of abortions are obtained among nulliparous women and those who become pregnant prior or during their engagement. Therefore, we can speculate that many other women who become pregnant during their engagement will proceed quickly with a shot-gun wedding.

The estimated abortion ratios by women's characteristics recognized subgroups of women who are more likely to decide to seek an abortion when they face an unplanned pregnancy. Women who have had no or two live-born children have the highest abortion ratios. This finding suggests that in Tehran, abortion is obtained to limit or to space births, or to delay childbearing.

The findings also revealed a complex relationship between incidences of abortion and the educational attainment of women and their husbands. The inverted U-shaped relationship between abortion ratios and women's schooling suggest that better-educated women and those with primary or no schooling may have stronger motivations to prevent unplanned births. Furthermore, the U-shaped relationship between abortion and husband's educational attainment may indicate a gender imposition in which less and better educated husbands play a greater role in the decision-making surrounding abortion. The high abortion ratios among less educated husbands, with a large number of children, may suggest a greater motivation for stopping childbearing rather than spacing births or delaying family formation. In contrast, better-educated husbands are determined to obtain an abortion mostly for achieving a smaller family size. The results by ethnicity of women and their husbands also revealed a similar pattern of gender imposition in abortion decision making, where the abortion ratio is greater among women whose husbands are Gilak and Mazandarani.

Consistent with previous findings[1], the incidence of abortion is negatively related with the degree of religiosity. Also, affluent women and those living in the northern residential districts of Tehran terminate a higher proportion of their pregnancies by an abortion. Our findings also point out that many abortions are obtained for the limiting and spacing of births and the economic hardships which families in Tehran are faced with. In addition, a majority of abortions resulted from contraceptive failures, especially failures in withdrawal, the pill, and condoms. These findings improve our understanding about the demographic, socioeconomic, and health circumstances surrounding women's decision to obtain an abortion. This study also could identify subgroups of women in particular need of services and counseling to prevent unintended pregnancy.

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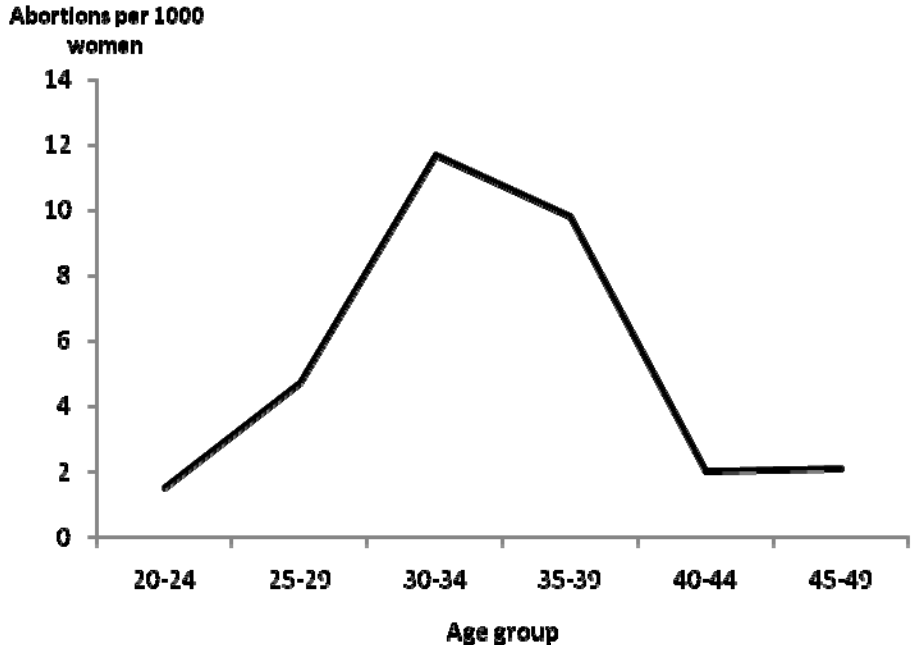
Table 1. Abortion rates, ratio and mean age at abortions reported in the last year preceding the survey among women aged 20-49: Tehran, Iran, 2009 TSF	
Age groups	**Age-specific Abortion Rates** (per 1000 women)
15-19	0
20-24	1.5
25-29	4.7
30-34	11.7
35-39	9.8
40-44	2
45-49	2.1
Total abortion rate (per woman)	0.16
Annual general abortion rate (per 1000 women)	5.5
Abortion ratio (per 100 known pregnancies)	8.7
Women's mean age at abortions (year)	33.5
Number of abortions performed annually	11,543

Note: Abortion ratio and Mean age at abortions were estimated for 'married' women aged 20-49, while other figures were estimated for 'all' women aged 20-49.

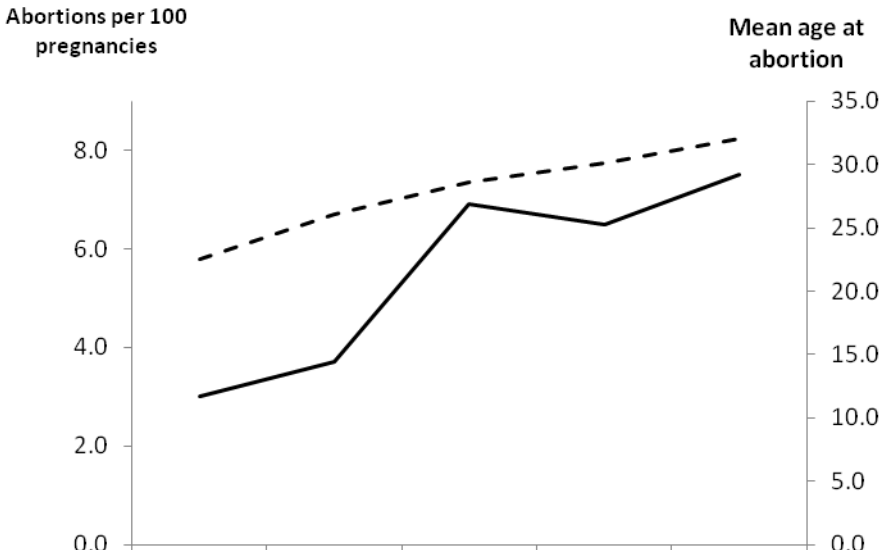
Source: The 2009 Tehran Survey of Fertility (the 2009 TSF).

Figure 1. Age-Specific Abortion Rates by Age Groups of Women Aged 20-49 , City of Tehran, Iran, TSF 2009



Source: As for Table 1.

Figure 2. Abortion Ratios and mean age at abortion by calendar periods at abortion: Tehran, Iran, 2009 TSF



	Before 1990	1990-94	1995-99	2000-04	2005-09
- Ratio	3.0	3.7	6.9	6.5	7.5
- mean age	22.5	26.1	28.6	30.1	32.0

Source: As for Table 1.

Figure 3a. Pattern of Abortion ratios by age at abortion, Tehran and selected Asian countries

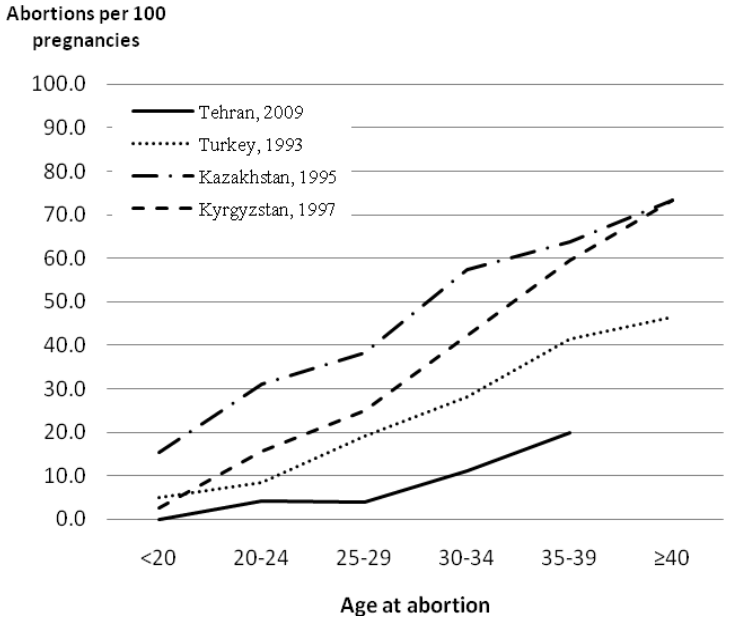
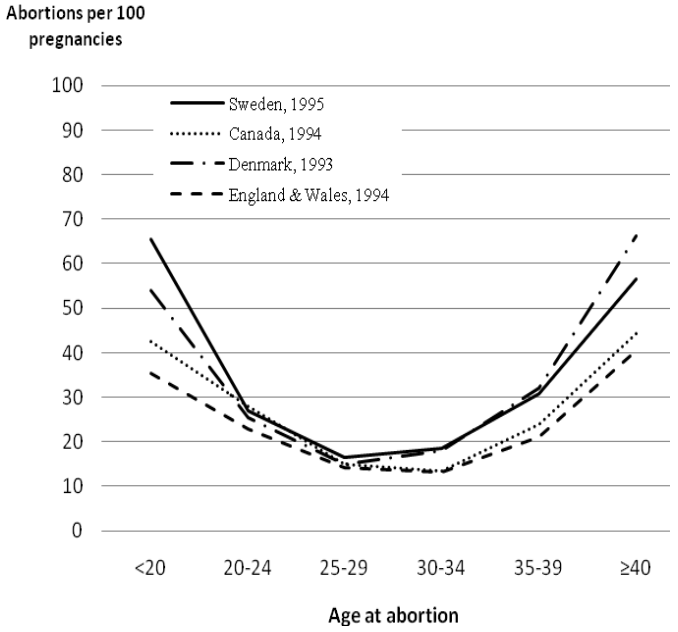


Figure 3b. Pattern of Abortion ratios by age at abortion, selected Western countries



Source: The 2009 TSF for Tehran, Bankole et al. (1999) for other countries.

Table 2. Percentage distribution of abortions and abortion ratios by women's characteristics, Tehran: Iran, 2009

Characteristics	Percent of Abortions	Abortion Ratio	Number of	
			abortions	known pregnancies
Age at abortion				
<20	00.0	0.0	0	38
20-24	13.2	4.3	10	230
25-29	18.4	3.8	14	368
30-34	36.8	11.1	28	253
≥35	31.6	20.0	24	120
Number of live-born children				
No children*	9.2	10.6	7	66
1	26.4	4.7	20	423
2	52.6	10.6	40	377
≥ 3	11.8	6.3	9	143
Ideal number of children				
1	34.2	8.6	26	303
2	57.9	7.1	44	617
≥ 3	7.9	6.7	6	89
Women's years of schooling				
<6	7.9	6.1	6	93
6-11	21.1	8.6	16	187
12	43.4	7.7	33	429
≥ 13	27.6	7.1	21	295
Husband's years of schooling				
<6	9.2	7.5	7	93
6-11	22.4	6.7	17	254
12	30.2	6.7	23	343
≥ 13	38.2	9.1	29	319
Women's employment status				
Unemployed	82.9	7.3	63	860
Employed	17.1	8.7	13	149
Importance of religion in life				
Very important	51.3	6.7	39	581
Somewhat important	38.2	8.2	29	354
Not too important/not at all	10.5	10.8	8	74
Women's ethnicity				
Fars	40.8	6.5	31	477
Turk	39.5	8.5	30	353
Gilak/Mazandarani	9.2	10.4	7	67
Lur	6.6	7.8	5	64
Others (Kurd/Arab/Baluch/Turkman)	3.9	6.3	3	48
Husband's ethnicity				
Fars	42.1	6.4	32	498
Turk	36.8	8.5	28	330
Gilak/Mazandarani	13.2	16.4	10	61
Lur	5.3	5.9	4	68
Others (Kurd/Arab/Baluch/Turkman)	2.6	3.8	2	52
Quartiles of household's monthly expenditure (US $)				
First (30-350)	17.1	4.1	13	317
Second (351 – 500)	19.7	3.0	15	273
Third (501 – 800)	36.8	11.3	28	248
Fourth (> 800)	26.3	11.7	20	171
Residential district				
Northern districts	29.0	10.2	22	216
Central districts	43.4	7.9	33	416
Southern districts	27.6	5.6	21	377
Total	**100.0**	**7.5**	**76**	**1009**

Note: *The denominator of the ratio for parity zero includes 59 current pregnancies plus 7 induced abortions.
Source: As for Table 1.

Table 3. Percentage distribution of abortions in five years preceding the survey by the most important reason given for seeking the abortion, Tehran, Iran: 2009 TSF	
Reason for Abortion	**Percent**
Health-related Reasons	**31.6**
Risk to maternal health	6.6
Risk to fetal health	19.7
Bleeding during pregnancy	5.3
Fertility-related Reasons	**47.3**
Limiting birth	35.5
Spacing next pregnancy	5.2
Postponing childbearing [a]	6.6
Socioeconomic Reasons	**21.1**
Economic difficulties	18.5
Spousal Relationship problems	2.6
Total	100.0
Number of Abortions in five years prior to the interview	76

Note: [a] Includes pregnancies which occurred prior or during the engagement period (*Aghd*), or outside a marital relationship.

Source: TSF (2009).

Table 4. Percent distribution of respondents who knew a woman who had an abortion in the last year preceding the survey by the most important reason for her abortion, Tehran, Iran: 2009 TSF

Reason for Abortion	Percent	Frequency
Health-related Reasons	**19.3**	**129**
Risk to fetal health	11.5	**77**
Risk to maternal health	7.8	52
Fertility-related Reasons	**61.3**	**408**
Both spouses did not want any more children	43.1	287
Husband did not want any more children	3.5	23
Spacing next pregnancy	10.0	67
Postponing childbearing	4.7	31
Socioeconomic Reasons	**15.1**	**65**
Economic difficulties	9.8	65
Spousal Relationship problems	2.9	19
Gender preference for the child	2.4	16
Don't Know	**4.3**	**29**
Total	100.0	666

Note: [a] Includes pregnancies which occurred prior or during the engagement period (*Aghd*), or outside a marital relationship.

Table 5. Percent distribution of abortions in five years preceding the survey by contraceptive method used at the time of conception, Tehran, Iran: 2009 TSF	
Contraceptive Method	Percent
No method used	15.8
Any method	**84.2**
Any modern method IUD Pill Male Condom	**31.6** 5.3 15.8 10.5
Any traditional method Withdrawal Rhythm	**52.6** 44.7 7.9
TOTAL	100.0
Number of Abortions	76