Induced Abortion among Chinese Women with Living Child-A National Study

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Abstract

Objective—Induced abortion is widely practiced in China. However, the information on induced abortion is limited. A national cross-sectional survey was designed to determine the risk factors of induced abortion among Chinese women with one child.

Methods—We sampled 16,881 Chinese women with one living child for the study. A structured questionnaire was used to collect induced abortion and related health information. The National Research Institute for Family Planning of China conducted a cross-sectional study among women who had delivered a baby between 2006 and 2008. Information was collected in relation to demographic characteristics (age, ethnicity, region, area etc.), social economic status (education level and occupation), marriage, and the attitude towards potential child's gender. Multi-logistic regression was used to test potential predictors for conducting abortion stratified by consistency between gender preference and current infants' gender, and indicating adjusted estimation on selected models of risk factors for abortion.

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Results—The mean age of participants was 27.96 ± 4.10 years (median 27 years). Among those women, the prevalence of induced abortion was 8.13 %. In the final model, females living in rural areas (OR = 1.21, 95 %CI: 1.04–1.39), individuals ages 18–25 (OR = 0.84, 95% CI: 0.72–0.99), individuals ages 30 or older (OR = 1.63, 95% CI: 1.42–1.86), and single individuals (OR = 1.72, 95% CI: 1.05–2.83) were more likely to experience induced abortion. Wife gender preference (OR = 0.66, 95 %CI: 0.53–0.83), husband gender preference (Boy: OR = 1.33, 95 %CI: 1.10–1.63; Girl: OR = 1.5, 95% CI: 1.22–1.86), and the area where the individuals were located were significantly associated with the reporting of induced abortion.

Conclusion—The prevalence of induced abortion is high among married women with child in China. There are also socio-demographic characteristics associated with induced abortion in China.

Keywords

Prevalence; Induced abortion; China; Sex selection

INTRODUCTION

Induced abortion is widely practiced in China. The average annual rate of induced abortion was 28.95 %among Chinese married women 20–49 years old, according to the data from 1979 to 2010[1]. Induced abortion does harm to not only the women[2] but also the future child, e.g. low birth weight[3].

Many induced abortion studies in China focused on unmarried women [4, 5]. Of note, unmarried woman had some difference characters in with those with child, for example, In China people are deeply influenced by traditional culture in which the premarital pregnancy is discouraged [5]. However, previous studies found that women had a high risk of undergoing abortion after their first live birth (most are married women. It is hard to deliver a child without marriage certification in China) and the incidence of induced abortion has increased among women with one living child [6].

Previous studies claim that China's one-child policy itself has lead to forced abortions[7], which has been reported from time to time in China in recent years[8, 9]. Sex selection has been directly related to induced abortion[10, 11], especially in Asian countries, e.g. India[12, 13], Nepal[14], and China[15]. This is the result of a preference towards having sons, accentuated by declining fertility[16]. To help mitigate the problem, the government banned prenatal sex screening in 1994, thus doing away with a resource enabling individuals to see the sex of a child early on in its development. However, the problem of induced abortion still continues to this day, especially in rural areas. The sex-ratio in China at birth has climbed during the past three decades to an alarming 118 boys born for every 100 girls, the highest sex imbalance in the world, according to the 2010 Chinese census[17].

Hence, a national prevalence study needed to be carried out to quantify the magnitude and impact of induced abortion within China, and ultimately lead to the enactment of measures to deal with this important health issue. Accordingly, we reported: 1) the prevalence of

induced abortion in Chinese women with one child; 2) the socio-demographic, clinical, and social risk factors of induced abortion.

METHODS

Population & sampling

Details of the methods have been reported elsewhere[18]. Briefly, in 2008, the National Research Institute for Family Planning of China conducted a cross-sectional study addressing the family planning policy and fertility health. A research area with a population of at least 300,000 with a 10 per 1000 birth rate and a minimum sample size of 3,000 would be needed for a study that is accurate and sufficiently powered to correctly calculate fertility intention. According to the administration areas in China, we used a multi-stage, cluster sampling method to select study subjects to represent urban/town and rural populations. Five provinces (Heilongjiang, Inner Mongolia, Jiangsu, Guizhou, and Gansu) were randomly selected to represent all 31 provinces in China. Each of the above randomly selected provinces was divided into multiple urban/town and rural regions. Then, 1–2 urban regions and 1–2 rural regions were randomly selected to represent their provinces.

Women who had delivered a baby during the period between January 2006 and November 2008 were eligible for the study population selection. We excluded women under 18 or above 45 years old.

Data collection

Standard questionnaires were administered in a one-on-one environment by trained, Mandarin speaking investigators. Information was collected in relation to demographic characteristics (age, ethnicity, region, area etc.), social economic status (education level and occupation), marriage, and the attitude to potential child's gender.

Measure

Education level was categorized into primary school, junior high school, and high school or above. Occupational categories included civil servant, manual worker, farmer, business, and others. Questions regarding abortion history were asked, including questions about spontaneous abortion and induced abortion.

Statistical analysis

Descriptive statistics on demographic characteristics were presented by frequency and proportion. Student T-tests and Chi-square tests were applied to examine associations between demographic characteristics and potential covariates for the abortion group and non-abortion group. A multi-logistical regression was used to test potential predictors for conducting abortion stratified by consistency between gender preference and current infants' gender, and indicated adjusted estimation on selected models of risk factors for abortion (Table1). All statistical analysis was performed using SAS 9.4.

This research was approved by the Ethical Committee of Guangdong Pharmaceutical University and School of Public Health and Tropical Medicine, Tulane University according

to the declaration of Helsinki promulgated in 1964 as amended in 1996, the approval number is 20170101.[19]

RESULTS

There were 17,093 women who answered the questionnaires. 16,881 (98.8 %) women remained after excluding 212 participants with missing data. The mean age of participants was 27.96 ± 4.10 years (median 27 years). Among those women, the prevalence of induced abortion was 8.13 %. The prevalence of induced abortion increased with age (5.41 % to 11.72 %). Single, lower educated women living in the rural area had a high risk of induced abortion (Table 2).

Results of variation analyses showed that of the seven socio-demographic variables, only religion did not meet the pre-selection criteria ($p < 0.05$). Hence, all the variables were entered in the multivariate model. In the final model, females living in rural areas (OR = 1.21, 95 %CI: 1.04– 1.39), individuals ages 18–25(OR = 0.84, 95 %CI: 0.72–0.99; 30 or more: OR = 1.63, 95 %CI: 1.42–1.86), and single individuals (OR = 1.72, 95 %CI: 1.05– 2.83) were more likely to experience induced abortion. Ethnicity was eliminated but respondents within the occupational category of "business man" had increased odds of reporting induced abortion, compared to workers (OR = 1.46; 95 %CI = 1.16–1.84).

Wife gender preference (OR = 0.66, 95 %CI: 0.53–0.83), husband gender preference (Boy: OR = 1.33, 95 %CI: 1.10– 1.63; Girl: OR = 1.5, 95 %CI: 1.22–1.86), and the area where individuals were located were significantly associated with the reporting of induced abortion.

DISCUSSION

Our results suggested that single women, women living in rural locations, and women with lower education levels had a high risk for induced abortion. Husband's gender preference (boy or girl) could also be associated with increased induced abortion.

In this study, the prevalence of induced abortion was 8.72 %. In Brazil, among the women with any previous pregnancy, 4.5 % reported induced abortion[20], while the abortion rate in Mexico was 38 per 1,000 women aged 15–44[21]. However, this data cannot be compared with the prevalence mentioned from this study, due to differences in study methods and the definition that is still being debated. For example, Lau et al conducted a survey on induced abortion among the 293 female sex workers in Hong Kong and reported the 55.6 % of had experienced induced abortion[22]. Of note, the female sex workers are different from the general population.

Our results on the unmarried women were consistent with previous studies. Qian et al conducted a systematical review of unmarried Chinese women and reported that abortion rates were high, ranging between 11 to 55 % in 8 studies[4]. Of note, unmarried woman face much pressure from both family and society due to the negative perception of unmarried pregnancy in China. For example, previous studies found that the rate of abortion is high

among Chinese unmarried female university students, even though the university students could get married and deliver under the Marriage Law[5].

Our results confirmed that women with lower education levels had a high risk of induced abortion [23]. However, Guo et al conducted a reproductive health survey with 4,687 persons regarding floating population in five cities in China in 2005. Their results suggested that the higher educational degree that these women had, the higher their risk of abortion [24]. Socioeconomic status varied on the contraception which contributes to health disparities [25, 26]. Moreover, failure to use the contraception is a cause of induced abortion. For example, a survey of 12,000 women in eight provinces of China was carried out in 1988, and its results showed that ineffective contraception was the cause for most unplanned pregnancies, leading to abortions[27].

Regarding sex selection, our results indicated that the father's preference for the particular sex of a child was associated with increased induced abortion. However, Zhou et al conducted a survey to explore attitudes towards gender preference among people of reproductive age. Their results indicated there was a preference for sons, although the preference was diminished considerably. Of note, the participants were at reproductive age, but none of the women had previously experienced pregnancy[28].Moreover, the participants might have covered their true attitude on the gender-selection issue when they faced the staff of the family planning committee. Hangzhou is a modern city in China and the people are more likely to be open-minded and accept new ideas. Previous studies suggested that instead of restricting abortion, and banning sex selection and sex determination, it is better to address the practice of sex selection by elevating the status of women and empowering women so that giving birth to a girl is a positive option, instead of a detriment to the parents and family, as is the current and more common mindset[15]. Legislative advocacy and social efforts aimed at promoting gender equality and women's human rights are needed to reduce the cultural and economic pressures for sex-selective abortion[14]. Wider social change promoting women's status in society should be enforced[15]. Providing access to safe abortions and achieving a decline in high sex ratios are both important goals. Both are possible if the focus shifts to addressing the conditions that drive people to prefer sons over daughters[16].

Limitation

Despite the study being based on a very large sample size, our results have several limitations. First, the mother's age is the presented age at the time of the survey, not at the age of the abortion. Second, although most abortions happened after sex exam of the infant, we cannot draw the conclusion that the abortion was caused by sex preference.

CONCLUSION

The prevalence of induced abortion is high among married women with child in China. There are also socio-demographic characteristics associated with induced abortion in China.

Acknowledgments

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Table 1

The characters of Chinese women with and without induced abortion (n = 16,881)

	Induced		P-Value
	No	Yes	
Area			< 0.05
Jiangsu	34.11	64.19	
Gansu	16.72	3.24	
Guizhou	14.58	8.82	
Inner Mongolia	19.13	8.90	
Heilongjiang	15.46	14.85	
Marriage			< 0.05
Married	96.64	97.43	
Single	1.45	1.54	
Devoice/Separated/windowed	1.92	1.03	
Region			< 0.05
City	56.13	67.79	
Rural	43.87	32.21	
Mother age			< 0.05
18–25	30.10	19.34	
25-30	48.67	48.97	
30	21.23	31.69	
Nation			< 0.05
Han	76.62	88.24	
Minority	23.38	11.76	
Mother education			< 0.05
Primary School	19.51	11.62	
Junior high school	43.39	35.00	
High school or above	37.10	53.38	
Mother Occupation			< 0.05
Farmer	47.39	25.00	
Worker	19.22	24.04	
Civil servants	8.22	8.38	
Business man	7.47	8.97	
Others	17.71	33.60	
Mother gender preference			< 0.05
Boy	21.46	11.84	
Girl	16.46	21.99	
Both	58.49	64.56	
Neither	3.59	1.62	
Father gender priority			< 0.05
Boy	27.85	20.96	
Girl	11.23	16.62	

	Induced	P-Value
Both	57.31	60.59
Neither	36.1	1.84

*
P < 0.05

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Table 2

Prevalence of induced abortion and its association with characteristics

	Prevalence	OR (95 %CI)
Area		
Jiangsu	14.34	10.52 (7.26–15.23)*
Gansu	1.69	Ref
Guizhou	5.11	2.97 (2.02–4.34)*
Inner Mongolia	3.97	2.58 (1.74–3.81)*
Heilongjiang	7.87	5.16 (3.58–7.44)*
Marriage		
Married	8.23	Ref.
Single	8.66	1.72 (1.05–2.83)*
Devoice/	4.56	0.47 (0.27–0.82)*
Region		
City	9.70	Ref
Rural	6.13	1.21 (1.04–1.39)*
Mother age		
18–25	5.41	0.84 (0.72–0.99)*
25–30	8.22	Ref
30 or more	11.72	1.63 (1.42–1.86)*
Nation		
Han	9.29	Ref
Minority	4.28	1.20 (0.95–1.52)
Mother education		
Primary School	5.03	1.45 (1.17–1.86)*
Junior high school	6.69	Ref
High school or above	11.35	0.99 (0.85–1.14)
Mother Occupation		
Farmer	4.48	0.87 (0.71–1.06)
Worker	10.01	Ref
Civil servants	8.32	0.94 (0.74–1.19)
Business man	9.65	1.46 (1.16–1.84)*
Others	14.44	1.65 (1.41–1.93)*
Mother gender preference		
Boy	4.68	0.66 (0.53–0.83) *
Girl	10.62	0.99 (0.82–1.20)
Both	8.94	Ref
Neither	3.85	0.49 (0.23–1.02)
Father gender priority		
Boy	6.27	1.33 (1.10–1.61)*
Girl	11.63	1.51 (1.22–1.86)*
Both	8.60	Ref

	Prevalence	OR (95 %CI)
Neither	4.33	1.36 (0.67–2.75)