International Journal of Gynecology and Obstetrics 125 (2014) 241–246

Contents lists available at ScienceDirect

International Journal of Gynecology and Obstetrics

journal homepage: www.elsevier.com/locate/ijgo

CLINICAL ARTICLE

Risk factors for repeat abortion and implications for addressing unintended pregnancy in Vietnam

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ARTICLE INFO

Article history:
Received 19 July 2013
Received in revised form 1 November 2013
Accepted 25 February 2014

Keywords:
Post-abortion family planning
Repeat abortion
Reproductive health
Sex imbalance
Unmet need
Vietnam

ABSTRACT

Objective: To determine predictors of repeat abortion in 3 provinces in Vietnam. *Methods:* In a cross-sectional study between August and December 2011, women who underwent abortion were interviewed after the procedure in 62 public health facilities in Hanoi, Khanh Hoa, and Ho Chi Minh City (HCMC). Information on sociodemographic factors, contraceptive and reproductive history and intentions, and opinions and experience of abortion services was collected. The primary outcome was repeat (≥2) abortions. *Results:* Overall, 1224 women were interviewed: 534 from Hanoi, 163 from Khanh Hoa, and 527 from HCMC. The mean age and parity of the respondents were 29 years and 1.8, respectively, and 79.6% were married. Approximately half of the respondents were not using contraception before pregnancy. The prevalence of repeat abortion was 31.7%. In multivariate models, significant predictors of repeat abortion included living in Hanoi, higher parity, age 35 years or older, and having 2 or more daughters (versus 1) or no sons (versus 1) after controlling for parity (all $P < 0.05$). *Conclusion:* Repeat abortion remains high in Vietnam, fueled partly by inadequate contraceptive use. Son preference seems to be an important predictor of repeat abortion. Strengthening post-abortion contraceptive counseling and promoting long-acting contraceptive methods are essential to reduce repeat abortion.

1. Introduction

Vietnam has one of the highest abortion rates in the world, estimated at 26 abortions per 1000 women in 2007 [1]. Despite Vietnam's liberal abortion law, unsafe abortion contributed to an estimated 11.5% of maternal deaths in 2000–2001 [2]. Vietnam's abortion rate equates to 2.5 abortions per woman per lifetime, indicating a high level of repeat abortion. This is despite a high prevalence of contraceptive use of 78% among married women [3]. Abortion among young Vietnamese women is also increasing: in Ho Chi Minh City (HCMC), the number of abortions among females aged 10–24 years increased from 781 in 2005 to 2235 in 2007 [4,5].

Vietnam's contraceptive provision is skewed toward the intrauterine device (IUD), which, particularly among young women, is not always the preferred contraceptive method. High rates of IUD discontinuation for method-related reasons have been documented in Vietnam, which might potentially contribute to the country's high abortion rate [6]. Whereas 1 abortion is indicative of unintended pregnancy, repeat abortion might signify a need for improvement in family planning programs to support women presenting for terminations in adopting—and continuing on—a contraceptive method of their choice [7].

Vietnam's sex ratio at birth increased from 106 male births per 100 female births in 2000 to 112 male births in 2008 [8–10]. Prenatal sex diagnosis and sex selection practices are prohibited in Vietnam [8]; however, it has been suggested that affordable sex determination technology has allowed Vietnamese couples to pursue their desire for 1 or more sons, thereby fuelling the high rate of abortion [8,11].

Studies in high-income countries have identified common risk factors for repeat abortion such as older age, high parity, and lower socioeconomic status [12–14]. Despite the high rate of repeat abortion in Vietnam, only 1 qualitative study has examined the characteristics of women undergoing repeat abortion in the country, and it found no sociodemographic factors associated with repeat abortion [15]. Identification of risk factors for repeat abortion might help family planning programs to design health interventions that improve contraceptive adoption and continuation subsequent to a woman's first abortion.

To address this research gap in Vietnam, the aim of the present study was to explore risk factors associated with repeat abortion among

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http://dx.doi.org/10.1016/j.ijgo.2013.11.014
0020-7292/

women presenting for termination services at public health facilities in Hanoi, Khanh Hoa, and HCMC, Vietnam.

2. Materials and methods

The present cross-sectional exit interview survey was conducted among women receiving termination services at selected public health facilities in Hanoi municipality, HCMC municipality, and Khanh Hoa Province between August 1 and December 31, 2011. Ethical approval for the study was provided from the institutional review boards at the London School of Hygiene and Tropical Medicine and Hanoi School of Public Health, and all participants provided written informed consent before the interview.

A multistage sampling strategy was implemented to select the areas, health facilities, and women. The 3 areas were selected to represent geographic and cultural differences within the country (north, south, and central, respectively). The following public health facility levels were included: central specialist and general hospitals; provincial specialist and general hospitals or reproductive health centers (RHCs); and district hospitals or RHCs. A master list of all health facilities in the 3 regions was obtained from the municipal and provincial departments of health. All specialist hospitals and RHCs specializing only in sexual and reproductive health service provision were selected, owing to the limited numbers of these facilities at each health administrative level. A random sampling strategy was used to select 50% of all non-specialized facilities (general hospitals and commune health stations). In total, 62 health facilities were included. This sampling method was previously described [16].

All women presenting for termination services at these facilities and living in the province or municipality in which the health facility was located were eligible for inclusion. Subsequent to the procedure and counseling session, women were invited to participate in a structured face-to-face exit interview.

The interview questionnaire was developed in English, translated into Vietnamese, revised after a pilot study, and back-translated into English. The questionnaire collected information on sociodemographic characteristics, abortion knowledge and attitudes, reproductive and contraceptive history, abortion experience, contraceptive and childbearing intentions, and knowledge and perceptions of abortion services.

Statistical analyses were performed via Stata version 11.1 (StataCorp, College Station, TX, USA). Owing to the multistage sampling strategy of the study design, with respondents selected within facilities, all statistical analyses took clustering into account via the Stata survey (svy) commands. Because the proportion of sampled facilities differed according to the facility type, respondents attending general health facilities had half the probability of selection as those attending specialized facilities, and were thus given twice the weight of women attending specialized facilities in the analyses. Although the sample was not nationally representative, the study design ensured that it was representative of Hanoi, Khanh Hoa, and HCMC.

Descriptive analyses were carried out to show the distribution of sociodemographic, reproductive, and abortion-related characteristics both overall and for first-time versus repeat abortion groups. The distribution of contraceptive methods (past use, intended use, and reasons for non-use) and barriers to accessing abortion were examined in a similar manner. A P value of less than 0.05 was considered to be statistically significant.

Bivariate and multivariate logistic regression models were used to determine predictors of repeat abortion. Variables considered as potential predictors included sociodemographic characteristics, reproductive and contraceptive history, reproductive and contraceptive intentions, abortion characteristics (gestational age and type of abortion), and factors related to abortion service access (cost, distance, and perceived accessibility). Whether number of sons and/or daughters was predictive of repeat abortion was also tested. Only factors that were significantly associated with repeat abortion at the bivariate or multivariate level were considered to be predictors and were included in the final model.

3. Results

During the study period, 1224 women completed the survey: 534 from Hanoi, 163 from Khanh Hoa, and 527 from HCMC. This represented a 99.7% response rate.

The mean age of respondents was 28.8 years. More than 50% were aged 20–30 years, approximately 43% were aged over 30 years, and 6.2% were younger than 20 years. Almost 80% of respondents were married, and 58.1% had at least high school education (8.8% had primary level or no education). Approximately one-third of respondents had no children, and 7.4% had more than 2 children. Half of the respondents were using contraception before the recent pregnancy, and most (86.5%) expressed their intention to use contraception after the abortion. Almost 43% of respondents wanted to stop childbearing, and 18.1% intended to have a child within 2 years (Table 1).

The prevalence of repeat abortion, defined as 2 or more abortions, was 31.7%. Women undergoing repeat abortion were similar to those undergoing first-time abortion in terms of educational attainment, distance traveled to clinic, and gestational age. Among all women, gestational age at the time of termination ranged from 0 to 29 weeks (52.3% at 5–6 weeks, and 6.4% at ≥9 weeks). Only 32 respondents (or 2.6% of the total sample) were in their second trimester. Compared with those undergoing first-time abortion, those undergoing repeat abortion were more likely to be married (90.0% vs 75.0%; $P \leq 0.001$) and from Hanoi (50.5% vs 34.7%; $P = 0.016$). They were also older ($P \leq 0.001$) with higher parity ($P \leq 0.001$), and were more likely to want to stop childbearing than women undergoing first-time abortion (63.6% vs 33.7%; $P \leq 0.001$). They were also more likely to have a surgical (rather than medical) abortion compared with women in the first-time abortion group (85.5% vs 72.7%; $P = 0.030$).

Among the respondents, condoms were the most popular contraceptive method, followed by the pill and emergency contraception (Fig. 1); there were no significant differences between first-time and repeat abortion. When asked about the reasons for non-use of contraceptives, women in the first-time abortion group were more likely than those in the repeat abortion group to cite lack of contraceptive knowledge (23.4% vs 12.4%; $P = 0.039$), but less likely to cite partner disapproval (21.2% vs 28.3%; $P = 0.020$).

With regard to contraceptive intentions subsequent to the abortion, the pill (37.8%) and condoms (35.5%) remained the most popular methods, followed by the IUD (27.4%). Intention to use condoms was significantly lower among women undergoing repeat abortion than among those undergoing first-time abortion (27.1% vs 39.9%; $P \leq 0.001$), in contrast to past condom use (Fig. 1).

There was a significant association between repeat abortion and intention to adopt user-independent methods (sterilization, IUD, and injectables) versus user-dependent methods (condoms, pill, emergency contraception, periodic abstinence, and withdrawal) ($P = 0.034$). Overall, 34.4% of women undergoing repeat abortion expressed the intention to adopt only user-independent methods, compared with 26.3% of women undergoing first-time abortion. By contrast, 68.7% of women in the first-time abortion group intended to use only user-dependent methods, compared with 56.6% of women in the repeat abortion group.

Most women undergoing both first-time (75.9%) and repeat (81.6%) abortion thought that abortion services were accessible in their area of residence. Each of the main barriers to accessing abortion services (lack of knowledge, cost, distance, and reluctance to use a public provider) was cited by 10% or less of respondents in both groups (Fig. 2). Stigma seemed to be a far greater barrier in the first-time abortion group than in the repeat abortion group (17.5% vs 7.0%; $P = 0.012$).

The proportion of respondents citing each barrier to accessing abortion was between 2 and 17 times higher in Khanh Hoa than in the other regions. For instance, 30.2% of respondents in Khanh Hoa said that they