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## CLINICAL ARTICLE

## Service users' attributes associated with the uptake of medical versus surgical abortion at public health facilities in Vietnam



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## ABSTRACT

**Objective:** To investigate the attributes of service users associated with uptake of medical abortion (MA) versus manual vacuum aspiration (MVA) at public health facilities in Vietnam. **Methods:** Structured exit interviews were conducted among women who underwent termination at 62 public health facilities in Hanoi, Khanh Hoa, and Ho Chi Minh City (HCMC) between August and December 2011. Data on sociodemographic, abortion-related, and service-related factors were compared between women who underwent MVA versus MA. **Results:** Overall, 1233 women completed the study survey: 541 (43.9%) from Hanoi; 163 (13.2%) from Khanh Hoa; and 529 (42.9%) from HCMC. Almost one-quarter of women (23.1%) had chosen MA. After controlling for sociodemographic factors, women living in Khanh Hoa (odds ratio [OR], 13.4; 95% confidence interval [CI], 5.3–33.8) and HCMC (OR, 5.8; 95% CI, 2.1–15.9) were more likely to have undergone MA than women in Hanoi. Older women were less likely to have undergone MA ( $P < 0.05$ ), and those who had previously heard of MA were twice as likely to have undergone MA ( $P = 0.020$ ). **Conclusion:** Uptake of MA was lower than that of MVA and varied by province. Women in Vietnam will make their own judgment about which method to choose if they have prior knowledge of both.

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## 1. Introduction

In Vietnam, surgical abortion was introduced in the early 1960s [1], and medical abortion (MA) was introduced in 1992 through a clinical study [2]. Abortion is available on request in Vietnam. Although first-trimester surgical termination involving manual vacuum aspiration (MVA) exists at all levels of public health administration, MA is permitted only at the central, provincial, and district levels for first-trimester termination and must be performed by an obstetrician–gynecologist [2].

The effectiveness and acceptability of first-trimester MA among Vietnamese women has been evaluated in clinical trials, and high rates of completion (>93%), satisfaction (>93%), and acceptability (>90%) have been reported [3–5]. This suggests that MA offers Vietnamese women an acceptable alternative to MVA. However, the uptake of MA has been relatively slow. A survey in 2002 found that the national

percentage of abortions using MA was 5%, compared with 86% using MVA [6]. An assessment in 2007 in Vietnam also showed that MA uptake at public health facilities varied greatly by region, being 2% in Da Nang, 10% in Hanoi, and 25% in Ho Chi Minh City (HCMC) [7]. Little is known about the factors that might be responsible for this low and varying pattern of uptake.

Sociodemographic characteristics might influence women's choice of abortion method [8,9]. Data from a large multicenter study in the United States showed that ethnicity and education were factors associated with MA uptake [8]. Gestational age might also affect the acceptability of an abortion method. In a study of MA acceptability among sexually active university students in South Africa, the fact that MA can be performed sooner than surgical abortion was identified as a positive factor among students [10]. In a study of women randomly assigned to medical or surgical abortion in Scotland, there were no differences in acceptability between the 2 groups among women with a gestational age of less than 50 days, but surgical abortion was more acceptable than MA among women at 50–63 days [11].

Identification of factors affecting MA uptake in Vietnam is important to ensure that MA is adequately available to offer women a choice regarding abortion services. The last national assessment on the provision

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of MA in Vietnam was conducted in 2003 [2], and there has not been a nationally representative quantitative survey. The aim of the present study was therefore to explore the personal characteristics of abortion service users and their knowledge of MA in relation to the uptake of MA versus MVA.

## 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 by 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.

The study locations 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 or general hospitals; provincial specialist or general hospitals or reproductive health centers (RHCs); district hospitals or RHCs. A master list of all health facilities in the 3 regions was obtained. All reproductive health specialist hospitals or RHCs were selected owing to their small numbers; 50% of all non-specialized facilities were selected via simple random sampling. In total, 62 health facilities were included.

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, reproductive and contraceptive history, abortion experience, and contraceptive or childbearing intentions. Information on women's perceptions of MA is presented elsewhere.

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 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.

Univariate, bivariate, and stratified analyses were undertaken for the outcome (MA versus MVA), exposure, and other important sociodemographic covariates including age, education, marital status, occupation, region, age at first abortion, and number of living children. Pearson  $\chi^2$  tests were used to assess the significance of differences in each of the recorded characteristics between women who underwent MA and those who underwent MVA.  $P < 0.05$  was considered to be statistically significant.

Logistic regression models were fitted for each exposure–outcome pairing to provide unadjusted odds ratios (ORs) and 95% confidence intervals (CIs). Factors that might be causally associated with undergoing MA were entered into multivariate logistic regression via 3 stages of model building. Sociodemographic factors (age, region, education, occupation, number of children, and marital status) were included as confounders in all models. Other variables that might affect whether a woman had an MA or not were entered 1 by 1 into the models.

Stage 1 examined the influence of demographic characteristics including region, age, education, occupation, and parity on MA uptake.

In stage 2, abortion-related characteristics (number of previous abortions, gestational age, having heard of MA before the current procedure, and repeat abortion) were added to the demographic characteristics while controlling for the confounding effects of the former, and the net effect of each variable in the model was examined. Stage 3, the final model, included an additional characteristic: namely, whether the woman had been adequately counseled about the advantages and disadvantages of MA versus MVA.

## 3. Results

In total, 1233 women were included in the survey: 541 (43.9%) from Hanoi, 163 (13.2%) from Khanh Hoa, and 529 (42.9%) from HCMC. The survey response rate was 99.7%. Overall, 76.9% of women underwent MVA, and 23.1% underwent MA.

Women in Khanh Hoa were younger and a higher proportion of them were childless, single, and still studying compared with women in the other regions. Women were more educated and a higher percentage were engaged in business, government, or office work in Hanoi than in the other regions. Women in Hanoi (41.0%) seemed to have had significantly more repeat ( $\geq 2$ ) abortions compared with women in Khanh Hoa (22.1%) and HCMC (28.0%) ( $P \leq 0.001$ ). Uptake of MA was higher in Khanh Hoa (48.5%) and HCMC (29.7%) than in Hanoi (5.4%).

Among the 406 women who had had 2 or more abortions, 85.8% underwent MVA and 14.2% underwent MA for the current procedure. Logistic regression analysis (with the current procedure as the outcome) showed that, compared with women who had had a surgical first abortion, women who had had a medical first abortion were 9 times more likely to opt for MA again for their current abortion (OR, 9.0; 95% CI, 4.3, 18.5;  $P < 0.001$ ).

Table 1 compares the sociodemographic, abortion-related, and service-related characteristics of women who underwent MVA versus MA. Women who underwent MA tended to be younger, and were more likely to be from HCMC, to be unmarried, and to have more children compared with those who underwent MVA. In addition, women who underwent MA had a lower gestational age (13.5% of MA versus 35.9% of MVA were  $\geq 7$  gestational weeks;  $P = 0.034$ ) and were younger at the time of their first abortion (11.1% of MA versus 6.5% of MVA were  $< 20$  years;  $P = 0.012$ ). Fewer women who underwent MA had had repeat abortions (19.7% of MA versus 35.1% of MVA;  $P = 0.03$ ), and a higher proportion of those who underwent MA had heard of MA before their current abortion (82.6% of MA versus 61.5% of MVA;  $P = 0.003$ ).

There were no differences in terms of facility type and price paid between women who underwent MVA and those who underwent MA. A higher proportion of the MA group reported receiving adequate counseling on the advantages and disadvantages of MA versus MVA (89.0% of MA versus 74.2% of MVA;  $P = 0.018$ ).

Unadjusted and adjusted logistic regression analyses were performed to assess the effect of different variables on the uptake of an abortion method (coded MA = 1 versus MVA = 0). Unadjusted analyses showed that variables associated with MA included region, age, education, parity, age at first abortion, gestational age, having heard of MA before the present occasion, repeat abortion, and whether adequate information had been received about MA and MVA.

Three multivariate logistic regression stages were used to arrive at the final model. In stage 1, women living in Khanh Hoa (OR, 20.0; 95% CI, 9.6–41.9) and HCMC (OR, 8.2; 95% CI, 3.5–19.1) were more likely to have undergone MA than women living in Hanoi. Women who were divorced or separated were almost 4 times more likely to have undergone MA compared with those who were single (never married) (OR, 3.6; 95% CI, 1.3–9.9). Older women were half as likely to have undergone MA compared with younger women aged 14–19 years.

In stage 2, region and age remained significant factors; however, marital status was no longer significant. The results of the newly added abortion-related variables showed that women who had heard

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