ORIGINAL RESEARCH ARTICLE

# Factors Associated with Induced Abortion among Women in Hohoe, Ghana

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## Abstract

In Hohoe, Ghana, induced abortion is the second highest cause of hospital admissions. We aimed to describe factors influencing induced abortion among 408 randomly selected women aged 15-49 years. 21% of the women had had an abortion; of those, 36% said they did not want to disrupt their education or employment; 66% of the abortions were performed by doctors. Bivariate logistic regression showed that compared with women with secondary education, women with basic education (OR = 0.31, 95% CI: 0.18-0.54) and uneducated women (OR = 0.24, 95% CI: 0.07-0.70) were significantly less likely to have had an abortion. Women who were married (OR = 1.83, 95% CI: 1.10-3.04), peri-urban residents (OR = 1.88, 95% CI: 0.95-3.94), and women with formal employment (OR = 2.22, 95% CI: 0.86-5.45) were more likely to have had an abortion. Stakeholders should improve access to effective contraception to lower the chance of needing an abortion and target education programmes at those with unmet need for contraception (*Afr J Reprod Health 2010; 14[4]: 115-121).*

## Résumé

**Facteurs liés à l'avortement déclenché chez les femmes à Hohoe, Ghana.** A Hohoe, au Ghana, l'avortement déclenché constitue la deuxième cause principale des admissions hospitalières. Nous avions comme objectif de décrire les facteurs qui influent sur l'avortement déclenché chez 408 femmes âgées de 15 à 49 ans qui ont été sélectionnées au hasard. Vingt-et-un pourcent des femmes ont eu un avortement ; parmi elles, 36% ont dit qu'elles ne voulaient pas interrompre leur éducation ou leur emploi ; 66% des avortements ont été réalisé par les médecins. La régression logistique bi variable a révélé que par rapport aux femmes qui ont fait l'étude secondaire, les femmes qui ont une éducation de base (OR=0,31, 95% CI : 018-0,54) et les femmes illettrées (OR=0,24, 95% CI : 0,07-0,70) avaient sensiblement moins la chance d'avoir un avortement. Les femmes mariées (OR=1,83, 95% CI : 1,10-3,04), les habitants péri- urbains (OR=1,88, 95%CI : 0,95-3,94) et les femmes qui ont des emplois formels (OR=2,22, 95% CI :0,86-5,45) avaient plus la chance d'avoir eu un avortement. Il faut que les intéressés améliorent la contraception effective pour réduire la possibilité de demander un avortement et de viser des programmes d'éducation pour celles qui ont des besoins pour la contraception qui n'ont pas été satisfaits (*Afr J Reprod Health 2010; 14[4]: 115-121).*

**Keywords:** Induced abortion, age, marital status, education, residence, employment, Hohoe

## Introduction

Induced abortion remains a huge public health problem worldwide and, particularly in developing countries. Even though the number of induced abortions declined worldwide between 1995 and 2003, about one in five pregnancies still ends in an abortion. The global unsafe abortion rate has remained essentially unchanged within the period; 15 and 14 abortions per 1,000 women aged 15-44 years, respectively[1,2].

Despite the fact that more abortions occur in developing countries than in developed countries (35 million versus seven 7 million), a woman's likelihood of an abortion is similar in both places; 26 abortions per 1,000 women aged 15-44 years in developed countries, compared with 29/1,000 in developing countries[1]. In 2008, of the estimated 185 million pregnancies that occurred in developing countries, 40% were unintended, and 19% ended in induced abortion[3]. According to a 2009 report, an estimated 251 million women in developing countries have an unmet need for modern contraceptives and more than four out of five

unintended pregnancies occur among such women[4].

In East Africa, the estimated abortion rate in 2003 was 39 per 1,000 women aged 15-44, in Central and West Africa, the rate was 26-28 per 1,000 women aged 15-44; all the procedures in these subregions were judged to be unsafe[2,5]. The World Health Organization (WHO) defines unsafe abortion as a procedure for terminating an unintended pregnancy carried out either by persons lacking the necessary skills or in an environment that does not conform to minimal medical standards or both[6]. Almost all abortion-related deaths occur in the least developed countries (LDCs); they are highest in Africa where 650 deaths per 100,000 unsafe abortions were recorded in 2003[2,7], accounting for an estimated 14% of maternal deaths[2].

In Ghana, unsafe abortion remains a major public health problem despite the liberalization of the law on abortion over two decades ago; many women still obtain unsafe abortions due to lack of knowledge about the law at the population and provider levels[8,9,10]. Induced abortion is the second largest direct cause of maternal mortality in Ghana, second only to haemorrhage[11]. Data on induced abortion are not available in the Ghana Demographic and Health Surveys, and the most common data available are usually hospital-based or the results of small surveys. Over the period 1972-94, of the 22 published studies conducted in Ghana on induced abortions, only one did not use hospital-based data[12]. Different authors have provided various estimates of induced abortion in Ghana, based mainly on small samples and hospital data: Bleek and Asante-Darko (15% in 1973), Lamptey et al. (25% in 1981-82), Nabila and Fayorsey (13% in 1991), Taylor and Abbey (22% in 1992), Ahiadeke (17 per 1,000 women aged 15- 49 years in 1998), Geelhoed et al. (22.6% among women aged 15-49 years in 1999), Turpin et al. (38.8% in 1994), and Adanu et al. (31% in 2005)[10,13-19]. The Ghana Maternal Health Survey 2007 provides data on abortion from a nationwide sample of 10,370 women aged 15-49 years; 15% of these women reported having had at least one abortion in their lifetime[11].

Ghana's total fertility rate (TFR) has declined steadily since 1990; 5.2 children per woman in 1993, 4.4 in 1998, 4.4 in 2003, and 4.0 in 2008[20-23]. However, the modern contraceptive prevalence rate (MCPR) has also declined between the two most recent rounds of the Demographic and Health Surveys. Proximate determinants such as contraceptive use, marriage and first sexual activity, postpartum insusceptibility, and abortion are expected to contribute to observed fertility declines[24], but this has not been entirely the case for

Ghana[25]. It is possible that there has been a decline in marital coital frequency that is not captured by the main proximate determinants. How much induced abortion really contributes to the TFR-MCPR mismatch in Ghana is an investigative challenge[25].

# Methods

## Study area

Hohoe is one of the 18 districts/municipalities in the Volta Region of Ghana. In 2008, it had a projected population of 171,346 (annual growth rate of 1.9%) and spread across 152 communities. The Hohoe municipal hospital reported managing a total of 326 abortions in 2007, with 64% of them being self-induced. Post-abortion complications were the second leading cause of all admissions to the hospital. The contraceptive prevalence rate for the municipality is 24% for all methods but only 15% for modern methods. The municipality has two hospitals, three community-based health planning and services (CHPS) compounds (Ghana's contemporary version of primary health care provision), four private clinics, and 26 public health centres[26]. The Volta Region accounted for 18% of the national burden of abortions based on hospital data in 2006, the third highest among 10 regions[27].

## Study design

A community-based cross-sectional survey was undertaken over the period July to October 2008. We used multistage sampling technique to select seven subdistricts and a total of 408 study participants/households from urban, peri-urban, and rural communities using the probability proportionate to population size technique. In any given randomly selected household, if there was more than one woman eligible for the study—those aged 15 to 49 irrespective of marital status—simple random sampling was used to select one participant. Data were double-entered into Epi Info ver 6 (CDC, Atlanta, USA).

Ethical clearance for the study was obtained from the Kwame Nkrumah University of Science and Technology-Komfo Anokye Teaching Hospital Committee on Human Research, Publications, and Ethics (KNUST-KATH CHRPE), and administrative clearance was obtained from the Hohoe Municipal Health Directorate. Additional permission to undertake the study was sought from the community leaders and gatekeepers, and in cases where the selected respondent was married, permission was sought from her husband. Eligible study participants were enrolled into the study only after they had verbally consented.

**Table 1:** Study variables

| Variable | Description/operational definition | Range & value |
|---|---|---|
| Induced abortion | Termination of pregnancy by any means or person other than spontaneously (excludes miscarriage) | Induced=0<br>Not induced=1 |
| Age | Completed years of life | 15-49 |
| Marital status | Legal union of a couple (are you married?) | Yes=0<br>No=1 |
| Level of education | Level of formal education attained | No formal education= 0<br>Basic up to junior high school=1<br>Secondary school or higher=2 |
| Residence | Place of usual abode as classified by the Hohoe Municipal Assembly according to population and social amenities available | Urban=0<br>Peri-urban=1<br>Rural=2 |
| Employment status | Daily occupation | Formal sector employment=0<br>Self-employed=1<br>Unemployed=2<br>Housewife=3 |
| Reasons for having abortion | Reasons as provided by respondents (one reason per respondent who had had an abortion) | |
| Providers of abortion | As named by respondents (one per respondent who had had an abortion) | |
| Abortion venues | As reported by respondents (one per respondent who had had an abortion) | |
| Abortion instruments | As reported by respondents (one per respondent who had had an abortion) | |
| Reasons for abortion as given to respondents by friends | As reported by respondents (one reason allowed per respondent whose friend had had an abortion) | |

*Analysis*

We describe the reasons given for opting for an induced abortion, as well as where the abortion was obtained and the method of termination. In addition we provide data on women who reported friends who had had an induced abortion. We began the statistical analysis with summary statistics and conducted bivariate analysis to compare women who had an induced abortion with women who did not, using chi-square test for trends. To determine significant differences between the levels of the variables, bivariate logistic regression models were used. Table 1 outlines the variables used in the statistical analyses.

# Results

*Factors influencing induced abortion*

Characteristics of the study population are shown in Table 2. Married women constituted 58.8% of the study sample, unmarried women 41.2%. The respondents' mean age was 29.9, and most had been educated up to junior high school. Almost two-thirds (64.5%) were peri-urban dwellers, 70.3% were self-employed, and nearly all (93.9%) were Christians. One-fifth (21.3%) of the sample had had an induced abortion. Women who had had an induced abortion differed significantly from those who had not in terms of age, marital status, level of education, and place of residence. Employment status did not differ significantly between women who had had an abortion and those who had not (p=0.15) (Table 2).

Among those women who had had an abortion, the most commonly given reasons were "not to disrupt education or employment" (35.6%) and "too young to bear a child" (28.7%). The commonest providers of abortion for this sample were the medical doctor (65.5%) and partners and friends (31%). The abortions were undertaken mainly at the hospital (60.9%) or at home (29.9%). Sharps or hospital instruments were the usual "instruments of abortion" (50.6%), while others used herbs or concoctions (31.0%). A little over half (52.9%) of the total study sample reported knowledge of a friend who had undergone an induced abortion. These friends reportedly had given similar reasons for the

**Table 2:** Socio-demographic factors and other characteristics of the study sample

| Variable | Induced abortion n(%) n=87 | No induced abortion n(%) n=321 | Total | Chi-square test for trend |
|---|---|---|---|---|
| **Age (years) category:** | | | | p=0.007 |
| 15-24 | 15(17.2) | 108(33.7) | 123 | |
| 25-34 | 43(49.4) | 131(40.8) | 174 | |
| 35-44 | 22(25.3) | 72(22.4) | 94 | |
| 45-49 | 7(8.1) | 10(3.1) | 17 | |
| Total | 87(100.0) | 321(100.0) | 408 | |
| **Marital status:** | | | | p=0.01 |
| Married | 41(47.1) | 199(62.0) | 240 | |
| Single | 46(52.9) | 122(38.0) | 168 | |
| Total | 87(100.0) | 321(100.0) | 408 | |
| **Education:** | | | | p=0.002 |
| No formal education | 5(5.7) | 41(12.8) | 46 | |
| Basic (up to JHS*) | 50(57.5) | 217(67.6) | 267 | |
| Secondary or higher | 32(36.8) | 63(19.6) | 95 | |
| Total | 87(100.0) | 321(100.0) | 408 | |
| **Residence:** | | | | p=0.04 |
| Urban | 8(9.2) | 51(15.9) | 59 | |
| Peri-urban | 66(75.9) | 197(61.4) | 263 | |
| Rural | 13(14.9) | 73(22.7) | 86 | |
| Total | 87(100.0) | 321(100.0) | 408 | |
| **Employment:** | | | | p=0.15 |
| Formal | 10(11.5) | 17(5.3) | 27 | |
| Self-employed | 60(69.0) | 227(70.7) | 287 | |
| Unemployed | 13(14.9) | 50(15.6) | 63 | |
| Housewife | 4(4.6) | 27(8.4) | 31 | |
| **Total** | **87(100.0)** | **321(100.0)** | **408** | |

*JHS = junior high school

abortion: "not to disrupt education or employment" (31.5%), "could not cater for a baby" (19.4%), and "partner rejected the pregnancy" (19%) (Table 3).

Bivariate logistic regression was run for factors associated with having an induced abortion (Table 4). Women aged 45 to 49 years were five times more likely to have had an abortion than those aged 15-24 (OR=5.04, CI: 1.38-17.16). Compared with married women, those who were unmarried were almost twice as likely to have had an abortion (OR=1.8, CI: 1.10-3.04). However, women without any formal education and those with basic education (up to junior high school), had a 76% (OR=0.24, CI: 0.07-0.70) and a 69% (OR=0.31, CI: 0.18-0.54) reduction in the odds of having had an abortion, respectively, when compared with women who had at least a high school education. Peri-urban residents were 1.9 times more likely than rural residents to have had an abortion (OR=1.88, CI: 0.95-3.94). Compared with the self- employed, women in formal employment were twice as likely to have had an abortion (OR=2.22, CI: 0.86-5.45) (Table 4).

**Table 3:** Contextual factors related to abortion seeking among women who reported an induced abortion in Hohoe

| Factor | Frequency (n=87) | % |
|---|---|---|
| **Reasons for having an abortion:** | | |
| Not to disrupt education or employment | 31 | 35.6 |
| Too young to bear a child | 25 | 28.7 |
| Could not afford to cater for a baby | 13 | 14.9 |
| Partner refused to accept pregnancy | 8 | 9.2 |
| Others (to delay, postpone, or stop childbearing) | 10 | 11.5 |
| **Total** | 87 | 100 |
| **Providers of abortion**: | | |
| Medical doctor | 57 | 65.5 |
| Partner and or friends | 27 | 31 |
| Others (nurses, TBAs) | 3 | 3.5 |
| **Total** | 87 | 100 |
| **Abortion venues:** | | |
| Hospital | 53 | 60.9 |
| Home | 26 | 29.9 |
| Maternity home | 5 | 5.7 |
| Others (herbalist) | 3 | 3.5 |
| **Total** | 87 | 100 |
| **Abortion "instruments":** | | |
| Sharps or hospital instruments | 44 | 50.6 |
| Herbs or concoctions | 27 | 31 |
| Orthodox medicines[a] | 9 | 10.3 |
| Manual vacuum aspiration | 7 | 8.1 |
| **Total** | **87** | **100** |
| **Reasons for having an abortion as reported to respondents by friends[b] (n=216)** | | |
| Not to disrupt education or employment | 68 | 31.5 |
| Could not afford to cater for a baby | 42 | 19.4 |
| Partner rejected pregnancy | 41 | 19 |
| Was too young to have a child | 22 | 10.2 |
| To increase interval between childbirths | 15 | 6.9 |
| Low income | 14 | 6.5 |
| To postpone childbearing | 10 | 4.6 |
| Do not want any more children | 4 | 1.9 |
| **Total** | **216** | **100** |

[a]Misoprostol; [b]n=216 is total number of respondents within study sample who had a friend who had had an abortion.

# Discussion

Accurate data on induced abortion are difficult to come by, particularly in settings where the procedure is illegal or highly stigmatized. Where abortion is restricted by law, no official data would be available and efforts to collect such data through surveys are unlikely to yield accurate and reliable results[28]. Even though abortion is legal in Ghana under most circumstances, data on induced abortion are unreliable; poor record keeping and the reluctance of health workers to accurately classify abortion types, together with other factors render hospital data inadequate for estimation of induced abortion[10]. The fact that abortion is highly stigmatized in the Ghanaian society means that a lot of underreporting can be expected, particularly when questions require individuals to report on multiple abortions.

Among the women in our sample, nearly a fifth reported an induced abortion (21.3%), a rate similar to that reported by other studies in Ghana[14,16,17]. Ahiadeke found a much lower prevalence (1.7%) in a study of 18,301women aged 15-49 in four regions of Ghana[10], while Adanu et al. found a much higher rate (31%) in a hospital-based study population[19]. The Ghana Maternal Health Survey 2007 reported that 15% of women had had at least one induced abortion in their lifetime[11]. Abortion rates estimated for West Africa are among the highest worldwide[2,5].

Age, education level, and marital status of women have been found to be related to the decision to abort pregnancies, particularly unplanned and/or unwanted ones[19]. Our results, based on bivariate analysis show that older women who were not married, had a higher than secondary education, lived in peri-urban areas, and had formal employment were more likely to have had an

induced abortion. It is possible that for these women, the need to keep their formal employment status to earn a living was important in the decision to have an abortion.

**Table 4:** Bivariate logistic regression of having an induced abortion among women in Hohoe  (n=408)

| Variable | OR | 95% CI |
|---|---|---|
| **Age (years) category:** | | |
| 15-24 (reference) | 1.00 | |
| 25-34 | 2.37 | 1.20-4.82 |
| 35-44 | 2.20 | 1.01-4.87 |
| 45-49 | 5.04 | 1.38-17.16 |
| **Marital status:** | | |
| Married (reference) | 1.00 | |
| Single | 1.83 | 1.10-3.04 |
| **Education:** | | |
| No formal education | 0.24 | 0.07-0.70 |
| Basic (up to JHS*) | 0.31 | 0.18-0.54 |
| Secondary or higher (reference) | 1.00 | |
| **Residence:** | | |
| Urban | 0.88 | 0.29-2.49 |
| Peri-urban | 1.88 | 0.95-3.94 |
| Rural (reference) | 1.00 | |
| **Employment:** | | |
| Formal | 2.22 | 0.86-5.45 |
| Self-employed (reference) | 1.00 | |
| Unemployed | 0.98 | 0.46-1.99 |
| Housewife | 0.56 | 0.14-1.70 |

*JHS = junior high school

Various studies report differently on the relationship between age and induced abortion; some studies found that women over age 30 were significantly less likely than younger women to have an abortion[17,29,30]. Other studies in Ghana, Kenya, Nigeria, and Ethiopia found the inverse to be true[10,11,19,31,32,33]. We found that the older the age group of a woman, the more likely she was to have an abortion. In fact, women aged 45-49 were over five times more likely to have had an abortion than women aged 15-24. In many settings, it is believed that distribution by age of abortion is bimodal— women in the youngest age groups who want to delay childbearing and women at the end of their childbearing years, who believe they cannot get pregnant at that age, are most likely to get induced abortions. One explanation may be the perceived need or lack thereof, for contraception at the end of childbearing years, or lack of awareness or unmet need for contraception at the youngest age groups.

In view of the generally pro-natalist views expressed in many communities in Ghana and the stigma associated with pregnancy outside marriage, married women would be expected to have fewer abortions than single or out-of-union women. In Ethiopia, married women who were peri- urban or urban residents and without formal education were more likely to have an abortion[33], while in Kenya, married women who were rural residents and housewives were more likely to have sought an abortion[31]. In Hohoe, single women were significantly more likely to have had an abortion when compared with married women[10,19,29].

In Hohoe, the lower a woman's level of education, the less likely she was to have had an abortion[17]. National-level data confirm a strong link between education and experience of abortion— women with no education are the least likely to have abortions in Ghana[11]. These findings differ from those in other studies[10,19,33]. The women in Hohoe with a low level of education may not know where to go to have an abortion.

Differences in the economic status of women reflected by the type of employment they are engaged in influences abortion decisions[18]. Women in formal employment (employed by others) who are earning a regular income may be influenced by their status in the decision to keep or terminate an unintended pregnancy. One-third of the women in Hohoe who had had an abortion did so in order not to disrupt their education or employment[10,31,34]. Other studies reported differently[19].

Women seek abortion in all sorts of places— hospitals, at home, and in traditional settings. Most women seeking an abortion in Hohoe went to doctors who used hospital instruments to perform the abortions in hospitals[11]; similar findings are reported in Nigeria and Uganda. However, urban women in Uganda, Burkina Faso, and Cote d'Ivoire are much more likely than rural women to use the services of doctors[3]. In Hohoe, urban women are more likely than rural women to be using a contraceptive and hence have a lower need for an abortion.

In Africa, many women who do not want a child in the next two years or who want no more children are not using any method of contraception. In Hohoe, 58.2% of such women were not using a contraceptive (data not shown).

A limitation of this study is that we did not try to explore whether the women had had more than one abortion and their reasons. In addition, it would have been interesting to determine the proportion of women who had had an abortion and were sexually active but were still not using contraceptives. Last, our results are based on bivariate regression analysis and do not include controls for other factors.

## Conclusion

Policies and programmes need to provide affordable avenues for safe and comprehensive abortion services, particularly for single, peri-urban residents older than 25 who have formal employment. Improving access to effective contraception is the

surest way to prevent mistimed and unwanted pregnancies, thus greatly reducing the need for induced abortion. Women who do seek induced abortion should be encouraged to find safe means of termination in order to decrease postpartum hospital admissions and the risk of maternal mortality.

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