

Post abortion contraceptive uptake and continuation rates at Korle-Bu Teaching Hospital, Accra, Ghana

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Abstract

Introduction: The tragedy of unsafe abortion is that it is one of the easily preventable causes of maternal death.

In Ghana, the maternal mortality ratio was 319/100,000 live births. (WHO, 2015) of which 11% of these were abortion related. 13% of abortions had complications including chronic pelvic pain, offensive discharge and uterine perforation

In spite of the above, this study sought to find out factors that affect uptake and continuation rates of post abortion contraception at the Korle Bu Teaching Hospital.

Methods: This was a longitudinal study using interviewer administered questionnaire of women reporting for elective termination of pregnancy or for uterine evacuation for incomplete abortion either induced or spontaneous. Participants were followed up by telephone calls at end of 1, 3 and 6 months. Simple proportions was calculated for post-abortion contraception uptake and continuation rates. Multiple logistic regression was used to determine factors associated with uptake and continuation rates. A p-value of less than or equal to 0.05 was considered as statistically significant.

Results: The study included 338 participants. The overall uptake was 132 (39.1%). Eighty-seven (25.7%) on discharge and 45 (13.4%) additional uptake within one month of the follow-up. Continuation rate at 6 months was 68.9%. Significantly associated factors were educational level, employment and marital status, gravidity/parity and previous contraceptive use.

Conclusion: Post-abortion contraception uptake of 39.1% with 68.9% continuation rate at 6 months found in this study is low. This implies high unmet need for post-abortion contraception that needs to be addressed urgently.

Keywords: Post-Abortion; Contraception Uptake; Continuation Rate; Unmet Need

1. Introduction

Maternal health is one of the main health challenges in the world today and reducing maternal mortality rates by three-quarters by the year 2015, was one of the targets of the millennium development goal five (MDG 5). This is one area in which the least progress was made within developing countries where incidentally highest maternal mortality ratios in the world occur. It is worth noting that a significant amount of these deaths are abortion related. Complications from unsafe abortions pose a serious threat to women's lives and health.

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This tragedy of unsafe abortion is the one of the easily preventable cause of maternal death¹. In many cases these unsafe abortions result in long-term consequences such as chronic pelvic pain, pelvic inflammatory disease, tubal occlusion and secondary infertility². In 2011, an estimated 46 million induced abortions are performed annually, about 20 million of them unsafe, 95% of which occur in the developing world². Unsafe abortions accounts for 13% of maternal deaths with case fatality ratios estimated to be about 367 deaths/ 100,000 unsafe abortions which is hundreds of times higher than that for safe and legal abortions in developed nations^{2, 3}.

Among Ghanaian women who have had an abortion in the five years preceding the 2007 maternal health survey, 13% experienced one or more health problems including chronic pelvic pain, offensive discharge and uterine perforation⁴.

In Ghana, the maternal mortality ratio according to the World Health Organization (WHO) for 2015 is 319/100,000 live births. It is worth noting that, 11% of these were abortion related. Amongst the millennium development goals was to reduce mortality to 185/100,000 live births by 2015⁴.

A hospital based study found induced abortion rates as high as 31%⁵. Another study in four regions of Ghana, found it to be 1.1% amongst the 18301 women involved in that study⁶. Currently, it is estimated that about 15 induced abortions occur per 1000 women between the ages of 15-44years and 45% of these are unsafe⁷. Thus since 2006, when comprehensive abortion care services have been permitted by law, maternal mortality due to abortions have decreased from 22-30% to 11%⁴. Contraception uptake within the period has remained the same at 24-25% over this period although knowledge of contraception is almost 100%.⁸ One of the main interventions to reduce this problem would be to have easy access to contraception. Recent studies have shown that 69% of women believe that the abortion environment is the most appropriate one to receive information on contraception and two-thirds of women seeking abortion would want to leave with a contraceptive method in hand⁹. Following an induced abortion of an unwanted pregnancy, women tend to be highly motivated to initiate a safe and reliable form of contraception, however many are unable to return for the post abortion check up¹⁰.

Moreover studies have also shown that ovulation can occur within 2-3weeks after early pregnancy termination¹¹. Thus the provision of post abortion contraceptive counseling and services is an important component of the post abortion care¹². An evaluation of post abortion services worldwide confirmed that family planning is a weak component of post abortion care¹³.

This scenario is most likely to lead to increased numbers of unintended pregnancies and repeat abortions and so clearly effective contraception would help reduce the risk of unintended pregnancies and subsequent repeat abortions.

Post abortion contraception has a huge potential to reduce maternal morbidity and mortality associated with repeat abortions and addressing the unmet need for post abortion contraception is much easier to confront compared to that of the overall unmet need for contraception. In populations of high fertility rates as in the developing countries dealing with post abortion and post-partum contraception will in itself decrease TFR.

Knowing the levels of post-abortion contraception uptake and continuation rates as well as knowing and understanding the factors associated with these, is important in any strategy formulation to address any high unmet need of post-abortion contraception, hence this study.

2. Methods

This was a longitudinal study of women who reported to the Department of Obstetrics and Gynaecology of Korle-Bu Teaching Hospital in Accra, Ghana for elective termination of pregnancy or for management of incomplete abortion. Women were included if they were clinically stable, had reliable phone contact and gave informed consent.

Using the formula $n = Z^2 p (q) / d^2$ and contraceptive prevalence of 34.3% in Ghana (World Bank, 2011), the minimum sample size of 338 were recruited consecutively as they reported for care and met the criteria for inclusion.

Data was collected using interviewer-administered pretested structured questionnaire and information collected besides socio-demographic and obstetric characteristics included history of contraceptive use, prior contraceptive counselling and uptake, timing of uptake, types of methods taken and continuation and discontinuation up to 6 months follow-up. The first part of the questionnaire was administered in person after counselling by trained nurses before the appropriate intervention either medical abortion or manual vacuum aspiration was carried out and the second part administered at one, three and six months follow up by telephone calls.

Data was collected over a twelve-week period from 1st December 2014 to 28th February 2015 and the follow up done for a period of six months from 1st March 2015 to 31st August 2015.

There was a follow up period for all participants by telephone calls at one, three and six months.

Ethical approval for the study was obtained from the University of Ghana Medical School Ethical and Protocol Review Committee. (MS-Et/M.1-P 3.4/2014-2015)

2.1. Data management and analysis

The data obtained was entered into an Excel spreadsheet (Microsoft Company, USA) and analyzed using Statistical Package for the Social Sciences, version 16, (SPSS 16.0). Continuous variables was analyzed using means and frequencies whilst categorical variables analyzed using Chi square statistic. Logistic regression was used to find the association between the separate independent variables, uptake and continuation rates and a p-value of less than 0.05 was considered as significant. The results were presented in text and tables.

3. Results

Three hundred and thirty eight women (338) participated in the study. Two hundred and eighty-eight (85.2 %) had elective terminations with 50 (14.8%) having had miscarriage. The overall post-abortion contraceptive uptake was 132 (39.1%). Eighty-seven (25.7%) of the participants had a contraceptive method provided on discharge, 45 women had a method provided within the initial 4 weeks of the follow-up period. There was no uptake between 1 and 6 months follow-up period. Continuation rate was 68.9% (91/132) at 6 months post-abortion.

The youngest participant was 16 years and the oldest was 45 years. The mean age was 29.9 years and the most of them were between 26-30 years.

Most, 175(51.9%) of the participants were married. Most, 211 (62.5%) of the participants had at least secondary level education and 41 (12.1%) had no formal education. All of the participants were urban dwellers. Most, 289 (87.0%) were Christian and 44 (13.0%) were Moslems. Majority, 232 (70.1%) were self-employed whilst 44 (13.3%) were unemployed.

Table 1 and 2 below shows the summary of the sociodemographic characteristics of the participants and its association with postabortion contraceptive uptake respectively. There was significant association between contraceptive uptake, marital status ($p=0.005$), educational level ($p=0.003$), and occupation ($p=0.003$).

Table 1 Sociodemographic Characteristics of Participants (N=338)

| Variable | Frequency | Percentage (%) |
|----------------|-----------|----------------|
| Age group | | |
| 16-20 | 14 | 4.1 |
| 21-25 | 82 | 24.3 |
| 26-30 | 94 | 27.8 |
| 31-35 | 72 | 21.3 |
| 36-40 | 66 | 19.5 |
| 41-45 | 10 | 3.0 |
| Marital status | | |
| Married | 175 | 51.9 |
| Single | 100 | 29.7 |
| Cohabitation | 63 | 18.4 |

| | | |
|-------------------|-----|------|
| Educational level | | |
| None | 41 | 12.1 |
| Basic level | 86 | 25.4 |
| Secondary level | 155 | 45.9 |
| Tertiary level | 56 | 16.6 |
| Occupation | | |
| Salaried worker | 55 | 16.7 |
| Self-employed | 239 | 70.0 |
| Unemployed | 44 | 13.3 |
| Religion | | |
| Christianity | 294 | 87.0 |
| Islam | 44 | 13.0 |

Table 2 Relationship between Sociodemographic Characteristics and contraceptive uptake. (N=338)

| Variable | Contraceptive uptake | | | |
|-------------------------|----------------------|-----------------|--------|---------|
| | Yes (%) n=132 | No (%) n=206 | Chi | P-value |
| Marital status | | | | |
| Married (n=175) | 54 (40.9) | 121(58.7) | 10.436 | 0.005 |
| Single (n=101) | 47 (35.6) | 54 (26.2) | | |
| Cohabiting (n=62) | 31 (23.5) | 31 (15.1) | | |
| Educational level | | | | |
| None (n=41) | 16 (12.1) | 25 (12.1) | 11.943 | 0.003 |
| Basic level (n=86) | 20 (15.2) | 66 (32.1) | | |
| Secondary level (n=155) | 66 (50.0) | 89 (43.2) | | |
| Tertiary level (n=56) | 30 (22.7) | 26 (12.6) | | |
| Occupation | | | | |
| Salaried worker (n=55) | 30 (22.7) | 25 (12.1) | 11.943 | 0.003 |
| Self-employed (n=239) | 93 (70.5) | 146 (70.9) | | |
| Unemployed (n=44) | 9 (6.8) | 35 (17.0) | | |
| Religion | | | | |
| Christianity (n=294) | 119 (90.2) | 175 (85.0) | 1.921 | 0.187 |
| Islam (n=44) | 13 (9.8) | 31 (15.0) | | |

Table 3 shows the relationship between the obstetrics characteristics (gravidity and parity) of the women and uptake of post abortion contraception.

Though the modal gravidity was four most of participants were nulliparous.

There was significant association between gravidity, parity and the uptake of post abortion contraception, ($p=0.005$, <0.001). Where those with higher number of pregnancies irrespective of outcome were more likely to choose a method and those who had not delivered before.

There was no significant association between previous termination of pregnancy or miscarriage, how the current or index pregnancy ended and uptake of post abortion contraception.

Table 3 Obstetrics characteristics (gravidity and parity) and uptake of post abortion contraception (N=338)

| Variable | Contraception uptake | | | |
|-----------|----------------------|------------------|--------|---------|
| | No (%) n=206 | Yes (%) n=132 | Chi | P-value |
| Gravidity | | | | |
| 1 | 32 (15.6) | 23 (17.4) | 12.681 | 0.005 |
| 2 | 73 (35.4) | 25 (18.9) | | |
| 3 | 47 (22.8) | 31 (23.5) | | |
| 4+ | 54 (26.2) | 53 (40.2) | | |
| Parity | | | | |
| 0 | 85 (41.3) | 30 (22.7) | 30.226 | <0.001 |
| 1 | 33 (16.0) | 33 (25.0) | | |
| 2 | 64 (31.0) | 28 (21.2) | | |
| 3 | 23 (11.2) | 40 (30.3) | | |
| 4+ | 1 (0.5) | 1 (0.8) | | |

Overall 144, (42.6%), of the participants had at least one previous termination of a pregnancy. Of the 288 elective terminations, 210 (62.1%) had it as comprehensive abortion care (CAC) in a clinic setting as compared to 78 (23.1%) that were self-induced abortion.

The commonest agent used in the self-induced abortions was misoprostol (Cytotec).

Table 4 Other obstetric characteristics of the participants. (N=338)

| Variable | Frequency | Percentage (%) |
|---------------------------|-----------|----------------|
| Previous miscarriage | | |
| Yes | 65 | 19.2 |
| No | 273 | 80.8 |
| Previous induced abortion | | |
| Yes | 144 | 42.6 |
| No | 194 | 57.4 |
| Current (Index) Abortion | | |
| Miscarriage | 50 | 14.8 |
| Elective termination | | |
| CAC | 210 | 62.1 |
| Self-induced | 78 | 23.1 |

| | | |
|--------------------------------|----|------|
| Agents used for self-induction | | |
| Cytotec | 61 | 78.2 |
| Concoction | 17 | 21.8 |

Majority of the women, 227(67.2%) had previous history of contraceptive use with 56 (16.6%) of the participants were using contraceptive methods within the 6 months preceding the just ended pregnancy. The two commonly used type of contraception by participants, were the oral contraceptive pill [35 (62.5%)] and condoms [17 (30.56%)].

Of those who used contraception within six months of the just ended pregnancy, 57.1% discontinued for various reasons including wanting to conceive and side effects experienced.

Majority of the women, 282 (83.4%) were not on any form of contraception within the last six months preceding the just ended pregnancy. The fear of side effects and wanting to conceive were the commonest reasons given for non-use.

Table 5 illustrates the contraceptive history of the participants, the types and the reasons for non-use and discontinuation.

Table 5 Contraceptive history of the participants

| Variable | Frequency | Percent (%) |
|--|-----------|-------------|
| Previous history of modern contraception use (N=338) | | |
| Yes | 227 | 67.2 |
| No | 111 | 32.8 |
| Reasons for non-use (n=111) | | |
| Wants to conceive | 39 | 35.2 |
| Dislike of methods | 31 | 27.9 |
| Partner disapproval | 3 | 2.7 |
| Fear of Side effects | 38 | 34.2 |
| Contraception use before just ended pregnancy (within last six months) (N=338) | | |
| Yes | 56 | 16.6 |
| No | 282 | 83.4 |
| Types of contraception used (n=56) | | |
| Condoms | 17 | 30.6 |
| Pills | 35 | 62.5 |
| Emergency contraception (postinor) | 4 | 6.9 |
| Contraception discontinuation prior to just ended pregnancy (n=56) | | |
| Yes | 32 | 57.1 |
| No | 24 | 42.9 |

Table 6 Previous contraceptive history of the participants (continued)

| Reasons for discontinuation (n=32) | | |
|---|----|------|
| Side effects | 8 | 25.1 |
| Wanted a baby | 14 | 43.7 |
| Dislike of methods | 5 | 15.6 |
| Method failed | 4 | 12.5 |
| Partner Disapproval | 1 | 3.1 |

There was a significant association between post abortion contraception uptake and the following variables: history of contraception use ($p=0.025$) as well as contraception use before the just ended pregnancy ($p=0.007$). However there was no significant association between the reasons for termination, partner involvement in the decision to terminate and uptake of post abortion contraception.

It was found that after counselling, almost half of the participants 166 (49.1%) chose short acting reversible contraceptive methods while 17 (5.0%) chose long acting reversible contraceptive (LARC) methods with 155 (45.9%) not making any choice. The method preference in descending order was as follows; male condoms [115 (62.8%)], injectable [44 (24.0%)], the pill [12(6.6%)], the intrauterine device IUD [8(4.4%)] and the subdermal implant [4 (2.2%)].

Though at the end of counseling 183 (54.1%) of the participants had indicated their preferred contraceptive methods. Only eighty-seven (47.5%) of the participants were provided with a method of contraception after the emergency treatment or elective termination before leaving the facility. The common reason given for non-provision of a method on discharge was the patient no longer interested in any method (72.9%) and lack of funds (27.1%).

In the 6 month follow-up period 45 participants chose a method of contraception at different times within a month after leaving the hospital. Sixteen participants who had not taken up any method were lost to follow up. There was no new uptakes beyond one month of follow-up.

Table 7 below shows the trend of continuation rates over the study period of 6 months.

Table 7 Continuation Rates during six month follow up period (N=132)

| Method still used | First month Frequency (%) | Third month Frequency (%) | Sixth month Frequency (%) |
|--------------------------|----------------------------------|----------------------------------|----------------------------------|
| Yes | 95 (72.0) | 91 (68.9) | 91 (68.9) |
| No | 37 (28.0) | 41 (31.1) | 41 (31.1) |

Using logistic regression, women in the age group of 30-34 years were two times more likely to continue with the method.

Similarly, women with prior history of contraception use were four times more likely to continue using the method whilst those with religious and cultural beliefs against contraception were three times less likely to continue with the method as seen in Table 8.

Having been satisfied with the family planning unit, most of the women, 126 (95.7%) would recommend our unit for anyone seeking contraception.

Table 8 Logistic Regression of Continuation Rates

| Characteristics | p-value | Odd Ratio (OR) |
|------------------------------|-----------|----------------|
| Age group | | |
| 25-29 | Reference | |
| 15-19 | 0.999 | 20.36 |
| 20-24 | 0.822 | 0.391 |
| 30-34 | 0.001 | 2.656 |
| 35-39 | 0.047 | 1.246 |
| 40-45 | 1 | 21.478 |
| History of Contraception Use | 0.001 | 4.096 |
| Religious/Cultural Benefits | 0.003 | 3.375 |
| Counselling | <0.001 | 2.441 |

4. Discussion

In this study the overall post abortion contraceptive uptake rate for this study was 39.1%. This is lower than the 89% and 68% found in Tanzania and Ghana respectively. ^{14,15}. In the Tanzanian study population was mainly cases with unsafe abortion cases which could in itself be a motivation to use contraception, including the probability of intense counselling for such patients. However the higher uptake in another tertiary centre in the same country by is difficult to explain, except for the fact that in the Opoku et al¹⁵ study in Ghana only 0.8% of cases were, with 9.0% induced(self) whereas in the current study elective(CAC) terminations made up 62.1% of cases, with 23.1% self-induced. It is expected that CAC would rather be associated with an increase in post -abortion contraceptive uptake but it could be speculated that this low up may be attributable to clients been comfortable with safe terminations than the myths and misconceptions of contraception affecting future fertility and therefore declining to use post-abortion contraception. The other plausible reason could be financial in the sense that after paying for elective terminations not covered by the National Health Insurance Service (NHIS) are unable to pay for contraception of their choice since only 25.7% of those who made of contraceptive choice finally got it on discharge after treatment. Spontaneous or self-induced abortions treatment is covered by NHIS and this could have an association with postabortion contraception uptake though the study did not explore this. A mixed method study of both clients and providers made elucidate the factors associated with this current finding.

The continuation rate at first month was 72.0 % and at the end of the sixth month was 68.9%. This is lower than the continuation rate in the study done in Tanzania where about 80% were still using contraception at the end of 12 months¹⁴. This could be due to partner disapproval of contraceptive use and side effects, which were the commonly stated reasons for discontinuation in this study. This could also be due to the 3 monthly personal follow up visits employed in the study in Tanzania for up to 12 months as opposed to the telephone follow up used in this study. The personal follow up would help address the concerns better and encourage continuation.

In this study, the sociodemographic characteristics significantly associated with uptake were marital status educational level and occupation.

Married women were less likely to choose a contraceptive method than single women or women who were cohabiting. These findings are consistent with those from the study by Ivankovich et al ¹⁶, in which being married was associated with the lower contraceptive use. It is still common knowledge that married are uncomfortable using contraception without the knowledge and consent of their partners It is however in contrast to a study in Kumasi by Opoku et al¹⁵ where contraception acceptance was independent of the marital status¹⁵. In the Opoku et al¹⁵ study the single women made up 50.1% of participants whereas in the current study single women made up 29.7% which could be related to the difference in the findings.

Higher educational level was found to be significantly associated with uptake of post abortion contraception as women with little or no education were less likely to choose a contraceptive method.. It is consistent with, Ivankovich et al ¹⁶who found out that lower educational level, higher parity and poverty levels were less likely to use no method or

inconsistently use a method¹⁶. This is however in contrast with findings of a study by Opoku et al¹⁵ where contraception acceptance was independent of educational level. This contrast is probably due to the fact that only 18% of participants in the Opoku et al¹⁵ study had below secondary education compared to 37.5% in the current study. Being employed was also significantly associated with increased uptake as unemployed women were less likely to choose a contraceptive method. It is consistent with, Ivankovich who found out that poverty levels were less likely to use no method or inconsistently use a method¹⁶. This study did not find a significant association between age, religion and post abortion contraception uptake.

In this study, there was significant association between the number of previous pregnancies irrespective of outcomes, the number of deliveries and uptake of post abortion contraception. Women with four or more pregnancies irrespective of outcome were more likely to choose a contraceptive method than those with lower number. This agrees with a study by Ivankovich in which higher parity was associated with lower contraceptive use¹⁶. These findings could be due to the fact most of the women with high fecundity being keener on preventing unintended pregnancies. Also nulliparous women less likely to choose a method, could be due the myths that contraception compromises future fertility.

Though majority, 67.2% had previously used modern contraceptive method, only a few, 16.6% were on contraception for varying periods up to six months before the index pregnancy in this study. Kavanaugh et al also had similar findings in their study where 71% of participants had used some form of contraception 3 months before the abortion⁹. Clearly, the majority of the women, 83.4% were not on any form of contraception before the just ended pregnancy similar to findings by Opoku et al¹⁵. Rasch et al also had similar findings¹⁴. This proportion of women not on contraception was high and this is consistent with the high national unmet need of contraception of 35%⁸. There was significant association between history of contraception use and uptake of post abortion contraception. Those with a history of contraceptive use were more likely to choose a method after an abortion, similar to findings by Kavanaugh et al⁹. In clinical practice previous history has always been a risk factor for recurrence and contraceptive use is no exception unless the experience was negative since this is behavioural.

Majority of the participants had no cultural or religious beliefs that prohibited the use of contraception. A few, 22.8% had religious or cultural beliefs that would not make them choose any modern method of contraception as they perceived contraception to be bad. The family planning providers duly respected their beliefs. Becker et al in their study had similar findings where no one felt pressured to take a contraceptive method¹⁷. There was significant association between having religious or cultural beliefs against contraception and uptake of contraception. Those with these beliefs were less likely to choose a modern method of contraception.

Most of the participants in this study had a preference for short-term methods; only 5% wanted a long-acting reversible method (LARC). This is similar to findings by Opoku et al¹⁵ where the short-term methods such as pill, condoms and injectable were the often chosen and the long acting such as the IUD and the implant were the least chosen types. Kavanaugh et al⁹ also found out black women compared to white women were substantially less likely to choose LARC.

About half of the women who had a method were still using the method at 1, 3 and 6 months. This is similar to a study done in Tanzania¹⁴. Within the first month follow-up review, 45 more participants had a method provided which is in contrast to other studies where there was no secondary uptake recorded^{9,14,15,17}.

The proportion of women who discontinued contraception in this study on account of various reasons at the end of six months was high, 31.1 %. However, it is similar to the study in Tanzania where 40% discontinued contraception¹⁴. It is higher than the documented rates of 7-27% that represents women who stop contraception within a year of starting due to quality of service¹⁸. It could also be due to the method of follow up by telephone that was used in this study as opposed to personal follow up which would enable good client provider relationships so concerns and problems could be addressed properly and most likely lead to a higher continuation rate. Also the duration of follow-up varied in the different studies and a study comparing the follow-up duration could provide trends helpful in when to tailor off re-counselling or follow up if yield will to small.

5. Conclusion

Post-abortion contraception overall uptake was 39.1%, with 25.7% discharged with a method and another 13.4 % being on a method within the first month after discharge. This is suggestive of a high unmet need for post-abortion contraception. At 6 months the continuation rates was 68.9%. The synergy of low uptake and low continuation rates implies higher unintended and probably unwanted pregnancy likely to translate to abortions and unsafe abortions.

Formal education, being employed, previous contraceptive use, high gravidity/parity were associated with increase post-abortion contraception uptake and continuation rates at 6 months.

Limitations of the study

The addition uptake after discharge and continuation rates of contraceptive were determined by telephone calls hence it was difficult to verify actual use of the methods.

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on request

Compliance with ethical standards

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Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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