Receiving abortion services at nongovernmental health facilities as a significant variable for postabortion family planning utilization: a comparative cross-sectional study

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BACKGROUND: Postabortion family planning is a major primary prevention strategy for unwanted pregnancies at which contraceptive use reduces approximately 230 million births every year worldwide. However, evidence that assesses postabortion family planning utilization and associated factors among women who received abortion services at governmental and nongovernmental health facilities is limited.

OBJECTIVE: This study aimed to compare the rates of postabortion family planning utilization and associated factors among women who received abortion services at governmental and nongovernmental health facilities.

STUDY DESIGN: A comparative cross-sectional study design was employed among 324 women who received abortion services. A systematic sampling technique was used to select the study participants, and data were collected by face-to-face interview using a structured questionnaire. Data were cross-checked, coded, and entered into EpiData (version 3.1; The EpiData Association, Odense, Denmark) and exported to Statistical Package for Social Sciences (version 25; IBM Corp, Armonk, NY) for analysis. Descriptive statistics, such as frequency, proportion, and mean with standard deviation, were computed. The association between independent variables and postabortion family planning utilization was made using a binary logistic regression model. Adjusted odds ratio with its 95% confidence interval was used as a measure of association, and variables with a P value of ≤0.05 were considered significant.

RESULTS: The rate of postabortion family planning utilization among women who received abortion services was 71.91% (95% confidence interval, 66.74—76.56). The rates of postabortion family planning utilization at governmental and nongovernmental health facilities were 55.6% (95% confidence interval, 47.75—63.10) and 88.27% (95% confidence interval, 82.27—92.43) respectively. Being counseled about contraceptive use (adjusted odds ratio, 33.130; 95% confidence interval, 6.089—180.243), not needing near-future pregnancy (adjusted odds ratio, 3.350; 95% confidence interval, 1.541—7.282), and receiving abortion service at nongovernmental health facilities (adjusted odds ratio, 4.732; 95% confidence interval, 1.900—11.787) were significantly associated with postabortion family planning utilization.

CONCLUSION: The rate of postabortion family planning utilization was lower among women who received abortion services at governmental health facilities than among women who received abortion services at nongovernmental health facilities. Counseling about contraceptive use, need for near-future pregnancy, and type of health facility were significantly associated with postabortion family planning utilization. Therefore, efforts are needed to promote and strengthen the counseling of contraceptive use and birth spacing of women who are receiving abortion services.

Key words: abortion services, associated factors, governmental health facilities, nongovernmental health facilities, postabortion family planning utilization

Introduction
Abortion is the ending of pregnancy by removing a fetus or embryo before it can survive outside the uterus.1,2 Postabortion family planning (PAFP) is the use of family planning methods within 48 hours after abortion service is provided.1,3,4 PAFP is provided to clients or individuals after a spontaneous abortion or an induced abortion.3−7 It is a time when women are highly motivated to avoid or delay another abortion.1,2
Why was this study conducted?
A few studies have been conducted on postabortion family planning utilization (PFPU) and associated factors. However, evidence concerning PFPU and associated factors among women who received abortion services at governmental and nongovernmental health facilities is limited.

Key findings
The rate of PFPU was lower among women who received abortion services at governmental health facilities than among women who received abortion services at nongovernmental health facilities. Not needing near-future pregnancy, being counseled about contraceptive use, and receiving abortion service at nongovernmental health facilities were positively associated with PFPU.

What does this add to what is known?
The study has compared the rates of PFPU among women who received abortion services at governmental and nongovernmental health facilities. Moreover, receiving abortion services at nongovernmental health facilities was positively associated with PFPU.

Materials and Methods
Study design and population
A comparative cross-sectional study design was employed among women who received abortion services at governmental and nongovernmental health facilities of Dessie City from March 1, 2021, to May 30, 2021. The source populations were all women who received abortion services at governmental and nongovernmental health facilities of Dessie City, and the study populations were all women who received abortion services at the selected governmental and nongovernmental health facilities of Dessie City and who were available during the time of data collection. All women who received abortion services in the selected health facilities during the data collection were included in the study. Participants who were unable to respond because of a serious illness during data collection time were excluded from the study.

Sample size determination
The sample size was calculated using the Epi Info (version 7.2.4.0; Centers for Disease Control and Prevention, Atlanta, GA) by taking the assumption of the percentage of PFPU among women who completed college education as 83.5%, ratio of exposed to unexposed as 1:1, adjusted odds ratio (AOR) as 2.59, power 80%, and 95% confidence level. Moreover, considering finite population correction and 10% nonresponse rate, the final sample size became 324. Of 10 governmental and nongovernmental health facilities in Dessie City that provide abortion services, 4 (40%) were included by lottery method. The calculated sample size was equally allocated to governmental and nongovernmental health facilities as a 1:1 ratio was applied in the current comparative cross-sectional study. The sampling intervals for governmental and nongovernmental health facilities were 2 and 5, respectively. Hence, in the current study, a systematic sampling method was applied. The starting point was selected randomly using the lottery method. The starting point for governmental health facilities was 1, and every 2 intervals, women were included. The
starting point for nongovernmental health facilities was 3, and every 5 intervals, women were included.

**Data collection procedures**
The data were collected using a structured and pretested questionnaire by interviewer-administered technique. The participant exit interview was conducted at a point where the service users were ready to be discharged. Of note, 6 midwives with a bachelor’s degree in midwifery and 2 healthcare workers with a master’s degree in public health were hired as data collectors and supervisors, respectively, during the data collection process. The questionnaire was prepared in English and then translated into local the Amharic language. The Amharic version was again translated back to the English version to check for consistency of meaning. Data collectors and supervisors were trained for 2 days on the objective of the study, the content of the questionnaire, data collection procedures, how to help the study participants, and ethical issues. The questionnaire was pretested on 5 samples. Based on the findings of the pretest, modification of the tool was made. During the data collection period, the collected data were examined continuously daily for completeness by the principal investigator and supervisors in the respective health facilities.

**Data processing and analysis**
Data were cross-checked, coded, and entered into EpiData (version 3.1; The EpiData Association, Odense, Denmark) and exported to Statistical Package for Social Science software (version 25; IBM Corp, Armonk, NY) for statistical analysis. Descriptive statistics, such as frequency, proportion, and mean with standard deviation was computed. The findings of the study were presented in texts, tables, and graphs. The model fitness was examined using the Hosmer-Lemeshow goodness of fit test, and the $P$ value was .814. Multicollinearity was checked using the variance inflation factor. The association between independent variables and PFPU was made using the bivariable binary logistic regression model, and all independent variables having $P$ value of <.25 were included in the multivariable logistic regression model. A $P$ value of <.05 and an AOR with a 95% confidence interval (CI) noninclusive of 1 were considered to determine predictors of PFPU in the final model.

**Ethical considerations**
The study was conducted per the Declaration of Helsinki. Ethical clearance was taken from the Research Ethics Committee of the College of Medicine and Health Sciences, Wollo University. Letter of permission was obtained from each governmental facility and nongovernmental health facility that were included in the study. After explaining the objective of the study, written informed consent was obtained from women before data collection. Participants were informed that participating in the study was voluntary and their right to withdraw from the study at any time during the interview was assured. Privacy of the client and confidentiality of information they gave were secured by interviewing in a private room and not using personal identifiers, such as names.

**Results**
Here, 324 women who received abortion services participated with a response rate of 100%. The age of women ranged from 15 to 42 years, and their mean age was 25.43±5.93 years. The study indicated that 136 (84.0%), 161 (99.4%), 109 (67.0%), and 106 (65.4%) of the women at governmental health facilities were married, Amhara, Muslim, and urban residents, respectively. Furthermore, 45 (27.8%), 143 (88.3%), 79 (48.8%), and 123 (75.9%) of the women at nongovernmental health facilities were married, Amhara, Muslim, and urban residents, respectively. The average monthly incomes of women at governmental and nongovernmental health facilities were 4317.28±3141.64 and 4188.89±2985.72 Ethiopian Birr, respectively (Table 1).

**Reproductive characteristics of women**
The mean number of pregnancies of women at governmental health facilities was 2.69±1.73, whereas the mean number of pregnancies of women at nongovernmental health facilities was 2.25±1.54. Furthermore, the mean number of births of women at governmental health facilities was 1.48±1.62, whereas the mean number of births of women at nongovernmental health facilities was 0.81±1.26. The study indicated that 31 women (19.1%) at governmental health facilities and 51 women (31.5%) at nongovernmental health facilities had a history of abortion. About 109 women (67.3%) at governmental health facilities and 162 women (100%) at nongovernmental health facilities had a gestational age of ≤12 weeks (Table 2).

**Abortion, family planning, and other related characteristics**
One hundred twenty one women (74.7%) at governmental health facilities and 117 women (72.2%) at nongovernmental health facilities had ever used contraception. Approximately 146 women (90.1%) at governmental health facilities and 157 women (96.9%) at nongovernmental health facilities were counseled about contraceptive methods utilization (Table 3).

**Postabortion family utilization of women**
In the current study, the overall rate of PFPU among women who received abortion services was 71.91% (95% CI, 66.74–76.56). The rates of PFPU among women who received abortion services at governmental and nongovernmental health facilities were 55.6% (95% CI, 47.75–63.10) and 88.27% (95% CI, 82.27–92.43), respectively.

**Factors associated with postabortion family planning utilization**
Counseling about contraceptive use, need for near-future pregnancy (pregnancy within 2 years), and type of health facilities were significantly associated with overall PFPU (Table 4).
This study aimed to compare the rates of PFPU and associated factors among women who received abortion services at governmental and nongovernmental health facilities of Dessie City. In the current study, the overall rate of PFPU among women who received abortion services was 71.91%. The rates of PFPU among women who received abortion services at governmental and nongovernmental health facilities were 55.6% and 88.27%, respectively. Counseling about contraceptive use, need for near-future pregnancy, and type of health facility were significantly associated with overall PFPU.

The overall PFPU among women who received abortion services was consistent with studies conducted in Tigray and Jimma. However, this finding was higher than studies conducted in Assela, Northwest Ethiopia, Debre Birhan, and China. The possible reason for this difference might be that at nongovernmental health facilities, women might be more comfortable and expect much more privacy and confidentiality, compared with governmental health facilities. This might increase the overall PFPU in the current study. The other possible reason might be the time difference among

### TABLE 1
Sociodemographic and economic characteristics of women who received abortion services at governmental and nongovernmental health facilities of Dessie City, Northeast Ethiopia, 2021

| Variables Categories | Government (n=162) | Nongovernment (n=162) | Total (N=324) |
|----------------------|-------------------|-----------------------|---------------|
|                       | n | %  | n | %  | n | %  |
| Age (y)               |   |    |   |    |   |    |
| 15−19                 | 18 | 11.1 | 38 | 23.5 | 56 | 17.3 |
| 20−24                 | 47 | 29.0 | 53 | 32.7 | 100 | 30.9 |
| 25−29                 | 44 | 27.2 | 38 | 23.5 | 82 | 25.3 |
| 30−31                 | 26 | 16.0 | 25 | 15.4 | 51 | 15.7 |
| ≥35                   | 27 | 16.7 | 8  | 4.9  | 35 | 10.8 |
| Marital status        |   |    |   |    |   |    |
| Single                | 23 | 14.2 | 88 | 54.3 | 111 | 34.3 |
| Married               | 136 | 84.0 | 45 | 27.8 | 181 | 55.9 |
| Separated             | 1  | 0.6 | 10 | 6.2  | 11 | 3.4  |
| Widowed               | 1  | 0.6 | 6  | 3.7  | 7  | 2.2  |
| Divorced              | 1  | 0.6 | 13 | 8.0  | 14 | 4.3  |
| Ethnicity             |   |    |   |    |   |    |
| Amhara                | 161 | 99.4 | 143 | 88.3 | 304 | 93.8 |
| Tigre                 | 0  | 0.0 | 13 | 8.0  | 13 | 4.0  |
| Others                | 1  | 0.6 | 6  | 3.7  | 7  | 2.2  |
| Religion              |   |    |   |    |   |    |
| Orthodox              | 53 | 32.7 | 71 | 43.8 | 124 | 38.3 |
| Muslim                | 109 | 67.0 | 79 | 48.8 | 188 | 58.0 |
| Protestant            | 0  | 0.0 | 12 | 7.4  | 12 | 3.7  |
| Place of residence    |   |    |   |    |   |    |
| Urban                 | 106 | 65.4 | 123 | 75.9 | 229 | 70.9 |
| Rural                 | 56 | 34.6 | 39 | 24.1 | 95 | 29.3 |
| Educational status    |   |    |   |    |   |    |
| No formal education   | 39 | 24.1 | 13 | 8.0  | 52 | 16.0 |
| Grade 1−8             | 50 | 30.9 | 32 | 19.8 | 82 | 25.3 |
| Grade 9−12            | 50 | 30.9 | 54 | 33.3 | 104 | 32.1 |
| College and above     | 23 | 14.2 | 63 | 38.9 | 86 | 26.5 |
| Family size           |   |    |   |    |   |    |
| 1−4                   | 121 | 74.7 | 119 | 73.5 | 240 | 74.1 |
| ≥5                    | 41 | 25.3 | 43 | 26.5 | 84 | 25.9 |
| Average monthly income|   |    |   |    |   |    |
| ≤2000                 | 58 | 35.8 | 45 | 27.8 | 103 | 31.8 |
| 2001−4000             | 38 | 23.5 | 58 | 35.8 | 96 | 29.6 |
| >4000                 | 66 | 40.7 | 59 | 36.4 | 125 | 38.6 |

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the studies. As such, women’s awareness regarding PFPU might be increased from time to time, and in turn, this might increase the utilization in the current study.

The need for near-future pregnancy was the variable that was significantly associated with PFPU. Not needing near-future pregnancy was positively associated with PFPU. The possible reason might be to prevent near-future pregnancy; utilizing family planning could be their best solution.

The other variable, which was positively associated with overall PFPU, was being counseled about contraceptive use. The women who were counseled about contraceptive use after abortion were more likely to utilize PAFP compared with women who were not counseled. This finding was supported by studies done in Assela, Debre Birhan, and Northwest Ethiopia. The possible justification for this might be that counseled women could be aware of the importance of PFPU, such as maternal and fetal complications related to immediate pregnancy after abortion and psychological and economic preparation for future pregnancy. Moreover, being counseled on contraceptive use might help women know about the reduction of unintended pregnancy and unsafe abortion and, in turn, might increase their PFPU.

Type of health facility was the other variable significantly associated with overall PFPU. Women who received abortion services at nongovernmental health facilities were more likely to utilize PAFP compared with their counterparts. This finding was supported by a study conducted in Tigray. The possible reason for this difference might be that women expect much more privacy and confidentiality and the reason they justify for termination of pregnancy might be easily accepted at nongovernmental health facilities. In contrast, at governmental health facilities, providers might need strong justification, such as incest, maternal medical indications, and fetal deformity, to permit abortion for clients. The other possible reason might be that nongovernmental health facilities are profitable facilities and relatively costly and women might expect a better quality of service and approach and being served quickly. Moreover, the promotions and strong counseling

| TABLE 2 | Reproductive characteristics of women who received abortion services at governmental and nongovernmental health facilities of Dessie City, Northeast Ethiopia, 2021 |
| Variables | Categories | Government (n=162) | Nongovernment (n=162) | Total (N=324) |
|-----------|------------|------------------|------------------|---------------|
|           | n | % | n | % | n | % |
| Gravidity | 1 | 51 | 31.5 | 73 | 45.1 | 124 | 38.3 |
|           | 2−4 | 90 | 55.6 | 75 | 46.3 | 165 | 50.9 |
|           | ≥5 | 21 | 13.0 | 14 | 8.6 | 35 | 10.8 |
| Parity    | 0 | 57 | 35.2 | 102 | 63.0 | 159 | 49.1 |
|           | 1 | 40 | 24.7 | 19 | 11.7 | 59 | 18.2 |
|           | ≥2 | 65 | 40.1 | 41 | 25.3 | 106 | 32.7 |
| History of previous abortion | Yes | 31 | 19.1 | 51 | 31.5 | 82 | 25.3 |
|           | No | 131 | 80.9 | 111 | 68.5 | 242 | 74.7 |
| Gestational age (wk) | ≤12 | 109 | 67.3 | 162 | 100 | 271 | 83.6 |
|           | >12 | 53 | 32.7 | 0 | 0 | 53 | 16.4 |
| No. of alive children | 0 | 58 | 35.8 | 102 | 63.3 | 160 | 49.4 |
|           | 1−4 | 97 | 59.9 | 59 | 36.4 | 156 | 48.1 |
|           | ≥5 | 7 | 4.3 | 1 | 0.6 | 8 | 2.5 |
| Condition of pregnancy | Planned or wanted | 115 | 71.0 | 11 | 6.8 | 126 | 38.9 |
|           | Mistimed but wanted | 7 | 4.3 | 17 | 10.5 | 24 | 7.4 |
|           | Mistimed or unwanted | 40 | 24.7 | 134 | 82.7 | 174 | 53.7 |
| Who decides when to have child? | Myself | 2 | 1.2 | 9 | 5.6 | 11 | 7.3 |
|           | Husband | 2 | 1.2 | 11 | 6.8 | 13 | 8.7 |
|           | Both | 118 | 72.8 | 8 | 4.9 | 126 | 38.0 |
| Discussed with partner about current pregnancy | Yes | 115 | 71.0 | 22 | 13.6 | 137 | 91.3 |
|           | No | 7 | 4.3 | 6 | 3.7 | 13 | 8.7 |

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given regarding family planning utilization by nongovernmental health facilities might be the other reason for the increase of PFPU at nongovernmental health facilities.

Research implications
The findings implied that efforts should be exerted on counseling women about contraceptive use after abortion, creating awareness about birth spacing, and working on governmental health facilities on increasing uptake of post-abortion utilization.

Strength and limitation
The comparative nature of the study was the strength of this study. Being facility-based was the limitation of the study that limited the generalization of the study to all women who received abortion services.

Conclusions
The rate of PFPU was lower among women who received abortion services at governmental health facilities than among women who received abortion services at nongovernmental health facilities. Not needing near-future
TABLE 4
Factors associated with overall postabortion family planning utilization at governmental and nongovernmental health facilities, Dessie, Northeast Ethiopia, 2021

| Variables                  | Categories | PFPU (n=324) | Utilized (%) | Not utilized (%) | COR (95% CI) | AOR (95% CI) |
|----------------------------|------------|--------------|--------------|-----------------|--------------|--------------|
| Age                       | 15–19      | 47 (20.17)   | 9 (9.89)     | 1               | 1            |              |
|                           | 20–24      | 72 (30.90)   | 28 (30.76)   | 0.492 (0.213−1.136) | 0.649 (0.219−1.921) |              |
|                           | 25–29      | 52 (22.31)   | 30 (32.96)   | 0.332 (0.143−0.771) | 0.619 (0.176−2.179) |              |
|                           | 30–34      | 35 (15.02)   | 16 (17.58)   | 0.419 (0.166−1.058) | 0.431 (0.103−1.796) |              |
|                           | ≥35        | 27 (11.58)   | 8 (8.79)     | 0.646 (0.223−1.872) | 1.252 (0.208−7.531) |              |
| Gravidity                 | 1          | 95 (40.77)   | 29 (31.89)   | 1.134 (0.478−2.692) | 4.084 (0.653−25.536) |              |
|                           | 2−4        | 112 (48.06)  | 53 (58.24)   | 0.731 (0.320−1.670) | 2.223 (0.573−8.619) |              |
|                           | ≥5         | 26 (11.15)   | 9 (9.89)     | 1               | 1            |              |
| Family size               | 1−4        | 164 (70.38)  | 76 (83.51)   | 0.469 (0.252−0.873) | 0.503 (0.190−1.337) |              |
|                           | ≥5         | 69 (29.61)   | 15 (16.49)   | 1               | 1            |              |
| Ever use contraceptive    | Yes        | 179 (76.82)  | 59 (64.83)   | 1.517 (0.135−17.032) | 11.941 (0.866−164.557) |              |
|                           | No         | 52 (22.31)   | 31 (34.06)   | 0.839 (0.073−9.635) | 5.364 (0.388−74.085) |              |
|                           | Do not remember | 2 (0.85)   | 1 (1.09)     | 1               | 1            |              |
| Counseling about contraceptive use | Yes | 231 (99.14)  | 72 (79.13)   | 30.479 (6.932−134.006) | 33.130 (6.089−180.243) |              |
|                           | No         | 2 (0.86)     | 19 (20.87)   | 1               | 1            |              |
| Need for near-future pregnancy | Yes     | 57 (24.46)   | 55 (60.43)   | 1               | 1            |              |
|                           | No         | 176 (75.53)  | 36 (39.56)   | 4.717 (2.817−7.899) | 3.350 (1.541−7.282) |              |
| Type of health facility   | Government | 90 (38.62)   | 72 (79.12)   | 1               | 1            |              |
|                           | Nongovernment | 143 (61.37) | 19 (20.87)   | 6.021 (3.405−10.649) | 4.732 (1.900−11.787) |              |

AOR, adjusted odds ratio; CI, confidence interval; COR, crude odds ratio; PFPU, postabortion family planning utilization.

a P value of ≤.05 in the bivariable analysis; b P value of ≤.05 in the multivariable analysis.

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pregnancy, being counseled about contraceptive use, and receiving abortion service at nongovernmental health facilities were positively associated with overall PFPU.

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