ORIGINAL RESEARCH ARTICLE

Awareness and acceptability of postabortion contraception among women attending gynaecological and antenatal clinic at a tertiary health centre in North-western Nigeria: A cross-sectional study design

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Abstract

Provision of comprehensive contraceptive care following an abortion is an important service that has the potential to minimize future unintended pregnancies, abortions, and unwanted births. This study aimed to determine the awareness, acceptability, and associated factors of postabortion contraception among women at the gynaecological and antenatal clinics of Usmanu Danfodiyo University Teaching Hospital, Sokoto**.** It was a cross-sectional study among 297 women who presented to these clinics in October and November 2022. The results showed that 45.5% were aware of post-abortion contraception and 61.6% were willing to accept it. The significant predictors of acceptability of post-abortion contraception were knowledge of post-abortion contraception, counselling for post-abortion contraception, and previous use of any form of contraception. This study suggests policy implications that should focus on improving knowledge, counselling services, and access to contraception. These policy interventions can significantly improve reproductive health outcomes and contribute to overall reduction in maternal morbidity and mortality.
. *(Afr J Reprod Health 2024; 28 [3s]: 93-101).*

Keywords: Post-abortion contraception, awareness, acceptability

Résumé

La fourniture de soins contraceptifs complets après un avortement est un service important qui a le potentiel de minimiser les futures grossesses non désirées, les avortements et les naissances non désirées. Cette étude visait à déterminer la sensibilisation, l'acceptabilité et les facteurs associés à la contraception après avortement chez les femmes des cliniques gynécologiques et prénatales de l'hôpital universitaire Usmanu Danfodiyo de Sokoto. Il s'agissait d'une étude transversale menée auprès de 297 femmes qui se sont présentées dans ces cliniques en octobre et novembre 2022. Les résultats ont montré que 45,5 % connaissaient la contraception post-avortement et 61,6 % étaient prêtes à l'accepter. Les prédicteurs significatifs de l'acceptabilité de la contraception post-avortement étaient la connaissance de la contraception post-avortement, le conseil en matière de contraception post-avortement et l'utilisation antérieure de toute forme de contraception. Cette étude suggère des implications politiques qui devraient se concentrer sur l'amélioration des connaissances, des services de conseil et de l'accès à la contraception. Ces interventions politiques peuvent améliorer considérablement les résultats en matière de santé reproductive et contribuer à la réduction globale de la morbidité et de la mortalité maternelles. *(Afr J Reprod Health 2024; 28 [3s]: 93-101).*

Mots-clés: Contraception post-avortement, sensibilisation, acceptabilité

Introduction

Postabortion care is an important intervention to decrease maternal mortality by treating complications from induced or spontaneous abortion; and by providing postabortion contraception counseling and services[1]. Postabortion contraception increases modern contraceptive uptake, decreases repeat abortion, reduces maternal mortality, and prevents mother-to-child Human immune deficiency virus (HIV) transmission and new HIV infection[1]. The provision of

comprehensive contraceptive care to women who had an abortion is an important service that has the potential to minimize future unintended pregnancies, abortions, and unwanted births[2].

About 24 million abortions in developing countries are unsafe and this contributes to about 13% of maternal mortality[3]. From 2015 to 2019, the global rate of unintended pregnancy was 64 unintended pregnancies per 1,000 women within the reproductive age group and 61% of these unintended pregnancies ended in abortion. This corresponds to a global abortion rate of 39 abortions per 1,000 women within the reproductive age group[4]. The proportion of unintended pregnancies ending in abortion has increased and people in low-income countries have less access to sexual and reproductive health care including contraception[4]. It has also been found that access to the full spectrum of sexual and reproductive health services, including abortion care and contraception could go a long way in reducing unintended pregnancies[4].

In some parts of the world like Ethiopia, improvement in postabortion family planning services has led to a remarkable increase in the uptake of postabortion family planning[5]. Post-abortion contraception uptake was found to be as high as 79.8% in Federal Medical Centre Owerri, Southern Nigeria[6]. A study conducted in 3 hospitals in Sudan found that training of health care personnel to promote and advocate postpartum/post-abortion contraception was effective and contributed to an increase in the uptake of family planning services[7].

There are limited studies on awareness and acceptability of postabortion contraception in Nigeria. Studies in Sokoto have assessed the contraceptive prevalence rate and general knowledge and utilization of contraception but not specifically on postabortion contraception[8,9]. With the low contraceptive prevalence rate in Sokoto[8] and poor knowledge of contraception[8,9], post-abortion counselling/contraception is a good opportunity to improve the utilization of family planning. This could go a long way in preventing the recurrence of abortion, its sequelae, and overall reduction in maternal morbidity and mortality. Hence, the need to conduct further research to identify the awareness and acceptability of post-abortion contraception and contributing factors to the acceptability of post-abortion contraception. The aim of this study was to determine the awareness, acceptability and predictors of acceptability of post-abortion contraception. The awareness, acceptability and predictors of acceptability of post-abortion contraception are reported in this study.

Methods

Study design

This was a hospital-based cross-sectional study among women presenting to the gynaecological and antenatal clinic of Usmanu Danfodiyo University Teaching Hospital (UDUTH), Sokoto.

Study setting

The study was carried out among women presenting to the gynaecological and antenatal clinic of UDUTH, Sokoto, North Western Nigeria. These are patients who presented to the clinics for some other conditions and were interviewed for this study. Usmanu Danfodiyo University Teaching Hospital, Sokoto is a second-generation teaching hospital in Nigeria located in the city of Sokoto, Sokoto State, Northwestern Nigeria. It provides tertiary health care delivery, training and research. It serves Sokoto State and neighbouring states like Kebbi, Zamfara, Niger states, and also the Niger Republic. The study was conducted between 24th of October to 18th of November, 2022. The participants were recruited into the study using a systematic sampling method as stated below under sampling method. Since the study was conducted at gynaecological and antenatal clinics, there was an allocation of participants proportionate to the number of cases seen at each clinic.

Study population

Those included were women within the reproductive age group who presented to the facility for either antenatal care or some gynaecological condition. The inclusion criteria were women within the reproductive age group who have had an abortion in the past and have given consent to participate in the study.

Variables of the study

Post-abortion contraception uptake: Uptake of at least a method of contraception immediately or within 48 hours of an abortion.

Awareness of postabortion contraception: Those who have previously heard that contraception can be offered immediately after an abortion.
Good knowledge of postabortion contraception is defined as those who have scored 75% and above on the questions assessing knowledge while those below 75% have poor knowledge.
Acceptability of postabortion contraception is defined as those who are willing to accept any form of contraception immediately or within 48 hours of an abortion.

Sample size determination

This was done using the formula for a cross-sectional study.

$$n = \frac{Z^2_{1-\alpha/2}\, P\,(1-P)}{d^2}$$

where n= Minimum sample size
P = Estimated proportion of good knowledge from previous study = 0.227[8].
d = Desired precision = 0.05
$Z_{1-\alpha/2}$ = Standard errors associated with 95% confidence intervals = 1.96

$$n = \frac{1.96^2\, P\,(1-P)}{d^2}$$

$$n = \frac{1.96^2 \times 0.227\,(1-0.227)}{0.05^2}$$

$$n = \frac{3.842 \times 0.227\,(0.773)}{0.05^2}$$

$$n = \frac{0.6738}{0.0025}$$

n= 269.5 = 270

Adding 10% attrition = 10% of 270 = 27

Hence, 297 participants were recruited for the study.

Sampling method

The participants were recruited into the study using systematic sampling method. The sampling interval was obtained by dividing the sampling frame for each of the clinics (N) by the number proportionally allocated to that clinic (n). It was found to be 6. At each clinic, the participants were given serial numbers. Simple random sampling by balloting was used to select the first study participant between 1 to 6. Thereafter, every 6th participant was selected. If a participant selected has not had a previous abortion, she was skipped and the next participant with a previous abortion was selected.

Data sources/data collection

An interviewer-administered questionnaire was used to obtain the necessary information. The questionnaire contained sections on socio-demography, questions to assess awareness of post-abortion contraception and a section to assess acceptability and associated factors. The questionnaire was transferred into Open Data Kit (ODK) and was used for data collection. Some few hard copies of the questionnaire were printed as backup during data collection.
Four research assistants were trained to administer the questionnaire to the participants. They had 2 days of training. The first day focused on discussion of the study methodology and installation of ODK. The second day was a hands-on training on how to administer the questionnaire.

The questionnaire was translated into Hausa language and also back-translated into English. It was then pretested on participants at the state Specialist hospital on 10 participants who were not part of the study participants.

Measures used to avoid bias

Selection bias was reduced by using systematic random sampling to select the participants from the 2 clinics. Logistic regression was used to take care of confounders.

Ethical approval

It was obtained from the UDUTH health research and ethics committee with reference number UDUTH/ HREC/2022/1191/V3. Written informed consent was also obtained from the participants before data collection.

Data analysis

The analysis was done using Statistical Package for Social Sciences version 25 (IBM SPSS statistics for Windows version 25.0. Armonk, NY: IBM Corp.). Continuous variables were presented with means and standard deviations. Categorical variables such as ethnicity & religion were presented with distributions and percentages. A Chi-square test was used to determine factors associated with awareness and acceptability of post-abortion contraception. Factors found to be associated with acceptability were entered into binary logistic regression model to

determine the predictors of the acceptability of contraception. The level of significance was set at $p < 0.05$.

Results

Socio-demographic characteristics of the respondents

There were 297 respondents that participated in the study and all had complete information and hence included in the analysis. Table 1 presents the sociodemographic characteristics of the respondents. The mean age of the respondents was 29.3 ± 5.9. The youngest was 18 years and the eldest was 45 years. The vast majority (59.6%) of the respondents were 25 years and older, with about one-third (33.7%) in the age group of 25 to 29 years. Most (83.3%) were Hausa/Fulani and had at least a secondary school education. Similarly, most (90.9%) were Muslims and seven out of ten (70.4%) were in monogamous family settings. The majority (59.6%) had one previous miscarriage.

Table 1: Sociodemographic and obstetrics characteristics of the respondents

Characteristics	Frequency (n)	Percentage (%)
Age		
Less than 20 years	6	2.0
20 to 24 years	55	18.5
25 to 29 years	100	33.7
30 to 34 years	77	25.9
35 years and above	59	19.9
Ethnicity		
Hausa/Fulani	249	83.9
Yoruba	12	4.0
Igbo	11	3.7
Others	25	8.4
Educational status		
No formal education	20	6.7
Primary	11	3.7
Secondary	121	40.7
Tertiary	145	48.9
Occupation		
Unemployed	130	43.8
Civil servant	72	24.2
Business	69	23.2
Others	26	8.8
Religion		
Islam	270	90.9
Christianity	27	9.1
Family setting		
Monogamous	209	70.4
Polygamous	88	29.6
Parity		
Nullipara/Primipara	117	39.4
Multipara	132	44.4
Grandmultipara	48	16.2
Number of previous miscarriages		
1 previous miscarriage	117	59.6
2 to 4 previous miscarriages	112	37.7
5 and above	8	2.7

Awareness and acceptability of post-abortion contraception

The sources of information about post-abortion contraception are shown in Figure 1. Among the respondents, 45.5% were aware of postabortion contraception. The major source of information was from health personnel. Among those who were aware of post-abortion contraception, only 25.7% of the respondents had good knowledge about it.

Among the respondents, 63.6% have ever used any form of contraception at any time in their life while only 21.2% have ever had postabortion contraception. However, 49.2% of the respondents have been informed of postabortion contraception by health personnel during their previous abortions. The husbands were reported to be the major decision-makers about the uptake of contraception among 50.5% of the respondents.

Close to two-thirds of the respondents (61.6%) were willing to accept postabortion contraception and 76.4% were willing to recommend it to a friend or relative.

Factors associated with the acceptability of post-abortion contraception

Table 2 shows the sociodemographic factors that were associated with the acceptability of post-abortion contraception. The only socio-demographic characteristics found to be associated with knowledge of postabortion contraception were religion and tribe. All the Yorubas and Igbos that participated in the study had good knowledge of postabortion contraception compared to 70.7% of Hausas ($\chi^2 = 12$, p-value = 0.005). About 96% of the Christians had good knowledge of postabortion contraception compared to 72% of the Muslims. There was a statistically significant association between knowledge of post-abortion contraception and religion ($\chi^2 = 7.1$, p-value = 0.008).

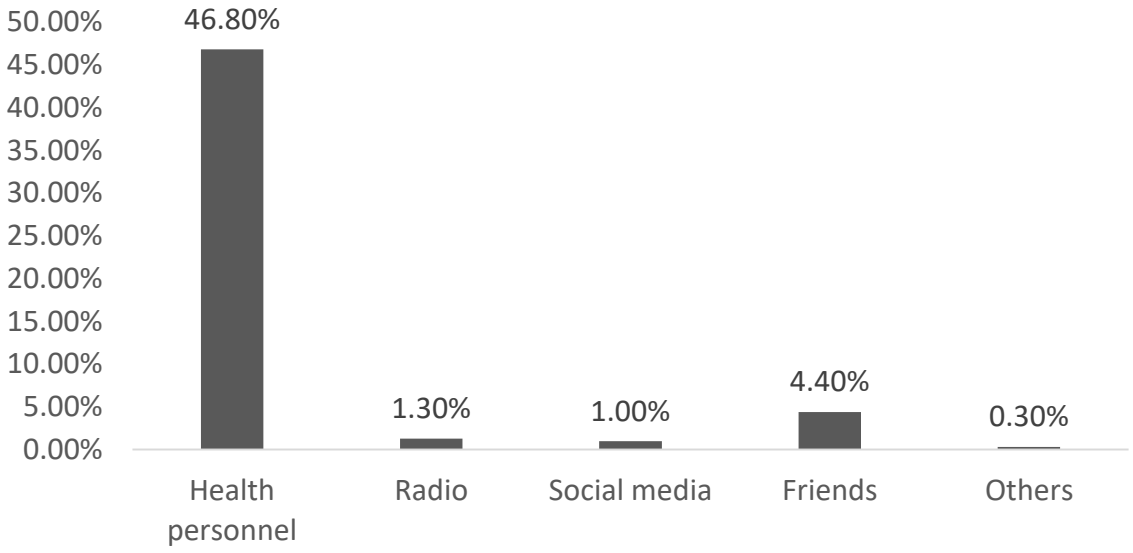

Figure 1: Sources of information about postabortion contraception

Table 2: Sociodemographic factors associated with knowledge of post-abortion contraception

Characteristics	**Good knowledge n (%)**	**Poor knowledge n (%)**	χ^2	***p*-value**
Age				
Less than 20	4 (66.7)	2 (33.3)	2.02	0.73
20 to 24	43 (78.2)	12 (21.8)		
25 to 29	70 (70.0)	30 (30.0)		
30 to 34	57 (75.0)	19 (25.0)		
35 and above	46 (78.0)	13 (22.0)		
Occupation				
Unemployed	98 (75.4)	32 (24.6)	3.76	0.288
Civil servant	50 (70.4)	21 (29.6)		
Business	49 (71.0)	20 (29.0)		
Others	23 (88.5)	3 (11.5)		
Educational status				
No formal education	16 (80.0)	4 (20.0)	1.69	0.639
Primary	7 (63.6)	4 (36.4)		
Secondary	87 (71.9)	34 (28.1)		
Tertiary	110 (76.4)	34 (23.6)		
Tribe				
Hausa/Fulani	176 (70.7)	73 (29.3)	12.0	0.005*
Yoruba	12 (100)	0 (0)		
Igbo	10 (100)	0 (0)		
Others	22 (88.0)	3 (12)		
Religion				
Islam	195 (72.2)	75 (27.8)	7.1	0.008*
Christianity	25 (96.2)	1 (3.8)		

*: Significant *p*-value

Table 3: Adjusted odd ratio of predictors of acceptability of postabortion contraception

Factors	Adjusted OR	95% CI	*P*-value
Tribe			
Hausa	1.26	0.43, 3.7	0.669
Yoruba	0.66	0.13, 3.4	0.621
Igbo	0.90	0.15, 5.4	0.910
Others	1.00		
Religion			
Islam	1.75	0.51, 6.0	0.378
Christianity	1.00		
Knowledge of PAC			
Good	4.84	2.0, 11.7	<0.001*
Poor	1.00		
Counselling for PAC			
Yes	1.96	1.10, 3.5	0.021*
No	1.00		
Ever use of contraception			
Yes	3.9	2.22, 6.82	<0.001*
No	1.00		

*: Significant *p*-value

Predictors of acceptability of post-abortion contraception

Logistic regression was used to determine the predictors of the acceptability of post-abortioncontraception as shown in Table 3. A crude odd ratio was obtained with each of the variables that were significantly associated with the acceptability of postabortion contraception. Thereafter, the whole variables were entered into the logistic regression model to obtain the adjusted odd ratio.

The significant variables that were retained in the final model were knowledge of post-abortion contraception, counselling for post-abortion contraception and previous use of any form of contraception. The odds of acceptability of post-abortion contraception among those with good knowledge were as high as 4.84 compared to those with poor knowledge (OR= 4.84, 95% CI= 2.0-11.7, $p < 0.001$). The odds of acceptability of post-abortion contraception among those who had postabortion contraception counselling were as high as 1.96 compared to those who did not (OR= 1.96, 95% CI= 1.10, 3.5, $p = 0.021$). The odds of acceptability of post-abortion contraception among those who had ever used any form of contraception were as high as 3.9 compared to those who did not (OR= 3.9, 95% CI= 2.22, 6.82, $p < 0.001$). The model showed that 32.3 % of the variance in acceptability of PAC was explained by the model (Nagelkerke R square = 0.323). The Hosmer and Lemeshow test also showed that the model fits well ($p = 0.486$).

Discussion

This study set out to determine the awareness, acceptability, and predictors of acceptability of post-abortion contraception. The key findings showed that 45.5 % of the respondents were aware of post-abortion contraception but only 25.7% of the respondents had good knowledge of postabortion contraception. Among the respondents, 63.6% have ever used any form of contraception at any time in their life while only 21.2% have ever had postabortion contraception. Only 49.2% of the respondents have been informed of postabortion contraception by health personnel during their previous abortions. The majority of the respondents (61.6%) were willing to accept postabortion contraception. The significant predictors of acceptability of post-abortion contraception were knowledge of post-abortion contraception, counselling for post-abortion contraception and previous use of any form of contraception.

The awareness of post-abortion contraception of less than 50% implies that the level of awareness is low in the study area. It is surprising

because the study was conducted within the city of Sokoto whose sociodemographic characteristics have shown that the majority have attained at least a secondary level of education. Just being aware that contraception can be offered immediately following an abortion would probably make clients request for it and utilize it. This implies that there should be more measures to disseminate information about post-abortion contraception so that clients would be aware that the service exists. In addition to the low level of awareness, only 25.7% had correct information on what post-abortion contraception entails. This is almost similar to the 22.7% that was reported to have good knowledge of contraception in a previous study in the study area Sokoto[9]. The finding may suggest a lack of improvement in knowledge on contraception in the study area. The findings in this study differ from that in Southwest Nigeria where all the participants were aware of the family planning method but only 11.7 % had good knowledge about family planning[10]. This lower level of knowledge could be due to variations in the educational level of the participants between the 2 studies. In addition, this study assessed knowledge of postabortion contraception while the other study assessed knowledge of contraception in general[6]. This necessitates the need for health personnel to improve their knowledge and how to disseminate correct information about post-abortion contraception. Perhaps, including post-abortion contraception in health talks at antenatal clinics would probably improve the knowledge of post-abortion contraception among the populace. This study suggests that improvement in knowledge about post-abortion contraception and offering comprehensive counselling for it can positively impact the acceptability of post-abortion contraception. Hence, policymakers may consider health educational campaigns and training programs for healthcare providers to ensure that patients receive accurate information about post-abortion contraception.

Even though the past history of utilization of post-abortion contraception (21.2%) was low, the acceptability of 61.6% implies that many are willing to utilize it once they are aware that it's available. The acceptability of post-abortion contraception found in this study is lower than 79.8% reported in Owerri[6] and 84% reported in Dessie town in Ethiopia[11]. A study by Mekuria et al in Ethiopia also reported postabortion contraceptive use of up to 78.5%[12]. They also found that postabortion contraceptive use was more common among singles, those who have had a previous history of abortion and those who used contraceptives previously[12]. Similarly, a higher post-abortion contraceptive acceptance rate of 85% was reported in India[13]. This variation may be due to sociocultural and educational status variations between the regions. A similar post-partum contraception uptake rate of 65% was reported in the same study area[14]. The acceptability of 61.6% is high enough to probably increase the uptake of post-abortion contraception and lead to an increase in contraceptive uptake among the populace.

Religion and tribe were the only non-modifiable socio-demographic factors found to have a significant association with the acceptability of post-abortion contraception. These factors could be confounding factors as they were removed as predictors from the final logistic regression model. The major predictors of the acceptability of post-abortion contraception identified in our study were consistent with findings from a population-based study in Nigeria and Cote d'Ivoire where post-abortion counselling for contraception was also found to be associated with an increase in the uptake of contraception[15]. The finding in this study is also similar to that reported in a previous study in Southwest Nigeria where good knowledge was found to be a predictor of postpartum family planning with an adjusted odd ratio of 2.31[10].

This implies that having correct and appropriate information would give insight and probably increase uptake of contraception as found in this study that knowledge of post-abortion contraception is the major predictor of acceptability of post-abortion contraception. Hence, appropriate information about post-abortion contraception should be given by health personnel as part of post-abortion care. It should be emphasized to the health personnel to always remember and counsel for contraception since it has been identified as a predictor of acceptability. Health education on contraception with emphasis on the health benefits would probably increase uptake. Improving quality and access to post-abortion contraception would go a long way in reducing the grave consequences of induced abortion.

The finding that previous history of use of contraception is a predictor of acceptability of post-abortion contraception implies that efforts should be made to increase the contraceptive uptake at all levels and not just following an abortion. It is also similar to what was reported in Southwest Nigeria that improvement in awareness leads to an increase in contraceptive uptake[10]. The finding in this study is supported by an experimental study carried out in a hospital in Egypt and India which found that women who had post abortion counselling used contraception significantly higher than those who did not have the counselling[16,17].

Since previous use of any form of contraception was identified as a significant predictor, policymakers can use this information to tailor interventions to address the specific preferences and needs of individuals with previous experience of contraceptive use. This may entail providing a variety of contraceptive alternatives and support services.

We encounter cases of both induced and spontaneous abortion that present to health facilities with one complication or the other like incomplete evacuation or septic abortion. Using the opportunity of counselling for post-abortion contraception and providing the services will go a long way in giving women the opportunity to control their fertility and prevent further unplanned pregnancies.

Strengths and limitations

Modifiable predictors that can improve the acceptability of postabortion contraception were identified. Hence, intervention can be directed towards them to improve the contraceptive uptake in the study area with high maternal mortality.

There may be a problem of recall bias among some of the participants since they were asked some questions related to their experience during the last abortion. This study was a hospital-based study and the findings may not be generalized to the whole population. Perhaps, the findings might differ from a community-based study.

Conclusion

There is poor knowledge on post-abortion contraception but the majority were willing to accept it. The major predictors of acceptability of post-abortion contraception were knowledge of post-abortion contraception, counselling for post-abortion contraception and previous use of any form of contraception. This implies that policies that lead to improvement in the knowledge of post-abortion contraception would probably increase the acceptability of post-abortion contraception.

Recommendation

This study has highlighted potential barriers to the acceptability of post-abortion contraception. Policymakers could concentrate on addressing these predictors through targeted interventions to ensure that appropriate contraceptive counselling is offered and the services are affordable and accessible to all individuals. Integrating post-abortion contraceptive counselling and services into existing reproductive health and abortion care services would be a key policy approach. These policy interventions can significantly improve reproductive health outcomes and contribute to the overall reduction in maternal morbidity and mortality.

There is a need to conduct an intervention study on the effect of family planning education on contraceptive uptake. There is also a need to conduct a study on the availability of post-abortion contraception services at the health facilities in the study area. It is recommended that there should be regular training and supervision of healthcare workers to ensure that they offer post-abortion contraception appropriately.

Conflict of interests

The authors declare no potential conflict of interest.

References

1. Curtis C, Huber D and Moss-Knight T. Postabortion family planning: Addressing the cycle of repeat unintended pregnancy and abortion. Int Perspect Sex Reprod Health 2010; 36(1): 44-8.
2. Sahoo H, Stillman M, Frost J, Acharya R and Hussain R. Availability, practices and acceptance of postabortion contraceptive services in health facilities: A study in six states of India. Contraception 2020;101(2): 106-111.
3. Ganatra B, Gerdts C, Rossier C, Johnson BR, Tunçalp Ö, Assifi A et al. Global, regional, and subregional classification of abortions by safety, 2010–14: estimates from a Bayesian hierarchical model. Lancet 2017; 390: 2372-2381.
4. Bearak J, Popinchalk A, Ganatra B, Moller A, Tunçalp Ö, Beavin C, Kwok L, Alkema L. Unintended pregnancy

and abortion by income, region, and the legal status of abortion: estimates from a comprehensive model for 1990–2019. Lancet Glob Health 2020; 8: e1152–6.

5. Samuel M, Fetters T and Desta D. Strengthening postabortion family planning services in Ethiopia: Expanding contraceptive choice and improving access to Long-Acting Reversible Contraception. Glob Health Sci Pract 2016; 4(2): S60-S72.
6. Onyegbule OA, Onumajuru CC, Ododo NA, Idih EE and Onyegbule PC. Uptake of post-abortion contraception among women who had manual vacuum aspiration at Federal Medical Centre, Owerri: A 5-year review. Trop J Obstet Gynaecol 2016; 33: 228-31.
7. Malel ZJB, Henry BB, Legge S, Palmieri J and Agarth A. Introduction of postpartum and post-abortion family planning into three hospitals in South Sudan. South Sudan Med J 2020; 13(3): 90-94.
8. Tunau KA, Awosan KJ, Adamu H, Muhammad U, Hassan M, Nasir S, Raji MO, Oche MO, Nwobodo EI and Baba TM. Comparative assessment of modern contraceptives' knowledge and utilization among women in urban and rural communities of Sokoto State, Nigeria. J Med Medical Sci 2016; 7(1): 006-14.
9. Sabo A, Alkammawa LA and Yakubu L. Knowledge and utilization of contraception among women attending antenatal care unit at Specialist Hospital Sokoto state, Nigeria. IOSR J Dent Med Sci 2018; 15(6): 50-6.
10. Anate B, Balogun M, Olubodun T and Adejimi A. Knowledge and utilization of family planning among rural postpartum women in Southwest Nigeria. J Family Med Prim Care 2021; 10(2): 730-7.
11. Abebe MA, Kassaw MW and Shewangashaw MW. Postabortion contraception acceptance and associated factors in Dessie Health Center and Marie Stopes International clinics, South Wollo, Northeast Amhara region 2017. Int J Reprod Med 2019: 1-10.
12. Mekuria A, Gutema H, Wondiye H and Abera M. Postabortion contraceptive use in Bahir Dar, Ethiopia: a cross-sectional study. Contracept Reprod Med 2019; 4: 19-24.
13. Thawal Y, Deshpande H, Patvekar M, Suryarao P, Bhalani R and Jindal S. Study of acceptance of post-abortal contraception in tertiary care centre. Int J Clin Obstet 2018; 2(5): 147-152.
14. Ibrahim R, Panti AA, Alhassan U, Garba J, Nasir A, Sulaiman B and Tunau KA. Choice of Postpartum Contraception among Antenatal attendees in Usmanu Danfodiyo University Teaching Hospital, Sokoto. J J Med Sci 2021; 2(1): 72-9.
15. Magalona S, Byrne M, OlaOlorun F, Mosso R, Omoluabi E, Moreau C and Suzanne OB. Contraceptive Use Before and After Abortion: A Cross-Sectional Study from Nigeria and Côte d'Ivoire. Stud Fam Plann 2022; 53(3): 433-53.
16. Ibrahim WH, El-Nashar IMH, Youness EM and Arief AF. Effect of Family Planning Counselling on Post Abortion Women Awareness and Practice of Using Contraceptive Methods. Assiut Sci Nurs J 2015; 3(5): 1599-167.
17. Arunachalam HG, Subramanyam S, Vijayakrishnan M. Impact of post abortal counselling and acceptability of concurrent contraception. Indian J Obstet Gynaecol Res 2015; 2(4): 232-237.