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Research Article

Uptake of Post-Abortion Contraception at a Tertiary Hospital in Zambia

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Abstract

Background: Post-abortion family planning/contraception (PAFP/C) is key for the prevention of unplanned pregnancies and reduction of their complications such as unsafe abortions, maternal morbidity, and mortality. This study assesed the uptake of post abortion contrraception and associated factors, influencing PAFP/C uptake among post-abortion care (PAC) service users at the Women and New-born Hospital (WNH) in Lusaka, Zambia.

Methodology: A cross-sectional study was conducted between 1st July 2021 and 31st January, 2022. Data was collected using an interviewer-administered questionnaire. Bivariate analysis and logistic regressions were used to evaluate the association between independent variables with the dependent variable. A p-value of < 0.05 at 95% CI was considered statistically significant.

Results: A total of 402 PAC-users participated in the study. The overall uptake of PAFP/C was 49.8%. Sociodemographic factors associated with uptake of PAFP/C included: being married [AOR 2.34, 95% CI (1.32, 4.14)], tertiary education [AOR 8.94, 95% CI (1.51, 52.90)], being employed [AOR 1.93, 95% CI (1.27, 2.92)], living in medium density area [AOR 1.81, 95% CI (1.21, 2.96)]. Reproductive factors such as being primiparous [AOR 3.01, 95% CI (1.48, 6.14); p = 0.002], having 1 to 3 living children [AOR 2.04, 95% CI (1.12, 3.74)], planned pregnancy [AOR 1.75, 95% CI (1.15, 2.65)] and reason for abortion being unwanted pregnancy [AOR 2.94, 95% CI (1.47, 5.87)] were significantly associated with PAFP/C uptake. Other associated factors included contraceptive knowledge [AOR 5.77, 95% CI (2.17, 15.34)], ever used contraceptives [AOR 6.59, 95% CI (3.60, 12.06)], having received PAFP/C counselling [AOR 291.75, 95% CI (39.43, 2158.87)], wanting to wait to conceive [AOR 2.20, 95% CI (1.20, 4.04)] and never wanting to conceive [AOR 3.26, 95% CI (1.31, 8.14)].

Conclusion: Uptake of PAFP/C was low due to several factors identified that need to be addressed to improve the uptake at WNH, Lusaka, Zambia.

Keywords: Post-abortion Family Planning/Contraceptive Uptake; Associated Factors; Women and New-born Hospital

Introduction

One in every four pregnancies in the world ends in an induced abortion, and almost 20% of post abortion women have had an abortion before [1,2]. Low post abortion family planning/contraception (PAFP/C) uptake is of global concern as more than half of post-abortion women are interested in utilizing contraception, but only 25% of them leave the facilities with a contraceptive method [3]. The low PAFP/C uptake is worse in low and middle income countries where the majority of PAC services users do not receive contraception [4-6]. Most of these women end up with unintended pregnancies and repeat abortions which put them at increased risk of morbidity and mortality [7]. Before this study, it was noted anecdotally that the Women and New-born Hospital (WNH) also had a low PAFP/C uptake. Between January 2018 and December 2019, 3,396 post abortion women were attended to at the WNH, out of which only half of them received contraception. This was contrary to the World Health Organization (WHO) and International Federation of Gynaecology and Obstetrics (FIGO) recommendation of having all post-abortion women offered voluntary PAFP/C services before their discharge from the health facility [8,9]. The WHO further recommends a six months' inter-pregnancy interval after an abortion to ensure optimal recovery, good future obstetric outcomes and good maternal health [10]. Although national contraception prevalence rate, which includes PAFP/C, has improved in some Sub-Saharan African (SSA) countries, it remains low in Zambia at 48% for married women aged 15-49 years and 43% among sexually active unmarried women of the same age group [11]. The unmet need for contraception in SSA, including Zambia, is high at 21% [11,12].

Some of the factors that contribute to low PAFP/C utilization in the low and middle income countries includes having age less than 20 years, being unmarried, having no or low education, having no previous pregnancy or living child, low socio-economic status, lack of PAFP/C counselling and lack of knowledge, previous history of contraceptive use, lack of access to effective contraceptives and not offering immediate PAFP/C services [13-15]. Despite PAFP/C being an effective strategy to prevent unplanned pregnancies and repeat abortions [16], it had not been given due attention in Zambia and at the WNH in particular. Failure to address low PAFP/C uptake would result in unintended pregnancies and repeat abortions as PAC users would continue leaving the health facilities without contraceptives [17].

The reasons for this low uptake were unclear and had not been investigated. This study, therefore, aimed at assessing PAFP/C uptake and establish associated factors among PAC service users at the WNH. The information generated would be helpful in contributing to strengthening the efforts and interventions aimed at reducing unwanted pregnancies, repeat induced abortions and abortion related complications among women seen at the WNH.

Methods

- **Study design and setting:** We conducted a cross-sectional study conducted at the WNH in Lusaka, a tertiary and national referral hospital in Zambia, from 1st July 2021 to 31st January 2022.
- **Study participants:** All post-abortion women who accessed post-abortion care (PAC) at the WNH and were not critically ill during the study period were included in the study. Women who were critically ill and those who could not consent were excluded from the study.

Sample size and sampling

The sample size was determined by using a single population proportion formula by assuming the prevalence of PAFP/C uptake to be 39% according to the study done by Gallagher., *et al*. [18] in Lusaka. Considering 5% level of significance ($\alpha = 0.05$), confidence level of 95% ($z\ \alpha/2 = 1.96$), 5% error margin ($d = 0.05$) and 10% non-response rate. Based on these, the total sample size for this study was determined to be 402.

Sampling technique

The sampling technique used was systematic random sampling. The anecdotal data from January, 2018 to December, 2019 showed that an average of 849 (N) women used post abortion care (PAC) services every 6 months at the WNH. To determine the sampling interval (K) for women accessing PAC at the WNH the formula $K = N/n$ was used, where $N = 849$, $n = 402$. K was 2.11. The starting point was selected randomly and then beginning from the starting point, each individual was selected that corresponded to the sampling interval of 2.

Data collection procedures

A pretested, structured interviewer administered questionnaire was used. Participants were recruited from the emergency

and in-patient gynaecological wards and exit interviews were conducted before their discharge. The participation in the study was voluntary and confidentiality and anonymity were assured.

Data analysis

Data was analysed using SPSS version 28. Descriptive statistics and summary measures of the variables were generated. Chi-square was used to check for association between PAFP/C utilization and independent variables. Logistic regression was done to determine association between predictors and uptake of PAFP/C and p values, unadjusted and adjusted odds ratios, including their 95% confidence intervals, were computed. Statistical significance was set at $p < 0.05$.

Results

Socio-demographic characteristics

This study recruited 402 women with 200 (49.8%) having received a contraceptive post-abortion while 202 (50.2%) did not. Majority of the participants 113(28.1%) were aged 25 – 29 years with a median age of 27 years and interquartile range of 10 years. Most participants were married 212(52.7%) compared to their single counterparts 190(47.3%). The largest number of participants 167(41.5%) had attained secondary education followed by those who had attained tertiary education 141(35.1%) and the least number of them had no formal education 11(2.7%). Of all the participants, 220 (57%) were unemployed while 182 (45.3%) were employed. Majority of the participants 167(41.5%) lived in medium density areas followed by those who lived-in high-density area 134(33.3%) and in low density areas 101(25.1%) respectively. Most of the participants 219(54.5%) belonged to other protestant churches followed by those who belonged to Pentecostal churches 108(26.9%) and Catholics were 75(18.7%). The rest of the results are shown in Table 1 below.

Variables	Post-abortion Contraception uptake		Total	p value
	No	Yes		
Age in years (Median ± IQR)	27 ± 10 years			
Age Categories (Years)				0.017
15 - 19	38(18.8%)	17(8.5%)	55	
20 - 24	47(23.3%)	38(19%)	85	
25 - 29	49(24.3%)	64(32%)	113	
30 - 34	26(12.9%)	31(15.5%)	57	
≥35	42(20.8%)	50(25%)	92	
Marital Status				<0.0001
Single	114(56.4%)	76(38%)	190	
Married	88(43.6%)	124(62%)	212	
Education				0.004
No formal education	9(4.5%)	2(1%)	11	
Primary	48(23.8%)	35(17.5%)	83	
Secondary	89(44.1%)	78(39%)	167	
Tertiary	56(27.7%)	85(42.5%)	141	
Occupation				<0.0001
Unemployed	134(66.3%)	95(47.5%)	229	
Employed	68(33.7%)	105(52.5%)	173	
Religion				0.697
Catholic	41(20.3%)	34(17%)	75	
Pentecostal	53(26.2%)	55(27.5%)	108	
Other Protestants	108(53.5%)	111(55.5%)	219	
Residence				0.044
Low density	48(23.8%)	53(26.5%)	101	
Medium density	75(37.1%)	92(46%)	167	
High density	79(39.1%)	55(27.5%)	134	

Table 1: Socio-demographic characteristics of study participants.

IQR = Interquartile range.

Reproductive characteristics

Majority of the participants were nulliparous 160(39.8%) followed by women with parity of two to four 145(36.1%). Most participants 207(51.5%) had gravidity of one to two, followed by those with parity of three to four 100(24.9%) while the remainder 95(23.6%) had gravidity of five or above. The largest proportion of participants 173(43%) had one to three living children, followed by those who had no living child 164(40.8%) and the least proportion 65(16.2%) had at least living children. Most of participants 231(57.5%) had first trimester abortions compared to those who had second trimester abortions 171(42.5%). Majority of the participants had no previous history of abortion 338(84.1%), while 64(15.9%) had previous history of abortion. Most of the participants 278(69.2%) had spontaneous abortions, while 100 (24.9%) of them had an induced abortions and the rest had missed abortions 24(6%). The details of other results are as presented in Table 2 below.

Variables	Post-abortion Contraception uptake		Total	p value
	No	Yes		
Parity				0.001
None	99(49%)	61(30.5%)	160	
1	23(11.4%)	41(20.5%	64	
2 - 4	62(30.7%)	83(41.5%)	145	
≥5	18(8.9%)	15(7.5%)	33	
Gestation Age				0.698
<12 weeks	118(58.4%)	113(56.5%)	231	
≥12 weeks	84(41.6%)	87(43.5%)	171	
Gravidity				0.054
1 – 2	116(57.4%)	91(45.5%)	207	
3 – 4	43(21.3%)	57(28.5%)	100	
≥5	43(21.3%)	52(26%)	95	
Live Children				0.001
None	100(49.5%)	64(32%)	164	
1 - 3	69(34.2%)	104(52%)	173	
≥4	33(16.3%)	32(16%)	65	
Abortion type				0.898
Missed	11(5.4%)	13(6.5%)	24	
Spontaneous	141(69.8%)	137(68.5%)	278	
Induced	50(24.8%)	50(25%)	100	
Abortion Method				0.232
Natural	154(76.2%)	152(76%)	306	
Safe	27(13.4%)	35(17.5%)	62	
Unsafe	21(10.4%)	13(6.5%)	34	
Previous abortion				0.093
Never	176(87.1%)	162(81%)	338	
Had	26(12.9%)	38(19%)	64	
Planned Pregnancy				0.001
No	136(67.3%)	101(50.5%)	237	
Yes	66(32.7%)	99(49.5%)	165	
Reason for Abortion				0.050
Natural	153(75.7%)	150(75%)	303	
Unwanted Pregnancy	36(17.8%)	40(20%)	76	
Foetal-Maternal Indication	3(1.5%)	8(4%)	11	
Sexual Assault	10(5%)	2(1%)	12	

Table 2: Reproductive characteristics of study participants.

Contraceptive characteristics

This study showed that 300(74.6%) respondents reported having received PAFP/C counselling and two third of these 200(66.7%) left the facility with a PAFP/C method. Of those who utilized PAFP/C, 199 (99.5%) of them received PAFP/C counselling and only one (0.5%) did not receive counselling. The choice of contraception was mostly made by respondents 239(59.4%), followed by jointly with partners 130 (32.3%) and the least of them were some adolescents whose decision was made by their parents 11(2.7%). Majority of the respondents 360(89.6%) had contraceptive knowledge prior to the abortion. Most of the respondents 307(76.4%) had a history of contraceptive use prior to the abortion of an index pregnancy. Of the 200 respondents who used PAFP/C, 105 (52.7%) chose long-acting reversible contraceptive (LARC) methods while 95 (47.5%) used short term methods. The largest proportion of the respondents 295(73.4%) desired to wait before conceiving again followed by those who wanted to conceive immediately 67(16.7%), and the least 40(10%) never wanted to conceive again. About half (102) of those who did not use PAFP/C did not do so because they were not offered the service at the facility. The rest of the results are presented in Table 3 below.

Variables	Post-abortion contraception uptake		Total	p value
	No	Yes		
Knowledge of contraception				<0.0001
No	36(17.8%)	6(3%)	42	
Yes	166(82.2%)	194(97%)	360	
Ever used contraception				<0.0001
No	73(36.1%)	22(11%)	95	
Yes	129(63.9%)	178(89%)	307	
Future Conception				0.053
Never	15(7.4%)	25(12.5%)	40	
Want to conceive	41(20.3%)	26(13%)	67	
Want to wait	146(72.3%)	149(74.5%)	295	
Received PAFP/C Counselling				<0.0001
No	101(50%)	1(0.5%)	102	
Yes	101(50%)	199(99.5%)	300	
PAFP/C Contraceptive method				<0.0001
None	202 (98.5%)	0(0%)	202	
Barrier	0(0%)	44(22%)	44	
Oral	0(0%)	51(25.5%)	51	
Implant	2(1%)	24(12%)	26	
Injectable	1(0.5%)	50(25%)	51	
IUCD	0(0%)	29(14.5%)	29	
Reason for no PAFP/C				0.703
Not ready	29(14.6%)	0(0%)	29	
Method unavailable	20(10.1%)	1(50%)	21	
Side Effects	16(8%)	0(0%)	16	
Partner refused	11(5.5%)	0(0%)	11	

Parents refused	12(6%)	0(0%)	12	
Religious reasons	10(5%)	0(0%)	10	
Service not offered	101(50.8%)	1(50%)	102	
Contraception Decision				0.042
Respondent	120(59.4%)	119(59.5%)	239	
Partner	9(4.5%)	13(6.5%)	22	
Joint with partner	63(31.2%)	67(33.5%)	130	
Parents	10(5%)	1(0.5%)	11	

Table 3: Contraceptive characteristics of study participants.

Key: IUCD = Intrauterine contraceptive device, PAFP/C = Post-abortion family planning/contraception

Factors associated with PAFP/C uptake

Variables that were significantly associated with PAFP/C use in the bivariate analysis at p value < 0.2 were entered into the univariate and multivariate logistic regression to determine the factors associated with PAFP/C uptake as shown in Table 4 below.

Variables	Univariate Logistic Regression			Multiple Logistic Regression		
	p value	AOR	95% CI	p value	AOR	95% CI
Marital Status						
Single	Ref					
Married	<0.0001	2.11	1.42-3.15*	0.003	2.34	1.33-4.14*
Education						
No formal education	Ref					
Primary	0.144	3.28	0.67-16.14	0.113	4.3	0.71-26.02
Secondary	0.085	3.94	0.83-18.81	0.07	5.08	0.88-29.47
Tertiary	0.016	6.83	1.42-32.79*	0.016	8.94	1.51-52.90*
Occupation						
Unemployed	Ref					
Employed	<0.0001	2.18	1.46-3.26*	0.002	1.93	1.27-2.92*
Residence						
Low density	0.082	1.59	0.94-2.67	0.109	1.57	0.90-2.72
Medium density	0.016	1.76	1.11-2.79*	0.018	1.81	1.11-2.96*
High density	Ref					
Parity						
None	Ref					
1	0.001	2.89	1.58-5.28*	0.002	3.01	1.48-6.14*
2-4	0.001	2.17	1.37-3.44*	0.255	1.46	0.76-2.78
≥5	0.434	1.35	0.64-2.88	0.445	0.68	0.25-1.84
Live Children						
None	Ref					
1-3	<0.0001	2.36	1.52-3.65*	0.021	2.04	1.12-3.74*

≥4	0.159	1.52	0.85-2.70	0.861	1.11	0.36-3.45
Planned/desired Pregnancy						
No	Ref					
Yes	0.001	2.02	1.35-3.03*	0.009	1.75	1.15-2.65*
Reason for Abortion						
Natural	Ref					
Unwanted Pregnancy	0.626	1.13	0.69-1.88	0.002	2.94	1.47-5.87*
Foetal-Maternal Indication	0.145	2.72	0.71-10.45	0.156	2.73	0.68-10.97
Sexual Assault	0.042	0.2	0.04-0.95*	0.953	0.95	0.17-5.32
Knowledge of contraception						
No	Ref					
Yes	<0.0001	7.01	2.88-17.05*	<0.0001	5.77	2.17-15.34*
Ever used contraception						
No	Ref					
Yes	<0.0001	4.58	2.70-7.76*	<0.0001	6.59	3.60-12.06*
Future Conception						
Never	0.019	2.628	1.17-5.89*	0.011	3.26	1.31-8.14*
Want to wait	0.085	1.609	0.94-2.77	0.011	2.2	1.20-4.04*
Want to conceive	Ref					
PAFP Counselling						
No	Ref					
Yes	<0.0001	199	27.36-1447.29*	<0.0001	291.75	39.43-2158.87*

Table 4: Binary logistic regression of factors associated with PAFP/C uptake at the WNH.

Women who had attained tertiary education were 8.94 times more likely to use PAFP/C than those who had no formal education [AOR 8.94, 95% CI (1.51, 52.90)]. Women who were married were 2.34 times more likely to use PAFP/C than their single counterparts [AOR 2.34, 95% CI (1.33, 4.14)]. Similarly, employed women were 1.93 times more likely to utilise contraception following an abortion than those who were unemployed [AOR 1.93, 95% CI (1.27, 2.92)]. Furthermore, women who lived in medium density areas were 81% more likely to use post-abortion contraception compared to those from high density areas [AOR 1.81, 95% CI (1.11, 2.96)].

In multivariable logistic regression reproductive factors influencing PAFP/C uptake were identified as follows. The odds of using post-abortion contraception were 3.01 times higher among primiparous women than nulliparous women [AOR 3.01, 95% CI (1.4, 6.14)]. Women who had one to three living children where 2.04 times more likely to utilize contraception following an abortion than those women who had no living children [AOR 2.04, 95% CI (1.12,3.74)].Women who had a planned pregnancy were 1.75 times more likely to accept PAFP/C compared to those who had unplanned pregnancy [AOR 1.75, 95% CI (1.15,2.65)].Women whose reason for aborting was unwanted pregnancy were 2.94 times more likely to use PAFP/C than those who aborted spontaneously [AOR 2.94, 95% CI (1.47,5.87)].

Women who had prior contraceptive knowledge, and those who had previous history of contraceptive usage were 5.77 and 6.59 times more likely to use PAFP/C compared to their counterparts [AOR 5.77, 95% CI (2.17, 15.34)] and [AOR 6.59, 95% CI (3.60,12.06)] respectively. Women who received PAFP/C counselling were 291.75 times more likely to use contraception than those who did not receive counselling [AOR 291.75, 95% CI (39.43, 2158.87)]. Women whose future conception plan was to wait or

never to conceive again had higher odds of using contraception than those whose plan was to conceive immediately. Among these women, those who never planned to conceive again were 3.26 times more likely to use post-abortion contraception than those who wanted to conceive [AOR 3.26, 95% CI (1.31, 8.14)]. However, the odds of using contraception among those women who wanted to wait to conceive was lower at 2.20 times than those who wanted to conceive [AOR 2.20, 95% CI (1.20, 4.04)].

Discussion

The prevalence of post-abortion contraceptive use in this study was low at 49.8%. This finding was in agreement with two Ethiopian studies done in Dessie (47.5%) as well as a study done in Nepal (49.5%) [19,20]. However, it was lower than the studies conducted in Brazil (97.4%), Urban Guinea (90.1%), Tanzania (90%) and Turkey (80%) [21-24]. On the other hand, the uptake in this study was higher than other studies done in Ghana (42.9%), Nigeria (39%) and India (29.6%) [6,15,25]. These differences in PAFP/C usage could be attributed to the variations in participants' marital statuses, levels of education, socio-economic statuses, contraceptive knowledge, religious beliefs, myths and misconceptions about post-abortion contraception and contraception services among the different study settings.

Married women were more than two times likely to use contraception after abortion compared to their unmarried counterparts. This finding was similar to other Ethiopian studies conducted in Tigray in 2018 and in Jimma in 2016, which reported higher odds of using PAFP/C of 2.5 times and 6.7 times, respectively, among married women than single women [14,26]. On a contrary, another Ethiopian study done in 2019 suggested that single women were 7.2 times, respectively, more likely to utilize PAFP/C than married women [17]. The possible explanation for the finding in this study could be that married women would be under the influence from their partners to use contraceptives. The Zambia demographic health survey (ZDHS) 2018 report also reinforced this finding by reporting a higher national modern contraceptive prevalence rate (NMCPR) among married women in the reproductive age group (15-49 years) at 48% than their unmarried counterparts at 43%[11,27]. In the other conflicting studies, the reason could be that single women were free from partner influence in decision to accept contraception. This study's finding entails the importance of male partner involvement in the PAFP/C counselling to increase its uptake [28].

This study found that PAFP/C usage was almost nine times higher among women who attained tertiary education compared to those who had no formal education. This finding was supported by the three studies, two conducted in Ethiopia's Tigray region [14] and Addis Ababa [23] and one conducted in Nigeria [15]. This high uptake of PAFP/C could be attributed to the fact that educated women are more interested in seeking information concerning their reproductive health which in turn enables them to make informed decisions.

In the present study, women who were employed were almost two times more likely to use PAFP/C than those who were unemployed. This finding was enforced by a study conducted in Addis Ababa in 2011 [29]. This could be attributed to the fact that employed women are likely to be responsible for their reproductive health issues and that most of the employed participants in this study had attained tertiary education which could further enable them to make informed reproductive health decisions. Furthermore, employed women would put aside fertility desires because of work.

In terms of socio-economic status, the current study found that women who lived in medium density areas had higher odds of accepting PAFP/C than those who lived in high-density areas. To the contrary, there was no significant association between living in low density area and uptake of contraception ($p = 0.109$). This contradictory finding may be due to small proportion of women from low density areas (25.2%). An Indian study done in 2012 agreed with the current study by reporting that women of low socio-economic status were less likely to use PAFP/C [6]. Possible explanation would be that poor women may lack insight and understanding of information about their reproductive health issues as they may be lacking formal education in most cases. This may affect their likelihood to access and use reproductive health services including PAFP/C.

Gravidity when adjusted for confounders was found to be statistically insignificant ($p = 0.808$). This finding is contrary to the findings of another study done in Kenya by Makenzius and colleagues in 2018 which showed that gravidities of more than one increased the odds of PAFP/C use [28]. This could be due to low proportions of study participants in this study who had gravidity above one which was the reference category. Under normal circumstances

women with high gravity are more likely to use contraception after an abortion.

The current study showed that having one to three living children was significantly associated with PAFP/C utilization. This finding was in line with an Addis Ababa study conducted in 2011 which reported similar findings [29]. The possible reason could be that women with live children would want to wait to have more children as they may want to concentrate on raising the ones they already have. Although this study found having a planned pregnancy to be significantly associated with high usage of post-abortion contraception, another study done in Ethiopia's Tigray region found no association between the two [14]. The reason for this study's finding could be that women with a planned index pregnancy are knowledgeable about reproductive health and contraceptives and are more likely to use PAFP/C to delay and / or prevent conception. The current study further established that there was higher usage of PAFP/C amongst women whose reason for abortion was unwanted pregnancy than those who aborted spontaneously. This was in line with another study done in Sweden which reported similar findings [30]. The explanation for this could be that motivation to initiate an effective contraceptive method among these women is highest immediately after the abortion to avoid a repeat unwanted pregnancy.

In this study, contraceptive knowledge, and history of using contraception were associated with higher odds of using PAFP/C among women. These findings were supported by the Ethiopian studies conducted in Tigray, Addis Ababa and Bahir Dar [14,17,29]. However, this study was in conflict with the Turkish done in 2009 where knowledge and previous contraceptive use were reported to have no effect on PAFP/C usage [31] and a Kenyan study done in 2015 [32]. The plausible explanation to findings by this study could be that prior exposure to contraceptive information and services influences women's understanding and awareness of the importance of PAFP/C usage. Therefore, this implies that women who have neither contraceptive knowledge nor ever used contraception should be offered more detailed contraceptive information and counselling whenever they seek PAC services at facilities.

This study found that women who received PAFP/C counselling had extremely higher odds to accept contraception than those that did not receive it. This finding was in agreement with studies done in Ethiopia, Pakistan, India and Turkey study in which women who received contraceptive counselling more likely to use post-abortion contraceptives [14,31,33,34]. This finding strongly indicated that PAFP/C counselling is an extremely important and effective tool to increase PAFP/C usage. This is evidenced by the fact that almost all the women that accepted PAFP/C in this study had received counselling. Furthermore, it meant that post-abortion period is the best time to introduce contraceptive counselling because women are more receptive to such information and messages.

This study found that never wanting to conceive again and wanting to wait to conceive were significantly associated with PAFP/C utilization. However, those who never wanted to conceive again were more likely to use PAFP/C compared to those who wanted to wait. This finding was in line with the study conducted in Urban Guinea which showed significant relationship between not willing to be pregnant within 12 months and post-abortion contraception acceptance [22]. The probable reason could be women who want to delay or never to conceive are likely to be more eager to prevent unwanted pregnancy and are, in turn, likely to use PAFP/C.

Conclusion

The Uptake of post-abortion contraception at the WNH was found to be 49.8% (200/402). This uptake is significantly low and in defiant to the recommended 100% post-abortion contraception usage according to the WHO and FIGO guidelines. Among the factors contributing to the low uptake of post-abortion contraception were: single marital status, lack of contraception awareness, low level of education, poor socioeconomic status, and lack of post abortion counselling. Women who had one to three live children were more likely to take up post abortion contraception.

Recommendations

Messages regarding PAFP/C should be targeted at women who are unmarried, young, have no formal education, childless, have no prior contraceptive knowledge, have never used contraception, and want to conceive after an abortion, with unplanned pregnancy and aborted spontaneously, to increase its utilization. A multicentric study is recommended to validate our findings.

Limitations

Firstly, this study was a cross-sectional study and so causal relationship of variables could not be established and reported.

Secondly, findings of this study could not be generalized be-

cause it was conducted at one study site, a tertiary hospital.

Lastly, this study might not give the real picture of post-abortion contraception utilization as women were not followed up to check how many continued with the methods after some time.

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Author Contributions

MK conceived, designed the study, analysed data, and wrote the manuscript. AB participated in the writing up of the manuscript. AK and BV supervised the whole research paper. All authors read through and approved final manuscript.

Declaration of Interests

No conflicts of interests are declared.

Bibliography

1. America L. "Preventing unsafe abortion Evidence brief". 4 (2014).
2. Sheet F. "Abortion in the United States". *Annals of Internal Medicine* 49.5 (2019): 1276.
3. Curtis C., *et al*. "Postabortion family planning progress: The role of donors and health professional associations". *Global Health: Science and Practice* 7 (2019): S222-230.
4. Shah IH., *et al*. "Postpartum and Post-Abortion Contraception: From Research to Programs". *Studies in Family Planning* 46.4 (2015): 343-353.
5. Thapa S., *et al*. "Knowledge, attitude and belief about contraception in post-partum and post abortal women in a tertiary care centre". *International Journal of Reproduction, Contraception, Obstetrics and Gynecology* 3.3 (2014): 533-539.
6. Zavier AJF and Padmadas SS. "Postabortion contraceptive use and method continuation in India". *International Journal of Gynecology and Obstetrics* 118.1 (2012): 65-70.
7. Johnson BR., *et al*. "Reducing Unplanned Pregnancy and Abortion in Zimbabwe through Postabortion". *Family Planning* 33 (2002).
8. World Health Organization., UNICEF., United Nations Population Fund., World Bank. Trends in maternal mortality : 1990 to 2008 : estimates. World Helath Organization (2010).
9. Health G. "Key Consensus Points FAMILY PLANNING: A KEY COMPONENT OF POST ABORTION CARE". (2009).
10. Usaid. "Family Planning: a Key Component of Post Abortion Care". *Training* (2013): 1-4.
11. Zambia Statistics Agency, Ministry of Health Zambia, ICF. The DHS Program - Zambia: DHS, 2018 - Final Report (English) (2019).
12. Teshale AB. "Factors associated with unmet need for family planning in sub-Saharan Africa: A multilevel multinomial logistic regression analysis". *PLoS One* 17 (2022): 1-15.
13. Benson J., *et al*. "The uptake is very high. Compare with other studies. And check with previWhat factors contribute to post-abortion contraceptive uptake by young women? A program evaluation in 10 countries in Asia and Sub-Saharan Africa". *Global Health: Science and Practice* 5.4 (2017): 644-657.
14. Moges Y., *et al*. "Factors associated with uptake of post-abortion family planning in Shire town, Tigray, Ethiopia". *BMC Research Notes* 11.1 (2018): 1-6.
15. Taiwo A., *et al*. No Title.
16. Haddad LB and Nour NM. "Unsafe abortion: unnecessary maternal mortality". *Reviews in Obstetrics and Gynecology* 2.2 (2009): 122-126.
17. Mekuria A., *et al*. "Postabortion contraceptive use in Bahir Dar, Ethiopia: a cross sectional study". *Contraception and Reproductive Medicine* 4.1 (2019).
18. Gallagher M., *et al*. "Post-Abortion Contraception among Women in Zambia: Missed Opportunities" (2017).
19. Seid A., *et al*. "Integration of Family Planning Services within Post Abortion Care at Health Facilities in Dessie -North East Ethiopia". *Science, Technology and Arts Research* 1.1 (2013): 38.

20. Shrestha A and Sharma P. "Post Abortion Choice and Acceptance of Contraception". *Nepal Journal of Obstetrics and Gynaecology* 8.1 (2013): 14-17.

21. Ferreira AIS., *et al*. "Choices on contraceptive methods in post-abortion family planning clinic in the northeast Brazil". *Reproductive Health* 7.1 (2010): 5-9.

22. Mina Millimouno T., *et al*. "The Uptake of Modern Contraceptive Methods Among Clients of Post-Abortion Care Services in Urban Guinea". *Central African Journal of Public Health* 5.5 (2019): 203.

23. Rasch V., *et al*. "Acceptance of contraceptives among women who had an unsafe abortion in Dar es Salaam".

24. Karabacak O., *et al*. "Contraceptive practices of women after abortion in Turkey". *The European Journal of Contraception and Reproductive Health Care* 6.3 (2001): 129-133.

25. Rominski SD., *et al*. "Post-abortion contraception choices of women in Ghana: A one-year review". *Global Public Health* 10.3 (2015): 345-353.

26. EK E M A. "Safe Abortion Care, Utilization of Post Abortion Contraception and associated Factors, Jimma Ethiopia". *Journal of Women's Heal Care* 5.4 (2016).

27. Gianett B., *et al*. "Maternal mortality trends and correlates in Zambia". Health Press Zambia Bull; 3 (2019).

28. Makenzius M., *et al*. "Contraceptive uptake in post abortion care — Secondary outcomes from a randomised controlled trial, Kisumu, Kenya". *PLoS One* 13.8 (2018).

29. Prata N., *et al*. "Factors associated with choice of post-abortion contraception in Addis Ababa, Ethiopia". *Afr J Reprod Health* 15.3 (2011): 51-57.

30. Gemzell-Danielsson K and Kallner Kopp H. "Post abortion contraception". *Women's Health* 11.6 (2015): 779-784.

31. Ceylan A., *et al*. "Post abortion family planning counseling as a tool to increase contraception use". *BMC Public Health* 9.1983 (2009): 1-7.

32. Ochako R., *et al*. "Barriers to modern contraceptive methods uptake among young women in Kenya: A qualitative study Global Health". *BMC Public Health* 15.1 (2015): 1-9.

33. Bansal A., *et al*. "Understanding the healthcare provider role on post abortion contraception adoption in India using National Family Health Survey - 5". *Reproductive Health* (2023): 1-11.

34. Saeed GA., *et al*. "Change in trend of contraceptive uptake - effect of educational leaflets and counseling". *Contraception* 77.5 (2008): 377-381.