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Research Article

Factors Associated with Loss to Follow-up among Acceptors of Modern Contraceptive Methods at the Family Planning Clinic of a Tertiary Hospital in Port-Harcourt, Nigeria

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Abstract

Background: Routine follow-up is recommended for safe and effective use of contraception in healthy women. However, it has been observed, that a large proportion of acceptors never return to the clinic for follow-up.

Objective: To investigate this problem, this study sought to determine the rate and factors associated with Lost to follow-up (LFU) among acceptors of modern contraceptives at a family planning clinic in a tertiary hospital.

Methodology: This was a retrospective descriptive study of All women who initiated a modern contraceptive method between 1st January 2014 and 31st December 2018, that were lost to follow-up. Data were retrieved from the hospital records and case notes of all the women using a proforma data sheet. Information on maternal age, parity, educational status, contraceptive use intention (spacing or limiting) and method chosen were retrieved. Data were entered into Excel sheet and analyzed with SPSS version 20. Chi-square test and Fisher's exact test for categorical variables were used for bivariate analysis and multiple logistic regression was applied to test for significant association with P-values of < 0.05 taken as significant.

Results: There were 168 LFU acceptors (of 517 total acceptors) during the five-year study period giving a LFU rate of 32.5%. The Mean age of the LFU acceptors ± SD was 34.36 ± 5.28 years and median parity was Para 3. Majority 103 (61.3%) accepted Implants followed by the IUDs in 64 (38.1%). Majority 105 (62.5%) initiated contraception for completed family size. Significantly more LFU acceptors were using contraception for completed family size than for child spacing compared to those who continued follow-up. There was significant association between LFU acceptors with age (P = 0.001) and education (P = 0.047), but not with parity (P = 0.259). However, following logistic regression analysis, only age remained statistically significant (P = 0.002). Women > 30 years of age were almost twice as likely to be LFU than those below ≤ 30 years.

Conclusion: The LFU rate of 32.5% in this study is unacceptably high. Older women over 30 years using contraception for completed family size were more likely to be lost to follow-up. There is need to identify means of reducing LFU. Recording contact details such as e-mail and cell phone numbers can assist in follow-up with women who do not keep appointments. Improved participant retention will improve validity of programs and allows for important clinical outcomes, such as pregnancy, to be assessed.

Keywords: *Modern Contraceptives; Loss to Follow-up; Associated Factors; Family Planning; Port-Harcourt*

Introduction

Contraceptive methods are generally categorized as either modern or traditional. The most acceptable modern methods are the pill, injectables, intrauterine devices (IUDs) and implants. Modern methods have been well accepted by clients in this family planning clinic. A recent study on contraceptive choices and acceptability in Port Harcourt revealed the most common methods as implants (70.2%), followed by IUDs (25.8%), Injectables (3.2%) and oral pills (0.8%) [1]. The implants and IUDs require active discontinuation, which requires clients to return to the clinic for removal. Both are recognized as the most effective long-acting reversible contraceptives (LARCs).

Routine follow-up is recommended for safe and effective use of contraception in healthy women. The follow-up needs vary for different users and situations, and for different methods. Specific populations that might benefit from more frequent follow-up visits include adolescents, those with certain medical conditions or multiple medical conditions. Follow-up visits provide opportunity to assess the woman's satisfaction with her current method, concerns about the method, changes in health status (including medications that would affect the safe and continued use of the method), assessing weight changes and counselling concerned women about weight gain, and opportunity to check for the presence of IUD strings.

However, it has been observed, that a large proportion of acceptors never return to the clinic for follow-up. Clients who are lost to follow-up (LFU) are usually treated in analysis as if they are no different from those who continued under observation. It is assumed the accidental pregnancy rates in the two groups of women is the same. Although the device is less likely to fail in LFU acceptors, the alternate hypothesis is also possible. This potential source of bias in evaluating contraceptives has long been recognized [2]. However, sufficient attention has not been given to address this problem and determine factors associated with loss to follow-up.

Likely reasons why clients are LFU may include the clinic routine, its geographical location, waiting times and the attitude of clinic staff. These can all influence the client's reaction to the clinic and thus her subsequent performance at that clinic. Also, the contraceptive method itself can contribute to the decision to drop out because of physical or psychological side effects, or even for aesthetic reasons.

These methods are expensive in private healthcare facilities but are offered at little or no cost in government healthcare facilities like our clinic. It is possible that some women attend the clinic just to obtain the methods cheaply and later return to their private care providers for follow-up. It is also possible that, since these methods are LARCs requiring little or no follow-up, women requiring contraception for limiting or completed family size, accept the methods and do not return for follow-up. These methods though requiring active discontinuation, can be removed at any health facility at little cost. To obtain information about this problem, the present study sought to determine the rate and factors associated with LFU among acceptors of modern contraceptives at a family planning clinic in a tertiary hospital.

Materials and Methods

This study was conducted at the family planning clinic of the Rivers State University Teaching Hospital (RSUTH), a tertiary hospital owned and funded by the Government of Rivers State. The hospital provides family planning counselling and services to clients from all over Port Harcourt city, as well as women who were delivered in the hospital. The hospital provides free services except in a few instances where the clients may pay a little token for certain consumables. The clinic provides all forms of modern contraceptives and has qualified providers trained in insertion and removal of implants and IUDs. The clinic runs daily, Mondays through Fridays.

This was a descriptive, retrospective review of all clients that were LFU after accepting a modern contraceptive method at the family planning clinic of the Rivers State University Teaching Hospital (RSUTH) from January 1, 2014 to December 31, 2018. Data were retrieved from the hospital records and case notes of all the women using a proforma data sheet. Information on maternal age, parity, educational status, contraceptive use intention (spacing or limiting) and method chosen were retrieved.

All women who initiated a modern contraceptive method between 1st January 2014 and 31st December 2018 were included in the study. Acceptors who did not return for follow-up, up to two years after acceptance of a method were defined as LFU (defaulters) in accordance with generally accepted recommendations [3]. Those who had follow-up visits were considered as non-defaulters.

Data were entered into Microsoft Excel sheet and exported to SPSS version 20 for analysis and presented as means, numbers and percentages, frequency tables and charts. Chi-square test and Fisher's exact test for categorical variables were used for bivariate analysis and multiple logistic regression was applied to test for significant association with P-values of 0.05 or less taken as significant.

Results

Five hundred and seventeen (517) women accepted a modern method of contraception in the clinic between January 1, 2014 and December 31, 2018. There were 168 LFU acceptors during the five-year study period giving a LFU rate of 32.5%. The Mean age of the LFU acceptors ± SD was 34.36 ± 5.28 years, with median age of 34 years and age range of 22 - 49 years. The median parity was Para 3 with a range of Para 0 - 9. Table 1 shows the characteristics of the LFU acceptors, with majority 108 (64.3%) in the 31 - 40 years age category, 149 (88.7%) haven had secondary education and above and 117 (69.6%) in the parity group of 2 - 4.

Variables (N = 168)	Frequency	Percentage
Age in years		
21 - 30 years	37	22.0
31 - 40 years	108	64.3
> 40 years	23	13.7
Educational level		
None	6	3.6
Primary	13	7.7
Secondary	90	53.6
Tertiary	59	35.1
Parity		
Para 0	1	0.6
Para 1	8	4.8
Para 2 - 4	117	69.6
Para ≥ 5	42	25.0

Table 1: *Characteristics of LFU acceptors at the tertiary hospital who ended family planning counseling/services.*

Figure 1 relates to the modern contraceptive method accepted by the LFU acceptors at the clinic. Majority 103 (61.3%) accepted implants (Implanon and Jadelle) followed by the IUDs in 64 (38.1%), both long-acting methods constituted 167 (99.4%) of method accepted by the LFU acceptors.

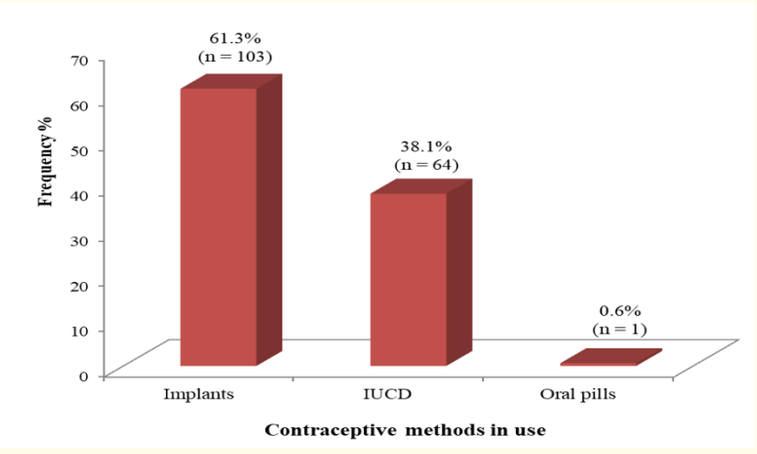

Figure 1: *Contraceptive methods in use among LFU acceptors at the tertiary hospital.*

Table 2 and figure 2 shows the contraceptive methods accepted according to the reason/intention for starting an episode of use among LFU acceptors. Majority 105 (62.5%) initiated contraception for completed family size (limiting) and this was the majority reason among implants and IUCD acceptors alike. Use intention for child spacing was the reason for initiating contraception in 63 (37.5%) of the LFU acceptors. The differences in the proportions were, however, not significant.

	Contraceptive methods in use			
Reasons/Intention for starting use	**Implants n (%)**	**IUCD n (%)**	**Oral pills n (%)**	**Total n (%)**
Completed childbearing	65 (61.9)	40 (38.1)	0 (0.0)	105 (100.0)
Child spacing	38 (60.3)	24 (38.1)	1 (1.6)	63 (100.0)
Total	103 (61.3)	64 (38.1)	1 (0.6)	168 (100.0)

Table 2: *Contraceptive methods in use according to the reason for starting an episode of use among LFU acceptors. Fisher's exact test = 1.595; p-value = 0.580.*

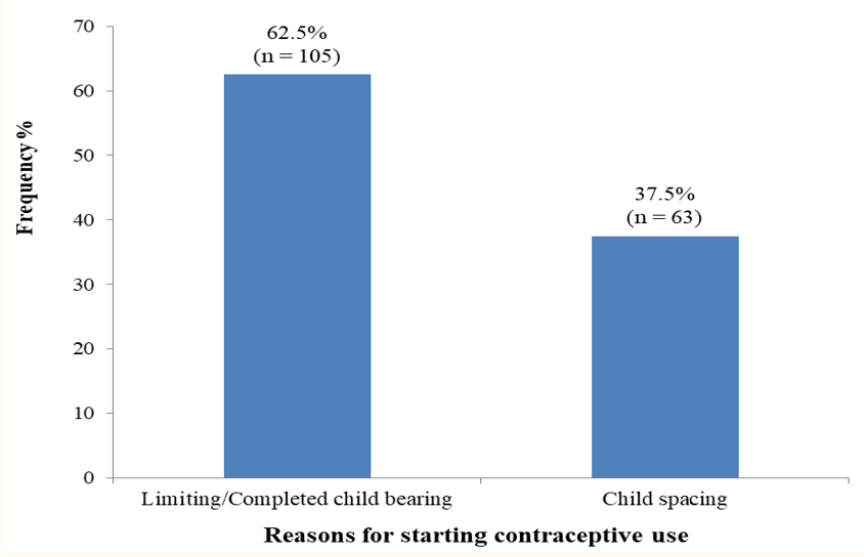

Figure 2: *Reasons for starting an episode of contraceptive use among LFU acceptors who ended family planning counseling/services at the tertiary hospital.*

A comparison of the reason/use intention for initiating contraception among the LFU acceptors (defaulters) and those who continued follow-up (non-defaulters) is as shown in figure 3. The difference in the proportion of the LFU acceptors in the limiting/completed family size and the child spacing group was statistically significant (P = 0.0001). More women who chose to use contraception for completed family size were more likely to be lost to follow up after accepting a modern method than those accepting use for child spacing.

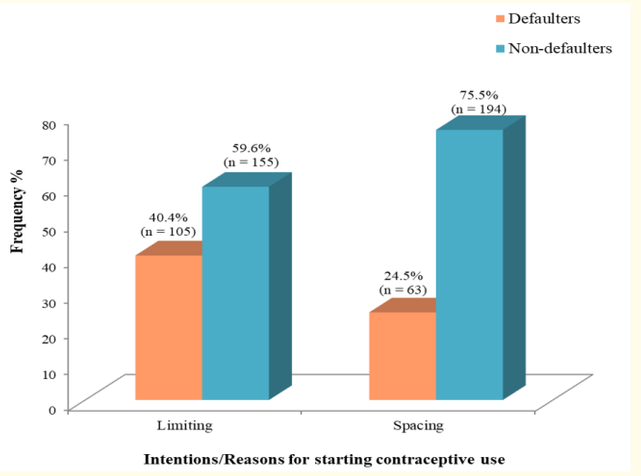

Figure 3: *Intentions/reasons for starting contraceptive use among defaulters (LFU) and non-defaulters. Chi Square = 14.841; P = 0.0001* (*: Statistically significant).*

Table 3 relates to a bivariate analysis of factors associated with likelihood of LFU among the acceptors of modern contraceptive methods. There was a significant association between LFU acceptors with age category (P = 0.001) and educational level (P = 0.047), but not with parity category (P = 0.259). However, following multiple logistic regression analysis (Table 4), only age category remained statistically significant (P = 0.002). Women > 30 years of age were almost twice as likely to be LFU than those 30 years and below.

	Status of women who started contraceptive use		
Variables	**Defaulters (LFU) N = 168 n (%)**	**Non-defaulters N = 349 n (%)**	**Total N = 517 n (%)**
Age in years			
≤ 20 years	0 (0.0)	5 (100.0)	5 (100.0)
21 - 30 years	37 (23.6)	120 (76.4)	157 (100.0)
31 - 40 years	108 (35.0)	201 (65.0)	309 (100.0)
> 40 years	23 (50.0)	23 (50.0)	46 (100.0)
	Fisher's exact test = 14.879; p-value = 0.001*		
Educational level			
None	6 (66.7)	3 (33.3)	9 (100.0)
Primary	13 (34.2)	25 (65.8)	38 (100.0)
Secondary	90 (29.0)	220 (71.0)	310 (100.0)
Tertiary	59 (36.9)	101 (63.1)	160 (100.0)
	Chi Square = 7.936; p-value = 0.047*		
Parity			
Para 0	1 (33.3)	2 (66.7)	3 (100.0)
Para 1	8 (22.9)	27 (77.1)	35 (100.0)
Para 2 - 4	117 (31.5)	254 (68.5)	371 (100.0)
Para ≥ 5	42 (38.9)	66 (61.1)	108 (100.0)
	Fisher's exact test = 3.764; p-value = 0.259		

Table 3: *Comparison of socio-demographic characteristics among defaulters (LFU) and non-defaulters who started an episode of contraceptive use.*

**: Statistically significant (p < 0.05).*

Factors	Coefficient (B)	Odds ratio (OR)	95% CI	p value
Age category				
> 30 years	0.663	1.940	1.27 - 2.97	0.002*
≤ 30 years[R]		1		
Educational level				
Above secondary	0.237	1.268	0.85 - 1.89	0.241
Secondary and below[R]		1		

Table 4: *Multiple logistic regression showing factors associated with defaulting in contraceptive use.*

**: Statistically significant (p < 0.05).*

Discussion

There are good reasons to evaluate a family planning program through a study of its LFU acceptors. Among assessment of failures of a program, LFU acceptors are far more numerous than contraceptive discontinuations and contraceptive failures. However, while LFU acceptors do not necessarily stop using their methods, there is a need to find out their subsequent pregnancy experiences. Trussel [2] in his publication mentioned a study by Tietze who found a 49% LFU rate and where after searching for those LFU, the pregnancy rate of the contraceptive under evaluation increased from 9.4 to 14.4/100 women-years, showing how inaccurate the findings of a study can be when too many women are LFU [4].

The 32.5% LFU rate found in this study represents a third of all acceptors of modern contraceptives during the five-year study period and is far from encouraging. It is higher than the 26% reported by a study in Brazil [5], although that study looked at LFU among Levonorgestrel-releasing Intrauterine System (LNG-IUS) acceptors only. A much older study that reported LFU for all methods reported a rate of 51.47% [6], while another that considered only contraceptive jelly, creams and diaphragms, reported 44.5% [7]. Rates for LFU acceptors appear to be associated with the type of contraceptive being evaluated, by the operational definition of when a client becomes LFU and the length of the observation period. The wide disparity in the estimated rates is partly due to the different definitions of LFU and the observation periods in these studies.

We note the scarcity of publications addressing the problem of LFU acceptors, perhaps the rates are too low in well developed countries to cause concern. For example, in a large study carried out in Denmark, Finland and Sweden, the LFU rate was about 11% after three years [8]. This is far lower than the findings of this study (after two years) and that of a study from Peru of 36% (after one year) [9].

This study found a significant association of LFU acceptors among women whose use intention was for limiting or completed family size rather than for child spacing compared to non-defaulters. This confirms our earlier hypothesis that perhaps most LFU are women who have completed their family size who accept a LARC method that needs little or no follow-up. This also explains the finding in the study of significant association with the age of the acceptors, where women > 30 years were almost twice as likely to be LFU than younger women. Contrarily, Faundes [5] found the LFU rate to be highest among women under 25 years and lowest among those over 35 years, the difference was only statistically significant when the lowest age group of ≤ 24 years was compared to the highest age group ≥ 35 years. His study had a completely different use intention and only considered LNG-IUS.

The findings of Faundes [5] that women with higher education levels are at a significantly greater risk of LFU could not be replicated in this study, as the significant difference on bivariate analysis collapsed on logistic regression. The difference in the findings may be the

differences in the study population. In this study, 88.7% had secondary (9 - 12 years) education and above, while in their study it was < 40%. However, their postulation that highly educated women, and therefore of high socioeconomic class, are more likely to be LFU as they only attend government health settings to receive the method and follow-up at private care facilities, might not be disagreed with. This is because the educational level of their study population appears more heterogenous than in this study. The study by Philips., *et al*. [10], like this study, also did not find any significant association of LFU and educational level.

The reasons for LFU in this study, unfortunately, could not be determined, as those clients could not be reached. The reasons for LFU have been determined in only a few studies. The most frequent reasons, from the study of Creedy and Polgar [7], being pregnancy (planned or unintentional), difficulty in getting to clinic, going to a private physician, and no longer needing contraception. Objections to a particular method or contraception in general were quite rare. Faundes [5] also found going to a private physician as reason for LFU. In the study by Bracken and Kasi [11], the three most frequent ones (which accounted for two-thirds of the reasons) were clinical complaints with contraception, wanted and unwanted pregnancy, and inconvenient demands of clinic routine.

There is need to identify means of reducing LFU in all settings. One publication was found in which means of reducing LFU rates was evaluated, and they found that providing an e-mail address or having cell phone numbers recorded, were factors associated with successful contact at the 12-month follow-up visit [12]. Previously no such records were collected or used for tracing of acceptors in our clinic and need to be applied in all clinics. Improved participant retention will improve validity of family planning programs and allows for important clinical outcomes, such as pregnancy, to be assessed [5]. It can and has been argued by Rivera., *et al*. [13], that women who are not volunteers for a clinical trial, need not be compelled for further follow-up after IUD insertion except if complication arise, since this only increases unnecessary consultations. However, in family planning clinics where performance of contraceptive methods is a matter of continuous evaluation, every effort should be made to keep the LFU rate low.

This study was limited by its retrospective design and the unavailability of tracking details, which would have enabled follow-up of the clients that were LFU to evaluate the various reasons for their dropping out from the family planning clinic. This would have been possible if at inception baseline information that will facilitate tracking the clients, such as cell phone numbers and email addresses, were collected.

Conclusion

The LFU rate of 32.5% in this study is unacceptably high. Older women over 30 years using contraception for completed family size were more likely to be lost to follow-up. There is need to identify means of reducing LFU rate. Recording contact details such as e-mail and cell phone numbers can assist in follow-up with women who do not keep appointments. Improved participant retention will improve validity of family planning programs and allows for important clinical outcomes, such as pregnancy, to be assessed.

Further research needs to incorporate motivational and attitudinal variables, which could be operative, and describe in greater depth the psychosocial setting in which contraception is practiced. Though the simpler demographic variables are identified as reliable and replicable predictors of LFU, further studies need to include more complex attitudinal and motivational variables to advance our understanding of the process of dropping out from family planning clinics.

Conflict of Interest

All the authors declare no conflict of interest.

Bibliography

1. Awoyesuku PA and Altraide BOA. "Contraceptive Choices and Acceptability among New Clients Attending Family Planning Unit of Rivers State University Teaching Hospital, Nigeria". *Journal of Advances in Medicine and Medical Research* 30.3 (2019): 1-7.

2. Trussel J. "Methodological pitfalls in the analysis of contraceptive failure". *Statistics in Medicine* 10.2 (1991): 201-220.

3. Tietze C and Lewis S. "Recommended procedures for the statistical evaluation of intrauterine contraception". *Studies in Family Planning* 4.2 (1973): 35-42.

4. Tietze C., *et al*. "The clinical effectiveness of the rhythm method of contraception". *Fertility and Sterility* 2.5 (1951): 444-450.

5. Faundes A. "Factors Associated with Loss to Follow-up Among Acceptors of the Levonorgestrel-releasing Intrauterine System at a Public-sector Family Planning Clinic in Brazil". *Jacobs Journal of Gynecology and Obstetrics* (2018).

6. Dubrow H and Kuder K. "Combined Postpartum and Family Planning Clinic". *Obstetrics and Gynecolog* 11 (1958): 586.

7. Creedy BS and Polgar S. "Returning for Yearly Check-ups: A study of 22,000 Family Planning Clients". New York: Planned Parenthood-World Population, mimeo 1063.

8. Nygren KG., *et al*. "Intrauterine contraception with Nova-T and Copper-T-200 during three years". *Contraception* 24.5 (1981): 529-542.

9. Escudero F., *et al*. "Factors associated with discontinuation rates of the Copper T380A in a Peruvian public hospital". *Advances in Contraception* 15.4 (1999): 303-311.

10. Phillips SJ., *et al*. "Continuation of copper and levonorgestrel intrauterine devices: a retrospective cohort study". *American Journal of Obstetrics and Gynecology* 217.1 (2017): 57.e1-57.e6.

11. Bracken MB and Kasi SV. "Factors Associated with Dropping out of Family Planning Clinics in Jamaica". *American Journal of Public Health* 65.3 (1973): 262-271.

12. Torres LN., *et al*. "We should really keep in touch: predictors of the ability to maintain contact with contraception clinical trial participants over 12 months". *Contraception* 90.6 (2014): 575-580.

13. Rivera R., *et al*. "Analysis of client characteristics that may affect early discontinuation of the TCu-380A IUD". *Contraception* 60.3 (1999): 155-160.

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