Family Planning: Choosing Contraceptive Methods in Kongo Central Province, the Democratic Republic of the Congo

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Abstract

Background: In developing countries, access to modern contraceptive methods remains a concern, particularly in Sub-Saharan Africa (SSA). Although satisfactory progress in increasing family planning use has been observed worldwide, demand and unmet need continue to grow. This study describes the different reasons that push women in rural and urban areas of Kongo Central province in the Democratic Republic of Congo (DRC) to choose one of the modern contraceptive methods. **Methods:** A cross-sectional, analytical study on the 705 clients recruited during the family planning mini-campaigns organized from January to March 2021 in 8 health zones of the Kongo Central Province in DRC. Community Contraceptive Methods Distributors (CCMD) collected the data, community health workers (CHW) trained in clinical providers' community family planning service. The Pearson's Chi^2 test was used to compare the proportions of the methods chosen in the different study variables categories, and logistic regression was done to analyze the strength of association between the uses of long-acting reversible contraceptives (LARC) with the study variables. **Results:** The mean age (SD) of the clients was 25.7 years. The median number of living children was 2 children and that of pregnancies carried per client was 3. Three (3) clients under the age of 20 out of 126 (2.4%) have 3 to 4 living children and one a up to 6 living children. Out of a total of 705 clients, 11.1% aged under 20 and 39.1% of clients aged 20 to 24 requested LARC. Divorced and unmarried women chose SAC and married and common-law women chose LARC more, compared to other categories of women. Unemployed women prefer SACs more than other professional categories, and women farmers prefer LARC. The level of education has no influence on the choice of method. The use of LARC increased with the number

of pregnancies carried, children alive, and children who died. The age and number of children who died did not influence the association between LARC and alive children. **Conclusion:** The choice of modern contraceptive methods is guided by the age of the mother and the number of children living in her life. Younger women are more likely to choose short-acting contraceptive methods in the eight health zones of Kongo Central province. The high number of living children influences the choice of LARC regardless of age.

Keywords

Choice, Clients, Contraceptive

1. Introduction

Among the priorities to be achieved before 2030 for sustainable development, goal 3 of the 17 global goals aims to reduce the maternal mortality rate below 70 per 100,000 live births and ensure access to health services, sexual and reproductive health care, and family planning [1].

This requires accessibility to contractive methods and covering unmet contraceptive needs, especially for poor populations in rural areas, who often present lower contraceptive prevalence than their urban counterparts [2] [3].

In developing countries, particularly Sub-Saharan Africa (SSA), access to modern contraceptive methods remains a concern. Although satisfactory progress in family planning use has been seen in many countries, demand increases rapidly [1].

In developing regions, an estimated 257 million women who want to avoid pregnancy are not using safe and effective family planning methods, for reasons ranging from lack of access to information or services to lack of support from their partners or communities. This threatens their ability to build a better future for themselves, their families and their communities [4]. The proportion of women of reproductive age (15 - 49) using modern family planning methods was 75.7% globally in 2019. Still, less than half of family planning needs were met in Central Africa and West Africa [5] [6].

The DRC is one of the most populous countries in SSA. It is characterized by very high maternal mortality rates and a low use rate of modern contraceptive methods. However, an encouraging increase in contraceptive prevalence since 2012 has been observed [7] [8] [9]. In its 2014 national strategic plan, the country set the objective to increase the modern contraceptive prevalence estimated at 6.5% in 2013 (5.4% in 2010) to at least 19% by 2020 [10]. Although the modern contraceptive prevalence for all women in this country has to 16.1% [11] [12], much remains.

A previous study on contraceptive methods carried out in the province of Kongo Central (DRC) showed that women from rural areas, are married and older (over 25 years) tend to choose LARC [3].

This study aims to describe the different reasons that push women in rural

and urban areas of Kongo Central province in the Democratic Republic of Congo (DRC) to choose one of the modern contraceptive methods.

2. Methods

An analysis of service data generated during 14 Family Planning (FP) mini-campaigns organized from January to March 2021 in 8 health zones in Kongo Central/DRC (Masa, Sona Bata, Kisantu, Mbanza Ngungu, Kimpese, Nzanza, Matadi, and Inga), in DRC was made. We used non-probability convenience sampling. All new clients who requested first time, a modern contraceptive method were included in the study. A total of 705 clients were included in the study. All modern methods were available and each client had the option of taking the method of her choice after general counseling with a cost ranging from 0 to 1.25$ USD per category of method. The data were collected by community health workers and clinical providers trained in family planning service provision using routine FP service registries. These registries include the following variables for each client: age, marital status, educational level, profession, children alive, children deceased, number of abortions, number of pregnancies.

Three categories of variables were used: sociodemographic variables (age, marital status, level of education, profession, number of living and dead children), clinical and gynecological variables (methods chosen, and total pregnancies carried).

The age, initially continuous variable, was categorized into three classes: Under 20, 20 to 24 years old, and 25 to 49 years old. The same is true for the number of living children, categorized into five classes (None, one to two children, three to four children, five to six children, and seven to eight) then in two categories (no living children versus living children). The deceased children variable was grouped first into three classes (None, one child, two or more) and then into two categories (None versus one or more children). The total number of pregnancies carried was categorized into five classes (None, one pregnancy, two to five, six to nine, and ten to fourteen) then in four categories (None, one pregnancy, two to five, six or more).

The variable of the contraceptive method chosen was grouped into two classes: Short-Acting Contraceptives including male and female condoms, Cyclebeads, pills, emergency contraception, and injectable and Long-Acting Reversible Contraceptive (LARC), which include implants and IUDs, although no client chose the latter.

The method variable was divided into two categories, short-acting contraceptive methods, and LARC. Pearson's Chi[2] test was used after checking the conditions of its application to compare the proportions of the chosen methods in the different categories of study variables. Logistic regression was done to analyze the strength of association between the use of LARC with the clinical and gynecological variables of the study. The stepwise forward exploratory approach with automatic step-by-step selection (input P = 0.05 and output P = 0.10) was used

and made it possible to generate the specific and adequate final model (Hosmer test-Lemeshow NS) for this study.

Two stratified analyzes were also performed. They verified the impact of age and the number of children who died on the association between LARC's choice and the number of children alive. The homogeneity of the Relative Risks (RR) in the strata for these two analyzes was judged using the Chi^2 interaction test. The conclusion was drawn when there was homogeneity after comparing the crude RR with the adjusted RR (estimated by the Mantel-Haenszel test) and after calculating the relative Dabis difference. All these analyses were performed with STATA version 14 software, and a significance level α = 5% was used. Before data collection, the protocol was submitted to the Ethics Committee of the Protestant University in Congo (Ref: CEUPC00095) for approval; at the provincial level, authorization was obtained from the Provincial Coordination of the PNSR Kongo Central.

3. Results

The clients' average age (SD) was 25.7 ± 6.3 years (Min: 13 years; Max: 49 years). The median number (IQS) of pregnancies carried by each woman was 3 (1 - 4) (Min: 0; Max: 14 pregnancies), and that of alive children for each woman was 2 (1 - 4) (Min: 0 children; Max: 8 children). The socio-demographic and gynecological data of these clients are presented in Table 1.

Among adolescents aged 20 years, 64.3% have one to two children alive, and 1.4% of young people aged 20 to 24 have five to six children. Some clients aged 25 to 49 years have up to seven children alive (See Table 2).

The proportion of women who chose LARC increased with age, with the number of pregnancies carried (P < 0.001), with the number of children alive (P < 0.001), and with the number of children who died (P < 0.001). Out of a total of 705 clients, 11.1% aged under 20 and 39.1% of clients aged 20 to 24 requested LARC. Divorced and unmarried women prefer SAC and married and common-law women prefer LARC, compared to other categories of women. Unemployed women prefer SACs more than other professional categories, and women farmers prefer LARC. The level of education has no influence on the choice of SAC or LARC (Table 3).

Adolescents aged 13 to 19 and youth aged 20 to 24 have also chosen LARC (Table 4). The Odds Ratio of clients who decided these methods did not change with age, which was higher among clients aged 20 to 24. However, this odds ratio increased with the number of children alive (P < 0.001).

Considering only two categories of clients; those without children versus those with living children, the Relative Difference (RD) of Davis calculated with the Relative Risk (RR) and the Adjusted Relative Risk is 4.5% in the association between LARC and the number of children alive stratified by age. This RD is zero in the association between LARC and number of children alive stratified by number of children dead. This shows that the client's age and the number of

Table 1. Sociodemographic, clinical and gynecological characteristics of clients.

Variable	n (705)	%	Mean (SD)	Me (IQS)
Age (years)			25.7 (6.3)	
<20	126	17.9		
20 - 24	207	29.4		
25 - 49	372	52.7		
Marital status				
Single	245	34.8		
Married or in union	447	63.4		
Divorced	13	1.8		
Educational level				
No schooling	234	33.2		
Primary	110	15.6		
Secondary	339	48.1		
Higher/University	22	3.1		
Profession				
No occupation	29	4.1		
Housewife	177	25.1		
Farmer	168	23.8		
Student	127	18.0		
Trader	198	28.1		
Civil servant or employee	6	0.9		
Children alive				2 (1 - 4)
No	58	8.2		
1 - 2	336	47.7		
3 - 4	214	30.3		
5 - 6	78	11.1		
7 - 8	19	2.7		
Children deceased				
No	561	79.6		
1	119	16.9		
2 - 7	25	3.5		
Total pregnancies carried				3 (1 - 4)
No	42	6		
1	142	20.1		

Continued

2 - 5	449	63.7
6 - 9	67	9.5
10 - 14	5	0.7
Selected methods		
Short-acting	448	63.5
LARC	257	36.5

Table 2. The proportion of the number of living children according to age.

Age (years)	0 children (%)	1 - 2 children (%)	3 - 4 children (%)	5 - 6 children (%)	≥7 children (%)
< 20 (n = 126)	32.5	64.3	2.4	0.8	0
20 – 24 (n = 207)	5.8	67.1	25.1	1.4	0.5
25 – 49 (n = 372)	1.3	31.2	42.7	19.9	4.8

Table 3. Choice of methods according to study variables (n = 705).

Variables	SAC (%)	LARC (%)	P^a
Age (years)			<0.001
< 20	88.9	11.1	
20 - 24	60.9	39.1	
25 - 49	56.5	43.5	
Marital status			<0.001
Single	72.7	27.3	
Married and in union	57.9	42.1	
Divorced	84.6	15.4	
Educational level			0.1
No schooling	65.4	34.6	
Primary	61.8	38.2	
Secondary	61.4	38.6	
Higher/University	86.4	13.6	
Profession			<0.01
No occupation	75.9	24.1	
Housewife	62.7	37.3	
Farmer	50	50	
Student	68.5	31.5	
Trader	70.7	29.3	

Continued

Civil servant or employee	66.7	33.3	
Total pregnancies carried			<0.001
0	92.9	7.1	
1	82.4	17.6	
2 - 5	60.6	39.4	
≥6	27.8	72.2	
Children alive			<0.001
0	93.1	6.9	
1 - 2	74.1	25.9	
3 - 4	53.7	46.3	
5 - 6	32,1	67.9	
7 - 8	26.3	73.7	
Children deceased			<0.001
0	65.8	34.2	
1	61.3	38.7	
2 - 7	24	76	

[a]Pearson's Chi^2.

Table 4. Association between use of LARC with age and number of children alive (n = 705).

Variables	%	aOR (IC95%)	P[a]
Age (years)			<0.001
<20	11.1	1	
20 - 24	39.1	3.4	
25 - 49	43.3	2,1	
Children alive			<0.001
0	6.9	1	
1 - 2	25.9	3.4	
3 - 4	46.3	7.5	
5 - 6	67.9	13.4	
7 - 8	73.7	8.4	

[a]Pearson's Chi^2. HL: P = 0.98.

children who died do not modify and have no confounding effect on the association between the choice of LARC and the number of children in life (**Table 5**).

4. Discussion

The average age of clients was 25.7 years. Previous studies on the use of modern contraceptive methods in the Democratic Republic of Congo shown that the

Table 5. Association between LARC and living children, stratified by age category and deceased children.

Variables		LARC (%)	RR [IC$_{95\%}$]
Age (years)	**13 - 17**		
	No children alive (n = 23)	0.0	1
	Children alive (n = 27)	18.5	2.0 (1.5 - 2.8)[a]
	18 - 24		
	No children alive (n = 30)	10.0	1
	Children alive (n = 253)	34.4	1.1 (1.0 - 1.2)[a]
	25 - 49		
	No children alive (n = 5)	20.0	1
	Children alive (n = 367)	43.9	1.0 (0.9 - 1.0)[a]
Children deceased	**0**		
	No children alive (n = 45)	6.7	1
	Children alive (n = 516)	36.6	1.1 (1.1 - 1.2)[b]
	1 - 7		
	No children alive (n = 13)	7.7	1
	Children alive (n = 131)	48.9	1.2 (1.1 - 1.3)[b]

[a]Chi^2 of homogeneity: p < 0.0001; RR = 1.12; adjusted RR = 1.07 [1.04 - 1.10]; Dabis's RD = 4.5%; [b]Chi^2 of homogeneity: p = 0.41; RR = 1.12; adjusted RR = 1.12 [1.1 - 1.7]; Dabis's RD = 0%; RD: Relative Difference.

average age of clients was between 25 and 30 years old [2] [3] [9] [13] [14]. This trend in our study can be explained by the fact that these young women, especially in rural areas, already have a high number of living children to support (Table 2). The median number of pregnancies carried by women in this study is 3, varying from 0 to 14 pregnancies and corresponds to the characteristics of women described in other studies and surveys carried out of the DRC [15]. We assume that this number of pregnancies up to 14 are unwanted pregnancies for some women. For others, recovery pregnancies are for women with lost children (Min: 0; Max: 7 children) (Table 1) or having abortions. However, all these early pregnancies, too numerous and very late, expose these women to an increased risk of complications and death for mothers, unborn babies, and newborns, and are also correlated with a higher risk of contracting sexually transmitted infections (STIs) and HIV/AIDS [15].

The use of LARC has increased with the number of pregnancies achieved, children alive and children who have died. This confirms the results of previous study in the Kongo Central province, which showed a preference for rural women, married and older (≥25 years) for LARC [3]. This trend can be explained in our study by the fact that these women who are still sexually active, having had several pregnancies and children alive, wish to delay or stop with

motherhood. However, despite this preference, many of these clients return to the health center shortly after (even before the scheduled date) to remove implants for the side effects, commonly heavy bleeding [15] [16] [17].

This study showed us that the choice of LARC by clients is oriented more by the number of children alive and not by age. These results are similar to those found in a study carried out in Kenya on LARC use among adolescent girls and young women and showed that age, residence, religion, marital status, and the number of living children had significant associations with LARC use [18]. Of these variables, the number of living children showed a stronger association revealing that the more children a woman has, the more likely she is to choose LARC. Young women with up to 2 living children were about 18 times more likely to choose LARC than those with no living children and those with at least 3 living children were 26 times more likely to use LARC than their counterparts without living children [18]. In our study, this statement may be due to the fact that women marry very young, especially in rural areas, and are exposed to large children even if the birth spacing is observed. This partly justifies that some clients under 25 already have many children alive, up to seven children (Table 2). Thus, this category of women may require other methods such as the IUD, which is a first-line contraceptive method, very effective, long-acting [19], but which is less preferred by clients [3] [9], despite its advantages [17], indeed, because it is less known, less popularized or because providers do not master insertion techniques. This contraceptive method can be offered to all women, regardless of parity [17]. It is the same for permanent contraception (through tubal ligation), which should also be part of the methods to be offered to clients who want it and those who consider that the number of children alive is sufficient mainly regardless of the age and in whom infertility secondary to the use of LARC is no longer a problem, their concern being the irreversible limitation of births [3], using the rights-based approach to family planning [20]. According to the study on the impact of contraceptive use among women desiring tubal ligation carried out at the Evangelical Medical Institute in Kimpese, Democratic Republic of Congo, the demand for surgical contraception comes mainly from married women and poorly educated (often in rural areas). Most of whom have more than five children [21].

Limitations of the Study

This study was only conducted on eight health zones among the 31 HZ of Kongo Central, limiting its external validity when designing national-level policies. The DRC presents wide variations among the contraceptive profile of its provinces and populations [11].

Additionally, although the full range of methods was available and the clients were free to select their preferred method after receiving counseling, user fees and method costs were not uniform across all methods. On average, the cost of LARC was five times that of purchasing short-acting methods. This cost difference could influence the choice of method. It could be why older women often chose it with more responsibilities and more money. Clients with insufficient

cash may have chosen short-acting methods, and clients may choose LARC with more cash.

5. Conclusion

The choice of modern contraceptive methods is guided by the age of the mother and the number of living children. Younger women are more likely to choose short-acting contraceptive methods. The high number of living children influences the choice of LARC regardless of age. Therefore, it is necessary to widen the possibility of other reversible, long-acting, and irreversible methods to help some women who may desire and prevent clients to certain cardiovascular risks associated with hormonal methods. Thus, a large-scale community inquiry must be initiated in this province on the acceptability and identify the reasons for non-adoption to these two methods to act on the probable causes according to the principles of human rights and related principles that apply to family planning.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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