

MEASURE Evaluation PRH

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Assessment of Healthy Timing and Spacing of Pregnancy Practices among Postpartum Women in Butembo, Eastern DRC, and Barriers to the Adoption of Family Planning Methods

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BACKGROUND

The Democratic Republic of Congo (DRC), located at the heart of Central Africa, shares borders with nine countries: Uganda, Rwanda, Burundi, and Tanzania, to the east; Zambia and Angola to the south; Congo to the west; and the Central African Republic and Sudan to the north. Following three decades of corrupt leadership that impoverished the country, since 1997 two rounds of war with militia rebellions and involving troops from other countries have further devastated the country. In 2006, democratic elections were held after four years of transition with United Nations support. However, despite the elections, some areas of the country, especially the east, are still unstable with pockets of rebellion from the Democratic Forces for the Liberation of Rwanda (FDLR) from Rwanda, the Lord's Resistance Army (LRA) from Uganda, and local militias.

These sets of wars have created one of the most severe humanitarian crises in the world, driving people into the bushes and forests and creating internally displaced populations, while others are forced to seek refuge in neighboring countries.

With the above situation, the country's health system was destroyed by years of neglect and conflict. Furthermore, very little government money is spent on health. Consequently, health facilities are run on a cost-recovery system, in which people are expected to pay for consultations and medications. Because people have become so impoverished, they are unable to access health services. Facilities suffer from a lack of supplies and many have stock-outs of basic medicines, including those needed for safe motherhood programs, like contraceptives.

DRC's health indicators are among the worst in the world. According to the 2007 DRC Demographic and Health Survey (DHS), the average fecundity is 6.3 births per woman — 5.4 in urban areas and 7 in rural areas.¹ The survey also showed that despite a high level of knowledge on contraceptives (82%), the contraceptive prevalence rate (CPR) for modern methods is low (7%). The infant mortality rate is estimated at 148 per 1,000 live births. The maternal mortality ratio (MMR) is among the highest in the world. Although the MMR has declined by almost two-thirds since the 2001 DHS estimate of 1,837 deaths per 100,000 live births, the most recent estimates from the 2007 DHS shows an MMR of 549 deaths per 100,000 live births. Despite general improvement, in some parts of eastern DRC, the situation is much worse; there are places where the MMR has been estimated to reach 3,000 per 100,000 live births.² The high ratios are thought to be due to the high fertility rate, low contraceptive prevalence rate (3%), and a short period of time between pregnancies.

The above statements apply to the whole country; information specific to the eastern part of DRC, and specifically in the city of Butembo where this study was conducted, is lacking. Butembo is a fast growing business hub for DRC's eastern provinces, located a few hundred kilometers from the Uganda border, and about 300 kilometers from Goma, its provincial capital.

Apart from sporadic lootings by fleeing soldiers from warring zones, Butembo has been spared from the recent wars. With this relative peace, many displaced people have sought refuge in the city, swelling the population and putting an additional strain on an already poor health system. Another reason for the population growth is the city's thriving businesses, leading to rural exodus and people emigrating from other provinces. Very soon, the population will reach 1 million people. Lands that were previously used for agriculture are now being used for building houses. Already, land conflicts have started spiking as people fight for the few remaining unused plots of land.

One action that may mitigate this is better use of such services as family planning (FP), which can help individuals achieve their fertility intentions of having only their desired number of children and having these children by proper spacing of pregnancies.³ As one walks through the streets of Butembo, it is easy to imagine that none of these aims are being met.

Worldwide, FP programs have yielded dramatically positive gains over the past decades. In developing countries, about half of couples now use modern contraception.⁴ These trends have meant millions of lives saved and additional benefits for women and children who enjoy healthier lives and can achieve greater levels of education and empowerment. Despite these gains elsewhere, contraceptive use is still low and the need remains high in some of the world's poorest and most populous countries, such as DRC.

It is now well known that FP helps prevent child as well as maternal deaths by reducing women's exposure to the health risks of pregnancy, childbirth, and abortion; and giving women more time to care for their children and themselves. In 2006, the World Health Organization (WHO) issued a recommendation that, after a live birth, the interval before attempting the next pregnancy should be at least 24 months; and the interval should be at least six months after a miscarriage or induced abortion, in order to reduce the risk of adverse maternal, perinatal, and infant outcomes.⁵ Several studies have confirmed the value of following this recommendation for birth spacing.⁶⁻¹⁰

In the DRC, the National Reproductive Health Program (PNSR) has made reducing maternal mortality its top priority. However, the program has little financial support from the government or outside sources, making it difficult for it to achieve this goal. Moreover, the program is not well integrated into the health system and little is known about knowledge of and attitudes toward FP among women in this part of the country. The results from the recent DHS are not representative enough to conclude this kind of information for eastern DRC.

The present study was therefore undertaken with the aim of assessing the extent of the knowledge, attitudes, and practice (KAP) of FP in Butembo and identifying a plausible strategy for reducing unwanted pregnancies and the associated morbidity and mortality. The study also attempted to identify whether couples are following the healthy timing and spacing of pregnancy (HTSP) strategy as recommended by WHO. Our study focused on women who have

just delivered because they are very likely to get pregnant again in a short period of time and the information extracted from them may reflect the extent of FP use and adherence to HTSP guidelines in the whole community.

We hope that our study will provide baseline data to assist policy-makers in developing appropriate evidence-based strategies to promote HTSP by the use of FP in this fast growing city. It will also enable them to monitor changes in FP practice and keep track of progress towards program goals. This study will also give junior academic staff of the university an opportunity to get involved in research for their future career advancement as co-investigators.

Research Questions

We wanted to find answers to the following questions regarding women from Butembo's FP use and spacing of pregnancies:

1. Among women who recently delivered, what is their level of knowledge, attitudes, and experience with FP?
2. How are they spacing their pregnancies? Do these women intend to space their next birth? If yes, how do they intend to postpone the birth? If no, what are their perceived barriers to space their pregnancies?
3. What is the degree of unmet need at the time of pregnancy?
4. To what extent is HTSP being promoted/discussed at health facilities following deliveries?

Specific study objectives included the following:

1. To assess the KAP about FP among women delivering in Butembo.
2. To determine their preferred FP methods used or to use in future.
3. To determine their source(s) of modern contraceptives methods.
4. To estimate the degree of unmet need (for nonusers when more children are not wanted, now or ever, or current unintended pregnancy due to non-use).
5. To determine their pattern of (and approaches to) spacing pregnancies to-date.
6. To determine whether FP is being promoted by health workers.

DATA COLLECTION/METHODOLOGY

In Butembo, most deliveries (98%) occur at health institutions.¹¹ We conducted a cross-sectional survey at all the maternity units of all the public and private hospitals and health centers located in the city. Since we did not have any previous FP KAP prevalence for the city, we used a convenience sample size calculated on the assumption of a prevalence rate of 50%, the most conservative estimate, for all reproductive health outcomes according to the Division of Reproductive Health (DRH) at the U.S. Centers for Disease Control and Prevention (CDC),¹² and 55% as the worst outcome. With a 95% confidence interval and response rate of 80%, 578 women were expected to be interviewed to obtain 462 completed interviews, from a total annual delivery number of 17,750 deliveries in the city's maternities according to 2008 statistics. The number of women interviewed at each facility in Butembo's 50 official maternities was proportional to the total number of deliveries. All consecutive mothers delivering at each facility were included until the study sample was reached. Participants provided informed consent, and approval to conduct the survey was obtained from the Provincial Inspection of Health through its local representative as well as from the Research Ethics Committee of the Catholic University of Graben. Trained health workers fluent in the local language conducted the interview using a pre-tested questionnaire designed for this survey.

The interviews employed some of the standard questionnaire items that have been used elsewhere on FP KAP. These included:

1. socio-demographic characteristics: age, marital status and duration, education, profession;
2. fertility and birth spacing experience: wanted pregnancies and interval, parity, number of live children, intention to postpone birth;
3. FP knowledge, attitudes, experience, methods ever used or intended to be used; and
4. FP promotion at the facility: discussion about FP, post-natal care (PNC) visits.

Data Analysis

The data collected were entered and analyzed using the computer software EPIINFO, version 3.5.1, of CDC. Where necessary, frequency or percentage as well as chi-square test (χ^2 test), Fisher exact test, and Student *t*-test were used to determine factors associated with FP KAP, with $p < 0.05$ determining the significance level for differences. Data are presented in tables.

RESULTS

Demographic Characteristics of Respondents

A total of 578 women were planned to be interviewed, but 574 post-delivery women were reached due to a lower volume of deliveries during the data collection period. Among them, two (0.3%) did not give their consent for interview, giving a response rate of nearly 100% or 572 women. Table 1 presents the socio-demographic characteristics of those who consented.

Almost two-thirds of respondents (64%) were from urban areas of the city. Their mean age was 26.7 (range: 14-48), with more than half in the range of 20-29 (54%). Teenage mothers (under 20 years) represented 14%. Most of the women were married (62%) and had some degree of education (82%): 38% had at least a primary school education, 39% a secondary school education and 5% a post secondary (university) education. Only 18% were illiterate. About two-thirds (60%) were Catholic and the rest Protestant, Islamic, or other. The three most common occupations among the respondents were housewife (35%), farmer/gardener (30%) and business woman (17%). The mean daily expenses was U.S. \$4.6 (range: U.S. \$ 1-25) for the 292 who gave their expenses. The remaining 280 women said they didn't know. About two-thirds (60%) possessed a radio set, 40% a bike, and 23% a motorcycle.

Degree of Knowledge about Fertility and Family Planning

When asked about awareness about a fertile period of their menstrual cycle, 68% replied affirmatively (table 2). However, when asked to specify that period, the percentage who could correctly state it (mid-cycle) fell to only 35% of all women.

Concerning awareness of FP, three-fourths of respondents (76%) attested being aware of FP methods, while 24% were not aware. Most of the respondents (96% of all women) knew at least one method, the rest (4%) knowing none. The most commonly known methods were the calendar method (56%), followed by male condom (42%), pills (33%), and injectables (26%). Vasectomy was the least known method (0.7%).

The three most common sources of information of the above for most of the respondents were from friends (50%), followed by nurses (32%) and school (14%). Doctors were given as a source of information by only 3% of the respondents.

When asked about their perception about FP, most women said it was good to use (80%). For the 14% who said it was bad to use, numerous reasons were given, primarily risk of health consequences (42%) and religious convictions (25%).

When compared with socio-demographic characteristics (tables 3 and 4), it was found that teenage mothers had little knowledge about both traditional and modern contraceptive

methods. None of these teenagers knew about the lactational amenorrhea method (LAM), the diaphragm, or vasectomy. And in general, the married, educated, Catholic, housewives, and those with a daily expenses of greater than U.S. \$ 1 per day were more aware of the different methods than the rest. Finally, urban women had a higher level of knowledge (range: 62%-86%) than rural ones, except for LAM where 54% of rural women knew as compared to 46% of urban women.

Use of Family Planning and Preferred Methods

Table 5 shows that 44% of respondents had used a form of FP in the past, against 31% prior to the most recent pregnancy and 72% intend to use FP in the future.

When asked about the methods used or to be used, the majority said they used the calendar method (72% in the past, and 62% prior to the recent pregnancy). The second most commonly used method was male condom (25% in the past and 21% prior to pregnancy) and pills (12% in the past and 10% prior to pregnancy). For future use, the preferred intended method was once again the calendar method as first choice (28%) followed by bilateral tubal ligation (BTL) (25%), implant (11%) and injectables (10%).

In summary, it was found that traditional methods were more often used than modern methods. Modern methods were used in 36% and 35% of cases in the past and prior to the most recent pregnancy respectively, compared to traditional method use of 64% and 65% respectively. However, among the 72% who intend to use FP in the future, in 55% of the cases, the intention is to use modern contraception vs. 30% for traditional methods. Fifteen percent of respondents were undecided as to which method to use in the future.

The most common reasons for not using FP were lack of knowledge of FP (41% in the past and 25% for future use), wanting to have children (17% in the past and 19% prior to current pregnancy), and fear of side effects (14% in the past and 19% future use).

As for the source of FP methods, most of respondents indicated that they did not need to go anywhere to ask since they were using the calendar method (65 before current pregnancy and 67% in the past). However, for those who used modern methods, their most common source of provision was from local pharmacies (21% in the past and 23% before the current pregnancy), while hospitals and health centers were only mentioned in 8% in the past and 7% before current pregnancy. However, for future use, 59% said they will get their FP method from a hospital or health center.

Spacing of Pregnancies

As presented in table 6, the survey noted that almost half of respondents (48%) already had one or two living children and almost a one-third of them (27%) had three or four children.

Moreover, almost a quarter (24%) had five or more children. The mean was 3.1 (0-12). The same trend was found for number of pregnancies: most of respondents had had one or two pregnancies (45%), and 26% had been pregnant three or four times. The mean was 3.5 (1-15).

Those who had children before the current pregnancy reported an average interval between the two pregnancies of 35.1 (3-156) months. About one-fifth had an interval of 24-29 months (20%) and another one-fifth an interval of 36-41 months (21%). In the majority of instances (56%), the pregnancy interval was between 24-41 months. When looking closely at pregnancies that resulted in a bad outcome (death of baby, spontaneous abortion, or induced abortion) the survey found that the pregnancy interval was more likely to be less than 18 months (30/42 = 70%, $p < 0.001$).

When asked about the interval they would have preferred, the majority of the 120 women who said they would have waited longer before getting pregnant said they would have preferred an interval of 60 months or more (42%), while a third preferred an interval of 36-41 months. The mean interval was 47.8 (range: 3-120) months.

For the next pregnancy, among the 317 women who wanted another child or more children, 40% of them wanted an interval of 36-41 months, followed by those with an interval of 60 and more months (28%). The mean was 43.9 (12-120) months.

Finally, when asked about the ideal interval for pregnancy spacing, most women cited the interval of 36- 41 months (43%), followed by the interval of 60 months or more (22%). The mean was 41.1 (9- 96) months.

Need for Family Planning

As shown in table 7, about 299 respondents had not intended to get pregnant for the most recent pregnancy (either wanting to wait longer to become pregnant or never wanting a pregnancy), which is a total potential unmet need of about 53%. Specifically, this survey found that about one-fifth of women (21%) had an unmet need for spacing and about one-third had an unmet need for limiting pregnancies (31%).

For future desire of another child, it was noted that 20% wanted one other child, 36% wanted more than one, 32% didn't want more children, and 12% were undecided. Of the 184 respondents who didn't want more children, 30 of them said they did not want to use any FP method, which is an unmet need of 16%.

Promotion of Family Planning

When respondents were asked whether health workers talked about the importance of FP or about methods of FP (table 8), the study found that, in general, FP benefits were not discussed

with well over half of them (58%), and no method had been discussed with 59% of them. However, in 60% of cases, FP was discussed at a PNC visit. Further analysis showed that there was a statistical difference between hospitals and health centers concerning promotion of FP. The results showed that health centers tended to promote postpartum FP more than hospitals (46% vs. 33%, $p \leq 0.004$).

General Comments and Suggestions from Respondents

At the end of the interview, women were encouraged to give comments or suggestions for improvements of FP services in Butembo. Table 9 summarizes some comments from the 316 women who answered this question. Some gave more than one suggestion. The most common comments were: “Teach us how to use FP methods” (30%); “More sensitization is needed” (24%); “Organize more workshops for us” (15%); “Men involvement is needed; they are an obstacle” (7%); and “Health workers do not talk about it” (3%). As noted, the first three comments could be summarized as related to promotion.

DISCUSSION

DRC has been characterized by high population growth since the 1970s, currently at 3% per year¹ and is projected to be among the 10 most populous countries in the world by 2050¹³. Since development comes with keeping population growth under control, access to safe, effective and affordable FP services is essential. This study contributes to the evaluation of the FP program in a targeted part of the country.

The study was designed to determine FP KAP among women delivering in the city of Butembo; their preferred FP methods used or to use in the future; their sources of modern contraceptives methods; the degree of unmet need (for nonusers when more children are not wanted, now or ever, or current unintended pregnancy due to non-use); their pattern of (and approaches to) spacing pregnancies; and whether FP is being promoted by health workers.

Various studies worldwide have explored KAP of FP with different results. This study showed that most postpartum women have a very high level of knowledge of at least one method of FP (96%). Despite that knowledge, the survey showed that they had a low level of FP use (44%). These results are similar to the trend found in the 2007 DRC DHS¹, although the level of knowledge is higher in this study than that found reported in the DHS (82% and 49% respectively). This may be so because this study was exclusively done in a semi-urban city while the DHS included rural areas where knowledge is likely to be low. Another explanation may be that the city seems to have a large middle class population as noted by the above poverty line daily expenses and properties owned. It is well documented that middle and upper classes tend to have more FP knowledge and use than the poor.

Several studies have also reported the same trends of high awareness, low use of FP, especially in developing countries where high knowledge of FP is not matched by usage¹⁴⁻¹⁷. This is not the case in developed countries where knowledge is almost similar to the usage level⁴. The low use always reflects the existence of some barriers to access of FP service. This study found some prominent barriers, one of them being the lack of women's knowledge of modern methods. The study found a missed opportunity as most women leave the health facilities following a birth without having been told about FP, as reported by almost two-thirds of women. They therefore rely on friends as their source of information on FP (50%) as the study showed, which is often unreliable, incorrect, and accompanied by misconceptions.

This is a big problem that must be tackled if FP is to be improved in the city and country. Normally, sensitization or promotion of FP is largely done by health workers. This is not the case in Butembo as the results show. A likely reason why health workers do not talk about FP may be that they, themselves, don't have enough knowledge about FP. A survey of health workers conducted in Butembo showed that most health care providers (nurses and doctors) had poor knowledge of FP¹⁸. This current study supports once again this need and highlights the necessity of a thorough refresher course on FP. Most women had a good perception about FP (80%) along

with a strong desire to space their pregnancies in the future (72%), but lack knowledge about it. About 80% of their comments concern sensitization. It is therefore urgent that relevant authorities design and implement FP training programs for health workers that could be followed by outreach activities to educate men and women on FP and how to plan and space pregnancies.

When respondents were asked about their method used or to be used in the future, it was noted that the calendar or fertility awareness method was most preferred. This is also similar to what the DHS found¹. The results are also consistent with the findings of studies in other developing countries¹⁹⁻²⁰. In developed countries, modern methods are the most widely used⁴. Many factors may explain this low use of modern FP methods in this city. First of all, as the results showed, there is little promotion of modern FP methods by health professionals, which leads to lack of knowledge by most women. Also, these methods may be unavailable at public facilities. This may explain why women seek private commercial pharmacies to get the few methods available. Looking for FP methods at pharmacies is a good indication of a poor public sector FP service delivery system. This constraint must be eliminated by introducing a fully fledged FP service that is free or low cost and offers all modern methods to give women a variety of choices. A needs' assessment of all health facilities in the city may also be needed to understand the full extent of availability of FP methods in each facility, including those not offering maternity services.

This survey found an unmet need of 21% for spacing and 31% for limiting. Moreover, among the women who did not desire to get pregnant again, 16% indicated not wanting to use any FP method. These figures of unmet need are higher than the average for sub-Saharan African countries, which has an unmet need of about 16% for spacing and 9% for limiting⁴, although in some West Coast African countries as much as 35% has been reported²¹ for the former. Among developed countries, the percentage is very low or even zero⁴. The 2007 DRC DHS reported an unmet need of 19% for spacing, which is almost similar to what this survey found (21%). However, for limiting, the results from this survey were more than six times what the DHS reported (31% vs. 5%). This is an area for future research into possible reasons for this huge difference, such as the DHS sample not being representative enough to pick up such differences.

Concerning fertility and spacing of pregnancies, this study found an average number of living children to be 3.6. Though these results were close to what was found for the capital, Kinshasa, (3.7), it was almost half of what was found during the 2007 DHS, which was 6.3 nationwide. Although the DRC has one of the highest fertility rates in the world, this lower figure in this semi-urban city may indicate a downward trend due to possible hardship that is not only found in big cities, but also in the country as a whole. Currently, most couples in big cities tend to limit or space their births. In their comments, some women mentioned this hardship as a motivation to learn about FP.

As for the inter-pregnancy interval, this study found a mean interval of 35.1 months, with most women having between 24 – 41 months (56%). These results are within the WHO recommendations of at least 24 months after live birth and 6 months after an abortion⁵⁻⁶. The DHS also found similar results¹. In the DHS the mean was 30.5 months and more than half spaced their pregnancies by more than two years and half. Even for future and ideal interval, the women indicated an interval that is within the WHO recommendations. Therefore, it can be said that women in Butembo do accept birth spacing. However, since they typically use a traditional method, which is less effective than modern methods, they should have better access to modern contraceptives to help achieve this goal. Therefore, promotion is deemed necessary.

Study Limitations

Many FP KAP studies look at all women of reproductive age (15-49), which may lead to results being more representative of the greater population. The current study was a small scale survey only on postpartum women delivering in all the maternity units of the city. Therefore, it is acknowledged that these results cannot be generalized as a complete picture of the situation in Butembo; a wide household survey would be needed for such a general finding. However this study gives some idea of what may be going on, and can help in developing better FP services.

CONCLUSION AND RECOMMENDATIONS

This study contributes to the understanding of why the DRC's CPR is low by surveying select women in a semi-urban city in Eastern DRC. The study objectives were to identify postpartum women's level of KAP toward FP; identify possible barriers to using FP; determine if their pregnancy spacing is in line with the WHO recommendation of at least 24 months between pregnancies; and ascertain the level of FP promotion by health workers.

On the basis of this study's findings, the overall FP knowledge of women in Butembo is very high. Teenage mothers have little knowledge of FP. Women's perception of FP is also very good. However, a vast majority of them do not use modern contraception. The calendar method is the most common method despite poor knowledge of the fertile period and presumably high failure rates. Several reasons were given for not using modern FP methods including lack of knowledge, fear of side effects, religious considerations, and husband opposition. The most common source of information on FP is from friends, with little contribution from health professionals (doctors or nurses). The most common source of provision of FP was local pharmacies, with very few from health facilities. The unmet need for spacing and limiting was high. However, for the majority of women, the spacing of pregnancies met WHO's HTSP recommendations. Finally, promotion of FP was found to be lacking, significantly more so in hospitals than health centres.

Based on these findings, the following recommendations are suggested for helping to improve FP in the city and ultimately in the province and country:

- Advocate to the Ministry of Health to allocate more funds to support the PNSR, thereby enabling it to integrate and improve access to FP services in all public health facilities in eastern DRC.
- Encourage the PNSR to work with international donors to help fund FP commodities and train providers on FP in Eastern DRC.
- Provide youth-friendly FP services to address the needs of sexually active teenagers.
- Advocate for the use of modern contraceptives by establishing a functional FP service in each facility to help women maintain HTSP.
- Conduct training workshops in FP for all health workers in Butembo health centres and hospitals to improve their FP knowledge and technical competence so as to better promote FP during their contact with women and thus dispel women's fears and misconceptions about FP.
- Train community-based workers ("relais communautaires") on FP methods, referrals, and distribution of some FP methods (i.e. pills, condoms).
- Intensify FP promotion to women at each contact opportunity like antenatal and postnatal visits, deliveries, and child health visits.
- Support and train researchers in assessing facility readiness for FP, health worker knowledge of FP, as well as women and men's FP KAP.

- Improve the coverage and distribution of FP services in public and private health centers and hospitals, availing all the methods in each facility and making them affordable.

TABLES

Table 1: Socio-demographic Characteristics

Characteristics	N	%
Age (Years)		
Mean Age:	26.7 (14 – 48)	
≤19	82	14.3
20 – 24	164	28.7
25 – 29	142	24.8
30 – 34	96	16.8
≥35	87	15.2
Don't Know	1	0.2
Marital Status		
Single	75	13.1
Married	356	62.2
Separated	7	1.2
Widow	5	0.9
Cohabitation	129	22.6
Education		
No Education	105	18.4
Primary	219	38.3
Secondary	222	38.8
University	26	4.5
Religion (N = 562)		
Catholic	339	60.3
Protestant	173	30.8
Islam	14	2.5
No Religion	1	0.2
Non Answer	3	0.5
Other	32	5.7

Table 1 (Continued)

Characteristics	N	%
Occupation (N = 567)		
Housewife	198	34.9
Employee	43	7.6
Student	48	8.5
Own Business	96	16.9
Farmer	171	30.2
Others	11	1.9
Daily expenses		
Mean:	\$4.6 (1-25)	
≤1\$	49	8.6
2 – 5 \$	177	30.9
6 – 10 \$	48	8.4
>10 \$	18	3.1
Don't Know	280	49.0
Address		
Urban	367	64.2
Rural	205	35.8
Possessions		
TV	141	24.7
Radio	343	60.0
Motorcycle	134	23.4
Bike	230	40.2
Vehicle	23	4.0
None	113	19.8

Table 2: Awareness of Fertility Period and Family Planning

Methods	N	%
Knowledge on Fertility Period (N = 571):		
Yes	389	68.1
No	129	22.6
Don't Know	53	9.3
Ever Heard about FP Methods (N = 568)		
Yes	430	75.7
No	138	24.3
Knowledge of FP Method		
At least One Method	547	95.6
None	25	4.4
Individual Methods Awareness		
Pills	188	32.9
IUCD	47	8.2
Injectables	148	25.9
Implants	105	18.4
Condom, Male	242	42.3
Condom, Female	59	10.3
Diaphragm	8	1.4
BTL	60	10.5
Vasectomy	4	0.7
Breastfeeding (LAM)	13	2.3
Calendar (Fertile period awareness)	321	56.1
Withdrawal	59	10.3
Others	17	3.0

Table 2 (Continued)

Methods	N	%
Source of Information		
Friends	286	50.0
Radio	18	3.1
Newspaper/Book	11	1.9
Nurse	185	32.3
Doctor	15	2.6
Church	14	2.4
School	80	14.0
Relative	26	4.5
TV	9	1.6
Other	31	5.4
Perception on FP Usage (N = 570)		
Good to use	456	80.0
Bad to use	77	13.5
Undecided	37	6.5
Reasons if Bad to Use (N = 76)		
Risk of health consequences	32	42.1
Religion conviction	19	25.0
Risk of Infertility	7	9.2
Can disturb the cycle	3	3.9
It is natural for a woman to give birth	3	3.9
Husband against it	2	2.6

Table 3: Knowledge of Traditional Method by Socio-demographic Characteristics

Characteristics	Lactation N (%)	Abstinence N (%)	Withdrawal N (%)
Age (Years)			
≤19	-	37 (11.5)	6 (10.2)
20 – 24	3 (23.1)	88 (27.4)	14 (23.7)
25 – 29	4 (30.8)	82 (25.5)	17 (28.8)
30 – 34	5 (38.5)	61 (19.0)	15 (25.4)
≥35	1 (7.7)	53 (16.5)	7 (11.9)
Don't Know	-	-	-
Total	13 (100)	321 (100)	59 (100)
Marital Status			
Single	10 (76.9)	35 (10.9)	10 (16.9)
Married	-	214 (66.7)	40 (67.8)
Separated	-	7 (2.2)	-
Widow	-	4 (1.2)	2 (3.4)
Cohabitation	3 (23.1)	61 (19.0)	7 (11.9)
Total	13 (100)	321 (100)	59 (100)
Education			
Illiterate	1 (7.7)	17 (11.5)	1 (1.7)
Primary	3 (23.1)	114 (35.3)	9 (15.3)
Secondary	8 (61.5)	149 (46.4)	34 (57.6)
University	1 (7.7)	21 (6.5)	15 (25.4)
Total	13 (100)	321 (100)	59 (100)
Religion			
Catholic	6 (46.2)	187 (59.0)	28 (49.1)
Protestant	5 (38.5)	98 (30.9)	24 (42.1)
Islam	1 (7.7)	10 (3.2)	4 (7.0)
No Religion	-	-	-
Non Answer	-	1 (0.3)	-
Other	1 (7.7)	21 (6.6)	1 (1.8)
Total	13 (100)	317 (100)	57 (100)

Table 3 (Continuous)

Characteristics	Lactation N (%)	Abstinence N (%)	Withdrawal N (%)
Profession			
Housewife	8 (61.5)	120 (37.5)	22 (37.9)
Employee	1 (7.7)	34 (10.6)	15 (25.9)
Student	1 (7.7)	29 (9.1)	11 (19.0)
Own Business	-	48 (15.0)	4 (6.9)
Farmer	3 (23.1)	80 (25.0)	6 (10.3)
Others	-	9 (2.8)	-
Total	13 (100)	320 (100)	58 (100)
Daily Expenses			
≤1\$	-	22 (6.9)	2 (3.4)
2 – 5 \$	2 (15.4)	98 (30.5)	10 (16.9)
6 – 10 \$	1 (7.7)	33 (10.3)	11 (18.6)
>10 \$	1 (7.7)	13 (4.0)	5 (8.5)
Don't Know	9 (69.2)	155 (48.3)	31 (52.5)
Total	13 (100)	321 (100)	59 (100)
Address			
Urban	6 (46.2)	201 (62.6)	51 (86.4)
Rural	7 (53.8)	120 (37.4)	86 (13.6)
Total	13 (100)	321 (100)	59 (100)

Table 4: Knowledge of Modern Methods by to Demographic, N (%)

Characteristics	Pills	Inject	IUCD	Implant	Male Cond	Fem Cond	Diaph	BTL	Vasect
Age (Years)									
≤19	14 (7.4)	8 (5.4)	1 (2.1)	2 (1.9)	34 (14.0)	7 (11.9)	-	1 (1.7)	-
20 – 24	55 (29.3)	37 (25.0)	10 (21.3)	27 (25.7)	71 (29.3)	20 (33.9)	2 (25.0)	14 (23.3)	1 (25.0)
25 – 29	53 (28.2)	45 (30.4)	23 (27.7)	28 (26.7)	65 (26.9)	16 (27.1)	2 (25.0)	17 (28.3)	1 (25.0)
30 – 34	37 (19.7)	27 (18.2)	14 (29.8)	26 (24.8)	40 (16.5)	11 (18.6)	1 (12.5)	14 (23.3)	1 (25.0)
≥35	29 (15.4)	31 (20.9)	9 (19.1)	22 (21.0)	32 (13.2)	5 (8.5)	3 (37.5)	14 (23.3)	-
Don't Know	-	-	-	-	-	-	-	-	1 (25.0)
Total	188 (100)	148 (100)	47 (100)	105 (100)	242 (100)	59 (100)	8 (100)	60 (100)	4 (100)
Marital Status									
Single	18 (9.6)	10 (6.8)	1 (2.1)	5 (4.8)	31 (12.8)	8 (13.6)	-	6 (10.0)	1 (25.0)
Married	133 (70.7)	106 (71.6)	39 (83.0)	83 (79.0)	156 (64.5)	40 (67.8)	6 (75.0)	45 (75.0)	3 (75.0)
Separated	4 (2.1)	4 (2.7)	-	2 (1.9)	6 (2.5)	-	1 (12.5)	1 (1.7)	-
Widow	2 (1.1)	2 (1.4)	1 (2.1)	2 (1.9)	2 (0.8)	2 (3.4)	1 (12.5)	1 (1.7)	-
Cohabitation	31 (16.5)	26 (17.6)	6 (12.8)	13 (12.4)	47 (19.4)	9 (15.3)	-	7 (11.7)	-
Total	188 (100)	148 (100)	47 (100)	105 (100)	242 (100)	59 (100)	8 (100)	60 (100)	4 (100)
Education									
Illiterate	13 (6.9)	17 (11.5)	-	6 (5.7)	18 (7.4)	1 (1.7)	1 (12.5)	5 (8.3)	-
Primary	54 (28.7)	48 (32.4)	11 (23.4)	32 (30.5)	83 (34.3)	14 (23.7)	1 (12.5)	21 (35.0)	1 (25.0)
Secondary	98 (52.1)	69 (46.6)	25 (53.2)	51 (48.6)	121 (50.0)	34 (57.6)	4 (50.0)	28 (46.7)	1 (25.0)
University	23 (12.2)	14 (9.5)	11 (23.4)	16 (15.2)	20 (8.3)	10 (16.9)	2 (25.0)	6 (10.0)	2 (50.0)
Total	188 (100)	148 (100)	47 (100)	105 (100)	242 (100)	59 (100)	8 (100)	60 (100)	4 (100)

Table 4 (Continued)

Characteristics	Pills	Inject	IUCD	Implant	Male Cond	Fem Cond	Diaph	BTL	Vasect
Religion									
Catholic	100 (54.9)	93 (63.7)	17 (37.0)	55 (55.0)	131 (55.3)	32 (57.1)	5 (62.5)	27 (45.8)	3 (75.0)
Protestant	67 (36.8)	45 (30.8)	22 (47.8)	32 (32.0)	81 (34.2)	24 (42.9)	3 (37.5)	26 (44.1)	1 (25.0)
Islam	8 (4.4)	4 (2.7)	5 (10.9)	4 (4.0)	10 (4.2)	-	-	1 (1.7)	-
No Religion	-	-	-	-	-	-	-	-	-
Non Answer	-	-	-	-	1 (0.4)	-	-	-	-
Other	7 (3.8)	4 (2.7)	2 (4.3)	9 (5.0)	14 (5.9)	-	-	5 (8.5)	-
Total	182 (100)	146 (100)	46 (100)	100 (100)	237 (100)	56 (100)	8 (100)	60 (100)	4 (100)
Profession									
Housewife	63 (33.7)	44 (29.7)	19 (40.4)	32 (30.5)	101 (41.9)	16 (27.6)	1 (12.5)	30 (50.0)	1 (25.0)
Employee	27 (14.4)	19 (12.8)	12 (25.5)	15 (14.3)	28 (11.6)	11 (19.0)	2 (25.0)	8 (13.3)	-
Student	21 (11.2)	9 (6.1)	4 (8.5)	6 (5.7)	27 (11.2)	14 (24.1)	1 (12.5)	2 (3.3)	2 (50.0)
Own Business	29 (15.5)	26 (17.6)	5 (10.6)	23 (21.9)	41 (17.0)	10 (17.2)	1 (12.5)	5 (8.3)	-
Farmer	44 (23.5)	46 (31.1)	6 (12.8)	26 (24.8)	37 (15.4)	7 (12.1)	2 (50.0)	14 (23.3)	1 (25.0)
Others	3 (1.6)	4 (2.7)	1 (2.1)	3 (2.9)	7 (2.9)	-	1 (12.5)	1 (1.7)	-
Total	187 (100)	148 (100)	47 (100)	105 (100)	241 (100)	58 (100)	8 (100)	60 (100)	4 (100)
Daily Expenses									
≤1\$	7 (3.7)	9 (6.1)	1 (2.1)	3 (2.9)	14 (5.8)	1 (1.7)	-	5 (8.3)	-
2 – 5 \$	54 (28.7)	43 (29.1)	10 (21.3)	33 (31.4)	67 (27.7)	9 (15.3)	3 (37.5)	20 (33.3)	1 (25.0)
6 – 10 \$	25 (13.3)	12 (8.1)	10 (21.3)	16 (15.2)	31 (12.8)	14 (23.7)	-	11 (18.3)	-
>10 \$	7 (3.7)	4 (2.7)	4 (8.5)	5 (4.8)	11 (4.5)	3 (5.1)	-	4 (6.7)	-
Don't Know	95 (50.5)	80 (54.1)	22 (46.8)	48 (45.7)	119 (49.2)	32 (54.2)	5 (62.5)	20 (33.3)	3 (75.0)
Total	188 (100)	148 (100)	47 (100)	105 (100)	242 (100)	59 (100)	8 (100)	60 (100)	4 (100)
Address									
Urban	134 (71.3)	92 (62.2)	40 (85.1)	80 (76.2)	156 (64.5)	47 (79.7)	4 (50.0)	42 (70.0)	3 (75.0)
Rural	54 (28.7)	56 (37.8)	7 (14.9)	25 (23.8)	86 (35.5)	12 (20.3)	4 (50.0)	18 (30.0)	1 (25.0)
Total	188 (100)	148 (100)	47 (100)	105 (100)	242 (100)	59 (100)	8 (100)	60 (100)	4 (100)

Table5: Use and Preferred FP Methods

	In the Past N (%)	Before Current Preg N (%)	Future use N (%)
Use of FP	253 (44.4)	173 (30.6)	180 (72.0)
Preferred Modern Methods:	115 (35.6)	68 (35.4)	99 (54.7)
Pills	29 (11.5)	18 (10.4)	5 (2.8)
IUCD	3 (1.2)	1 (0.6)	2 (1.1)
Injectables	10 (4.0)	6 (3.5)	18 (10.0)
Implants	5 (2.0)	4 (2.3)	19 (10.6)
Condom, Male	64 (25.3)	37 (21.4)	9 (5.0)
Condom, Female	3 (1.2)	2 (1.2)	1 (0.6)
Diaphragm	-	-	-
BTL	1 (0.4)	-	45 (25.0)
Vasectomy	-	-	-
Preferred Traditional Methods:	208 (64.4)	124 (64.6)	54 (30.2)
Breastfeeding (LAM)	3 (1.2)	2 (1.2)	-
Calendar (Abstinence)	183 (72.3)	107 (61.8)	50 (27.8)
Withdrawal	22 (8.7)	15 (8.7)	2 (1.1)
Other	-	-	2 (1.1)
Don't Know			27 (15.0)

Table5 (Continued)

	In the Past N (%)	Before Current Preg N (%)	Future use N (%)
Reasons for not using FP method	N = 317	N = 392	N = 52
Wanted a child	54 (17.4)	76 (19.4)	1 (1.9)
Husband opposed	14 (4.4)	22 (5.6)	5 (9.6)
Fear of side effects	45 (14.2)	58 (14.8)	10 (19.2)
Medical reasons	6 (1.9)	8 (2.0)	1 (1.9)
Not available	2 (0.6)	5 (1.3)	-
High Cost	16 (5.0)	22 (5.6)	2 (3.8)
No FP Service	3 (0.9)	3 (0.8)	-
Religious reasons	15 (4.7)	22 (5.6)	4 (7.7)
Others	26 (8.2)	35 (8.9)	19 (36.5)
Don't Know	18 (5.7)	15 (3.8)	1 (1.9)
No FP Knowledge	131 (41.3)	145 (37.0)	13 (25.0)
Where to get the Methods	N = 250	N = 173	N = 145
Hospital/Clinic	19 (7.6)	12 (6.9)	86 (59.3)
Pharmacy	53 (21.2)	39 (22.5)	10 (6.9)
NGO	-	1 (0.6)	-
Don't Know	5 (2.0)	4 (2.3)	-
Used/Will Calendar Method	167 (66.8)	112 (64.7)	49 (33.8)
Other	6 (2.4)	5 (2.9)	-

Table 6: Fertility and Spacing of Pregnancy

	N	%
Live Children		
Mean	3.1 (0 – 12)	
0	5	0.9
1 – 2	277	48.4
3 – 4	154	26.9
5 – 6	76	13.3
≥7	60	10.5
Number of Pregnancy		
Mean	3.5 (1 – 15)	
1 – 2	257	44.9
3 – 4	151	26.4
5 – 6	80	14.0
≥7	84	14.7
Outcome of Previous Pregnancy (N = 416)		
Baby alive	334	80.3
Baby dead	40	9.6
Abortion	42	10.1
Interval between Last Two Pregnancies (Months) (N = 413)		
Mean	35.1 (3 – 156)	
0 - 11	13	3.1
12 – 17	39	9.4
18 – 23	35	8.5
24 – 29	82	19.9
30 – 35	61	14.8
36 – 41	86	20.8
42 – 47	12	2.9
48 – 53	23	5.6
54 – 59	5	1.2
≥60	57	13.8
Waiting Period She Would Have Liked (N = 120)		
Mean	47.8 (3 – 120)	
0 - 11	1	0.8
12 – 17	4	3.3
18 – 23	-	-
24 – 29	10	8.3
30 – 35	1	1.7
36 – 41	34	28.3
42 – 47	2	1.7
48 – 53	17	14.2
54 – 59	-	-
≥60	50	41.7

Table 6 (Continued)

	N	%
Interval She Wants for Next Pregnancy (N = 317)		
Mean	43.9 (12 – 120)	
0 - 11	-	-
12 – 17	3	0.9
18 – 23	3	0.9
24 – 29	38	12.0
30 – 35	3	0.9
36 – 41	127	40.1
42 – 47	4	1.3
48 – 53	43	13.6
54 – 59	2	0.6
≥60	87	27.5
Don't Know	4	1.3
Can't get Pregnant (i.e. BTL)	3	0.9
Optimum Waiting Time according to Women		
Mean	41.1 (9 – 96)	
0 - 11	1	0.2
12 – 17	4	0.7
18 – 23	1	0.2
24 – 29	99	17.3
30 – 35	17	3.0
36 – 41	242	42.5
42 – 47	7	1.2
48 – 53	75	13.1
54 – 59	-	-
≥60	125	21.9

Table 7: Unmet Need

	Frequency		Intention for Future Use of FP		
	N	%	Yes, N (%)	No, N (%)	Don't Know N (%)
Current Pregnancy					
Wanted pregnancy	271	47.5	-	-	-
Wanted to wait longer	122	21.4	-	-	-
Never wanted pregnancy	177	31.1	-	-	-
Total	570	100	-	-	-
Future Pregnancy					
Want another	112	19.6	0	0	0
Want more	207	36.3	1 (0.4)	0	0
Don't want more	184	32.2	150 (81.5)	30 (16.3)	4 (2.2)
Undecided	68	11.9	29 (44.6)	22 (33.8)	14 (21.5)
Total	571	100	180	52	18

Table 8: FP Promotion

Promotion Item	Yes, N (%)	No, N (%)	Total, N (%)
Promotion of FP			
Benefits of FP	242 (42.3)	330 (57.7)	572 (100)
FP Methods	233 (40.7)	339 (59.3)	572 (100)
Talk about PNC	344 (60.1)	228 (39.9)	572 (100)
Reasons for PNC	293 (51.2)	279 (48.8)	572 (100)
Promotion By Facility			
Health Center	189 (45.8)	224 (54.2)	413 (100)
Hospital	53 (33.3)	106 (66.7)	159 (100)
Total	242 (42.3)	330 (57.7)	572 (100)

Table 9: Comments from Respondents

Promotion Item	N	%
teach us please on FP	102	29.9
more sensitization needed	83	24.3
organise more seminars	50	14.7
men involment needed too	22	6.5
question on how to use	17	5.0
FP is good to use	17	5.0
FP methods have consequences	9	2.6
Health workers never talked about FP	9	2.6
it is costly	5	1.5
Religion not allowing	4	1.2
No knowledge	2	0.6
Where to find FP services	2	0.6
Others	19	5.6
Total	341	100

BIBLIOGRAPHY

1. *Democratic Republic of the Congo, Demographic and Health Survey 2007*. Calverton, MD: Ministry of Planning (DRC), Ministry of Health (DRC), Macro International, Inc.; 2008.
2. JSI Research and Training Institute, Reproductive Health for Refugees Consortium. *Assessment of Reproductive Health in Democratic Republic of Congo*. Arlington, VA: JSI Research and Training Institute; 2002. Available at http://www.rhrc.org/resources/drc_rh.pdf.
3. Tuladhar H, Marahatta R. Awareness and practice of family Planning methods in women attending gyne-OPD at Nepal Medical College Teaching Hospital. *Nepal Med Coll J*. 2008;10(3):184-191.
4. Population Reference Bureau. *Family Planning Worldwide, 2008, Data Sheet*. Washington: Population Reference Bureau; 2008.
5. World Health Organization (WHO). *Report of a WHO Technical Consultation on Birth Spacing, Geneva, Switzerland, 13-15 June 2005*. Geneva: WHO; 2006.
6. Health Communications Project. *Communication Impact*. 2008;(24).
7. DaVanzo J, Hale L, Razzaque A, Rahman M. The effects of pregnancy spacing on infant and child mortality in Matlab, Bangladesh: How they vary by the type of pregnancy outcome that began the interval; *Pop Studies*. 2008;62(2):131-154.
8. Zhu BP. Effect of interpregnancy interval on birth outcomes: findings from three recent US studies. *Intern J Gynaeco Obstet*. 2005;89:S25–S33.
9. Rutstein SO. Effects of preceding birth intervals on neonatal, infant and under-five years mortality and nutritional status in developing countries: evidence from the Demographic and Health Surveys. *Intern J Gynaeco Obstet*. 2005;89:S7–S24.
10. Setty-Venugopal V, Upadhyay UD. Birth spacing: three to five saves lives. *Pop Reports*. 2002;Series L(13).
11. Butembo health district reports, 2008, [unpublished]. Butembo, Democratic Republic of Congo.
12. *Reproductive Health Assessment Toolkit for Conflict-Affected Women*. Atlanta, GA: Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Coordinating Center for Health Promotion, U.S. Centers for Disease Control and Prevention; 2007.
13. Population Reference Bureau (PRB). *2010 World Population Data Sheet*. Washington: PRB; 2010
14. Zafar MI, Ford N, Ankomah A. Significance of beliefs and values predicting fertility and contraceptive behaviour in Pakistan. *J Biol Soc Sci*. 1995; 27: 301-318.
15. Renjhen P, Gupta SD, Barua A, et al. A study of knowledge, attitude and practice of family planning among the women of reproductive age group in Sikkim. *J Obstet Gynecol India*. 2008;58:63-67.

16. Planned Parenthood Federation of Korea (PPFK), Yonsei University. Center for Population and Family Planning. Benchmark survey report on community based distribution of contraceptives in Korea. 1976; 51-64.
17. Riley AP., Stewer MK, Chakarborty J. Programme and method related determinants of the first DMPS. Use duration in rural Bangladesh. *Stud Fam Plann.* 1994;25:255-267.
18. Kambale Mathe J. Doctors and nurses knowledge and attitude of contraceptive methods in eastern D R. Congo. *Révue Médicale des Grands Lacs.* 2007;1(4):7-15.
19. Ikechebelu JI, Joe-Ikechebelu NN, Obiajulu FN. Knowledge, attitude and practice of family planning among Igbo women of south-eastern Nigeria. *J Obstet Gynaecol.* 2005;25(8):792-795.
20. Onwuzurike BK, Uzochukwu BS. 2001. Knowledge, attitude and practice of family planning amongst women in a high density low income urban of Enugu, Nigeria. *African J Repro Health.* 2001;5:83-89.
21. Sonfield A. Working to eliminate the world's unmet need for contraception. *Guttmacher Pol Rev.* 2006;9(1).