# Knowledge, Awareness, and Perception of *Minembwe Reproductive Age Women on the Use of Modern Contraceptive Methods*

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***Abstract:-*** **The struggle to have a choice whenever women and girls want to control pregnancy has been a great challenge as far as human history. The majority of rural women in sub-Saharan Africa have little or inadequate information on modern birth control. This study was conducted to assess the knowledge, awareness, and perception of Minembwe women of reproductive age on the use of modern contraceptive methods. This was a descriptive study that collected primary data through a structured questionnaire distributed to women who consented to participate in the study and data collected was analyzed using IBM-SPSS version 21.0. There were 370 participants of which the majority were within the age group 26 - 30 years, with most secondary education 45.7% and had at least 4 children (64.9%). Not less than 72.2% had good knowledge of reproductive health (RH) and family planning (FP) (67.0%) with the radio as the main source of information. The average knowledge of modern contraceptive methods was 30.5% with the knowledge of injectable contraceptives (81.1%), implants (53.5%), while Female Sterilization (Tubal Ligation) and Diaphragm were 11.6% and 5.9% respectively. Educated women had a higher knowledge of FP (90.0%) and 60.0% believed that family planning is useful. Not less than 83.8%% still want to have more children. Only 23.9% had the plan to use modern contraceptives while 46.2% were not involved in any form of birth control. Religion, occupation, information about FP were found to be significantly associated with knowledge, attitude, and perception of the women on FP. Those with a positive attitude on FP tend to practice FP over 6 times more than those who had a negative attitude. Also, women who believed that FP is useful for child spacing practiced FP 4.0 times more than those who did not. The poor knowledge can be attributed to the poor level of education, distance and remoteness, and the fact that the major source of information is radio while other media are almost inaccessible.**

***Keywords:*** **Contraception, Family planning, Birth control, Reproduction, child spacing**

## I. INTRODUCTION

Throughout the history of mankind, women and girls have struggled to control pregnancies when they wanted to. This remained a private and individual struggle until the 1968 International Conference on Human Rights when family planning (FP) was recognized as a human rights' obligation for every Country [1].

Contraception is a term that is rarely defined but used to mean a range of interventions that are commonly used to control births. Accordingly, family planning refers to the use of modern or traditional contraceptive methods undertaken with the objective of preventing unwanted pregnancy, regulating a number of births and family size, and spacing pregnancies [2]. For the sake of differentiating modern versus traditional contraceptives, the modern contraceptive is considered as any product, method, medical device or procedure that averts pregnancy or interferes with reproduction after sexual intercourse [3] (Hubacher and Trussell, 2015). Examples of modern contraceptive methods as described by Hubacher and Trussell include oral contraceptives with pills containing hormones; long-term birth control method such as the use of Norplant, Depo-Provera, or Intrauterine devices; female and male sterilization; condoms use; and diaphragm insertions to name a few [3]. According to Lindskog, after the conflict of 1996-2003 and lingering conflict in eastern DRC, women do not have or have little access to information and therefore no incentive to reduce the number of children [4]. Therefore, the aim of this study was to assess the knowledge, awareness, and perception of Minembwe women of reproductive age on the use of modern contraceptive methods for birth control.

## II. REVIEW OF LITERATURE

The DRC continues to rank higher among countries with fertility profile worldwide. In sub-Saharan Africa, it is the third country with a high number of births per woman. In addition to limited access to health services and information particularly on sexual and reproductive health (RH); social, financial, traditional and environmental factors have a direct impact on fertility as well [4].

Women in rural settings do not have or have little access to information and therefore no incentive to reduce the number of children [4]. Measuring the level of knowledge with regards to contraception provides useful information on how women accede to information and use services. It also provides insight on how education and knowledge do influence women's behavior, on how and where women do seek such services as well; thus, helping to identify program areas that need to be strengthened [5].

Studies suggest that woman's education increases knowledge and drives attitudes towards health, and sexual and reproductive health services use [6]. Educated women are

often economically independent on their partners and frequently empowered in the household, they may be able to make health care decisions on their own, and are less vulnerable to discrimination and abuse [5]. Consequently, a higher level of education results in great use of such services [7]. It is also evident that educated women are more likely to attend adequate prenatal care where there are skilled personnel and care of quality during childbirth [5], [6], [7]. These findings are consistent across many qualitative and quantitative studies from different settings confirming that the higher the level of education, the more women will likely understand the utility of reproductive health services and will use them. For example, in a study by Jabeen *et al*. assessing Knowledge, attitudes and practices of contraception in women of reproductive age in Pakistan [8]; in a study by Bbaale *et al.* assessing the association between female education, contraceptive use and fertility in Ugandan population [9]; and in a study by Lakew *et al*. aiming to understand how geographical variation influences modern contraceptive use among married women in Ethiopia have found that women with a primary level of education are more likely to use contraception compared to those with no education [9], this increases as women's educations increases to secondary and post-secondary levels ([8], [9]. Therefore, people with higher education are better informed about services; and education increases woman's decision making power.

Education influences health services seeking in several ways: schooling of a woman is often viewed as an indicator of socioeconomic fulfillment, thus, increasing physical and economic safety for women and their families, as well as their self-determination and the ability to support themselves and their families [11]. Educated women make an informed decision based on the importance of family planning, the risk of not using the services, and carefully negotiate their personal relationships and are empowered to create and maintain social networks in order to care for their families [12]. Furthermore, women with a high level of education tend to delay sexual activity, marriage, and childbearing more than uneducated women; and that this, in turn, increases the use of contraceptive [11], [12], [13], [14], [15].

The major problem that led to this study is that the majority of the people in these communities have no adequate access to reproductive health information. Due to the vulnerability of the women living in these areas to the risk of unintended pregnancy, it is of program and policy relevance to better understand the barriers to effective use of modern contraceptives among sexually active women. This will better expose them to more information on modern contraceptive. It will also help the policymakers in planning and formulation of policies that will increase the adoption of modern birth control methods among people of rural communities.

## III. METHODOLOGY

This study was conducted in Minembwe, one of the 516 health zones of the DRC, one of the 34 health zones of South Kivu province [16]. The Minembwe Highlands with an estimated population of 30,000 people are parts of the rural and enclave areas of DR Congo, situated in the South Kivu province and administrative zone of Fizi. This area is characterized by poor education and there is a disparity in education by gender. The disparities in literacy have led to significant inequalities in accessing many health and economic services. For example, uneducated women do not have access to health information and education tools, they have limited autonomy for their decision. The MINEMBWE health zone is divided into 18 health centers (health areas) corresponding to the health facilities (Health Facility). Participants in this study were recruited from 8 out of a total of 18 health facilities that make the Health Zone of Minembwe after randomization of the villages. The interviewed populations were distributed in the Health Zone and corresponding Referral Hospital. Villages were identified at the second level of selection using the randomization method.

This was a descriptive cross-sectional study using a structured questionnaire – translated French version into two main local languages (Swahili and Kinyamulenge) widely spoken in this part of the highlands of the country- to collect data from the respondents. Selected women were interviewed to produce information on socio-demographic characteristics, knowledge, awareness, and perception of modern contraceptive methods.

The sample size was calculated as the formula below.

$$n = \frac{Z^2 \alpha/_2 \, p(1-q)}{d^2}$$

Where n=sample size
Z= standard normal deviation with 95% confidential interval = 1.96; d = absolute precision = 0.05.
Therefore, from the above sample size is:

$$n = \frac{1.96^2 . 0.5(1-0.5)}{0.05^2}$$

$$n = \frac{3.8416 x \; 0.2491}{0.0025} = 382.777024 \approx 383$$

*Sample Size – Finite Population* (where the population is less than 50,000) [17]

$$\text{New SS} = \frac{SS}{\left(1 + \left(\frac{SS-1}{Pop}\right)\right)}$$

$$\text{New SS} = \frac{383}{\left(1 + \left(\frac{383-1}{18092}\right)\right)} = 375{,}080 \approx 375$$

Statistical Package for Social Sciences (SPSS) version 21.0 was used for both, data entry and analysis. The confidence interval was set at 95% and p-value of less than 0.05 was considered statistically significant. Authorizations were obtained from the administrative and health authorities of the covered area, as well as the *Universite Eben-Ezer de*

*Minembwe* acting as an ethical review board. Participants were informed of the various aspects of the study and were anonymously included in the survey after they signed an informed consent form.

## IV. RESULT AND DISCUSSION

### *A. Socio-Demographic Characteristics of Respondents*

The mean age of women who participated in the study was 32 years. The majority of the women (28.1%) were within the age group 26 - 30 years, followed by 36 - 40 years (24.1%) while 20.3% were within the age group 31 - 35 years. There were more respondents that had secondary education 169 (45.7%) than those who had a university education (5.4%) and primary education (22.9%) while 26.0% had no formal education. Among the uneducated. Only 7.0% were employed. The majority of the women were married (332, 89.7%), protestants (325, 87.8%), had 7 – 10 family members (196, 53.0%), and had at least 4 children (233, 64.9%), (Table 1). Figure 1 shows a decrease in the average number of children as the level of education increases from an average 5 each for those who had no education or primary education compared to an average of 3 children from the university graduates.

Table 1: Socio-demographic characteristics of the participants

| Parameter (n = 370) | Frequency | Percent% |
|---|---|---|
| **Age category** | | |
| **15 - 20** | 31 | 8.4 |
| **21 - 25** | 38 | 10.3 |
| **26 - 30** | 104 | 28.1 |
| **31-35** | 75 | 20.3 |
| **36 - 40** | 89 | 24.1 |
| **41 - 45** | 33 | 8.9 |
| **Education** | | |
| **Primary** | 85 | 22.9 |
| **Secondary** | 169 | 45.7 |
| **University** | 20 | 5.4 |
| **Noneducated** | 96 | 26.0 |
| **Employment** | | |
| **Employed** | 26 | 7.0 |
| **Unemployed** | 340 | 92.0 |
| **Student** | 4 | 1.0 |
| **Marital status** | | |
| **Single** | 10 | 2.7 |
| **Married** | 332 | 89.7 |
| **Widow** | 21 | 5.7 |
| **Divorcee** | 3 | 0.8 |
| **Separated** | 4 | 1.1 |
| **Religion** | | |
| **Catholic** | 33 | 8.9% |
| **Protestant** | 325 | 87.8% |
| **Muslim** | 5 | 1.4% |
| **None religion** | 7 | 1.9% |
| **Number of family members** | | |
| **1-3 people** | 23 | 6.2 |
| **4-6 people** | 131 | 35.4 |
| **7-10 people** | 196 | 53.0 |
| **8 and plus** | 20 | 5.4 |
| **Number of children (n= 359)** | | |
| **1-3 children** | 126 | 35.1 |
| **4-6 children** | 149 | 41.5 |
| **7 or more** | 84 | 23.4 |

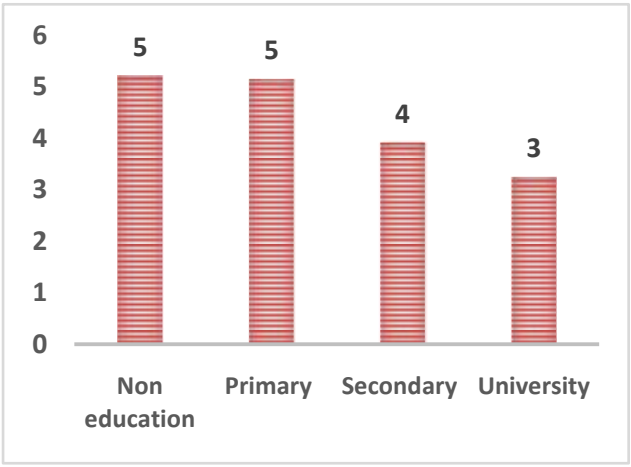


Figure 1: Average number of children by the level of education

### *B. Awareness and Source of information about RH and FP*

To determine the level of exposure of women to family planning information and the channels through which they were informed, all women that have heard about RH and FP were also asked about the source of their information.

Most of the women 267 (72.2%) have heard about reproductive health while only 248 (67%) have been exposed to tailored family planning messages. The results showed that the main source of information is the radio as indicated by 172 (46.4%) and 148 (40%) women for reproductive health and family planning respectively; followed by health education sessions at a health facility (25.1% and 23.7%, respectively). Spouse (husband) was mentioned as a source of information at a lower frequency of 17.8% for reproductive health and only at 3.2% for the family planning. Medical consultations, friendship groups, schools, and posters at the Health Facility were also cited as sources of information while churches and close family members were among the least important sources of information on RH (3.8% and 5.0%) and FP (3.5% and 1.6%) as depicted in Table 2.

Table 2: Awareness of Contraception and Source of Information

| Parameter | Reproductive Health | | Family Planning | |
|---|---|---|---|---|
| | Frequency | Percent % | Frequency | Percent % |
| **Women who have heard about RH/FP** | | | | |
| **Yes** | 267 | 72.2 | **248** | **67** |
| **No** | 103 | 28.8 | **122** | **33** |
| **Source of Information** | | | | |
| **Posters at HF** | 47 | 12.7 | 36 | 9.7 |
| **At HF during Health Education Sessions** | 93 | 25.1 | 88 | 23.7 |
| **During a visit with a medical doctor or a health worker** | 75 | 20.2 | 94 | 25.4 |
| **At the church, during religious women group sessions** | 25 | 6.7 | 28 | 7.5 |
| **In the village, during the community health worker's session** | 21 | 5.6 | 24 | 6.4 |
| **In a group of Friends** | 72 | 19.4 | 78 | 21 |
| **At the school** | 78 | 21 | 44 | 11.8 |
| **At the radio** | 172 | 46.4 | 148 | 40 |
| **By husband** | 66 | 17.8 | 12 | 3.2 |
| **A close family member** | 13 | 3.5 | 6 | 1.6 |

### *C. Knowledge of Contraceptive Methods*

Table 3 shows the contraceptive methods most known by the respondents. The study showed that the women had high knowledge of injectable contraceptives (81.1%), average knowledge of implants (53.5%), oral contraceptives (45.9%), and condoms (45.4%) but poor knowledge of IUD, female sterilization (Tubal ligation) and other types of modern contraception. The average knowledge of all correspondent based on all listed modern contraceptive methods was 30.5%, which is an indication of poor knowledge of modern contraceptive methods for birth control.

Table 3: Types of Contraceptive methods known by respondents

| Contraceptive Methods | No | | Yes (spontaneous) | | Yes (remind) | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| **Injectable Contraceptives** | 51 | 13.8 | 300 | 81.1 | 19 | 5.1 |
| **Intra-Uterine Devices (IUD)** | 285 | 77.0 | 43 | 11.6 | 42 | 11.4 |
| **Implants** | 103 | 27.8 | 198 | 53.5 | 69 | 18.6 |
| **Female Sterilization (Tubal Ligation)** | 244 | 65.9 | 43 | 11.6 | 83 | 22.4 |
| **Oral contraceptives (Pills)** | 144 | 38.9 | 170 | 45.9 | 56 | 15.1 |
| **Condom** | 112 | 30.3 | 168 | 45.4 | 90 | 24.3 |
| **Diaphragm** | 294 | 79.5 | 22 | 5.9 | 54 | 14.6 |
| **Monitoring-after pill (Emergency pill)** | 226 | 61.1 | 91 | 24.6 | 53 | 14.3 |
| **Periodic Continence** | 187 | 50.5 | 79 | 21.4 | 104 | 28.1 |
| **Withdrawal (Coitus interruptus)** | 213 | 57.6 | 54 | 14.6 | 103 | 27.8 |
| **Breastfeeding and amenorrhea (LAM)** | 213 | 57.6 | 74 | 20.0 | 83 | 22.4 |
| **Average Knowledge** | 188 | 50.9 | 113 | 30.5 | 69 | 18.6 |

Table 4 summarizes the knowledge of modern family planning methods by age and education level, two main characteristics that should have a strong influence on knowledge. Overall 67.0% of all the women have heard

family planning. The women aged between 31-35 years were the least exposed to family planning messages. The lowest level of knowledge of family planning (54.5%) was observed among women who have not attended school while 90.0% of women who had University education had a good knowledge of various contraceptive methods.

Table 4: Age and Education Distribution of the Respondents Knowledge of Contraceptive Methods

| Parameter | Category | Frequency | Percent % |
|---|---|---|---|
| **Age of respondents (years)** | 15-20 | 21 | 68 |
| | 21-25 | 32 | 84 |
| | 26-30 | 66 | 63 |
| | 31-35 | 44 | 59 |
| | 36-40 | 62 | 70 |
| | 41-45 | 23 | 70 |
| | **Total** | **248** | **67** |
| **Level of Education** | Non-educated | 54 | 54.5 |
| | Primary | 59 | 69.4 |
| | Secondary | 117 | 69.2 |
| | University | 18 | 90.0 |
| | **Total** | **248** | **67.0** |

*D. Respondents' attitude and perception of Family Planning*

As shown in Table 5, 222 (60.0%) of the respondents believed that family planning is useful and the majority 150 (38.5%) agreed that FP is used for child spacing and 140 (35.9%) agreed that FP is good for the health of mother and child. However, only a few (9.2%) agreed that FP is useful for deciding how many children they can have or for better living conditions of the family (16.9%). Not less than 83.8%% of women still want to have additional children. The average number of desired children is 8, and a large majority of women (69.4%) wish to have between 7 and 10 children.

At the time of this study, only 23.9% of the women were either using or plan to use modern contraceptive methods for birth spacing; 13.3% and 16.6% reported using abstinence and other traditional methods respectively while 46.2% were not involved in any form of birth control. At least 3 of every 4 women (77.4%) would like to observe a time limit of 3 to 5 years between two pregnancies, and 7 women (2.3%) reported not knowing how long they would like for births space. This indicates a feeling of low decision-making or negotiation power with their spouses in respect of reproductive health (Table 6).

Table 5: Respondents perception on FP

| Perception | Frequency | Percent (%) |
|---|---|---|
| **Family Planning useful** | 222 | 60.0 |
| **FP is useful for Maternal and child health** | 140 | 37.8 |
| **FP is useful for Birth spacing** | 150 | 40.5 |
| **FP is useful for deciding how many children you want to have** | 34 | 9.2 |
| **FP is useful for good living conditions of the family (household)** | 66 | 17.8 |
| **Would like to get more children in the future** | 310 | 83.8 |

Table 6: Attitude towards family planning

| | Category | Frequency | Percent % |
|---|---|---|---|
| **For what reason FP is useful** | The health of the mother | 140 | 35.9 |
| | Birth spacing | 150 | 38.5 |
| | Choice of desired no of children | 34 | 8.7 |
| | Better Living conditions of FP | 66 | 16.9 |
| | **Total** | **390** | **100.0** |
| **Women desiring more children** | No | 60 | 16.2 |
| | Yes | 310 | 83.8 |
| | **Total** | 370 | 100.0 |
| **The ideal number of desired children** | 4-6 children | 79 | 25.5 |
| | 7-10 children | 215 | 69.4 |
| | 11 and more children | 16 | 5.2 |
| | **Total** | 310 | 100.0 |
| **Average desired number of children** | Average | 8.04 | |
| | Minimum | 4 | |
| | Maximum | 14 | |

| | | | |
|---|---|---|---|
| **What are you doing (do you plan to do) to space birth** | Abstinence | 49 | 13.3 |
| | Traditional methods | 61 | 16.6 |
| | Modern Methods | 88 | 23.9 |
| | Nothing | 170 | 46.2 |
| | **Total** | 368 | 100.0 |
| **How many years would you like to observe between births?** | I don't know | 7 | 2.3 |
| | 1-2 Years | 52 | 16.8 |
| | 3-5 Years | 240 | 77.4 |
| | More than 5 Years | 11 | 3.5 |
| | **Total** | 310 | 100.0 |

*E. Socio-demographic Characteristics Associated with Perception of Use of Family Planning*

Table 7 shows the socio-demographic characteristics of 370 women in relation to the perception of family planning services. Socio-demographic characteristics of women in this study were found to be significantly associated with the positive attitude of women towards FP ($p<0.05$). The observed characteristics include religion, occupation, information about FP and the health of reproductions. Other analyzed variables were not significantly associated with the positive perception towards FP.

Table 7: Socio Demographic Characteristics Associated with Family Planning Perception and Attitude

| n = 370 | Frequency | Good % (n) | Poor % (n) | $\chi 2$ | p-value |
|---|---|---|---|---|---|
| **Age category of women** | | | | | |
| **<=29 Years** | 134 | 64.9 (87) | 35.1 (47) | 2.124 | 0.145 |
| **>=30 Years** | 236 | 57.2 (135) | 42.8 (101) | | |
| **Education level** | | | | | |
| **No educated** | 96 | 65.6 (63) | 34.4 (33) | 1.709 | 0.191 |
| **Educated** | 274 | 58.0 (159) | 42.0 (115) | | |
| **Religious** | | | | | |
| **Catholic** | 45 | 75.6 (34) | 24.4 (11) | 5.165 | **0.023*** |
| **Protestants** | 325 | 57.8 (188) | 42.2 (137) | | |
| **Employment Status** | | | | | |
| **farmer and breeder** | 326 | 56.4 (184) | 43.6 (142) | 14.462 | **<0.001*** |
| **Other work** | 44 | 86.4 (38) | 13.6 (6) | | |
| **Marriage status** | | | | | |
| **No husband** | 38 | 55.3 (21) | 44.7 (17) | 0.396 | 0.529 |
| **With Husband** | 332 | 60.5 (201) | 39.5 (131) | | |
| **Household size** | | | | | |
| **≤6 persons** | 154 | 63.6 (98) | 36.4 (56) | 1.453 | 0.228 |
| **≥7 persons** | 216 | 57.4 (124) | 42.6 (92) | | |
| **Number of living children** | | | | | |
| **≤4children** | 189 | 66.7 (126) | 33.3 (63) | 7.155 | **0.007*** |
| **≥ 5 children** | 181 | 53.0 (96) | 47.0 (85) | | |
| **Have you ever heard about reproductive Health?** | | | | | |
| **Yes** | 103 | 36.9 (38) | 63.1 (65) | 31.754 | **<0.001*** |
| **No** | 267 | 68.9 (184) | 31.1 (83) | | |
| **Have you ever heard about FP** | | | | | |
| **Yes** | 122 | (53) | (69) | 20.791 | **<0.001*** |
| **No** | 248 | (169) | (79) | | |

*** Significant at p<0.05**

*F. Logistic regression of individual attitude and perceptions influencing family planning services utilization*

As shown in Table 8, women who have heard about family planning from health workers and other sources of information tend to practice family planning about 7.0 times more than women who have not heard about FP ($p< 0.001$). Similarly, those that have heard about reproductive health services are 3 times more likely to use the service as compared to the respondent who have never heard about it ($p = 0.013$).

The women with a positive attitude towards the use of family planning practiced family planning over 6 times more than women who have a negative attitude ($p < 0.001$). Women who believed that FP is useful for child spacing practiced FP

4.0 times more than those who do not see family planning as a way of child spacing (p< 0.001).

Table 8: Logistic regression of individual perceptions influencing family planning services utilization

| n = 370 | OR | 95% CI | p-value |
|---|---|---|---|
| **Have vou ever heard about FP** | | | |
| Yes | 1 | | |
| | | [2.55-20.64] | <0.001 * |
| No | 7.264 | | |
| **Have you ever heard about reproductive Health** | | | |
| Yes | 1 | | |
| | | [1.24-6.55] | 0. 013* |
| No | 2.855 | | |
| **In your opinion, is Family Planning useful?** | | | |
| Yes | 1 | | |
| | | [2.64-15.29] | <0.001* |
| No | 6.356 | | |
| **Family planning is useful for Birth spacing** | | | |
| Yes | 1 | | |
| | | [2.03-7.01] | <0.001* |
| No | 3.771 | | |

* Significant at p<0.05

### *G. Discussion*

Sixty-seven percent (67%) of women self-reported to know about RH and FP services, with radio, health education sessions at schools and health care providers reported as the main sources of FP information. This is consistent across many studies from the settings similar to Minembwe [18], [19] and suggests the difficulties in accessing appropriate health information through other mass media such as TV show and awareness campaigns in this rural and remote area. Also, it highlights a need to expand the spectrum of communication channels- beyond clinical and school-based approaches, to include friends, religious gatherings, spouses, families, and use for the dissemination of the information regarding family planning in this areas.

The study established that knowledge about injectable was the highest (four in every five respondents). More than half had heard about implants. Awareness about pills and male condoms were 46% and 45% respectively while less than one quarter had heard about the female condom, emergency pill, vasectomy and female sterilization/tubal ligation. Knowledge of traditional methods was low with less than one in every four respondents having heard about calendar method or periodic abstinence. The average knowledge of the respondents on modern contraceptive methods was relatively poor (30.5%), even though their knowledge of FP and RH was relatively good. The level of knowledge found in this study aligns with some, but not all, results from previous researches which have yielded generally inconsistent findings. Some studies have, like this study, demonstrated low levels of awareness [20], [21]., [21]; others have found a proportion of women who have heard about SRF and FP services much higher [22], [23] and yet this finding is far low to the level reported in the DRC DHS 2013-2014, where nationally, about 82% of women have been reported to know at least one contraceptive method.

The low level of FP knowledge found in this study can be explained by a number of factors that include but not limited to the fact that FP remains a topic that is rarely discussed openly except in some cases of health-related education sessions organized during prenatal and postnatal medical consultations as well as occasional broadcast program campaigns. Also, Minembwe region is remote and hardly accessible by any transportation means which reduces exposure to information and as well due to the cultural norms and religious influence, as clearly stated. This region is highly religious with most religion being against FP and contraception in general. This limits access to information and its dissemination among the church members. Those who practice FP do so in hiding and are afraid of sharing information.

Compared to other education levels, women without education are least aware of FP services; the knowledge increases with the advancement in education (p<0.05). Evidence from other resource-limited countries has shown that education is an important factor that increases knowledge about FP and other health services, with a positive correlation between family planning and education advancement. Alemayehu *et al.* showed that women who attended primary education increase their knowledge three times than women who had no formal education, and this increases to seven times if a woman has attended a college and above [24]. These findings are in lines with studies done in Sudan and Nigeria where the women's level of preconception about FP and other health care services has been demonstrated to increase if the education increases [25], [26]. This relationship might be due to the fact that when the women's educational level is increasing, they might be exposed to information regarding preconception of care, they are motivated and curious to know and understand about health and risk factors, they might have the interest to read, listen to any information sources, and also to women's decision making skill to search source of information.

The average number of children of uneducated women was higher than that of educated women, this might not be unconnected to the fact that educated women had a better knowledge of family planning than their uneducated counterparts. Due to their poor knowledge of modern contraceptive methods and urge to have more children, the majority of the women disagreed with the fact that FP can help them decide the number of children they could have. They rather believed that FP will completely and permanently stop them from bearing the desired number of children. The average number of children desired was 8.

This study shows that only 23.9% of the interviewed Minembwe women were using modern contraceptive methods

for birth spacing; while the majority (46.2%) were not involved in any form of birth control. The reason cited included leaving regulation to God, not wanting to do anything about it while just 2.3% did not know what to do. This finding reflected in the average number (8) of children per woman. While most the majority of the women did not practice any form of birth control and very few used traditional methods, many (77.4%) wished to have 3 - 4 years' space between two pregnancies. The best way to achieve this is a subject of concern.

The finding that married women were eight times more knowledgeable than widows or unmarried women ($p<0.05$) is not consistent with studies conducted in Ethiopia [24], in Sudan [27] and in Tanzania [28]. This difference might be due to the difference in the study population and the large sample size in our study.

The current study showed that women with occupational or living within the family with financial incomes tend to be more aware of FP services, but the difference was not statistically significant ($p>0.05$); age of women, religious believes, size of households, distances to the clinics and number of children per family were not found to increase knowledge, knowledge, and perception on family planning. These findings are not in line with a study by Alemayehu in Ethiopia who found that the age of woman increases her chance of knowledge, with women aged 35 years and above being 4 times more likely to have better knowledge and attitude than those who aged below 24 years [24]. Contrary, the findings that age does not increase knowledge and perception about FP aligns better with results by Ahmed *et al.* in Sudan [26], by Ezegwui *et al.* in Nigeria [25], and by Hutchinson *et al.* in Ghana [29]. This observation might be explained by the difference in population, especially in this study where old women were less educated and that the fact education has shown to increase women's knowledge provide balanced results. The fact is that, if a woman is old enough she is mostly at high risk to be pregnant and give birth; however, the age reduces frustration and increases motivation to seek information about health services and social behavior risk factors and other things related to preconception care.

With regards to the use of contraceptive methods, this study revealed a generally poor attitude and perception on the use of modern contraceptive methods. This attitude is in contrast to the observed facts in the target population of the Demographic and Health Survey [DHS] - DRC, 2013-2014. This attitude is not in line with the DRC's FP multi-sectoral National Strategic Plan's target which aims to achieve a modern contraceptive prevalence level of at least 19% by 2020. Similarly, however, some women expressed a positive attitude towards the use of modern FP methods. Indeed, through this study.

## V. CONCLUSION

The findings of this study provided enough evidence to conclude that the women of Minembwe had good knowledge of family planning and reproductive health but they demonstrated poor knowledge, attitude, and perception on the use of modern contraceptive methods. The poor knowledge can be attributed to the poor level of education, distance and remoteness, and the fact that the major source of information is radio while other media are almost inaccessible.

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