



# Dual Contraception Use and Associated Factors among HIV Positive Women Follow-Up at Treatment Center Unit of Yaounde Central Hospital, Cameroon

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## Abstract

**Background:** A less risky sexual behaviour for sexual and reproductive health among HIV positive women is essential for their well-being and that of their sexual partners and children. The aim of this study was to assess the frequency of dual contraception method use and factors associated among HIV positive women follow-up at the treatment center unit (TCU) at Yaounde Central Hospital (YCH). **Methods:** It was a transversal study done for 6 months at YCH. A sample of 294 HIV positive women among 322 who came for consultation and received their treatment during our study period was included. Data collection was by face-to-face questionnaire administration. Data were analysed using Epi-infos 7.1.3.3 software. Multiple logistic regression was done to find an association between the outcome and predictor variables with statistically significant level of  $p < 0.05$  and CI of 95%. **Results:** Prevalence of DCM use was 33.3%. Multivariate logistic regression showed that DCM utilization was associated with age  $> 35$  [(AOR = 0.29, 95% CI (0.14 - 0.60)], sexual frequency (AOR = 0.25, 95% CI (0.10 - 0.60)], parity and gravidity of less than 3, (AOR = 0.29, 95% CI (0.14 - 0.58) and (AOR = 0.28, 95% CI (0.12 - 0.65))] respectively and no past history of abortion [(AOR = 0.24, 95% CI (0.10 - 0.56)]. All were protective factors. **Conclusion:** DCM use prevalence among HIV positive women was low. Age  $> 35$  years, one or more than one sexual intercourse per week, parity and gravidity of less than 3 and no past history of abortion were associated with DCM use.

## Subject Areas

HIV and Reproductive Health, Public Health, Infectious Diseases

## Keywords

Dual Contraception, HIV Positive Women, Yaounde

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## 1. Background

Dual contraception (DC) is the use of condom associated with another modern contraceptive method (oral Contraceptif pills, Jadelle®, Depo Provera®/Sayana press®, Intra-uterine device). It is recommended as effective strategy to reduce the incidence of Immunodeficiency Virus infection (HIV) [1]. In 2016, 36 million people were infected with HIV worldwide, 52% of these people were women of more than 15 years and 6% were children. Sixty four percent of new HIV infections were from Sub-Saharan Africa with 43% women and 2 million children [2]. In Cameroon, the prevalence of HIV was 4.3% in 2015, the following year, 32,000 new cases were registered with 4000 children, 29,000 deaths related to HIV and 74% HIV positive on Antiretroviral therapy (ARVT) [3].

DC provides double protection. It protects against sexually transmitted infections (STIs), which increases the risk of transmission of HIV between HIV positive women and their sexual partner. Moreover, it prevents unplanned pregnancies as stated by the second pillar of the prevention from mother to child transmission of HIV (PMTCT) [4]. An unwanted pregnancy increases the risk of a bad pregnancy outcome (abortion, prematurity etc.) and in women HIV positive the risk of transmission from mother to child [5].

Despite recommendations due to HIV high prevalence, in Africa as well as in Cameroon, contraception needs remain high [6] [7] [8]. The prevalence of contraception among women of 15 to 49 years was 17% in 2014 [9]. A study realised in Cameroon in 2015 revealed that about 50% of HIV positive women unwilling to be pregnant used another contraceptive method than condom [10].

Integration of family planning services to other services in health facilities as well as information, education and communication on this topic are preconised as solutions [11]. Very few studies have been done to measure the level of practice of DCM and factors influencing its use in Cameroon, which limits recommended strategies. Besides, this makes difficult the follow-up of activities of integration of family planning into other services. This study was done to produce data on the use of DCM and associated factors in other to determine intervention needs to promote a sexual behaviour at low risk among HIV positive women, moreover, to produce evidence on which to lay on to propose a reinforcement of existing strategies for a better control of HIV. The objective of this study was to assess DCM use and factors associated among HIV positive women follow-up at TCU of YCH.

## 2. Methods

### Study design

It was a facility based transversal descriptive study done at TCU of YCH for 6 months (5th January to 30th June 2018) with objectives of assessment of the prevalence of dual contraceptive method use and associated factors on 322 HIV positive women who follow-up at TCU of YCH (centre region of Cameroon), who came for consultation and/or to receive their antiretroviral treatment.

### Target population

All women of child bearing age (15 - 49 years) HIV positive followed up at TCU of YCH were eligible to the study. Were included all eligible women who consented to participate. We define no exclusion criteria.

### Sampling

Sampling was consecutive and non-exhaustive. During analysis all women using DCM (case group) were compared to other participants (control group).

### Sample size

#### Chesselsman formula was used for sample size calculations

$$N: \left[ 2(Z\alpha + Z\beta)^2 P(1-P) \right] / (P_0 - P_1)^2$$

$N$ : sample size per group

$P_0$ : prevalence of contraception in the control group (0.5) [10]

$P_1$ : Prevalence of DC in the case group (0.31) [12]

$P$ :  $(P_0 + P_1)/2$  (0.4)

$Z\alpha$ : Statistical value for type 1 error (1.96)

$Z\beta$ : Statistical value for a power of 80% (0.84)

$N$ :  $[2(1.96 + 0.84)^2 \times 0.4 \times (1 - 0.4)] / (0.5 - 0.31)^2 = 98$  participant/group

A minimal sample size of 196 was obtained

### Data collection

Data collection was done in the waiting room before consultations at the TCU and in front of the pharmacy of TCU where HIV positive women come and take their antiretroviral treatment (ARVT). Every morning for 6 months every HIV positive woman eligible to the study was met and after their consent to participate in the study obtained, data was collected by face to face pre-tested structured questionnaire administration. Data on sociodemographic variables (age, region, residence, level of education, marital status, profession and religion) and gynaeco-obstetrical variables (gravidity, parity, past history of abortion, sexual frequency) were then coded, entered and analysed using epi-infos 7.2.2.2 software.

### Data analysis

Data collected was coded, entered, cleaned and analysed using Epi Info version 7.2.2.2 [centers for Disease Control and Prevention (CDC), Atlanta, USA]. Relative frequencies at 95% confidence intervals (95% CI) were presented for categorical variables, while normally distributed continuous numerical variables were presented as means with their standard deviations. Participants were then compared depending on if they use a DC (Case) or not (Control). Chi-square

and Fischer exact test were used to compare both groups. Univariate analysis such as percentages was computed and presented in suitable tables and graphs. Bi-variate analysis on sociodemographic characteristics (age, region, residence, level of education, marital status, profession and religion), gynaeco-obstetrical factors (gravidity, parity, past history of abortion, sexual frequency) were also carried out. Then, variables with having statistical significance were included in multivariate logistic regression model with dependent variable as DCM use and independent variables sociodemographic and gynaeco-obstetric characteristics were done to find associated factors to DCM. This was done to verify for confounding factors and association between the outcome and predictor variables.

#### **Ethics statement**

An ethical clearance was obtained from the institutional ethic committee of Douala University (Littoral region, Cameroon).

### **3. Results**

#### **3.1. Description of Participants**

Three hundred and twenty-two (322) HIV positive women were eligible for the study, 294 (91.3%) consented to participate in the survey. Their mean age was  $35 \pm 4.1$  years. The age interval mostly represented was 35 - 40 years. Median age was 37.5 years. Most of the participants were catholic (55.6%), traders (33.6%), urban zone residents (92.1%), from center region center (55.6%) and having a secondary level of education (60.6%) (**Table 1**).

Concerning gynaeco-obstetrical characteristics, women with gravidity of more than 4 (40.5%), between 1 and 2 children alive (47.6%) were the most represented. Moreover, those having only one sexual partner, (93.5%), with a sexual relationship of more than 3 years (66.7%), less than one sexual intercourse per week (59.8%) and at least one abortion as past history were equally the most frequent in our study population (**Table 2**).

#### **3.2. Contraception Use**

The prevalence of contraception in our study was 264 (89.8%).

##### **3.2.1. Dual Contraception Method Use among HIV Positive Women Follow-Up at Treatment Centre Unit of Yaounde Central Hospital, Cameroon**

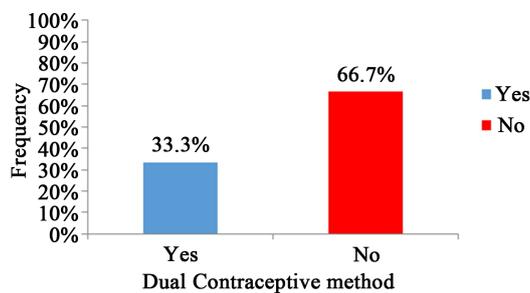
The frequency of utilisation of DCM in our study population was 98 (33.3%), (**Figure 1**).

##### **3.2.2. Distribution of HIV Positive Women with Respect to Types of Contraceptives Methods**

Condom alone was the most conceptive method used 193 (65.5%). Moreover, 45 (15.4%) of the study population used hormonal methods that is: 13 (4.5%), 22 (7.6%) and 10 (03.3%) respectively Oral contraceptive pills (OCPs), DEPO/Sayana Press®, et le Jadelle® (**Figure 2**).

**Table 1.** Frequency distribution of HIV positive women follow-up at treatment center unit of Yaounde Central Hospital, with respect to socio-demographic characteristics.

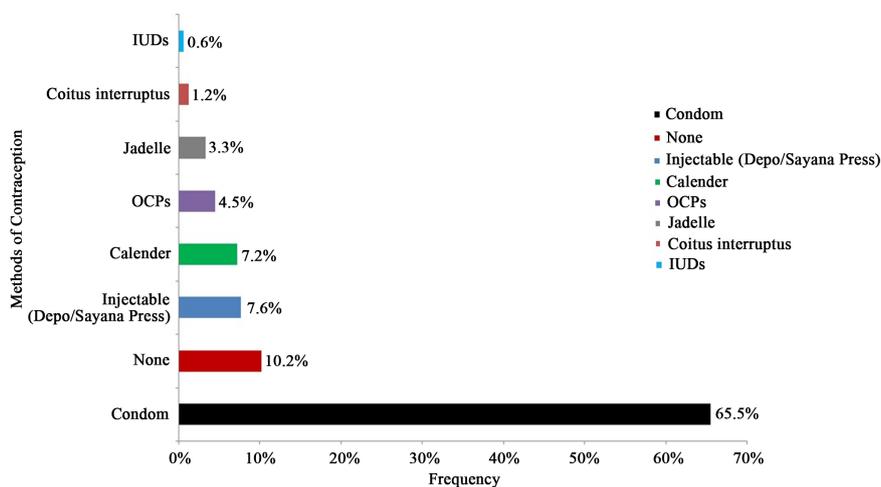
Variable (N = 294)	Effective (n)	Frequency (%)
<b>Age (years)</b>		
<20	03	01.0
[20 - 25[	15	05.1
[25 - 30[	67	22.8
[30 - 35[	41	13.9
[35 - 40[	83	28.2
[40 - 45[	59	20.2
[45 - 49]	26	08.8
<b>Profession</b>		
Civil servant	37	12.7
Trader	99	33.6
Student	22	07.4
Housewife	84	28.4
Hairdresser	24	08.4
Tailor	19	06.6
Others	09	02.9
<b>Residence</b>		
Urban	271	92.1
Rural	23	07.9
<b>Marital status</b>		
Married	89	30.2
Widow	12	04.0
Concubine	83	28.4
Single	110	37.4
<b>Region</b>		
Far North	01	0.5
North	01	0.5
Adamawa	02	0.7
Center	162	55.1
Littoral	14	04.7
West	68	23.0
North-West	15	04.9
South-West	04	01.5
South	17	05.7
East	10	03.4
<b>Religion</b>		
Catholic	175	59.6
Protestant	96	32.6
Muslim	04	01.5
Others	19	06.3
<b>Level of education</b>		
Primary	57	19.4
Secondary	178	60.6
University	52	17.8
None	07	02.2



**Figure 1.** Dual contraception method use among HIV positive women follow-up at treatment center unit of Yaounde Central Hospital, Cameroon.

**Table 2.** Frequency distribution of HIV positive women follow up at treatment center unit of Yaounde central Hospital with respect to gynaeco-obstetrical characteristics.

Variable (N = 294)	Effective (n)	Frequency (%)
<b>Gravidity</b>		
0	23	07.8
1 - 2	98	33.3
3 - 4	54	18.4
>4	119	40.5
<b>Parity</b>		
0	45	15.3
1 - 2	140	47.6
3 - 4	54	18.4
>4	55	18.7
<b>Number of sexual partner</b>		
1	275	93.5
2	14	04.7
None	05	01.8
<b>Relationship duration (year (s))</b>		
<1	34	11.7
[1 - 2]	29	09.8
]2 - 3]	32	10.8
>3	199	67.7
<b>Type of sexual intercourse</b>		
Vaginal	286	97.3
Anal	01	00.3
Anal and vaginal	07	02.4
<b>Frequency of sexual intercourse per week</b>		
1 - 3 times	176	59.8
>3 times	103	35.1
<1 time	15	05.1
<b>Number of abortion</b>		
1	89	30.3
2	38	12.9
>3	25	08.5
None	142	48.3



**Figure 2.** Distribution of HIV positive women follow-up at treatment center unit of Yaounde Central Hospital, Cameroon with respect to types of contraceptives methods.

### 3.2.3. Distribution of HIV Positive Women with Respect to Different Contraceptive Methods Associated to Condom

On 98 participants who used DCM, 25 (25.5%) used OCPs and Jadelle®, 45 (45.9%) DEPO/Sayana Press® and 3 (3.1%) IUDs associated to condom (Table 3).

### 3.3. Association of Dual Contraceptive Method Utilization of HIV Positive Women Follow-Up at Treatment Centre Unit of Yaounde Central Hospital, Cameroon

Multivariate logistic regression analysis showed that current dual contraceptive method utilization among HIV positive women was significantly associated with age [(age > 35 years women were less likely to use DCM than those of age group less than 35 years, [(AOR = 0.29, 95% CI (0.14 - 0.60)], Sexual frequency [women having one or more than one sexual intercourse per week were less likely to use DC than those having sex less frequently, (AOR = 0.25, 95% CI (0.10 - 0.60)], parity and gravidity of less than 3 women with gravidity and parity less than 3 were less likely to use DCM than those with more than 3, (AOR = 0.29, 95% CI (0.14 - 0.58) and (AOR = 0.28, 95% CI (0.12 - 0.65))] respectively and no past history of abortion [Women with no past history of abortion were less likely to use DCM than those with history of abortion [(AOR = 0.24, 95% CI (0.10 - 0.56)], (Table 4).

## 4. Discussion

Only 33.3% of study population used DCM. Condom was the most conceptive method used (65.5%). DEPO/Sayana Press® (45.9%) was the most contraceptive method associated to condom in DC (45.9%). After multivariate logistic regression analysis factors such as the age > 35 years, one or more than a sexual intercourse peer week, parity and gravidity of less than 3 and no past history of abortion were associated to DC use. All were protective factors.

**Table 3.** Distribution of HIV positive women with respect to different contraceptive methods associated to condom.

Types of contraceptives	Effective (n)	Frequency (%)
OCPs	25	25.5
DEPO/Sayana Press®	45	45.9
Jadelle®	25	25.5
DIU	03	03.1
Total	98	100

**Table 4.** Factors associated with dual contraceptive method utilization of HIV positive women follow-up at treatment center unit of Yaounde Central Hospital, Cameroon.

Variables	DC+	DC-	Crude OR	Adjusted OR (95% CI)	P value
<b>Age &gt; 35 years</b>	30	117	3.35	0.29 (0.14 - 0.60)	0.001
<b>Gravidity &lt; 3</b>	18	86	3.54	0.28 (0.12 - 0.65)	0.003
<b>Parity &lt; 3</b>	35	129	3.42	0.29 (0.14 - 0.58)	0.001
<b>Frequency of sexual intercourse/week</b>	23	83	2.39	0.25 (0.10 - 0.60)	0.001
<b>No past history of abortion</b>	28	99	2.60	0.24 (0.10 - 0.56)	0.001

DCM in our study was low (33.3%). Several barriers to the use of modern contraceptive methods may explain this result. A study done in Bafoussam (West-Cameroon), on women of child bearing age revealed barriers like; contraception perceived as useless, fear of undesired effects, ignorance, or lack of information [13]. Moreover, a lack of support from the male partner and follow-up by family planning health personnel were equally stated as barriers by women in a study done in Yaounde [14]. Studies in Nigeria (45%) [15] and the United States of America (USA) (47%) [16] have shown a greater percentage. Explanations could be that in Nigeria several campaigns were organised to promote DCM use [13] and in USA a high integration of family planning with HIV services [14].

Condom (65.5%), followed by injectables were the most frequent type of contraceptive method used. Besides injectables were the most contraception use associated to condom in DCM use. This could be explained by the fact that in Africa and Cameroon, injectables are perceived as “invisible” method. Is secret, rapidly administered, not living a mark after injection and gives the possibility of not inform the partner or family. According to certain beliefs, is seen as a “vaccine” against pregnancy. The use of injectables has increased importantly in Sub-Saharan Africa [17]. A similar trend was found in a clinic in Yaounde on contraceptive choices among women of child bearing age (WCBA) [18]. Equally in a study in Ethiopia, injectables were the most frequent followed by OCPs and Implants [19].

Women of more than 35 years in our study tend to use less DCM. Greater proportion of the women of this age is in a relationship or married and a study

in Yaounde revealed that married women tend to use more contraception if they discuss with their husband [20]. In our study women may have been influenced negatively by their partners. The role of male partners on contraceptive use is well known [21]. A study done in Ethiopia has revealed different trends with women of more than 30 years tending to use more a DC [22]. The difference in sample size could explain this difference.

In our study, women with a gravidity and parity inferior to 3 tend not to use DC. This could be explained by the fact these women could be unsatisfied by their number of children then they could tend to be less interested in contraception. A study realised in Cameroon on fertility desire among HIV positive women in 2010 has revealed that fertility desire reduces with parity [23]. Besides, a study done at YCH, in 2016 on sexual practices and fertility desire in HIV positive women revealed a negative correlation between parity and fertility desire [24]. A similar trend was found in a study in Kenya, parity increases with DC [25].

In our study the number of sexual intercourse per week superior or equals to one decreases with DCM use. In Cameroon, a high sexual frequency could be correlated to young age and multiple sexual partners. A study done in Cameroon, revealed that young girls engage much easily with multiple partners than older women. Consequently, a higher frequency of sex and more risk of infection because many girls in the study agreed not always using a condom [26]. A different trend was found in a study done in Uganda which showed that sexual intercourse frequency increases with DCM use [27]. The difference in the socio-demographic characteristics of participants between the two studies could explain this difference.

Women with no past history of abortion less tend to use DCM in our study, less exposed to post-abortum care management than those with past history of abortion could explain this trend. In Cameroon after an abortion the women have to be proposed an effective modern contraceptive method [28]. A similar trend was found in a study done in India [29].

## 5. Conclusion

The frequency of utilisation of DC among HIV positive women follow-up at TCU of YCH was low. Condoms followed by injectables were the most frequent contraceptives used. Condom associated with DEPO/Sayana press® was the most frequently used DCM method. Factors like age superior to 35 years, parity and gravidity inferior to three, one or more than one sexual intercourse per week and no past history of abortion were associated with DCM and all were protective factors.

## What Is Already Known on This Topic

- Despite recommendations due to HIV high prevalence, in Africa as well as in Cameroon, contraception needs remain high.

- Integration of family planning services to other services in health facilities particularly use of dual contraception among HIV positive women has been recognised and recommended as an effective solution to reduce HIV.
- Very few studies have been done to measure the level of practice of DCM and factors influencing its use in Cameroon, which limits recommended strategies and makes it difficult for the follow-up of activities of integration of family planning into other services.

### What This Study Adds

- This study was done to produce data on the use of DCM and associated factors in order to determine intervention needs to promote sexual behaviour at low risk among HIV positive women.
- To produce evidence data on which to lay on to propose a reinforcement of existing strategies for better control of HIV.
- To know determinants on which to act during education to increase dual contraceptive method rate use.

### Acknowledgements

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### Conflicts of Interest

Authors declared they have no conflict of interest.

### Authors Contributions

MRE, EF, TM conceived and designed the study, organised and coordinate the data collection on the field. TM analysed the data and drafted the final manuscript. All authors have read and validated the final version of the manuscript and have equally contributed to its content.

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