



**Knowledge and use of contraceptive methods as tools for preventing sexually transmitted infections and unwanted pregnancies in the student community in Kinshasa: an analytic cross-sectional study**  
*Connaissance et usage des méthodes contraceptives comme outils de prévention des infections sexuellement transmissibles et grossesses non désirables dans la communauté étudiante de Kinshasa : étude transversale analytique*

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**Résumé**

*Contexte & objectif.*

Beaucoup de dangers pèsent sur la santé, surtout sur la santé de la femme. L'usage des méthodes contraceptives n'est pas équitablement réparti, l'Afrique en représente seulement 25 %, et la République démocratique du Congo (RDC) ne rend compte que de 5,4 %. L'objectif de la présente étude était de déterminer l'ampleur de l'usage des méthodes contraceptives comme outils de prévention d'infection sexuellement transmissible (IST) et de grossesse non désirable dans la communauté étudiante. *Méthodes.* C'était une étude transversale et analytique, réalisée auprès des étudiantes des 4 universités de la ville de Kinshasa en RDC, répondant aux critères de sélection. *Résultats.* Quarante cent dix étudiantes ont été interviewées. Leur âge moyen était de  $23,5 \pm 2,6$  ans (extrême 18 et 39 ans). La connaissance de la contraception était ignorée par la majorité d'enquêtées (62,2 %). La connaissance de la méthode de prévention combinée des grossesses (condom) et des IST n'était satisfaisante que chez 47,1 % des enquêtées. Le condom (36,1 %) était le premier choix des enquêtées pour la prévention des IST (58,7 %) et un peu moins de grossesse non désirable (36,1%). L'usage des méthodes contraceptives était non effectif chez la majorité (71,7 %) d'enquêtées. *Conclusion.* Bien que plus d'un tiers d'enquêtées connaissent les méthodes contraceptives, près de trois-quart d'entre eux ne recourent à aucune de ces méthodes.

**Mots-clés :** Contraception, grossesse, IST, VIH/Sida, RDC

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**Summary**

*Context and objective.*

There are many dangers to health, especially to women's health. The use of contraceptive methods is not equally distributed, with Africa accounting for only 25 %, and the Democratic Republic of Congo (DRC) for only 5.4%. The aim of the present study was to determine the extent of contraceptive method use as a tool for preventing sexually transmitted infections (STIs) and unwanted pregnancies in the student community. *Methods.* This was a cross-sectional, analytical study of female students. Participants were selected from 4 universities in Kinshasa, DRC, meeting the selection criteria. *Results.* Four hundred and ten female students were interviewed. Their average age was  $23.5 \pm 2.6$  years (extremes 18 and 39 years). Knowledge of contraception was unknown to the majority of respondents (62.2 %). Knowledge of the combined method of preventing pregnancy (condom) and STIs was satisfactory for only 47.1 % of respondents. Condoms (36.1 %) were respondents' first choice for preventing STIs (58.7 %) and slightly less for preventing unwanted pregnancies (36.1 %). The use of contraceptive methods was non-effective among the majority (71.7 %) of respondents. *Conclusion.* Although more than a third of respondents were aware of contraceptive methods, nearly three-quarters did not use any of them.

**Keywords :** Contraception, pregnancy, STI, HIV/AIDS, DRC

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## Introduction

Many dangers weigh on health, especially on the health of women being weak, in particular, the danger of Sexually Transmitted Infections (STIs) with HIV/AIDS at the top, and the danger of unwanted pregnancies, for telling both. The use of contraception counters the aforementioned dangers by protecting women, particularly teenager girls, from the risks that STIs and unwanted pregnancies can represent for their health (1). The impact of unwanted pregnancies is not only on women level, but even affects children. When births are less than two years apart, the infant mortality rate is 45 % higher than the mortality rate; when births are spaced 2 to 3 years apart, the infant mortality rate is 45 % higher. 60% mortality rate (1-2). Globally, in 2011, 63 % of married women aged of 15 to 49 years old used contraception, compared to 55% in 1990. In 2001, a total of 62 % of married or cohabiting women, or 650 million out of more than a billion of women, used contraceptives (3-4). The prevalence of modern contraceptive methods among married women increased globally between 2000 and 2019 by 2.1 percentage points, from 55.0 % to 57.1 % (2). The use of contraceptive methods is not equitably distributed. In developed countries, 70% of women of childbearing age use contraception, on other hand, in less developed countries, 60 % use it. Africa accounts for only 25% of contraceptive use, while prevalence is remarkably high in Asia, Latin America and the Caribbean (above 66 %) (1,5). Traditional methods are more popular in developed countries than in developing countries, due to 11% in developed countries compared to 5% in developing countries (2, 4). Africa is the continent where contraception is least widespread, especially in sub-Saharan Africa where access to contraceptive methods remains difficult. In the Democratic Republic of Congo (DRC), the prevalence of modern contraception increased in 2021 from 26 to 27.3 % in Kinshasa and from 20 % to 26.3% in Kongo Central (6), According to the results of the Multiple Indicator Cluster Survey (MICS Survey) carried out in 2010, the modern contraceptive prevalence rate in the DRC was 5.4 %, which remains a very low rate for the country as a whole (7). In addition to accessibility to contraceptive methods, other factors come into play. In particular, the search for children, knowing that the number of children continues to be classified in Africa as wealth (3). However, in 2011, 143 million women, the majority of whom live in developing countries, do not use contraceptive

methods even though they no longer want to have children or would like to space births (3). The biggest question here is whether these women are aware of the existence of contraceptive methods? Contraception is essential today to the extent that it comes into play both in the prevention of unwanted pregnancies and Sexually Transmitted Infections, including HIV/AIDS; although only one contraceptive method plays this double roles (the mechanical method: condom). In addition, for fear of becoming a "girl mother", the use of contraceptive methods is increasing in student environments (1-3). Women represent more than half of the 37 million people currently living with HIV; while nearly 600,000 new HIV infections occur each year among teenagers girls and women in Africa. We also know that contraceptive methods are used by more than 700 million women worldwide, including more than 58 million African women. The use of these methods has shown a positive impact in the prevention of unwanted pregnancies and STIs. While knowing that the incidence of HIV continues to be high following the predilection of injectable intramuscular progestin (depot medroxyprogesterone acetate) in many African countries (5). In Ivory Coast, Abidjan, a study on the "contraceptive practices for HIV-infected women followed on an outpatient basis at the Treichville University Hospital Center", reported a majority of patients (62.9 %) reported using a modern contraceptive method. They mainly used injectable progestins (45.5 %) and the implant (32.6 %). The practice of double protection was only reported by 17.4% of them (8). When are all users of different contraceptive methods not aware of the risks and complications of these prevention tools in their body?

The aim of this study was to determine the extent of the use of contraceptive methods as tools for preventing STIs and unwanted pregnancy, by determining the sociodemographic characteristics of the respondents, the prevalence of those who use contraceptive methods, the prevalence those who have had complications during the use of contraceptive methods.

## Methods

### *Setting and period of the study*

The survey was carried out among students of Universities in the Town Province of Kinshasa, capital of the DRC. During the period between April the 1<sup>st</sup> tiel November the 20<sup>th</sup>, 2022.

### *Type of study*

The study was cross-sectional with an analytical aim.



#### *Inclusion and non-inclusion criteria*

The population of our study was a population of female students from the Universities of Kinshasa. We included female students from four of the Town Universities (John Wesley Methodist University, Cardinal Malula University, Simon Kimbangu University and Bel Campus Technological University), whose age was between 18 to 35 years old and from whom we received consents illuminated.

Not included in the study all students who did not respond to the questionnaire, or partially responded to the questionnaire.

#### *Sampling and sample size*

The selection of our sample was made in 4 Universities in the Town Province of Kinshasa, where we proceeded with one-step probability sampling. Respondents aged of 18 to 39 years old who met our selection criteria have been interviewed.

The sample size was convenient, set at 410 respondents.

#### *Collection of data*

The respondents were recruited within their respective universities, using the one-step probability sampling method; and a questionnaire made up of ten items.

#### *Intent variable*

As a variable of interest, we have sociodemographic data (age, marital status, residence, area, language and religion), the use of contraceptive methods and knowledge of the risks and complications of contraceptive methods.

#### *Statistical analysis*

After collecting the data, we entered it into the computer using the Excel 2013 program; and we presented them in table form.

SPSS version 24 software is used for the analyses.

The statistic used to describe the variables was made up of the mean, the standard deviation and the extremes for the quantitative variables; for qualitative variables, we described them in the form of relative frequency (%) and/or absolute (n). The chi-square test was applied to compare proportions.

The p value <0.05 and therefore the threshold of statistical significance.

#### *Ethical consideration*

The study was conducted under the authorization and approval of the John Wesley Methodist University Research and Ethics Committee, under number 0003/UMJW/SGAC/BEC/2022.

The respondents signed the informed consent after having had the necessary explanations on the purpose of the study. They were free to leave the study. The anonymity of the respondents was assured.

#### **Results**

##### *Sociodemographic characteristics*

A total of 410 students were interviewed. The sociodemographic profile of the respondents is recorded in Table 1.



**Table 1:** Sociodemographic characteristic

Variables	Frequency	
	N=410	%
Age (years)		
18-20	59	14.4
21-23	164	40.0
24-26	134	32.7
27-29	43	10.5
≥30	10	2.4
Cultural area		
Luba	175	42.7
Kongo	143	34.9
Lingala	74	18.0
Swahili	18	4.4
Marital status		
Married	54	13.2
Bachelor	356	86.8
Level of study		
University/Graduated	14	3.4
Academic/Bachelor's degree	380	92.7
Postgraduate	16	3.9
Religion		
Christian/Kimbagui	140	34.1
Christian/Revival Church	112	27.3
Christian/Protestant	84	20.5
Christian/Catholic	65	15.9
Muslim	9	2.2

The mean age was  $23.5 \pm 2.6$  years old with the extremes ranging from 18 to 39 years. The age group of 21 to 23 was more represented with 40.0 %. In terms of educational level, 92.7 % of respondents were at the bachelor's level, the majority of whom, 86.8 %, were married, and from the Luba cultural area with 42.7 %.

#### *Knowledge of respondents about contraception*

Table 2 gives the frequencies on respondents' knowledge of contraceptive methods.

**Table 2:** Knowledge of respondents about contraceptive methods

Variables	Frequency	
	(410)	%
Knowledge of respondents about contraception		
This is the method that allows you to avoid pregnancy	151	36.8
This is the effect of conceiving pregnancy	148	36.1
This is the prevention of HIV/AIDS	4	1.0
I don't know	107	26.1



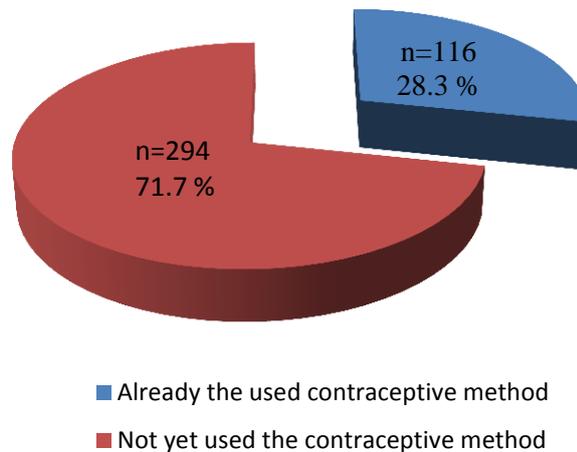
Knowledge of respondents on the type of contraception		
Hormonal method: implant, IUD	144	35.1
Mechanical method: condom	148	36.1
Natural method: coite interruptus, there MAMA,T0...	58	14.1
Chemical method: spermicide	31	7.6
I don't know	29	7.1
Knowledge of the combined prevention method for pregnancy and STIs		
Condom	193	47.1
Sexual abstinence	118	28.8
Morning after pill: feel free, G-Nancy...	50	12.2
Coitus interruptus	28	6.8
Castration	21	5.1
First choice of respondents to prevent unwanted pregnancy		
Condom	148	36.1
Sexual abstinence	111	27.1
Coitus interruptus	110	26.8
Pill	30	7.3
Castration	11	2.7
First choice methods to avoid STIs		
Condom	240	58.5
I don't know	86	21
Sexual abstinence	84	20,5

The majority of respondents, i.e. 62.2 %, did not know about contraception (the definition of contraception), but they had majority have some knowledge about the type of contraception, i.e. 92.9 %. Preponderant rates of 47.1 % of respondents were aware of the combined prevention method (condom) for unwanted pregnancy and STIs. The condom (36.1 %) remains the first choice of respondents for preventing unwanted pregnancy; also, the majority of respondents, i.e. 58.5 %, ensured the prevention of STIs using condoms.

#### *Use of contraceptive methods*

- *Frequency of subjects who have already used contraceptive methods*

Figure 1 illustrates the frequency of use of contraceptive methods.



**Figure 1:** Frequency of subjects who have already used contraceptive methods

The majority of respondents did not use contraceptive methods, compared to only 28.3% of respondents who used them.

➤ *Complications during the use of contraceptive methods*

Complications of contraceptive methods that occurred during use are shown in Table 3.

**Table 3:** Complications during the use of contraceptive methods

Complication	Frequency	
	(116)	%
None	82	70.7
Pregnancy	19	16.4
STI	15	12.9
Total	116	100.0

Among respondents who used contraceptive methods, complications during this use occurred in 29.3% of cases, these were unwanted pregnancies (16.4 %) and STIs (12.9 %).

➤ *Use of contraceptive methods and characteristics sociodemographic*

Table 4 presents the use of contraceptive methods with regard to the sociodemographic characteristics of the respondents.

**Table 4:** Use of contraceptive methods and sociodemographic characteristics

Variables	Already used contraceptive methods		P
	Yes n=116	No n=294	
Age (years old)			0.015
18-20	24 (20.7)	35 (11.9)	
21-23	50 (43.1)	114 (38.8)	
24-26	33 (28.4)	101 (34.4)	
27-29	7 (6.0)	36 (12.2)	
≥30	2 (1,7)	8 (2,7)	
Marital Status			0.185
Bride	12 (10.3)	42 (14.3)	
Bachelor	104 (89.7)	252 (85.7)	
Linguistic zone			0.627



Tshiluba	52 (44.8)	123 (41.8)	
Lingala	23 (19.8)	51 (17.3)	
Swahili	3 (2,6)	15 (5.1)	
Kongo	38 (32.8)	105 (35.7)	
Religion			0.134
Catholic	14 (12.1)	51 (17.3)	
Kimbanguiste	36 (31.0)	104 (35.4)	
Protestant	23 (19.8)	61 (20.7)	
Muslim	5 (4,3)	4 (1,4)	
Wake Church	38 (32.8)	74 (25.2)	

It appears from this table that young female students in the age between of 18 to 23 years old (63.8 %) had used contraceptive methods a lot. The majority (89.7 %) were single, from the Luba cultural area (44.8 %), and of the Kimbanguist Christian religion.

Comparing the respondents who had and had not used contraceptive methods, there was a significant difference in the age group (younger students,  $p=0.015$ ), in favor of those who had used contraceptive methods. Parameters that did not show a statistically significant difference ( $p \geq 0.05$ ).

*Determinants of the lack of knowledge of the contraceptive method protecting against both pregnancy and STIs in univariate and multivariate analysis*

The determinants of the lack of knowledge of the contraceptive method protecting against both pregnancy and STIs in univariate analysis and multivariate analysis are recorded in Table 5.

**Table 5:** Determinants of lack of contraceptive knowledge for both pregnancy and STIs in bivariate analysis and multivariate analysis

Factors	Bivariate analysis		Multivariate analysis	
	p	OR (CI 95%)	P	aOR (CI 95%)
Level of study				
Post-university		1		1
University	0.236	0.889 (0.099-1.403)	0.327	0.500(0.099-1.403 )
Marital status				
Single		1		1
Married	<0.0001	1.549(0.345-20.172)	<0.0001	4.706(2.394-9.251)
Religion				
Non-christian		1		1
Chritian	0.404	0.397(0.715-0.308)	0.579	1.487(0.366-6.045)

In bivariate analysis of logistic regression analysis, marriage emerged as the main factor associated with lack of knowledge about the contraceptive method protecting of pregnancy and sexually transmitted infections. After adjusting for this aforementioned risk the contraceptive method protecting against both factor, marriage persisted as a major factor independently associated with lack of knowledge of the contraceptive method protecting against both pregnancy and sexually transmitted infections, multiplying this risk 4.7 times.

**Discussion**

This study focused on knowledge of risks and complications, as well as the use of contraceptive methods as tools for preventing sexually transmitted infections and unwanted pregnancies in the student community, aimed to determine the extent of the use of contraceptive methods as tools for preventing STIs and unwanted pregnancy, by determining the sociodemographic characteristics of the respondents, the prevalence of those who use contraceptive methods, the prevalence those

who have had complications during the use of contraceptive methods caused by contraception.

*Sociodemographic data*

The average age of the respondents was  $23.5 \pm 2.6$  years, with the extremes ranging from 18 to 39 years. The age group of 21 to 23 was more represented with 40.0%. The research carried out in a student environment, had 92.7% of respondents with a bachelor's degree, the majority, 86.8%, were married, from the Luba cultural area (42.7%), and of Kimbanguist Christian religion.



In the study by Dieudonné Mpunga Mukendi *et al.* on the knowledge, attitudes and practices of adolescents and teachers regarding contraception. They decry that the majority of adolescents they interviewed were of Christian religion, and confided in those around them (mothers, couples) about questions of sexuality (9).

This result is similar to ours regarding the religion of the respondents. And this is justified in the sense that the two studies were carried out in the DRC, and that the Christian religion is dominant in the country.

#### *Knowledge of the respondents*

Knowledge of contraception, talking about the definition, was ignored by the majority of respondents, i.e. 62.2%, but it had some knowledge about the type of contraception. In 92.9 % cases. Knowledge of the combined prevention method (condom) for pregnancies and STIs was only known among 47.1% of respondents. The condom (36.1 %) was the first choice of respondents for preventing unwanted pregnancy; also, the majority, 58.5 %, ensured the prevention of STIs using condoms.

DRD Ajavon and collaborator in their study on knowledge, attitudes, practices of contraceptive methods in public grammar schools in the town of Kara (Togo). They found results similar to ours. The majority of respondents were aware of contraceptive methods (91.98 %) (10). This similarity is due to the fact that the study is carried out in the same geographical setting.

#### *Use of contraceptive methods*

The use of contraceptive methods was not effective among the majority (71.7 %) of respondents, compared to only 28.3 % of respondents who used them. Among respondents who used contraceptive methods, complications during this use occurred in 29.3 % of cases, these were unwanted pregnancies (16.4 %) and STIs (12.9 %). It appears that young female students in the age group of 18 to 23 had used contraceptive methods a lot. The majority (89.7 %) were single, from the Luba cultural area (44.8%), and of the Kimbanguist Christian religion.

In the same study by DRD Ajavon *et al.*, almost half of the respondents used contraceptive methods including condoms (85.71 %) (10). Result far superior to ours. This difference is observed following an ineffective awareness system for the use of contraceptive methods.

On the other hand, in the study by Dieudonné Mpunga Mukendi *et al.* on the knowledge, attitudes and practices of adolescents and lessons regarding contraception. They report irregular use

of artificial contraceptive methods, with the profile of natural contraceptive methods (9). In any case, the two results intersect, due to the fact that the use of contraceptive methods is not effective.

Comparing the respondents who had used and who had not used contraceptive methods, there was a significant difference in the age group (younger students,  $p=0.015$ ), in favor of those who had used contraceptive methods. Parameters that did not show a statistically significant difference ( $p \geq 0.05$ ).

#### *Complications during contraceptive use*

Among respondents who used contraceptive methods, complications during this use occurred in 29.3% of cases, these were unwanted pregnancies (16.4%) and STIs (12.9%).

Considering that pregnancies are not desirable during the period of contraception, this is demonstrated by the GRECO study carried out by Barjot P *et al* in France, among all patients presenting a pregnancy that occurred while they were taking contraception. The study reported: occurrence of unwanted pregnancy in people using estrogen-progestin contraception in 88% of cases, microprogestin in 8.7% of cases, macroprogestin in 0.9% of cases, and another type of pill in 2.4% of cases (11).

There is a large difference in prevalence between our study and that carried out in France. The reasons are simple, the culture of contraceptive use is very widespread in France and in the Democratic Republic of Congo; faced with a high rate of use, it is likely to also have a high rate of complications; hence the prevalence of complications during contraception in France far exceeds those in the DRC.

#### *Limitations and strengths of the study*

##### *Limitation of the study*

The limitation of this study is due to the fact that the research only took into consideration female students, without investigating the use of contraception among (male) students.

##### *Strength of the study*

This research is one of the rare studies that has discussed contraception in the aspect of knowledge of complications, especially in a sexually active environment like that of academia.

#### **Conclusion**

The use of contraceptive methods as tools for preventing STIs and unwanted pregnancy in the student community is not widespread: young undergraduate students do not know what contraception is, but have a certain knowledge about the type of contraception and the contraceptive method that can protect against both



unwanted pregnancies and Sexually Transmitted Infections. Their first choice for combined prevention (undesirable pregnancies and STIs) remains the Condom (mechanical method); but the use of contraceptive methods was not effective in the majority. The minority who use them suffer from complications, notably unwanted pregnancy and STIs (including HIV/AIDS).

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#### Contribution of the authors

Kapitene KM designed the research protocol, perform statistical analysis, wrote and edited the article;

Bampeledi KM carried out the field survey.

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