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Adolescents' knowledge, attitude and utilization of emergency contraceptive in Idjwi Island in the Democratic Republic of the Congo

Abstract

Introduction: Unintended pregnancies are a major health problem and one of the main interventions to reduce unintended pregnancies and unsafe abortions is the correct use of emergency contraception (EC). The objective of this study was to assess knowledge, attitude, and utilization of EC among adolescent girls in Idjwi Island, Eastern of the Democratic Republic of the Congo.

Methods: We conducted a cross-sectional survey of 353 adolescent girls aged 15-24 who were recruited and who completed a pre-established questionnaire after they were accepted into the survey. Data collected were analyzed with STATA 16 software and the comparison of variables with the Chi-square test and a significance threshold of 5%.

Results: We found that 293 (83.0%) reported having ever had sexual intercourse and 220 had heard of EC. The proportion of respondents with sufficient knowledge was 59.1% (130/220) and the assessment of attitude towards the EC shows that 81.8% (180/220) of the respondents had a positive attitude towards EC. Of 293 respondents who had ever had sexual intercourse, 148 (50.5%) reported having ever used EC. Respondents with a secondary educational level (adjusted odds ratio =14.3 [7.2-28.3]) and university educational level (adjusted odds ratio =4.8 [1.8-13.0]) were more likely to use EC compared to those with a primary educational level.

Conclusion: The study shows that the level of EC utilization was medium in Idjwi Island. Educational level was a major predictor of EC utilization. Therefore, it is recommended that strategies be developed to improve EC utilization by increasing the level of EC awareness among adolescent girls.

Keywords: emergency contraception, knowledge, attitudes, utilization, adolescent girls, Idjwi Island

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Abbreviations: 95% CI, 95% confidence interval; AOR, adjusted odds ratio; DRC, Democratic Republic of the Congo; EC, emergency contraception; ECP: emergency contraceptive pill; UOR, unadjusted odds ratio; WHO, world health organization

Introduction

Many young women are at high risk of unintended pregnancy. In many developing countries, pregnancy severely limits the education of an adolescent girl.[1] Between 2015 and 2019, the World Health Organization (WHO) recorded an annual global average of 73.3 million induced abortions (safe or unsafe).[1] Unwanted pregnancies often lead to unsafe abortions and their prevention leads to abortion. Worldwide, about 536,000 maternal deaths occur each year, with 99% of these deaths occurring in developing countries. Each year, 4.7% to 13.2% of maternal deaths can be attributed to unsafe abortion.[2] In developed regions, an estimated 30 women die per 100,000 unsafe abortions. That figure reaches 220 deaths per 100,000 unsafe abortions in developing countries, and 520 deaths in Sub-Saharan Africa. Virtually all deaths and disabilities due to abortions could be prevented through sex education, effective contraception, legal access to safe induced abortion, and timely care of complications.[3] Most deaths occur in countries where abortion is legally restricted, leading to procedures carried out under dangerous conditions. About 7 million women are hospitalized each year following unsafe abortions in developing countries.[4] The estimated annual cost of treating major complications due to abortions is US$553 million.[5]

Young people face significant threats to sexual and reproductive health, such as unwanted pregnancies, sexually transmitted infections, and sexual exploitation and abuse. All of these situations, particularly those related to teenage pregnancy, can have significant health implications. Unsafe abortion due to unplanned pregnancy is one of the leading causes of maternal morbidity and mortality among women.[6] The risk of dying from unsafe abortions was highest in Africa and it estimated that nearly half of all abortions take place in the worst safe conditions.[3]

In response to this abortion situation, the use of the emergency contraceptive pill (ECP) and its inclusion in national health programs were suggested. It is a catch-up method used to prevent unwanted pregnancies due to unprotected sex or accidental rupture of condoms or missed pills in women.[7,8] Emergency contraception (EC) refers to contraceptive methods that can be used to prevent pregnancy after sexual intercourse. These are recommended for use within 5 days but are most effective the earlier they are used after the sexual act. EC is indicated to prevent pregnancy after unprotected or inadequately protected sex.[9]

A study of female students at the University of Parakou (Benin) showed that only 51% of respondents had ever heard of EC.[9] Another study of female students in Botswana reported that overall knowledge of EC was 95% and only 22% had used it at least once.[10]

Improving knowledge about the utilization of contraceptive methods is a crucial step towards reducing the incidence of unwanted

pregnancies. If EC were widely used, unwanted pregnancies and the need for induced abortion could be significantly reduced.[11] In many low-income countries, lack of knowledge and access to EC can lead to the use of unsafe abortion among young women, which contributes significantly to maternal morbidity and mortality.[6] There are gaps in knowledge, attitude, and utilization of EC in studies carried out in different developing countries. Various studies in Ethiopia, Uganda, Ghana, and Kenya have indicated that awareness of EC is around 50% and utilization is below 20%.[12–15] This concept of EC utilization continues to be challenged by several factors, including socio-demographic characteristics of young girls, knowledge and attitudes towards EC, and the availability and accessibility of EC.[16–18]

However, no data are available to consider a decision by the health authorities on the promotion of this emergency method in Idjwi Island, in the Democratic Republic of the Congo (DRC). For this reason, this study aims to assess knowledge, attitudes, and utilization of EC among adolescent girls in Idjwi Island.

Materials and methods

Study framework, type and period

This is an analytical cross-sectional study conducted from February 1st to 20th, 2022 among adolescent girls aged 15-24 residing in Idjwi Island, in the Eastern DRC. This island is a territory located in the middle of Lake Kivu, separated in the north by Goma city, in the south by Bukavu city, in the east by the Rwandan Republic, and in the west by the territory of Kalehe. This island has an area of 310 km2 (it is the second largest lake island in Africa) and a population of 320,009 inhabitants according to recent estimates, a density of 1,035 inhabitants per km^2. This density is among the highest densities in Africa. In terms of health, Idjwi Island has a health zone and includes one general hospital, 4 referral health centers, 16 health centers, and 11 health posts.

Study population

Adolescent girls aged 15-24 were selected as our study population. A sample of 400 adolescent girls was randomly selected to participate in this study. A minimum sample size of 400 was chosen on the basis of the following formula: $n = z^2pq/d^2$, with 95% standard deviation of confidence interval (1.96), estimated EC utilization prevalence of 50%, accuracy error of 5%. Unmarried teenage girls aged 15-24 were randomly selected from the different groups and were interviewed in the community setting and were the eligible population for this study. Severely ill persons, hearing impairment, mental disability, or inability to respond were the exclusion criteria for the study.

Data collection and study variables

We chose to assess their EC knowledge using a semi-structured questionnaire that guarantees anonymity and allows for the interview of a large number of adolescent girls. The questionnaire was pre-tested with 25 adolescent girls not included in the study. This pre-test allowed modifications to be made to arrive at the final form of the questionnaire. Training of 20 investigators for three (3) days with pre-test questionnaire. This questionnaire was administered to each individual included in the study. It included variables related to socio-demographic characteristics, knowledge, attitudes, and utilization of EC. The knowledge was related to statements related to EC. Attitudes were concerned with emotional response, reaction, confidence, and rumor regarding EC. The questionnaire consisted of four sections, including questions related to socio-demographic characteristics, EC knowledge, attitudes toward EC, and EC utilization. Socio-demographic details include age, educational level, marital status, religion, parental status, and sources of information on EC.

Knowledge was assessed using a 7-item questionnaire adapted from Abate et al.[17] and amended to suit the respondents. To assess knowledge of the EC, a score of one (1) point was assigned to a correct answer and a score of zero (0) to an incorrect answer. The assessment of EC knowledge was made using the calculation of a knowledge score above 60% as "good knowledge"; below 60%, the participant was considered to have "poor knowledge".

Attitudes were assessed using 8 Likert-type items adopted by Abate et al.[17] Answers were: "strongly disagree", "disagree", "neutral", "agree", and "strongly agree" weighing 1 to 5 respectively for each positive statement. In our study, we rated -2 for "strongly disagree", -1 for "disagree", 0 for "neutral", 1 for "agree" and 2 for "strongly agree". To identify an attitude towards EC, we used a scale of 1 to 16 for a positive attitude and -16 to 0 for a negative attitude.

EC utilization was considered to be dependent variable. Participants indicated whether they had used EC at least once ("yes" or "no").

Statistical analyzes

Statistical analyzes were performed using STATA version 16. Descriptive statistics (frequencies, percentages, mean and standard deviation [SD]) were used to describe socio-demographic characteristics, knowledge, attitude, and utilization of EC. A bivariate analysis was performed using the Chi-square test and a multiple logistic regression was then used to identify factors independently associated with EC utilization. Explanatory variables with a bivariate test value of 0.25 were included in the logistic model; p-value <0.05 was considered statistically significant.

Ethical considerations

Informed consent was obtained from each participant prior to the interviews and no compensation or incentives were provided to participants for this study. The anonymity and confidentiality of the respondents were ensured by using codes instead of their names, so that no information could be linked to specific respondents. The study was approved by the Medical Ethics Committee of the University of Goma (Approval No.: UNIGOM/CEM/003/2021).

Results

Of a total of 353 respondents, 293 (83.0%) reported having had sexual intercourse and 60 (17.0%) had not yet had sexual intercourse. Of the 293 respondents, 220 (75.1%) reported having ever heard of EC and 73 (24.9%) had never heard of it (Figure 1).

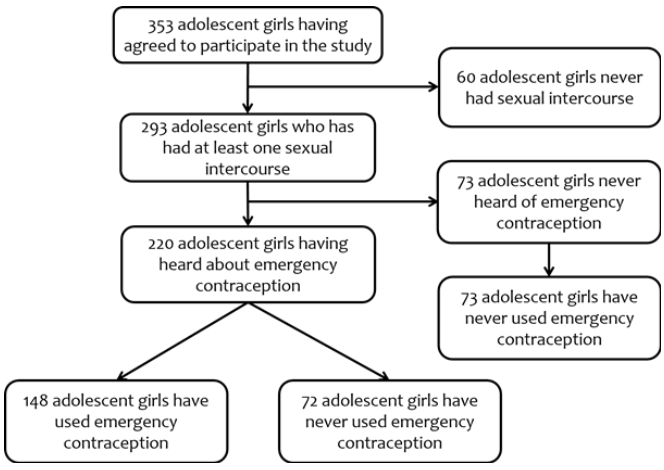

Figure 1 Distribution of the study population.

Socio-demographic characteristics of the participants

Of the 293 adolescent girls surveyed, 24.2% were under the age of 18. The mean age was 20.0 ± 2.8 years (range: 15 and 24 years). More than 38.2% were Catholic, 33.1% were Protestant, and 28.7% were other religions. Nearly three-quarters (73.4%) of the respondents lived with their parents. With regard to educational level, 36.2% were at primary level, 52.9% at secondary level and 10.9% at university level (Table 1).

Table 1 Socio-demographic characteristics of the respondents

Variable	Number (n=293)	Percentage
Age		
<18 years	71	24.2
18-21 years	122	41.6
>21 years	100	34.1
Educational level		
Primary	106	36.2
Secondary	155	52.9
Higher/University	32	10.9
Parental status		
Parents living together	177	60.4
Divorced parents	55	18.8
Deceased father and/or mother	61	20.8
Housing situation		
Lives with her parents	215	73.4
Lives with her friends	52	17.7
Lives alone	26	8.9
Religion		
Catholic	112	38.2
Protestant/Pentecostal	97	33.1
Others	84	28.7

History of sexual activity

First sexual intercourse occurred before age 15 years in 149 (50.8%) respondents; 121 (41.3%) of them have been pregnant at least once and 35 (11.9%) have a history of abortion. More than half (50.5%) of the respondents had two or more partners in the 12 months prior to the survey (Table 2).

Table 2 Respondents' history of sexual activity

Variable	Number (n=293)	Percentage
Age at the first sexual intercourse		
<15 years	149	50.8
15-19 years	99	33.8
≥20 years	45	15.4
History of pregnancy		
Yes	121	41.3
No	172	58.7
History of abortion		
Yes	35	11.9
No	258	88.1
Number of partners in the 12 months prior to the survey		
1	145	49.5
≥2	148	50.5

Knowledge of emergency contraception

Figure 2 shows the source of information for respondents regarding EC. Most respondents (117/220) were informed by friends, 58 (26.4%) by healthcare professionals, 31 (14.1%) were informed through television/radio, and 14 (6.4%) through social media (Figure 2).

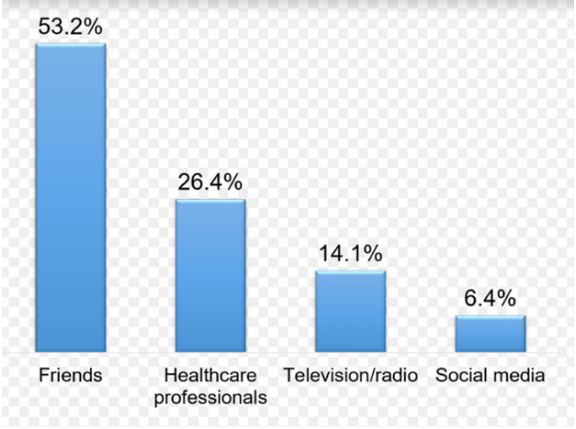

Figure 2 Source of information on emergency contraception.

The calculated knowledge scores ranged from 1 to 6 with a mean of 3.8 ± 1.1. The proportion of respondents with good knowledge was 59.1% (130/220) and that of respondents with poor knowledge was 40.9% (90/220). Table 3 shows participants' responses to the knowledge items on the EC. When asked about options available to prevent an unwanted pregnancy, 114 (51.8%) reported using EC, while 57 (25.9%) reported not knowing anything. With respect to EC methods, the majority of the respondents (66.8%) mentioned ECPs, while only 23 (10.4%) mentioned intrauterine contraceptive devices. Regarding the timing and doses of ECPs, 97 (44.1%) reported within 72 hours of sexual intercourse; 24 (10.9%) respondents reported twice as appropriate doses of ECP. Similarly, 28 (12.7%) respondents indicated that 12 hours is the time interval to take ECP. Regarding the benefit of EC, 189 (85.9%) reported preventing pregnancy (Table 3).

Table 3 Knowledge of Emergency Contraceptive among adolescent girls in Idjwi Island, in the DRC

Items en rapport avec les connaissances	Number (n=220)	Percentage
Things to do after unprotected sexual intercourse		
Use ECP	114	51.8
Abortion	10	4.5
No alternative	39	17.7
I don't know	57	25.9
Types of EC methods		
ECP	147	66.8
Intrauterine contraceptive device	23	10.4
Depo-provera	25	11.4
I don't know	25	11.4
Time limit to take EC		
Anytime	28	12.7
Before sex	48	21.8
24 hours after sex	47	21.4
72 hours sex	97	44.1
Dose of ECP		
One dose	104	47.3
Two doses	24	10.9

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Table Continued....

Items en rapport avec les connaissances	Number (n=220)	Percentage
Three doses	3	1.4
I don't know	89	40.4
Time interval between doses		
12 hours	28	12.7
24 hours	112	50.9
I don't know	80	36.4
Advantage of EC		
Prevent pregnancy	189	85.9
Regular contraceptive	4	1.8
Regulation of menstrual cycle	8	3.6
Abortion	19	8.6
Situations of requirement EC to prevent unintended pregnancy		
Raped	43	19.6
Condom breaks	80	36.4
Regular pills are missed	8	3.6
Use no contraceptives	34	15.4
In all above situations	50	22.7
I don't know	5	2.3
Mean of knowledge score (range)	3.8 ± 1.1	(1 – 6)

EC: emergency contraception; ECP: emergency contraceptive pill

Attitudes related to emergency contraception

The calculated attitude scores ranged from -10 to 14 with a mean of 5.1 ± 4.8. The evaluation of attitude towards EC revealed that 180 (81.8%) respondents had a positive attitude towards EC (Table 4). Table 4 shows the distribution of respondents' responses to items related to attitudes towards EC.

Respondents' utilization of emergency contraception

Of 293 respondents who had ever had sexual intercourse, 148 (50.5%) reported having ever used EC and 145 (49.5%) had never used EC (Figure 1). Regarding the frequency of EC utilization, of 148 respondents who had ever used EC, 50 (33.8%) used it once, 19 (12.8%) twice, 30 (20.3%) three times, and 49 (33.1%) more than three times. Among those who recommended EC utilization to the respondents, friends were the first (41.9%) followed by healthcare professionals (31.8%), and partners (26.3%).

Determinants of emergency contraception utilization

Bivariate analyzes showed that participants over 21 years of age (unadjusted odds ratio = 2.7 [1.4-5.1]), those with secondary educational level (unadjusted odds ratio = 15.6 [8.2-29.7]), and higher/university educational level (unadjusted odds ratio = 7.2 [3.0-17.4]), those living alone (unadjusted odds ratio = 2.7 [1.1-6.7]), and those with Catholic religion (unadjusted odds ratio = 2.0 [1.1-3.5]) were more likely to use EC than others. In a multivariate analysis, the probability of using EC was independently associated with educational level. Respondents with secondary educational level (adjusted odds ratio = 14.3 [7.2-28.3]) and higher/university educational level (adjusted odds ratio = 4.8 [1.8-13.0]) were more likely to use EC than those with a primary educational level (Table 5).

Table 4 Attitude towards Emergency Contraception among adolescent girls in Idjwi Island, in the DRC

Items related to attitudes	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I would use ECP if I have unprotected sex	43.20%	30.90%	12.70%	11.40%	1.80%
EC methods are safe	36.40%	30.40%	23.20%	6.40%	3.60%
I would recommend EC methods to a friend	33.20%	50.00%	7.30%	6.80%	2.70%
Increased accessibility of EC brings about irresponsible sexual behavior	39.10%	23.20%	10.50%	20.40%	6.80%
My partner has positive attitude towards EC methods	20.90%	27.30%	18.20%	25.40%	8.20%
If male partner knows about EC, he may be less likely to use condoms	24.10%	25.00%	17.70%	21.80%	11.40%
Increased accessibility of EC make women stop using other forms of contraceptive	32.70%	28.60%	18.60%	15.90%	4.10%
EC methods could have an effect on future fertility	24.10%	20.90%	37.30%	13.20%	4.50%
EC methods should be limited because they could have side effect	27.30%	0.00%	50.90%	0.00%	21.80%
Mean of attitude score	5.1 ± 4.8 (-10 et 14)				

EC, emergency contraception; ECP, emergency contraceptive pill

Table 5 Determinants of emergency contraception utilization among adolescent girls in Idjwi Island, in the DRC

Variable	Total (N=293)	EC utilization				UOR [95%CI]	AOR [95%CI]	P value
		Yes		No				
		(n=148), n (%)		(n=145), n (%)				
Age								
<18 years	71	26	(36.6)	45	(63.4)	1	1	
18-21 years	122	61	(50.0)	61	(50.0)	1.7 [0.9-3.1]	1.1 [0.5-2.3]	0.834
>21 years	100	61	(61.0)	39	(39.0)	2.7 [1.4-5.1]	1.7 [0.7-4.0]	0.206
Educational level								
Primary	106	16	(15.1)	90	(84.9)	1	1	
Secondary	155	114	(73.6)	41	(24.5)	15.6 [8.2-29.7]	14.3 [7.2-28.3]	<0.001
Higher/University	32	18	(56.3)	14	(43.8)	7.2 [3.0-17.4]	4.8 [1.8-13.0]	0.002
Parental status								

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Table Continued....

Variable	Total (N=293)	EC utilization				UOR [95%CI]	AOR [95%CI]	P value
		Yes		No				
		(n=148), n (%)		(n=145), n (%)				
Divorced parents	55	26	(47.3)	29	(52.7)	0.8 [0.4-1.4]	1.0 [0.5-2.4]	0.93
Deceased father and/or mother	61	26	(42.6)	35	(57.4)	0.6 [0.3-1.1]	0.6 [0.3-1.3]	0.198
Housing situation								
Lives with her parents	215	108	(50.2)	107	(49.8)	1	1	
Lives with her friends	52	21	(40.4)	31	(59.6)	0.7 [0.4-1.2]	1.3 [0.5-2.9]	0.588
Lives alone	26	19	(73.1)	7	(26.9)	2.7 [1.1-6.7]	2.2 [0.7-6.7]	0.18
Religion								
Catholic	112	67	(59.8)	45	(40.2)	2.0 [1.1-3.5]	1.9 [0.9-4.0]	0.075
Protestant/Pentecostal	97	45	(46.4)	52	(53.6)	1.1 [0.6-2.1]	0.9 [0.4-2.0]	0.885
Others	84	36	(42.9)	48	(57.1)	1	1	
History of pregnancy								
No	121	69	(57.0)	52	(43.0)	1	1	
Yes	172	79	(45.9)	93	(54.1)	0.6 [0.4-1.0]	1.2 [0.6-2.2]	0.588
Number of partners in the 12 months prior to the survey								
1	145	74	(51.0)	71	(49.0)	1	1	
≥2	148	74	(50.0)	74	(50.0)	1.0 [0.6-1.5]	1.0 [0.6-1.8]	0.973

EC, emergency contraception; UOR, unadjusted odds ratio; AOR, adjusted odds ratio; 95% CI, 95% confidence interval

Discussion

In this study, 59.1% of the participants were sufficiently aware of EC. The study also found that 81.8% of the respondents had a positive attitude toward EC. EC utilization was 50.5% and significantly associated with secondary educational level (adjusted odds ratio = 14.3 [7.2-28.3]) and higher/university educational level (adjusted odds ratio = 4.8 [1.8-13.0]). The majority (75.7%) of the respondents were 18-24 years of age with a mean age of 20.0 ± 2.8 years. In the study by Mishore et al.[18] the majority (94%) of participants were 24 years of age or younger; what is considered a sexually active age group.[22] This is also in line with a similar study in Nigeria.[23] The results of this cross-sectional survey showed that 75% of the adolescent girls reported having ever heard of EC and 59.1% had good knowledge of EC. This finding is consistent with results from in Ghanaian and Nigerian studies[12,24,25] and those reported in Asian studies[26,27] although there are differences in the proportions found. These differences may be explained by the availability of information or not, popularizing the EC method at all levels of the healthcare system in these different countries. The most frequent sources of information are friends, healthcare professionals, and media. This finding is similar to that of other authors.[28–30]

It should be noted that social media are mentioned the least by participants, which shows that they are less used in Idjwi Island, which is a rural area. In a Nigerian study, the majority of participants had obtained information about EC from social media and friends.[31] This is similar to an Ethiopian study where health facilities accounted for 69.3% of the sources of information on EC.[29] Few teenage girls obtained information about contraception from their family members. According to Byamugisha et al.[15] parents/guardians do not give their children information about contraception because of socioculture or religious beliefs. Some girls who become pregnant perform abortions out of fear of parental reaction; hence the need for ongoing parent-child communication on sexual matters.[15]

The majority of the respondents (66.8%) mentioned ECP as an EC method, while 10.4% mentioned intrauterine contraceptive devices. Only 44.1% of the teenage girls correctly indicated that 72 hours was the time to use the method. The study also found that respondents' educational levels were significantly associated with EC utilization. Respondents that are more educated were more likely to use EC than less educated respondents. It is recognized that education also influences the expression of knowledge and that more educated women generally have a positive attitude towards EC. Abate et al.[17] found that EC utilization was significantly associated with good EC knowledge. This finding is different from the Alemtu study.[32] Unlike other contraceptive medicines, EC is not to be administered regularly. It is given in cases of unprotected sex involving the risk of an unwanted pregnancy.[14] Awareness of accessibility and care within the defined time frame are necessary for the proper and effective EC utilization.[33,34]

Half of the participants (50.5%) reported having ever used EC. This proportion is lower than those reported in Beninese[9] and Cameroonian[30] surveys. However, for those who reported never using EC, the reasons given were religious belief and fear of possible side effects. These findings are also noted among Nigerian students, who have focused on religious belief.[35,36] Nevertheless, 66.9% of the participants reported using the levonorgestrel pill more than once in their sexual lives. In fact, the levonorgestrel pill is most commonly used in most African countries.[37,38] This frequency is higher than that of the African literature which indicates, with the exception of South Africa,[37] a lesser use such as Uganda[15] and Ethiopia.[17]

Most respondents (68.2%) had used the EC on the recommendation of their friends or partners. In addition, recent studies have shown that male sexual partners have an influence on the use of ECPs and lead women to a strong desire not to continue a pregnancy for which their opinion is not favorable. The intrinsic value of EC is that it eliminates the obligation of women, especially adolescent girls, to choose between abortion and unwanted pregnancy. However, the practice of modern contraceptive methods in general has a difficult time winning over women in Africa.[9] In several African countries, healthcare providers are limiting information on EC, fearing abuse or increased risk of sexual behavior or neglect of traditional contraceptive methods.[9]

However, studies that have shown the opposite point out that the use of the EC must be ad hoc without hindering women's contraceptive habit.[36,37] Among adolescent girls, there is little information about EC

methods, likely leading to high rates of clandestine abortions with often-irreversible complications. The lower-risk use and expected benefits of EC merit encouraging women in general, young girls and adolescents in particular to use this contraceptive product on demand.

This study has some limitations. First, it is a cross-sectional study, it was carried out at a single time, or over a short period of time at most. It provides an overview of results and their related characteristics at that time, and the results could have been different if another time period had been chosen. Secondly, despite the eloquence of our results, we must ask ourselves whether the statements made by these teenage girls are true. An information bias cannot be ruled out in the interpretation of the results. But observing anonymity may reduce the importance of this bias in adolescent responses.

Conclusion

The present study shows that the level of EC utilization was medium and the education was a major predictor of EC utilization. Therefore, much more should be done in the area of information, education and communication of awareness and use of modern contraceptives. Special attention should be paid to EC for adolescent girls in order to reduce unwanted pregnancies and abortion. A separate study to assess the availability and quality of contraceptive methods in Idjwi Island is also recommended.

Acknowledgments

None.

Conflicts of interest

The author declares there is no conflict of interest.

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