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Original Research Article

Knowledge and Use of Contraceptives among Single Women in Tertiary Education, Ndola, Zambia

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ABSTRACT

The incidence of unplanned pregnancies is on the rise in Zambia. The results from a study aimed at determining the level of knowledge and factors associated with the use of contraceptives among single women in tertiary education is documented in this manuscript.A cross section study was conducted using a structured questionnaire to 180 consenting participants. The Chi-square test was used to determine the relationship between qualitative variables. A result yielding a *p* value of less that 0.05 was considered significant. The response rate was 70% with 126 out of 180 questionnaires being returned. The respondents aged 25 years or older (48.8%) had more knowledge than respondents aged less than 25 years (20.0%) concerning contraceptives ($p<0.001$). Those who did not use school as a source of knowledge about contraceptives were 61% (OR = 0.39; 95% CI [0.16, 0.93]) less likely to have high contraceptive knowledge compared to respondents who sourced information on contraceptive knowledge from school. Compared to participants who had no sexual intercourse in a previous month, those who had 1-4 and 5 or more times sexual intercourse were 99% (OR = 0.01; 95% CI [0.00, 0.06]) and 99.7% (OR = 0.003; 95% CI [0.00, 0.03]) less likely to use contraceptives, respectively. The most preferred contraceptive was the male condom (49.2%). About 2 in 3 (68.3%) of respondents knew about the emergency contraceptive. Most women have a low level of knowledge about contraceptives. Intervention programs should be integrated into the existing school programs.

Key words: Contraceptives, Knowledge, Sexual activity, Single women, Tertiary education, Zambia.

INTRODUCTION

The main effect of failed or non-use of contraceptives is the high rate of unplanned pregnancies leading to increased cases of unsafe abortions and post abortion care at health facilities. A study conducted at the University Teaching Hospital in Zambia showed that most women reporting for abortion services had no knowledge of the emergency contraceptive pill. [1] Records indicate a high incidence of abortion among single women in the age group 15-45 years and fairly educated. [2] It can be assumed that a large number of these women are in tertiary education and so the main focus is single women currently in college or university.

Global rates of unwanted pregnancy in 2102 according to Hussein and co-authors were estimated at 53 per 1000 women aged 15-44 years, with the majority being from the African region at 80 per 1000 and lowest in Europe at 43 per 1000. [3] Approximately 14 million pregnancies are thought to occur in sub-Saharan Africa annually. A sizeable proportion of this is due to inappropriate use of short term hormonal contraceptive methods. If a fifth of women using oral

contraceptives or injectables switched to long term methods, over 1.8 million unwanted pregnancies could have been averted over 5 years. [4] Various factors affect the choice of modern contraceptives, the most common being aspects of the community's socio-cultural and economic environment. [5]

There is a relationship between levels of contraceptive use and the incidence of induced abortion. According to Marston and Cleland, if fertility and its other determinants such as sexual exposure remain the same, a rise in contraceptive use or in effectiveness of use must lead to a decline in induced abortions and vice versa. [6] Contraception and induced abortion can be viewed as alternative ways of achieving the same aggregate level of fertility in a population. A study carried out in Uganda revealed that age, early sexual debut and a rural background were significantly associated with non-use of contraceptives for males but not for females. [7] In Western Nigeria, Lamina observed that the prevalence of contraceptive use among abortion seekers was low and reasons for abortion varied from single parenthood or being a student to lack of desire to have children. [8]

Although contraceptives are available in Zambia, it is not clear as to what proportion of younger women who are sexually active know of their availability. The 2012 report on the state of the nation on young people in Zambia indicate that the median age of first sexual experience among women in most countries profiled, Zambia inclusive, is between ages 16 and 18. Therefore, it is logical to assume that most single women in colleges or tertiary education in Zambia are sexually active. Most studies in Zambia concerning contraceptive use in Zambian women do not account solely for single women as a group but encompass women of all age groups and marital statuses. This leaves a gap between percentage of single women who have access and knowledge about the use of and availability of contraceptives. The aim of this study was to assess the level of knowledge and the factors associated with the use and choice of contraceptives.

MATERIALS AND METHODS

Study design and Setting

A cross sectional study was conducted in Ndola city, Zambia. Data was collected from medical students of Copperbelt University, School of Medicine and student nurses of Ndola Schools of Nursing and Midwifery between February, 2015 and May, 2015. The eligibility criteria required the student to be female, not married and in either first or last year of study.

Sample size and sampling

The sample size of 180 was calculated using Epi Info Stat Calc program version 7, based on the following parameters: total population size of 340 students from the two institutions, confidence level of 95%, and marginal error of 5% and expected frequency of 50% as no estimates existed on unmarried tertiary level education women. All students in the first and last intakes of the Copperbelt University School of Medicine (CBUSOM) and the Ndola Schools of Nursing and Midwifery (NSNM) were eligible to participate in the study.

Data Collection

A structured questionnaire was administered to consenting participants. The questionnaire contained 25 questions concerning age, religious affiliation, relationship status, sexual history, previous knowledge about contraceptives as well as their use, history of unplanned pregnancy and its outcome (abortion or advice on contraceptives), opinion on the choice of contraceptive, knowledge about the emergency contraceptive pill, acquisition of contraceptives and what could be done to improve contraceptive services in Zambia.

Ethical considerations

Ethical clearance was sought from the Tropical Diseases Research Centre Research Ethics Committee in Ndola, Zambia, and ethical standards were adhered

to throughout this study. Informed consent was sought from study participants. They were asked to read, understand and sign an informed consent form.

Data management and analysis

Data entry was screened in terms of consistency and was double entered. The analysis was done using SPSS statistical software package version 16.0. The description of the study was in terms of religion, relationship status, sexual activity and level of knowledge according to age. The Chi-square test was used to determine associations between socio-demographic factors with age and knowledge about contraceptives with socio-demographic factors and sexual history. Crude odds ratio (OR) was calculated using Logistic regression analysis with 95% confidence interval (CI) to determine the associations between the sources of information and the level of knowledge of contraceptives. The same was done to determine association of contraceptive use with frequency of sex. A *p* value of less than 0.05 was considered significant.

RESULTS

Table 1: Description of Study

	Age (years)			
		<25	25+	
	Total	Total=85 (67.5%)	Total=41 (32.5%)	
Factor	**n (%)**	**n (%)**	**n (%)**	**P value**
Religion				
Catholic	39 (31.2)	26 (31.0)	13 (31.7)	0.932
Non Catholic	86 (68.8)	58 (69.0)	28 (68.3)	
In a relationship				
Yes	98 (77.8)	68 (80.0)	30 (73.2)	0.388
No	28 (22.2)	17 (20.0)	11 (26.8)	
Sexually active				
Yes	58 (46.4)	35 (41.2)	23 (57.5)	0.088
No	67 (53.6)	50 (58.8)	17 (42.5)	
Level of Knowledge				
High	37 (29.4)	17 (20.0)	20 (48.8)	<0.001
Low	89 (70.6)	68 (80.0)	21 (51.2)	

A total of 126 single women in participated in the survey out of a total of 180 giving a respondent of 70%. Of this sample, 67.5% were below the age of 25 years and 68.8% of the respondents were non-Catholic. About 3 in 4 (77.8%) of the respondents were involved in a relationship, 69.4% of these being below the age of 25 years. Less than half of the respondents (46.4%) admitted to currently being sexually active, with 60.3% of these being below the age of 25 years. The respondents aged 25 years or older (48.8%) had more knowledge than respondents aged less than 25 years (20.0%) concerning contraceptives ($p<0.001$). Table 1 is a descriptive table showing the demographics of the participants.

Of the 46.4% respondents who were sexually active, 60.3% were sexually active before the age of 25 years and 22.2% were not yet sexually active. More than half of the respondents (68.3%) admitted to having previously heard of the emergency contraceptive pill.

Table 2: Factors Associated with Contraceptive Knowledge

	Contraceptive knowledge			
	Total	High	Low	
Factor	**n (%)**	**n (%)**	**n (%)**	**P value**
Age				
<25years	85 (67.5)	5 (50.0)	80 (69.0)	0.292
25+years	41 (32.5)	5 (50.0)	36 (31.0)	
Religion				
Catholic	39 (31.2)	12 (32.4)	27 (30.7)	0.847
Non-Catholic	86 (68.8)	25 (67.6)	61 (69.3)	
Sexually Active				
Yes	58 (46.4)	18 (48.6)	40 (45.5)	0.744
No	67 (53.6)	19 (51.4)	48 (54.5)	
Coital frequency monthly				
0	70 (55.6)	19 (51.4)	51 (57.3)	0.734
1-4	38 (30.2)	13 (35.1)	25 (28.1)	
5+	18 (14.3)	5 (13.5)	13 (14.6)	

There were no significant associations of age, religion, sexual activity and frequency of sexual intercourse on one hand and knowledge on the other (Table 2).

Table 3 shows associations between the source of information and the knowledge score of contraceptives. There was a significant association between school as a source of information and knowledge score ($p=0.019$). Those who did not use school as a source of knowledge about contraceptives were 61% (Odds ratio = 0.39; 95% CI [0.16, 0.93] less likely to have high contraceptive knowledge compared to respondents who sourced information on contraceptive knowledge from school.

There were no significant associations between age, religion, knowledge and relationship status on one hand and contraceptive use on the other

(Table 4). However, coital frequency was associated with contraceptive use (p<0.001). Compared to participants who had no sexual intercourse in a month, those who had 1-4 times sexual intercourse in a month were 99% (OR = 0.01; 95% CI [0.00, 0.06]) less likely to use contraceptives; and those who had at least 5 times sexual intercourse in month were 99.7% (OR = 0.003; 95% CI [0.00, 0.03]) less likely to use contraceptives.

Table 3: Sources of Information

	Contraceptive Knowledge			
	Total	High	Low	
Factor	**n (%)**	**n (%)**	**n (%)**	**P value**
Family				
No	123 (97.6)	89 (100.0)	34 (91.9)	0.024
Yes	3 (2.4)	0 (0)	3 (8.1)	
Television				
No	75 (59.5)	53 (59.6)	53 (59.6)	1.000
Yes	51 (40.5)	36 (40.4)	36 (40.4)	
Radio				
No	100 (79.4)	70 (78.7)	30 (81.1)	0.759
Yes	26 (20.6)	19 (21.3)	7 (18.9)	
Internet				
No	95 (75.4)	71 (79.8)	24 (64.9)	0.077
Yes	31 (24.6)	18 (20.2)	13 (35.1)	
Magazine				
No	92 (73.0)	63 (70.8)	29 (78.4)	0.382
Yes	34 (27.0)	26 (29.2)	8 (21.6)	
Clinic				
No	77 (61.1)	57 (64.0)	20 (54.1)	0.295
Yes	49 (38.9)	32 (36.0)	17 (45.9)	
Friend				
No	73 (57.9)	51 (57.3)	22 (59.5)	0.823
Yes	53 (42.1)	38 (42.7)	15 (40.5)	
School				
No	39 (31.0)	22 (24.7)	17 (45.9)	0.019
Yes	87 (69.0)	67 (75.3)	20 (54.1)	

Table 4: Factors Associated with Contraceptive Use

	Contraceptive use			
	Total	Yes	No	
Factor	**n (%)**	**n (%)**	**n (%)**	**P value**
Age (years)				
<25	85 (67.5)	55 (71.4)	30 (61.2)	0.233
25+	41 (32.5)	22 (28.6)	19 (38.8)	
Coital frequency monthly				
0	70 (55.6)	67 (87.0)	3 (6.1)	<0.001
1-4	38 (30.2)	9 (11.7)	29 (59.2)	
5+	18 (14.3)	1 (1.3)	17 (34.7)	
Religion				
Catholic	39 (31.0)	19 (24.7)	20 (40.8)	0.056
Non-Catholic	87 (69.0)	58 (75.3)	29 (59.2)	
Knowledge				
High	37 (29.4)	20 (26.0)	17 (34.7)	0.295
Low	89 (70.6)	57 (74.0)	32 (65.3)	
In a relationship				
Yes	98 (77.8)	56 (72.7)	42 (85.7)	0.087
No	28 (22.2)	21 (21.3)	7 (14.3)	

Table 5 shows the preference of contraceptive methods. The most preferred mode of contraceptive method was the male condom (49.2%). Less than a quarter (20.6%) did not know which was the best and 4.0% preferred neither of them.

Table 5: Preferred Contraceptive

Contraceptive method	n (%)
Male condom	62 (49.2)
Female condom	1 (0.8)
IUD	1 (0.8)
Jadel implants	10 (7.9)
Injectable	3 (2.4)
Surgical sterilization	3 (2.4)
The pill (COC)	4 (3.2)
Other	11 (8.7)
Don't know	26 (20.6)
None	5 (4.0)
Total	126 (100)

DISCUSSION

The results of this study of Zambian single women in tertiary education found that 60.3% of the sexually active respondents had sexual debut before the age of 25 years, a finding that is in accord with many previous studies. [9-11]

This study found that respondents aged 25 years or older had more knowledge on contraceptives compared to those less than 25 years of age. More than half of the respondents (68.3%) admitted to having previously heard of the emergency contraceptive pill. However, the study did not find out the proportion of students who actually used the contraceptive pill. We are unable to compare rate of contraceptive use to other university students in the region because this study did not measure the overall rate of contraceptive use among sexually active students in this sample. However, this study was able to determine that close to half (49.2%) of the respondents preferred a male condom to other forms of contraceptive methods. This could be attributed to the fact that it is the most advertised contraceptive method by media, readily and easily available and has dual protection; protection against STIs and pregnancy. This study is a significant contribution to the literature as it presents data from an understudied but important population, university and nursing school students.

The WHO reasons for a global unmet need for contraceptive include age,

cultural and religion, [12] however, this study found that ccontraceptive use was not significantly associated with age and religion; a finding that is not in accord with the WHO reasons for a global unmet need for contraception. There was positive association between relationship and contraceptive usein the current study, unlike in a previous study among South African youth, which found that having more than one sexual partner in the past 12 months was associated with contraception non-use. [13]

The study also found that respondents who were above 25 years of age showed higher knowledge of the types of contraceptives. The knowledge score was graded according to how much the participants knew about the methods of contraceptives and how to acquire them. This could be due to the fact that, participants were in hospital related education institutions and were more likely to acquire knowledge from the hospital or from school work. School actually showed association with high knowledge score. Sexually active women had less knowledge about contraceptives than those who were not sexually active. It could be that some of the participants who had a high knowledge did not feel free to admit that they had had sexual intercourse before or it could be that they acquired the information from school work. The results showed that the frequency of high knowledge score was inversely proportional to the frequency of sex. Respondents who reported having had sexual intercourse more than 5 times a month, had the minimum frequency of high knowledge score. This could mean that the more knowledge one had of contraceptive, the less the desire to frequently get involved in sexual intercourse. However, this could also mean that such students had limited knowledge about contraceptives because they only concentrated on the use of condoms since the findings show that the overall most preferred contraceptive was the male condom. This result was similar to the results obtained by a study conducted in Tanzania [14] and the authors attributed this to the advertising of condoms in the media.

Most participants preferred the male condom because of its ability to protect against Sexually Transmitted Infections and prevent unplanned pregnancy. It could also be because this was the most common contraceptive found in the hospital and all the respondents acquired a great deal of their education inside the hospital. The least preferred method of contraceptive was the pill. Most respondents thought that it causes hormonal imbalances and taking it daily made it most likely to be ineffective and was an inconvenience. However, the opposite is true in a study done in the USA where the authors found that majority of women preferred the pill although it should be noted the results were regardless of marital status. [15] A large number of respondents did not know which contraceptive method was better than the other, further confirming how much knowledge is lacking concerning contraceptives.

The use of contraceptives showed that those who were less sexually active were less likely to use contraceptives than those that were more sexually active. And the main reason for this was to avoid unplanned pregnancy, STIs and HIV. However, the knowledge about the emergency contraceptive was higher than expected with a frequency of 68.3%. This was higher than the value determined in a study done in Nigeria [8] where only a quarter of the respondents expressed knowledge of the emergency contraceptive. However, this is almost similar to findings in a study by Aziken *et al* where 58% of the respondents agreed to prior knowledge of the emergency contraceptive pill. [16] As stated earlier, this knowledge could be acquired from hospital related tertiary education and so it was expected that those with the knowledge were in the higher intakes although year of study was not recorded in the questionnaires.

The study involved students from health related institutions and so the

information obtained may not be generalized to women who are not in health related schools. Research has to be done in non-health related learning institutions. However, overall, the study showed that school was a good source of knowledge about contraceptives.

CONCLUSION

Low contraceptive knowledge and use were found and frequency of coitus was the only factor identified as associated with contraceptive use. The study also found that there is an association between the level of contraceptive knowledge and school. Therefore, it is important to consider interventions that hinder females from engaging in early sexual debut as this has a bearing on the frequency of coitus before getting into a stable relationship. This information may help guide intervention efforts such as designing sexual and reproductive health policies and programmes.

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