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Determinants of Non-Protection during First Sex among Secondary School Students in Cameroon's Capital City, Yaoundé

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Abstract

The practice of unprotected sex is a very serious issue as it can result to sexually transmitted infections and unwanted pregnancies. The non-protection during first sexual intercourse can result to habitual practice of subsequent unprotected sex. This study seeks to find out the key determinants of non-protection during first sex among secondary school students aged 14-19 in Cameroon's capital city Yaoundé as way of providing information that can be useful for the promotion of safe sex. Information for this study was collected through a self-administered questionnaire administered to 2405 students in public, lay private and confessional schools. This study revealed that 49% of these students had started sexual activity. At first sex, 35% of students used no measure of protection against STDs or unwanted pregnancies. A binary logistic regression shows that the main determinants of non-protection during first sex are the age at first sex, circumstance of the first sex and the student's mother's educational level. Students who started sex at 10, 11 and 12 are close to six (6) times more likely than whose started sex after 16 to undergo it unprotected. Students whose first sex was non-voluntary are 4.4 times more likely to go into it unprotected than students whose first sex was voluntary. Students whose mothers have tertiary education are 40% less likely to go into first sex unprotected than students with mothers with lower educational levels. There is need for comprehensive sex education for children to start before the reach 10, to promote female education and equip parents especially mothers with skills to teach their children how to abstain from sex or practice safe sex and to prevent forced sex.

Keywords: first sex; unsafe sex; STDS; unwanted pregnancies

Introduction

Unsafe is an important factor for disability and death world over. In fact, the World Health Organization, W.H.O has declared unsafe sex as the second most important factor of disability in the poorest countries and the ninth most important in Developed Countries (Ezzati, 2002). In its efforts to encourage safe sex, UNAIDS (2010) reports that in 2009 alone, globally, there were 2.6 million incidences of HIV out which 1.8 million cases were in Africa. A large proportion of these cases resulted from unsafe

sex. Still as result of unsafe or unprotected sex, many women commit unsafe abortions especially in Africa as a result of unprotected sex. Many of these abortions are carried out on women below 25 who are equally disproportionately infected by HIV/AIDS. Maternal deaths resulting from the practice of unsafe sex is major cause of illness and death among women in Developing Countries including Cameroon. Apart from HIV/AIDS many thousands of persons are infected by many other STIs such as gonorrhea, syphilis, chlamydia, genital wasps and various forms of bacterial and protozoa infections as a result of the practice of unprotected sex.

Public health experts see unsafe sex as unprotected sex that leads to sexually transmitted diseases including HIV/AIDS. Risky or unprotected sex is common among people who begin sex early, among people involved in pre-marital sex and among people with multiple sex partners without the use of condoms. Because of the various risks linked to unsafe sex such as undesired pregnancies and infection by sexually transmitted diseases including the deadly HIV/AIDS, many campaigns carried out in Cameroon and elsewhere have focused on the promotion of safe sex or abstinence. Despite these campaigns, the result of the study that provides the basis for this study entitled "A Survey on the Knowledge and Opinions of Adolescent Students Aged 14 to 19 Years in Secondary Schools, in Cameroon's Capital City towards Sex Education" show that the practice of voluntary unprotected first sex is very common. The voluntary first sexually act of 32.3% of these students was unprotected thereby exposing them to all forms of risk related to unsafe sex at very tender ages as the mean age at first sex were as low as 15.2 years, 16.2 for boys and 14.7 for girls. The question that this study seeks to answer is-***What are the determinants of non-protection during first sex and what are the policy implications***.

Ethical Considerations

Letters requesting for permission to carry the survey were addressed to the principals of the various colleges chosen, and upon the principals' approval, the survey was conducted. The questionnaire was examined and proved by the Scientific Committee of the Central Bureau for Censuses and Population Studies of Cameroon.

Theoretical Considerations

Many theories have been put forward to explain the practice of unsafe or safe sex. One of these theories is the symbolic interactionism perspective of unsafe sex. This theory states that the nature of sexual intercourse depends on the perspective and context. Unsafe sex may be good so long as it is pleasurable. Contextually, sex between lovers may be viewed as safe and no protection will be used while commercial sex may be regarded unsafe and partners will use condoms.

Cognitive psychology theory on its part, suggests that an individual's sexual behaviour is guided by for elements which are susceptibility, benefits, barriers and severity. According to this theory, people usually evaluate the consequences of their behaviours in terms of the costs and benefits to be derived. If individuals evaluate the cost of unwanted pregnancies and sexually transmitted diseases including AIDS to be higher than the benefits to be derived from unprotected sex, they would practice safer sex.

The cultural theory supposes that the nature of sexual intercourse is influenced by the cultural belief. According to this theory, what constitutes unsafe sex depends on the society. Premarital sex can be viewed as a sin by a particular group while others will view it a demonstration of becoming an adult. Even within the same cultural context, views about sex can change over time.

The practice of safe or unsafe sex is sometime viewed as a success or a failure of the socialization process. The family as the basic unit of socialization, is expected to socialize its members especially children to avoid unsafe sex and its consequences including its unpleasant consequences. Apart of the family, the socialization of individuals is also conditioned by society. Parents who spend most of their time at work may not have time to socialize their children on the benefits of safe sex or abstinence until marriage. Schools may not consider sex education as part of their curriculum, and where they do, it might not they may not be sufficient to equip young people to adequately face the challenges of sexual life.

Sexual behaviour is influenced by the circumstances surrounding the people involved. It involves impulse and is influenced by cultural, contextual and subconscious factors that may be difficult to influence. For example, the influence of alcohol and drugs on sexual

behaviour brings into focus the importance of contextual factors in influencing sexual practices.

Data and Methods

Data Collection

The colleges that participated in this study were picked from the public, denominational and lay private colleges in Cameroon's capital city, Yaoundé. These colleges were selected from among schools offering the Anglophone, and some, the Francophone subsystems of education, and found in all the seven subdivisions of the city. Considering the fact that more students in this part of Cameroon belong to the Francophone subsystem of education, about three quarters of the respondents were made up of students from francophone sub-system. A deliberate effort was made to include technical colleges as well as general education colleges. The colleges selected, therefore, do not constitute a random sample.

A self-administered questionnaire, mostly composed of multiple choice questions was used for this study. The questions were asked in English and French, considering the fact that the selected schools were of the two educational subsystems. In all, 29 colleges took part in the study, and the questionnaire was administered to 2405 students aged 15-19, (1263 of the respondents were girls and 1142 were boys) in January, 2015. Students were chosen from classes ranging from the third to the sixth form, while attempting to balance the proportion of boys to that of girls as much as was possible.

The self-administered questionnaire was made up four parts. The first part of the questionnaire was designed to collect data on the students' demographics; the second part consisted of questions to evaluate students' exposure to sex education, their views on accessibility to contraception and sexual health advice and their preferences in implementing sex-education in schools. The third part focused on the first sex, the time of its initiation, its nature, the circumstance of its initiation and partners. The fourth section collected data on the outcomes of respondents' sexual activities, such as STIs, pregnancies, miscarriages, abortions and live births. Information relevant for this study was obtained from the first and third sections of the questionnaire (information on the demographics of the respondents and data on the age at first sex, nature of first sex (protected or unprotected, partners of first and circumstances of this sex (forced or unforced).

A questionnaire and an envelope were handed over to each of the 100 students aged 15-19 chosen from each school. Before the distribution of questionnaires, an information statement was read out to the students, giving them detailed information on the aims of the study and how the respondents were selected, thereby also providing a platform for the students to ask questions about the study. In order to motivate students to provide honest answers, anonymity was assured and they were free to refuse to complete the questionnaire or any part of it. Responses were returned in sealed envelopes and the students were asked not to write their names on the questionnaires or on the envelopes. Frequencies for each question were established after entering the data using the Statistical Package for Social Sciences (SPSS) software.

Definition of the Dependent Variable (Unprotected Sex)

Unprotected sex here is also known as unsafe sex. It is defined as sex that is performed without the use of birth control to prevent pregnancy. It is performed without the use of a condom to prevent the spread of sexually transmitted diseases including HIV/AIDS.

Presentation of Variables

Dependent Variable

The dependent variable used for this study is the non-protection during first sex. Exceptionally declared ages at first sex (below 10 years) which represented 4% of responses were not retained for this analysis.

Independent Variables

The independent variables used for this study are divided into three categories:

- Contextual variables which include mother's and father's educational levels which has four modalities (no-education, primary education, first cycle secondary education, second cycle secondary education and tertiary education) and source of knowledge on contraception and sexual health (schools, church/mosque, internet, schools, the family, friends, etc.).
- Socio-demographic variables which involve sex of the respondents, age at first sex, circumstance of first sex (forced or voluntary), partner of first sex (teacher, classmate, family member, persons in the neighbourhood).
- Socio-cultural variables such as respondents' religious affiliations, type of educational establishment currently attended (public, lay private and confessional), type of education of education (grammar or technical/commercial), subsystem of education (Anglophone or Francophone subsystem) and current cycle of education (first or second).

N.B The non-response rate for each of these variables is zero.

Declarations of Age at First Sex

As expected, the declared ages at first sex increase sharply after 14 and the fall after 16. This is reflected by the data. This gives the impression that the declared age at first sex is of fairly good quality.

Data Analysis

The analysis of data for this study involves two phases:- the descriptive and explanatory phases.

Descriptive Phase

Descriptive analysis here involves two phases: bivariate and multivariate.

Bivariate analysis

It involves the analysis of the results of cross-tabulation of some characteristics of respondents such as sex, religious affiliations, class currently attended, type of education, subsystem of education, type of educational establishment and exposure to sex education and age at first sex. This analysis involves a cross-tabulation of parents'/ guardians' characteristics notably the educational level and participants' ages at first sex.

Descriptive Multivariate Analysis

This involves using the software SPAD to come out with the profiles of students who begin sex early (before 16) and those who begin later (after 16).

Explanatory Analysis

Since the dependent variable for this study, the prevalence of anemia is a quantitative dichotomy, binary regression is the appropriate multivariate explanatory method to use. This method estimates the probability for an event to occur as a function of the independent variables. The dependent variable takes the modality 1 when the event occurs (non-protection during first sex) and 0 when it does not. In this way, the logistic regression estimates the probability; the student undergoes first sex unprotected. It precisely estimates the net effect of associated variables to the non-protection during first sex.

If ***P*** is the possibility that the event under investigation occurs, I-P is the possibility that it does not occur. The logistic regression probability in a linear form is ***L=log (P/1-P) or L=b0 +b1X1+b2x2+...bnxn*** where X1, X2…Xn are independent variables and bo, b1, b2…bn are regression coefficients of the model. The non-linear probabilistic form of the model is ***P=1/(1+exp(-L)***. This provides coefficients of regression "bi" from which odd ratios are calculated. An odd ratio greater than 1 indicates that there is a higher probability

of the student going into first sex un protected in relation to the group of variables under consideration and vice versa.

Hierarchy of Explanatory Factors of Non-Protection during First Sex

In order to come out with a hierarchical classification of the multiple explanatory factors which influence the non-protection during first sex, the contribution of the different explanatory variables is calculated using the following formula.

$$\text{Contribution of Variable} = \frac{\text{Chi Square of the Saturated Model-Chi Square without the Variable}}{\text{Chi Square of the Saturated Model}}$$

Data Analysis

In order to come out with the determinants of the practice of unsafe first sex among students in secondary schools in Cameroon's capital city, Yaoundé, two levels of data analysis are carried out. The first analysis is purely descriptive analysis followed by a more advanced multivariate analysis.

Descriptive Analysis

Two types of descriptive analysis are carried out in this study. The first is a bivariate analysis and the second seeks to come out with the profile of respondents that practiced unsafe first sex. This is factorial analysis.

Bivariate Analysis

Bivariate analysis involves the behaviour of each independent variable and the dependent variable (non-protection during first sex) in the absence of other independent variables.

A lower proportion of female respondents (27.55%) than males (33.66%) underwent first sex unprotected. The Chi Square Test shows an association between the sex of the respondent and the practice of unprotected sex at a 5% significant level.

The Chi Square Test shows no link between the religious affiliations of respondents and the practice of unprotected first sex at a 5% significance level.

This study reveals that the proportion of students who practiced un protected first sex reduces with the educational levels of the father or male guardian (42%, 35.55%, 31.25% and 28% for fathers with no education, basic education , the first cycle of secondary education, the second cycle of secondary and tertiary education respectively). However, the Chi Square Test shows no significant association between these two variables. This same tendency is noticed with the mother's educational levels with proportions of 53.67%, 33.85%, 30.83% and 23.83% respectively). Unlike the father's educational level, the Chi Square Test shows a significant association between mothers' educational level and the practice of non-protected during first sex by these students.

At a 5% significant level, the Chi Square Test reveals no association between the sources of information on contraception and sex education and non-protection during the first sexual encounter.

The proportion of respondents whose first sex was voluntary and unprotected (22.56%) is significantly lower than that for respondents whose first sex was non voluntary (39.39%). The Chi Square Test shows a significant association at the 5% between the nature of first sex and non-protection of the intercourse.

As far as the partners of first sex are concerned, the highest proportion of respondents who underwent first unprotected are those who had it with a family member (59.09%). The Chi Square Test shows a significant association between non-protected during first sexual intercourse and the partner of that act.

Irrespective of the type of educational establishment, the practice of unsafe sex during the first sex is fairly the same. These proportions are 29.07%, 31.14 and 31.36% for public, lay private and confessional schools respectively. However, there is no significance at

5% between the practice of non-protected during first sex and type of educational establishment.

For 34.5% of respondents who currently attend general secondary, the first sex was unprotected against 25.5% for those attending technical or commercial secondary schools. There is a significant association between the non-protection during sex at first sex and the type of secondary education.

There is little difference between the proportions of respondents (students) whose first sex was unprotected and subsystems of education (Anglophone or Francophone). The proportions are 31.13% and 30.64% respectively and the Chi Square Test shows no significant association at the 5% level.

28.34% of respondents who are currently attending first of secondary education reported that their first sex intercourse was unprotected as against 31.83% of those currently attending the second cycle. However, the Chi Square Test shows no significant association between these two variables.

This study reveals that the mean age of respondents whose first sex was unprotected, 14.77 years is lower than that of respondents whose first sex was protected (15.69 years). The Chi Square Test shows a 5% significant level, association between the practice of non-protection during first sex and age at first sex.

Measurement of Strength of Association between the Dependent Variable and Independent Variables

The Chi Square Test tells us whether an independent variable is significantly statistically associated with the dependent variable or not. However, this test gives us no information on the strength of this association. The strength of association is given by the Crammer's V.

Variable	*Degree of Association*	*Rank*
Circumstance of first sex	0.245	1
Age at first sex	0.242	2
Mother's educational level	0.146	3
Partner of first sex	0.131	4
Type of educational establishment	0.083	5
sex	0.070	6

Table 1: Classification of the Degree of Association between Independent Variables and the Dependent Variable (non-protection during First Sex).

Among the 12 variables retained for this study, six individually show strong association with non-protection during first sex. These variables are circumstance of first sex, age at first sex, mother's education, partner of first sex, type of educational establishment and sex. The most important is circumstance of the first sex. This is easily understood as forced sex is usually very unlikely to be protected.

Multivariate Descriptive Analysis (Factorial Analysis)

The aim of this section reduces the 12 variables and 43 modalities to few variables and modalities that best describe respondents whose first sex was either protected or non-protected.

Profiles of Respondents Based on Protection or Non-protection during First Sex

The first group is made of respondents (students) whose first sex was not protected. This group is made up essentially of students whose first sex was before 16. Their fathers in a majority have only had primary education. They belong to a religious affiliation which is not Catholic, Protestant or Islam. In a majority, they are found in the first cycle of secondary education. They have no source of information on sexual health and contraception and their first sex was with either a member of the family, a teacher or a friend. This first sex was forced.

The second group is made up of those whose first sex was protected. For this group, the first sex took place after 16. The fathers of this group of students in a majority have tertiary education. This group of persons is either Protestants or Moslems and they are mostly in the second cycle of public schools. Their main sources of information on sexual and reproductive health including contraception are the family, the church, and the school or health specialist. Their first sex was largely voluntary.

Explanatory Analysis (Binary Logistic Regression)

The nature of the dependent variable used for this study makes binary logistic regression appropriate. This analysis enables us to identify determinants of non-protection during first sex. This is a causal analysis.

Presentation of the Model Used for this Analysis

The logistic regression model used here involves the step by introduction of variables into the model in order to follow up successive influences of independent variables on the dependent variable (non-protection during first sex). This enables to:

- Identify the explanatory variables of non-protection during the first sex;
- Come out with a classification of the explanatory factors of non-protection during the first sex;
- And come out with the mechanisms of intervention of explanatory variables of non-protection during first sex.

The model used for this study has 12 variables which are introduced step by step as shown below:

1. M_0: crude model.
2. M_1: father's educational level.
3. M_2: M_1 + mother's educational level.
4. M_3: M_2 + source of information on contraception and sexual health.
5. M_4: M_3 + sex.
6. M_5: M_4 + age at first sex.
7. M_6: M_5 + circumstance of first sex.
8. M_7: M_6 + partner of first sex.
9. M_8: M_7 + type of school establishment.
10. M_9: M_8 + type of education.
11. M_{10}: M_9 + sub system of education.
12. M_{11}: M_{10} + respondent's educational level.
13. M_{12}: M_{11} + religion.

Represents the crude model. It represents the effects of an independent considered alone on the dependent variable (non-protection during first). M12, the global or saturated model gives the net effect of each independent variable on the dependent variable (non-protection during first) in the presence of other variables. The intermediary model which brings the mechanism of intervention of independent variables in the explanation of non-protection during first sex.

Identification of Determinants

The result of binary logistic regression reveals that in the saturated model, only three out of the twelve (12) variables can be used to explain the practice of unsafe first sex by students aged 14-19 in secondary schools in Cameroon's capital city Yaoundé. These variables are the respondent's mother's educational level, age at first sex and the circumstance of first sex.

Classification of Explanatory Variables for Non-protected First Sex

The classification of explanatory variables for non-protected first sex is derived from the formula:

$$\text{Contribution of a Variable} = \frac{\text{Chi Square of the Saturated Model-Chi Square without the Variable}}{\text{Chi Square of the Saturated Model}}$$

The application of the above formula gives the following classification of explanatory variables according to their relative contributions to the explanation of non-protection during first sex.

Variable	*Chi Square of saturated model*	*Chi Square of the Model without the variable*	*Relative Contribution (%)*	*Rank*
Age at first sex	145.03	95.66	34.04	1
Circumstance of first sex	145.03	102.42	29.38	2
Mother's Educational level	145.03	130.50	10.02	3

Table 2: Relative Contribution of Explanatory Variables of Non-Protection during First Sex.

Identification of Explanatory Variables of Non-Protection during First Sex

Variables Related to the Living Environment of the Respondent

Variables related to the living environment of the respondent considered here are the contextual variables which are the father's educational level, mother's educational level and source of knowledge on contraception and sexual health. Among these variables, only the educational level of the mother significantly explains non-protection during first sex. Respondents whose mothers have secondary education are 40% more likely than those whose mothers have tertiary education not to use condoms during first sex. There is no significant difference in non-protection during first sex by respondents who mothers have no education, primary and secondary education.

Socio-demographic Variables of Respondents

Demographic variables used in this analysis are sex, age at first sex, circumstance of first sex and partner of first sex. Among these variables, age at first sex and partner of first sex contribute to significantly explain non-protection during first sex. As the circumstance of first sex is concerned, respondents whose first sex was forced are 4.3 times more likely than those whose first sex was voluntary to undergo it unprotected.

As far as age at first sex is concerned, respondents who began sex at 10, 11 and 12 years are 6.8, 4.3 and 4.5 times respectively more likely to do it without the use of condoms than started it after16. On the contrary, there is no significant difference between the non-uses of condoms during first sex for those who began sex after 12 years.

Influences of Socio-cultural Factors

The socio-cultural dimension of this study consists of type of educational establishment, subsystem of education, the religious affiliation of respondents and their level education at the time of first sex. The level of education at the time of first sex is the only explanatory socio-cultural variable that significantly explains the non-use of condoms during first sex. Respondents who had their first sex before 16 are more likely than those who had it after 16 not to use any form of protection.

Mechanisms of Intervention of Explanatory Variables of the Practice of Non-protection during First Sex
Mechanisms of Intervention of Variables of the Living Milieu

Mother's Educational Level

Mother's education is significant in the crude as well as the saturated model as an explanatory factor of non-protection during first sex at a 5% significant level. However, the modality "higher or tertiary education" becomes insignificant after the introduction of father's education and source of information on sexual health and contraception before subsequently becoming significant while the modality "no education" remains significant throughout the model. We notice a small change in the net odd ratios of different categories of the variable as we move from one model to another.

Mechanisms of Intervention of Socio-demographic Variables

Age at First Sex

Age at first sex remains significant as an explanatory variable for non-protection during first sex even in the presence of all other variables of the model. However, variations of the odd ratios of some of its modalities exist. When the age at first sex is introduced into the model at M5, the deviation (gap) in the practice of non-protection during first sex observed in the crude model increases by 20.3% between those who had their first sex at 16 and 10 years of age. On the contrary, the difference between those who had first sex at 14 and those who had at it 16 disappears completely. It seems that age at first sex acts through sex, the source of information about contraception and sexual health and parents' educational levels to influence the practice of non-protected first sex. The difference between respondents who had their first sex at 14 and those who had it at 16 in the crude model Mo is in part due to the presence of many boys with low access to information on safe sex.

Circumstance of First sex

The results of the crude model shows that respondents whose first sex was forceful are 4.4 times more likely undergo unprotected sex than those who did it voluntarily. The risk of undertaking first sex unprotected increases by 9% with the introduction of the variable on the circumstance of this act. It later drops to its initial value of 4.4 with the introduction of type of education. It seems that the circumstance of first sex influences non-protection through the source of knowledge on sexual health and contraception, parents' level of education, type of educational establishment and subsystem of education. The difference between respondents whose first sex was forced and non-protected and those whose first sex was deliberate and unprotected at the crude model (Mo) is in part due to the presence of many boys with low access to information on safe sex.

Discussion

The topic of non-protection during first sexual intercourse is an important health concern, particularly in Developing Societies such as Cameroon where issues related to sexual health, education, and access to contraception are prevalent. A study of determinants of non-protection during first directly or indirectly expose socio-cultural influences, education, access to contraception, exposure to the media, etc.

In many societies in Cameroon, traditional and religious norms may discourage about sexual health and contraception. Traditional beliefs about virginity and sexual initiation can lead to a lack of protective measures during first sexual experiences. Gender roles can sometimes significantly affect decision-making regarding the use of protection during sex including first sex. In many situations, women may feel pressured to comply with male partners desires, leading to non-use of condoms.

The level of sexual education received by young people can influence their knowledge about safe sex. Studies have shown the comprehensive sexual education can lead to higher rates of condom use (safe sex)9Morris et al., 2020).

Misunderstandings about the effectiveness of condoms and other forms of protection can result in the practice of unprotected sex. Some people may believe that condoms reduce sexual pressure or are not necessary if both partners know themselves quite well.

Other causes of the practice of unsafe sex include limited access to contraceptives, peer influence, fear of stigmatization of carrying concerns or discussing safe sex and attitudes towards unprotected sex, (Tchouaket et al.,2022).

Conclusion

The practice of unprotected sex has far-reaching negative consequences it exposes the both partners to the risk of unwanted pregnancies and sexually transmissible infections. This study shows that an important proportion of students in secondary schools in Cameroon's capital city Yaoundé begin sex unprotected (32.3%). Starting sex unprotected can be the beginning of a series of unprotected sex for an individual and should need to be put in place to prevent unsafe sex especially at first sex. Of the twelve variables used in this study to analyze the determinants of non-protection during first sex among students in secondary schools in Yaoundé, Cameroon, only three show significant contributions. These variables are age at first sex, circumstance of first sex and the mother's education level. Respondents who begin sex at 10, 11 and 12 years are on the average six (6) times more likely to do so unprotected than those who start it above twelve years. This means that sex education which most not only be focused on abstinence-only should begin very early even before children reach 10. This education should not focus on the importance of abstinence before marriage, but it should be comprehensive to include contraceptive use and how to practice safe sex. Another outcome of this study is that students whose mothers have tertiary education are 40% more likely to be protected during first sex compared to those whose mothers have no education, primary education or secondary education. This calls for the need to promote female education beyond secondary level and the provision of mothers with lower education with skills on sex education for children. This study equally those students who were forced into first sex are 4.4 times more likely to do so unprotect than those who did it voluntarily. This calls for the need to protect young people against forced sex which is very likely to expose them to all forms of risks associated with unsafe sex.

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Annexes

	Crude Effects	***Net Effects***											
Indpendent Variables													
	M0	***M1***	***M2***	***M3***	***M4***	***M5***	***M6***	***M7***	***M8***	***M9***	***M10***	***M11***	***M12***
Father's Educationa Level	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Tertiary	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*
No Education	1.9 (ns)	1.9 (ns)	0.9 (ns)	0.5 (ns)	0.6 (ns)	0.6 (ns)	0.6 (ns)	0.6 (ns)	0.7 (ns)	0.6 (ns)	0.6 (ns)	0.7 (ns)	0.9 (ns)
Primary	1.4 (ns)	1.4 (ns)	0.9 (ns)	1.3 (ns)	1.3 (ns)	1.3 (ns)	1.3 (ns)	1.4 (ns)	1.4 (ns)	1.7 (ns)	1.4 (ns)	1.5 (ns)	1.2 (ns)
secondary	1.2 (ns)	1.2 (ns)	0.9 (ns)	1.3 (ns)	1.3 (ns)	1.3 (ns)	1.3 (ns)	1.4 (ns)	1.4 (ns)	1.3 (ns)	1.5 (ns)	1.5 (ns)	1.1 (ns)
Mother's Educational level	***		**	***	***	***	***	**	**	***	***	***	***
Tertiary	0.7**		0.7 (ns)	0.6 (ns)	0.7**	0.6***	0.6***	0.6**	0.6**	0.6***	0.6***	0.6***	0.6***
Non	2.6***		2.6**	2.55***	2.7***	2.6***	2.1**	2.1**	2.05**	1.9*	1.9*	1.9*	2*
Primary	1.1 (ns)		1.2 (ns)	0.9 (ns)	0.9 (ns)	0.9 (ns)	0.9 (ns)	0.9 (ns)	0.9 (ns)	0.9 (ns)	0.6 (ns)	0.6 (ns)	1.1 (ns)
secondary	*Ref*		*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*
Source of Knowledge on contraception and sexual health	ns			ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Family mmber	*Ref*			*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*
No Knowledge co	1.5 (ns)			1.29 (ns)	0.7 (ns)	0.7 (ns)	0.8 (ns)	0.8 (ns)	0.8 (ns)	0.7 (ns)	0.957 (ns)	0.9 (ns)	1.2 (ns)
School	1.3 (ns)			1.2 (ns)	1.3 (ns)	1.3 (ns)	1.3 (ns)	1.3 (ns)	1.3 (ns)	1.4 (ns)	1.279 (ns)	1.2 (ns)	1.2 (ns)
Friend	1.1 (ns)			0.8 (ns)	0.8 (ns)	0.8 (ns)	0.8 (ns)	0.9 (ns)	0.9 (ns)	0.7 (ns)	0.856 (ns)	0.8 (ns)	0.8 (ns)
Health Specialist	0.7 (ns)			1.2 (ns)	1.1 (ns)	1.1 (ns)	0.9 (ns)	0.9 (ns)	1.1 (ns)	0.9 (ns)	1.191 (ns)	1.1 (ns)	0.8 (ns)
Media	1.3 (ns)			0.7*	0.9 (ns)	0.9 (ns)	0.8 (ns)	0.9 (ns)	0.8 (ns)	0.9 (ns)	0.784 (ns)	0.7 (ns)	1.1 (ns)
Religious institution	1.6 (ns)			2.5 (ns)	2.4 (ns)	2.2 (ns)	2.5 (ns)	2.4 (ns)	2.3 (ns)	1.8 (ns)	2.552 (ns)	2.4 (ns)	2.3 (ns)
Others	1.2 (ns)			1.3 (ns)	0.6 (ns)	1.2 (ns)	1.2 (ns)	1.5 (ns)	1.6 (ns)	1.7 (ns)	1.099 (ns)	0.7 (ns)	1.1 (ns)

Sex	**				***	ns	***	*	*	*	*	*	*
Male	*Ref*				*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*
Fémale	0.7**				0.7**	2.9 (ns)	0.7	*0.7**	0.7*	0.7*	0.7*	0.7*	0.7
Age at first sex	***					***	***	***	***	***	***	***	***
10	6.4***					7.7***	6.3***	5.8***	5.8***	5.9***	5.9***	6.7***	6.8***
11	4.7***					4.6***	4.2***	*4****	4***	3.9***	3.9***	4.4**	4.3***
12	3.5***					3.9***	4.1***	*4****	4.1***	4.1***	4.1***	4.4**	4.5***
13	1.7 (ns)					2.1**	1.8*	*1.8 (ns)*	*1.8 (ns)*	1.9*	1.9*	2.1*	2.11*
14	1.6**					1.6 (ns)	1.4 (ns)	*1.4 (ns)*	*1.4 (ns)*	*1.4 (ns)*	*1.4 (ns)*	*1.4 (ns)*	1.5 (ns)
15	1.4 (ns)					1.3 (ns)	1.1 (ns)	*1.1 (ns)*	*1.1 (ns)*	*1.1 (ns)*	*1.1 (ns)*	*1.1 (ns)*	1.2 (ns)
16	*Ref*					*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*
17	0.8 (ns)					0.8 (ns)	0.8 (ns)	*0.8 (ns)*	*0.8 (ns)*	*0.8 (ns)*	*0.8 (ns)*	*0.8 (ns)*	0.7 (ns)
18	1.3 (ns)					1.2 (ns)	1.3 (ns)	*1.4 (ns)*	*1.4 (ns)*	*1.4 (ns)*	*1.4 (ns)*	*1.4 (ns)*	1.3 (ns)
19	0.6 (ns)					0.- (ns)	0.6 (ns)	*0.6 (ns)*	*0.6 (ns)*	*0.6 (ns)*	*0.6 (ns)*	*0.6 (ns)*	0.5 (ns)
Circumstance of first sex	***						***	***	***	***	***	***	***
Voluntary	*Ref*						*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*
Forced	4.4***						4.8***	4.7***	4.6***	4.4***	4.4***	4.4***	4.3***
Partner of first sex	***							ns	ns	ns	ns	ns	ns
Friend	*Ref*							*Ref*	*Ref*	*Ref*	*Ref*	*Ref*	*Ref*
classmate	0.9 (ns)							1.5 (ns)	1.5 (ns)	1.5 (ns)	1.3 (ns)	1.8 (ns)	0.9 (ns)
Family member	3.2***							0.5 (ns)	0.5 (ns)	0.6 (ns)	0.4 (ns)	0.5 (ns)	1.4 (ns)
Teacher	1.9 (ns)							0.7 (ns)	0.7 (ns)	0.6 (ns)	*0.6 (ns)*	*0.7 (ns)*	1.4 (ns)
Other partners	0.7 (ns)							2.7 (ns)	2.6 (ns)	2.6 (ns)	2.3 (ns)	2.4 (ns)	0.8 (ns)
Type of school establishment	ns								ns	ns	ns	ns	ns
Public	*Ref*								*Ref*	*Ref*	*Ref*	*Ref*	*Ref*
Lay Private	0.9 (ns)								0.7 (ns)	0.7 (ns)	0.805 (ns)	0.8 (ns)	0.9 (ns)
Confessional	0.9 (ns)								0.9 (ns)	0.9 (ns)	0.981 (ns)	1 (ns)	1.02 (ns)
Type of Education	**									**	*	ns	ns
Generral	*Ref*									*Ref*	*Ref*	*Ref*	*Ref*

technical	0.7**									0.7**	1.366*	0.7 (ns)	0.8 (ns)
Educational subsystem	ns									ns	ns	ns	ns
Francophone	*Ref*										*Ref*	*Ref*	*Ref*
Anglophone	1.1 (ns)										0.889 (ns)	0.9 (ns)	0.9 (ns)
Individual's level of Education	***											*	*
2nd cycle	*Réf*											*Ref*	*Ref*
1er cycle	0.8 (ns)											0.7*	0.7*
religion	**ns**												**ns**
catholic	*Ref*												*Réf*
Protestant	0.8 (ns)												0.9 (ns)
Islam	0.9 (ns)												0.6 (ns)
Others	1.3 (ns)												1.2 (ns)
None	1.4 (ns)												0.9 (ns)
Chi Square		4.34	19.17	26.60	31.11	84.47	131.78	133.87	134.21	138.63	138.64	142.33	145.03
Pseudo R2(%)		0.37	1.64	2.28	2.66	7.23	11.27	11.45	11.48	11.86	11.87	12.17	12.40

Annex 1: Result of Binary Logistic Regression of Potential Determinants of Non-Protection of First Sex by Students Aged 14-19 in Scondary Schools in Cameroon's Capital City, Yaoundé.

1.1 Respondents by Age and Sex			
Age	Males	Females	Both Sexes
15	21.1	23.6	22.4
16	22.6	23.4	23.0
17	22.4	20.6	21.8
18	15.7	17.0	16.4
19	17.4	15.4	16.3
Total	1142 (47.5)	1263 (52.5)	2405 (100.0)
1.2 Respondents by Religious Affiliations			
Religion	Males	Female	Both Sexes
Catholics	59.1	57.4	58.2
Protestants	22.1	23.1	22.6
Orthodox	0.1	0.1	0.1
Moslems	7.7	7.4	7.5
Animists	0.1	0.1	0.1
Others	5.6	8.9	7.5
None	4.1	2.0	3.0

1.3 Respondents by Type of Educational Establishment			
Type of Educational Establishment	Male	Female	Both Sexes
Public	56.5	52.3	54.3
Lay Private	24.2	25.7	25.0
Denominational	19.3	21.5	20.7
1.4 Respondents by Type of Education			
Type of Education	Male	Female	Both Sexes
Technical	29.9	23.8	26.7
Grammar	70.1	76.2	73.3
1.5 Respondents by Subsystem of Education			
Subsystem of Education	Male	Female	Both Sexes
Anglophone	19.2	15.4	17.7
Francophone	80.8	84.6	82.3

Annex 2: Some Characteristics of Respondents.

2.1 Respondents(%) by Unset of Sexual Activity			
Unset of Sexual Activity	Males	Female	Both Sexes
Yes	551(48.2%)	443 (34.3%)	984(40.9%)
No	591(51.8%)	820 (65.7%)	1441(59.1%)
2.2 Respondents by Age at First Sex			
10-14	34.8	16.9	26.9
15-19	65.2	83.2	73.1
Mean Age	14.7	16.2	15.2
Absolute Number	551(48.2%)	433(34.3%)	984
2.3 Respondents(%) by Partners of the First Sex			
Class mate	21.3	11.8	17.1
Persons in the neighborhood	61.2	39.7	51.7
Family member	2.0	2.8	2.3
teacher	3.8	5.1	4.4
Others	11.8	40.6	24.5
2.4 Respondents(%) by Voluntary or Non-Voluntary First Sex			
Voluntary	92.0	82.2	87.7
Non Voluntary	8.0	17.8	12.3
2.5 Respondents(%) by Protection or Non Protection during First Sex			
Protected	63.9	72.5	67.7
Unprotected	36.1	27.5	32.3

Annex 3: Characteristics of Respondents' First Sexual Acts.