

## ORIGINAL RESEARCH ARTICLE

# Association between Age at First Sexual Relation and Some Indicators of Sexual Behaviour among Adolescents

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### Abstract

This study explores the relationship between age at first sexual intercourse and four indicators of sexual behaviour among adolescents aged 14 to 19 years in Burkina Faso, Malawi and Uganda. Analyses are conducted using data from National Surveys of Adolescents, organized in 2004. Multivariate analyses are performed using dichotomous logistic regression and ordered polychotomic logistic regression. Analyses show that initiation of sexual activity before age 14 is more likely to be associated with having a casual sex partner. It is less likely to be associated with condom use at first sexual relation or with systematic condom use in the past 12 months. These associations vary depending on adolescents' country and gender. Delaying onset of sexuality could be a surer and safer way to protect health during adolescence. However, sexual and reproductive health programs that advocate abstinence only are likely to have few positive effects on young people. To better implement this strategy, sexual education for adolescents should be integrated (*Afr J Reprod Health 2012 (Special Edition); 16[2]: 173-188*).

### Résumé

L'étude explore la relation entre l'âge au premier rapport sexuel et quatre indicateurs de comportement sexuel chez les adolescents de 14 à 19 ans au Burkina Faso, au Mali et en Ouganda. Les données proviennent des Enquêtes Nationales sur les Adolescents menées en 2004. Des analyses multi variées ont été faites à l'aide des régressions logistiques dichotomiques et polychotomique ordonnées. Ces analyses révèlent qu'une entrée en sexualité avant 14 ans est plus susceptible d'être associée au recours à un partenaire sexuel occasionnel ; elle est moins susceptible d'être associée à l'utilisation du préservatif au premier rapport sexuel ou à son utilisation systématique au cours des douze derniers mois. Ces associations varient selon les pays et le sexe des adolescents. Le report de l'entrée en sexualité pourrait être un moyen plus sûr et plus sûr pour protéger la santé dans l'adolescence. Pourtant, des programmes de santé sexuelle et de reproduction produiront de meilleurs effets s'ils allient la promotion de l'abstinence sexuelle et celle de l'éducation sexuelle (*Afr J Reprod Health 2012 (Special Edition); 16[2]: 173-188*).

**Keywords:** Adolescents, age at first sexual intercourse, sexual behaviour, Africa

### Introduction

Age at first sexual intercourse is a marker of behavioural and health risks.<sup>1,2,3</sup> Sexual initiation at a young age is more likely to expose individuals to risky sexual behaviours and sexually transmitted diseases. The issue of initiation of sexual activity early in adolescence is linked to the body's stage of development. Adolescence

corresponds to a time of biological, physiological, immunological and intellectual immaturity. It is during pubescent adolescence—theoretically between the ages of 12 to 15—that the body acquires secondary sexual characteristics and reproductive capacities.<sup>4</sup> According to hypotheses of psychological theories of adolescent development,<sup>5</sup> early onset of sexual activity is more likely to interrupt an individual's developmental process<sup>6</sup> and to predispose him or

her to behaviours that differ from those of peers.<sup>7</sup> It disrupts the transition process to adulthood and draws the individual closer to deviant peers.

Cross-sectional studies conducted in Africa have shown that early age at first sex is associated with having several sexual partners. In rural South Africa<sup>8</sup> and in the KwaZulu Natal region of this country,<sup>9</sup> males aged 15 to 24 who had their first sexual relation before aged 15 were more likely to have had several sex partners in the past three years. In Cameroon, 12- to 25-year-old who initiated sexual relations before the age of 16 were more likely to have multiple sex partners at the time of the study and to have had casual sex in the 12 months prior to the study.<sup>10</sup> Conversely, they were less likely to be having sexual encounters during the study. In Malawi, young people 12 to 19 years old, whether married or not, who started being sexually active before age 12 are more likely to have two or more sex partners than adolescents who first had sex between the ages of 12 and 14.<sup>11</sup> In Tanzania, individuals of both sexes aged 15 to 49, living in a rural area in the north-west of the country who had their first sexual intercourse at a young age were more inclined to have had more sexual partners in the periods of one month to two years preceding the investigation for men, and of three months to lifetime for women.<sup>12</sup> In the region of Arusha, Tanzania, initiating sex before age 16 for males and females aged 15 to 54 is associated with having two sex partners or more in the past five years.<sup>13</sup> Conversely, this study reveals that initiation of sexual activity before the age of 16 is associated with condom use during sexual relations.

Other cross-sectional studies have shown an association between early age at first sexual relation and low condom use. High-school students in Arusha, Tanzania, who had their first sexual relation before age 13 were less likely to have used condoms the last time they had sex than other youth whose first sexual intercourse occurred at 13 years of age or over.<sup>14</sup> In South Africa, 15- to 24-year-old boys who started being sexually active before age 15 were less likely to have used condoms at first sexual relation; the same applied to girls in the same age group who had not been forced to have sex.<sup>15</sup> In Mali, unmarried 15- to 19-year-old adolescents of both

sexes living in an urban centre who had their first sexual relation at 14 or younger were less likely to use modern contraception (mostly condoms).<sup>16</sup>

A study of Malians that combined biographical data looked at the relationship between age at first sex and risky sexual behaviours (having several sex partners, having a casual partner, and/or having an unprotected sexual relation) of individuals of both sexes living in disadvantaged neighbourhoods.<sup>17</sup> Results show that among females aged 12 to 24, initiating sexual relations before age 16 is more likely to be associated with risky sexual behaviour. Among 15- to 29-year-old males, the same comportment is observed when first sex occurred before age 18.

Cross-sectional studies have also shown an association between age at first sexual relation and the risk of contracting sexually transmitted infections and HIV. In a study conducted in Ethiopia, the authors observed an association between early onset of sexual activity among women and increased prevalence of sexually transmitted diseases and pelvic inflammatory disease.<sup>18</sup> In Zimbabwe, the risk of HIV infection is higher among women aged 18 to 35 whose first sexual experience occurred before the age of 16.<sup>19</sup> These women were more likely to have more than one sex partner during their lifetime.

Early initiation of sexual relations is not a new phenomenon in sub-Saharan Africa. In the past, virginity was valued in many societies and sexual initiation, at a young or later age, took place during marriage.<sup>20</sup> Today, puberty occurs at a younger age, and age at marriage is rising; therefore, sexual initiation of adolescents is likely to be earlier and premarital. The result is that adolescents are more exposed to risks of unwanted pregnancy, premature births, and sexually transmitted diseases that have harmful health, social and economic consequences for the individual as well as his or her family and community. Girls are the ones to be exposed to the consequences of having intercourse at a young age; they are the foremost victims of pregnancy, abortion or unplanned birth.<sup>2</sup> It was expected that modern contraception would lead to a reduction in the level of risk of first sexual intercourse and premarital sexuality. Researchers have shown that modern contraception has not been successful in

African countries.<sup>21</sup> Cultural, social, economic and institutional factors have hindered its acceptance and dissemination. The current study assesses the relationship between age and condom use at first sex, as well as the subsequent behaviour of adolescents of both sexes aged 14 to 19. Age at first sexual intercourse is the principal independent variable. Subsequent sexual behaviour is operationalized by number of sex partners, having casual sex partners, and systematic condom use in the past 12 months. The study focuses on three Sub-Saharan countries: Burkina Faso (West Africa), Malawi (southern Africa) and Uganda (East Africa). It is based on the hypothesis that first sex at a young age is more likely to be associated with having several sex partners and having casual partners; it is less likely to be associated with condom use at first sexual relation and systematic condom use in the past 12 months. Adolescents are rarely the subject of research on this topic. Yet, adult behaviours take root during adolescence. The combination of first sexual intercourse at a young age and less safe sexual and contraceptive practices developed during adolescence determines the scope of long-term consequences of early onset of sexuality. Most studies carried out in Africa on this topic do not differentiate adolescents' behaviour based on time since first sex. The potential duration of sexual life could have an influence on an adolescent's abilities and capacities regarding sexual relationships or contraceptive use. This study takes this major variable into consideration.

The three countries included in this study vary in level of socioeconomic development. In 2005, Uganda had the highest human development index (0.505), followed by Malawi (0.437) and Burkina Faso (0.370).<sup>22</sup> Their populations lived mostly in rural areas: in 2005, fewer than 20% were living in urban zones. Burkina Faso had the highest percentage of population living in urban centres (18.3%), compared with Malawi (17.2%) and Uganda 12.6%).

## Data, Variables and Methods

### Data

Analyses are conducted using data from National Surveys of Adolescents (NSA), organized in 2004

under the Protecting the Next Generation project. NSA were carried out in four countries: Burkina Faso, Malawi, Uganda and Ghana. The study focuses on the first 3 countries; Ghana is excluded because of the small number of sexually active adolescents. The surveys looked at the sexual and reproductive health of 12- to 19-year-old adolescents of both sexes.<sup>23,24,25</sup> They were conducted by national statistical offices in collaboration with Macro International Inc., The Alan Guttmacher Institute, and research centres or universities in these countries. Despite a few local particularities, the questionnaires and methodologies used for NSA in the different countries usually included the same key questions.

NSA is nationally representative stratified household surveys. All adolescents aged 12 to 19 living in regular households are eligible to participate. Samples of adolescents surveyed included 5955 participants in Burkina Faso (50.6% boys and 49.4% girls), 4031 in Malawi (50.9% boys and 49.1% girls), and 5112 in Uganda (49.1% boys and 50.9% girls).

The population targeted by the study is composed of adolescents aged 14 to 19 who have initiated sex and who do not live with a spouse or who live in a family environment under adult guardianship at the time of the study. The study did not include adolescents whose first sexual relation was within a union. Sample sizes were as follows: 923 participants in Burkina Faso (59.8% boys and 40.2% girls), 942 in Malawi (70.9% boys and 29.1% girls), and 977 in Uganda (64.9% boys and 35.1% girls). The sample selected makes data less representative of the total population. For the most part, the excluded adolescents are girls. The strategies and data collection methods used in National Surveys of Adolescents (NSA) have helped improve the quality of data on sexuality. To reduce the level of resistance that is inherent when sexuality is brought up and to ensure data collection is exhaustive, NSA organizers focused on the quality of questionnaire development and administration, and on how to approach households and interviewees. For instance, data were collected by progressing gradually through questions for which trust in and ease with interviewers were necessary. Consent—often formal—of 18- and 19-year old adolescents or of

the guardians of 12- to 17-year-old participants is a mark of the confidence established between interviewers and interviewees, and ensures the reliability of data on sexual behaviour. Interviews were strictly confidential and were conducted by the interviewer with each adolescent on his or her own. Interviewers were asked to note down in their reports the presence of anyone in proximity of the site where interviews were held. The various strategies used in this survey do not signify that the data fully reflect the realities of the issue under study. Biases are possible.

### Variables

An adolescent's status regarding first sex is determined with the following question: "When did you have sex for the first time (if you have ever had sex)?" We are referring to sexual relations with vaginal penetration. For adolescents who had initiated sex, information on when they had the first sexual relation is collected for month and year, year or age. Using a data imputation method, age at first sex is available for all adolescents who have initiated sex. Age at first sexual relation reported by adolescent ranges from 10 to 19 years in Burkina Faso, 7 to 19 years in Malawi, and 6 to 19 years in Uganda. The variable includes three categories: under 14 years old, 14 to 16 years old, and 17 to 19 years old (Table 1).

To assess condom use at first sex, the following question was asked: "When you had sex for the first time, was a male condom used?" Other indicators concerned sexual behaviour in the past 12 months: number of sex partners, having casual sex partners, and systematic condom use. The first and the last indicators summarize the data collected for several questions that adolescents were asked about sexual relations and sex partners. For boys, the last indicator is a combination of data concerning the past 12 and 3 months. For girls, data is limited to the past 12 months. There are two categories for this indicator: No and Yes. Adolescents who used a condom during all reported sexual relation are considered as having used it systematically. Adolescents also provided a description of the type of relationship they had with each partner at the time of the sexual relation. A sex partner can be a spouse, a boyfriend or

girlfriend, a casual partner or a sex worker. A casual partner or a sex worker is defined as a casual sex partner.

Analyses are controlled for family environment, family processes, characteristics of adolescents and of households, and characteristics of survey strata. Family environment is represented by type of family household, parents alive, living with grandparents, and ratio of people under 20 per adult in the household. Family processes refer to parental level of control and to having discussed sexuality with family members. Parental level of control is an index constructed from a database on parents' or guardians' knowledge of adolescents' night time outings, what adolescents do with their free time, and who adolescents' friends are. Adolescents' characteristics include level of education, ethnicity, place of residence, age at time of survey, and time since first sex. Time since first sex is the difference between an adolescent's age in months at time of survey and approximate age in months at first sex. Household characteristics are operationalized using a household wealth index, calculated from the characteristics of home and goods possessed by the household and its members, as well as facilities in the home. Survey strata characteristics are measured by level of knowledge of adolescents in the contraception, HIV/AIDS and STI section of the survey. This variable is an index constructed using data from statements made by adolescents in the sampling strata.

Variables constructed and used for analyses have certain limitations. Data from which these variables were constructed were collected during the survey or over the 12-month period. It is impossible to assess anteriority among variables and the causal relationship that may exist among them using these data. For example, some events can occur at a point in time or be the result of a common cause. Results are considered from the point of view of simple associations among variables.

### Methods

Analyses were performed in two stages. The first looked at trends in evolution of sexual initiation

**Table 1:** Percentages of adolescents aged 14 to 19 years sexually active by variables and countries (†)

Variables	Burkina Faso		Malawi		Uganda	
	Boys	Girls	Boys	Girls	Boys	Girls
<b>Independent Variables</b>						
Age at the first sexual relation	(N=552)	(N=371)	(N=668)	(N=274)	(N=634)	(N=343)
Under 14 years	20.7	9.1	36.3	11.6	35.6	24.8
14-16 years	56.3	68.8	46.0	53.3	44.7	60.0
17-19 years	23.0	22.1	17.7	35.1	19.8	15.2
<b>Dependent variables</b>						
Number of sex partners in the past 12 months						
No partner	30.0	23.1	50.4	39.9	47.0	46.7
One partner	57.1	74.1	42.2	56.7	44.4	48.6
At least two partners	12.9	2.8	7.4	3.4	8.6	4.7
Having casual sex partners in the past 12 months						
Condom use at first sex	32.4	40.4	18.0	28.8	30.8	43.3
Systematic condom use in the past 12 months	27.1	35.8	13.5	15.2	18.8	21.5
<b>Control Variables</b>						
Type of family household						
Both parents (Mother and father)	58.7	47.3	44.9	38.6	41.0	38.2
Mother or father only	17.5	14.5	25.5	24.9	31.0	31.3
No parent	23.8	38.2	29.6	36.4	28.0	30.5
Parents alive						
Father and mother alive	79.5	76.0	68.6	63.3	68.5	71.7
Father and/or mother died	20.5	24.0	31.4	36.7	31.5	28.3
Living with grandparents	36.0	34.7	25.6	51.2	32.2	29.3
Ratio of people under 20 per adult in the household (Continuous)						
Parental level of control						
Low	53.4	45.0	46.9	27.6	59.0	43.9
Medium	31.8	30.2	34.1	33.7	27.6	26.0
High	14.7	24.8	19.0	38.7	13.4	30.1
Having discussed sexuality with family members	26.5	25.2	39.6	45.2	33.8	57.8
Level of education						
Without instruction or primary	82.4	81.3	79.1	73.9	69.3	72.6
Secondary	17.6	18.7	20.9	26.1	30.7	27.4
Ethnicity						
<u>Burkina Faso</u>	<u>Malawi</u>	<u>Ouganda</u>				
Mossi	Chewa	Muganda	59.5	65.5	31.9	23.4
Not Mossi	Not Chewa	Not Muganda	40.5	34.5	68.1	76.6
Place of residence						
Urban			27.0	38.1	19.3	27.1
Rural			73.0	61.9	80.7	72.9
Age at time of survey						
14-16 years			30.7	35.9	47.0	33.4
17-19 years			69.3	64.1	53.0	66.6
Time since first sex						
Last twelve months			16.1	24.2	23.4	21.9
More than twelve months			83.9	75.8	76.6	78.1
Household wealth index						
Low			40.3	47.9	29.3	32.9
Medium			23.8	19.9	44.9	33.7
High			35.9	32.2	25.8	33.4
Level of adolescents' knowledge in contraception, HIV/AIDS and STI in the same survey stratum						
Low			22.5	18.9	32.1	25.6
Medium			37.5	34.0	29.3	25.8
High			40.0	47.1	38.6	48.7

Note : † : Weighted percentages

according to adolescents' gender, by survival curves obtained using discrete-time survival analysis. This analysis included all adolescents, whether or not they had initiated sex. The second stage consisted of performing multivariate analyses using dichotomous logistic regression (having a casual sex partner, condom use at first sexual relation and systematic condom use in the past twelve months) and ordered polychotomic logistic regression (number of sex partners in the past twelve months). Analyses of having a casual sex partner were limited to boys. No girl from the Malawian sample reported having had such a partner; in the other two countries, very few girls reported having one. An analysis of condom use at first sex was not controlled for duration of sexual initiation.

The sample size of adolescents in each country is relatively low. This could diminish the possibility of observing relationships between the variable of interest and dependent variables. To this end, data from the three countries were amalgamated into one file for the purpose of carrying out additional, possibly 'confirmatory' analyses. The process consisted of considering each country's sample as a sub-sample of the broader geographical area. The analyses were weighted using a recalculated weight that took into account the proportional size of each sample and weight of the sample in each country for the adolescent population in the country. Analyses were controlled for country. The NSA sample design consisted of interviewing a number of adolescents living in households. Logistic regression involves the assumption of independence among observations; this hypothesis cannot be verified in the case of the behaviours of adolescents from a same household. To control the correlation of observations and improve the robustness of standard errors, we used the 'cluster' option in Stata. Weighted data were used for all analyses. In terms of the cross-sectional nature of NSA data, this article looks at the associative relationships among variables.

## Results

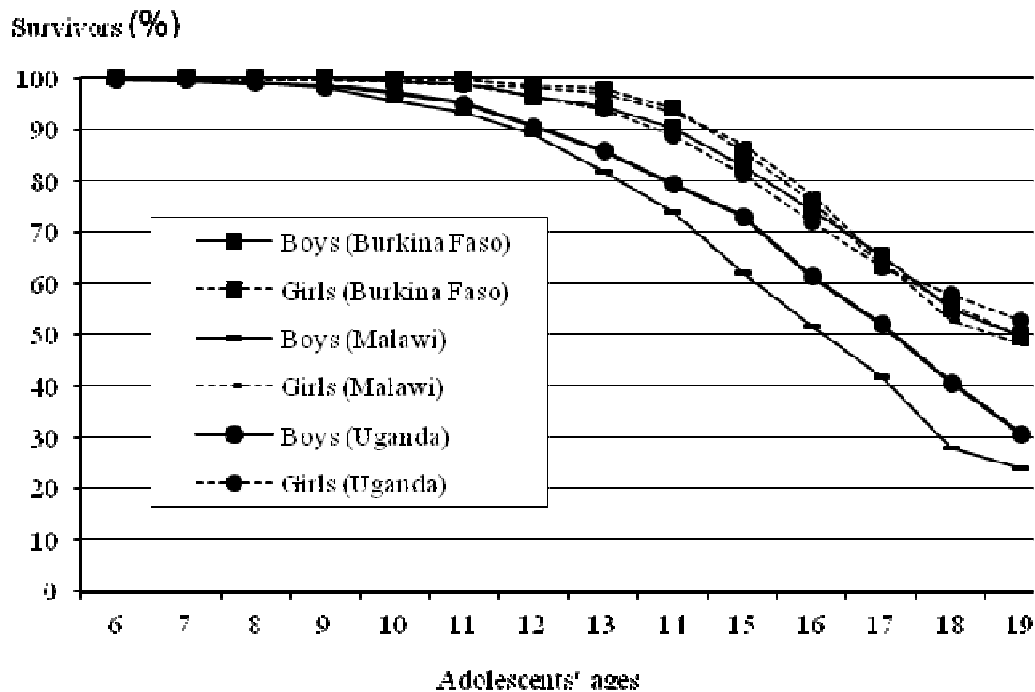
### First sex

This section presents survival curves at first sex, taken from survival tables (Figure 1). They

provide numbers for boys and girls in Burkina Faso, Malawi and Uganda in each age group who had not initiated sex. The significance of differences between boys and girls in each country was calculated with the Logrank test.

The review of data on age at first sexual intercourse shows that some adolescents initiated sexual intercourse at ages 6 to 9. These cases are more important among participants from Malawi and Uganda. By comparing age at first sexual intercourse and adolescents' motivations for having sex at the time of first sexual intercourse, it appears that the cases of forced sexual intercourse are rare among those who initiated sexual intercourse at ages 6 to 9 (The results are not presented). Most of these adolescents explain this sexual initiation by feeling or envy and to a lesser extent by partner instigation or friends influence. An assessment of the relation between age at first sex given and age of the first partner, for adolescents having very young ages did it with partners having approximately their age or having less than the three years different. However, It is important for the readers to keep in mind the possibility of bias in the understanding of question of penetrative sex or the report of age at first sex. Even if, among adolescents who initiated sexual intercourse, fewer adolescents declared to have had sexual intercourse at ages 6 to 9. Also, among adolescents from Burkina Faso and girls from Malawi and Uganda, less than 1% has had sexual intercourse before 10 years.

The survival curves at first sexual intercourse of boys in Malawi and Uganda are almost identical. The curves decrease regularly between ages 8 and 19. Percentages of boys who have not started being sexually active are more important in Uganda than in Malawi. At age 19, 30.7% of boys in Uganda and 23.8% in Malawi have not started being sexually active. For the rest of adolescents, in particular boys from Burkina Faso and girls from all countries, curves begin to decrease a little later, between 10 and 11 years. In Burkina Faso, girls are more likely to delay the first sexual intercourse than boys. At age 19, between 48% and 53% of boys in Burkina Faso and girls in these three countries have not started being sexually active. Between ages 13 and 17, the survival curves of first sexual intercourse of all adolescent



**Figure 1:** Survival curves at first sex for boys and girls aged 14 to 19 years in Burkina Faso, Malawi and Uganda

groups decrease in important ways. In these three countries, girls delay first sex more than do boys. These differences reflect the socialization processes of both groups of adolescents. Girls are subject to significant control by family and community members, which limits their propensity to initiate sexual activity at a young age. The gap between survival curves for boys and girls is more apparent for Uganda, and even more so for Malawi.

Ages 14 to 16 are markers of onset of sexual intercourse and correspond to time of first sex for many adolescents. These ages represent a time when events occur that change children's lives. At 15, many youth have already started puberty. NSA reports for 2004 set the median age at first menstruation for girls and at pubertal changes for boys at 15.3 and 15.5 years respectively in Burkina Faso,<sup>23</sup> and at 15.1 and 14.6 respectively in Malawi.<sup>24</sup> In Uganda, the median age for both events was 15.<sup>25</sup> These children accede socially to young adulthood. Within the family fold, they are treated less and less like children. They can access adult circles and be authorized to listen to discussions about intimate issues, which they could not do in the past. This social and biological

conditioning means that adolescents progressively see themselves as socially mature and capable of engaging in sexual activity, regardless of their young age.

**Association between Age at First Sex and Other Indicators of Sexual Behaviour**

Tables 2, 3, 4 and 5 present the results of multivariate analyses, which were conducted for Burkina Faso, Malawi, Uganda individually and for all three countries together. Results in Table 2 concern the number of sex partners and having had casual partners in the past 12 months among boys; those in Table 3 show condom use at first sex and systematic condom use in the past 12 months. Table 4 presents results for number of sex partners and having had casual partners in the past 12 months among girls; those in Table 5 show condom use at first sex and systematic condom use in the past 12 months. The effects of variables are represented by the estimated coefficients ( $\beta$ ) from logistic regressions. Results are considered according to a maximum significance threshold of 0.10.

**Table 2 :** Estimated coefficients ( $\beta$ ) of the relation between age at first sexual intercourse and the number of sex partners and having had casual partners in the past 12 months among boys in Burkina Faso, Malawi and Uganda ( $\dagger$ )

Variables	Estimated coefficients of logistic regressions models							
	Number of sex partners in the past 12 months				Having had casual partners in the past 12 months			
	Burkina	Malawi	Uganda	All	Burkina	Malawi	Uganda	All
Age at the first sexual relation								
Under 14 years (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14-16 years	0.01	0.35	0.47*	0.38**	-0.32	0.21	0.42	0.18
17-19 years	0.11	0.08	0.43	0.33	-1.70 $\pm$	-0.49	-0.41	-0.78 $\pm$
Type of family household								
Both parents (Mother and father) (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mother or father only	-0.11	-0.01	0.04	0.00	0.69	0.12	0.10	0.14
No parent	-0.60*	-0.26	0.07	-0.17	-0.58	0.23	0.60	0.20
Parents alive								
Father and mother alive (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Father and/or mother died	0.30	-0.15	-0.07	-0.02	-0.33	-0.35	-0.37	-0.25
Living with grandparents								
No (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yes	0.23	-0.59*	-0.05	-0.09	-0.16	-0.18	0.26	0.05
Ratio of people under 20 per adult in the household	-0.11	0.04	0.06	0.04	0.33*	0.31*	0.02	0.12 $\pm$
Parental level of control								
Low (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium	-0.95***	-0.04	-0.42*	-0.42***	-1.41**	-0.23	-0.69 $\pm$	-0.74**
High	-0.63*	-0.74**	-0.66**	-0.69***	-1.58*	-1.99*	-1.46*	-1.64***
Having discussed sexuality with family members								
No (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yes	-0.14	0.61**	-0.20	0.03	-0.13	0.09	-0.38	-0.16
Level of education								
Without instruction or primary (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Secondary	-0.26	-0.17	0.11	-0.04	0.59	0.18	-0.14	0.02
Ethnicity								
1.Burkina Faso 2.Malawi 3.Uganda								
Mossi (Ref.) Chewa (Ref.) Muganda (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Not Mossi Not Chewa Not Muganda	-0.02	0.46*	0.40 $\pm$	0.20 $\pm$	1.00**	-0.16	0.98 $\pm$	0.48*
Place of residence								
Urban (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rural	-0.65 $\pm$	0.46	0.05	0.13	-1.74*	-0.34	0.73	0.00
Age at time of survey								
14-16 years	-0.34	-0.50*	-0.35	-0.41**	-0.45	0.75	-0.48	-0.60*
17-19 years (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time since first sex								
Last twelve months (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
More than twelve months	-0.34	-0.67*	-0.59**	-0.55***	-0.70	-0.22	-0.53	-0.54 $\pm$
Household wealth index								
Low (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium	-0.51 $\pm$	-0.22	-0.03	-0.12	0.25	-0.46	-0.31	-0.19
High	0.05	-0.11	-0.21	-0.13	0.57	-0.50	-0.42	-0.21
Level of adolescents' knowledge in contraception, HIV/AIDS and STI in the same survey stratum								
Low (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium	-0.47	-0.40 $\pm$	0.03	-0.08	-0.75 $\pm$	-0.51	0.18	-0.40
High	-0.46	0.00	0.57**	0.37*	-1.91*	-0.38	0.64	-0.11
Constant	na	na	na	na	-0.11	-2.18*	-3.96***	-1.27
N	540	652	617	1809	540	650	616	1806

*Note* :  $\pm$  :  $p < 0.10$  ; \* :  $p < 0.05$  ; \*\* :  $p < 0.01$  ; \*\*\* :  $p < 0.001$  ; Ref. : Reference; na : Not applicable;  $\dagger$  : Weighted results



**Table 3 :** Estimated coefficients ( $\beta$ ) of the relation between age at first sexual intercourse and the condom use at first sex and systematic condom use in the past 12 months among boys in Burkina Faso, Malawi and Uganda (†)

Variables d'intérêt et de contrôle	Estimated coefficients of logistic regressions models							
	Condom use at first sex				Systematic condom use in the past 12 months			
	Burkina	Malawi	Uganda	All	Burkina	Malawi	Uganda	All
Age at the first sexual relation								
Under 14 years (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14-16 years	0.56	0.61±	1.26***	1.02***	1.52**	0.26	0.33	0.59**
17-19 years	1.29**	0.90*	1.70***	1.46***	2.01**	-0.32	0.56	0.71*
Type of family household								
Both parents (Mother and father) (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mother or father only	0.12	-0.16	0.24	0.10	0.17	0.13	-0.09	-0.03
No parent	-0.67±	-0.06	-0.12	-0.23	-0.23	0.03	0.04	-0.06
Parents alive								
Father and mother alive (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Father and/or mother died	-0.02	-0.17	0.38	0.14	-0.48	-0.40	0.52±	0.10
Living with grandparents								
No (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yes	-0.02	-0.06	0.18	0.12	0.01	-0.92*	-0.12	-0.11
Ratio of people under 20 per adult in the household	-0.02	-0.11	-0.07	-0.07	-0.25±	-0.01	-0.02	-0.05
Parental level of control								
Low (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium	-0.11	0.49±	-0.24	-0.05	0.09	-0.18	-0.69*	-0.35*
High	0.06	-0.08	0.08	-0.06	-0.52	-0.12	-0.02	-0.25
Having discussed sexuality with family members								
No (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yes	0.31	0.07	0.14	0.14	0.04	0.65*	-0.10	0.08
Level of education								
Without instruction or primary (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Secondary	1.03**	0.48	0.73**	0.75***	0.79*	0.63±	0.80**	0.81***
Ethnicity								
1.Burkina Faso 2.Malawi 3.Uganda								
Mossi (Ref.) Chewa (Ref.) Muganda (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Not Mossi Not Chewa Not Muganda	-0.52*	-0.40	-0.46±	-0.52***	-0.99***	0.76*	-0.48	-0.47**
Place of residence								
Urban (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rural	-1.28**	-0.53	-0.94**	-0.95***	-0.45	0.34	0.05	-0.24
Age at time of survey								
14-16 years	0.17	-0.57±	-0.82**	-0.57**	0.68±	-0.91*	-0.79*	-0.47*
17-19 years (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time since first sex								
Last twelve months (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
More than twelve months	-0.18	-0.66*	-0.41	-0.44*	-0.45	-0.52	-0.33	-0.33
Household wealth index								
Low (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium	0.07	0.02	0.04	0.04	-0.21	-0.25	0.05	-0.07
High	-0.04	-0.12	0.05	-0.04	-0.04	-0.81*	0.18	-0.11
Level of adolescents' knowledge in contraception, HIV/AIDS and STI in the same survey stratum								
Low (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium	0.17	0.47	0.47	0.42*	-0.04	-0.62±	0.27	0.17
High	0.44	0.28	0.20	0.30	1.19**	-0.24	0.45	0.65**
Constant	-0.36	-1.43*	-1.46*	-0.69	-1.03	-2.44**	-2.24**	-0.99*
N	540	651	617	1808	540	652	617	1809

Note : ± : p<0.10 ; \* : p<0.05 ; \*\* : p<0.01 ; \*\*\* : p<0.001 ; Ref. : Reference; na : Not applicable; † : Weighted results

**Table 4 :** Estimated coefficients ( $\beta$ ) of the relation between age at first sexual intercourse and the number of sex partners in the past 12 months among girls in Burkina Faso, Malawi and Uganda ( $\dagger$ )

Variables	Estimated coefficients of logistic regressions models			
	Number of sex partners in the past 12 months			
	Burkina	Malawi	Uganda	All
Age at the first sexual relation				
Under 14 years (Ref.)	0.00	0.00	0.00	0.00
14-16 years	0.94 $\pm$	-0.23	0.62*	0.49*
17-19 years	2.04**	-0.29	0.12	0.46
Type of family household				
Both parents (Mother and father) (Ref.)	0.00	0.00	0.00	0.00
Mother or father only	0.17	-0.17	-0.01	0.00
No parent	-0.32	0.13	-0.28	-0.22
Parents alive				
Father and mother alive (Ref.)	0.00	0.00	0.00	0.00
Father and/or mother died	0.07	0.64	0.22	0.25
Living with grandparents				
No (Ref.)	0.00	0.00	0.00	0.00
Yes	-0.54	0.05	-0.05	-0.05
Ratio of people under 20 per adult in the household	-0.03	-0.17	0.09	0.03
Parental level of control				
Low (Ref.)	0.00	0.00	0.00	0.00
Medium	-1.34***	-0.51	-0.67*	-0.77***
High	-0.49	-0.31	-0.75*	-0.62**
Having discussed sexuality with family members				
No (Ref.)	0.00	0.00	0.00	0.00
Yes	0.32	-0.47	0.74**	0.42*
Level of education				
Without instruction or primary (Ref.)	0.00	0.00	0.00	0.00
Secondary	0.25	-0.06	-0.02	0.12
Ethnicity				
1.Burkina Faso 2.Malawi 3.Uganda				
Mossi (Ref.) Chewa (Ref.) Muganda (Ref.)	0.00	0.00	0.00	0.00
Not Mossi Not Chewa Not Muganda	-0.23	-0.41	-0.43	-0.26
Place of residence				
Urban (Ref.)	0.00	0.00	0.00	0.00
Rural	0.81	-0.03	0.32	0.35
Age at time of survey				
14-16 years	0.55	1.00*	-0.44	-0.29
17-19 years (Ref.)	0.00	0.00	0.00	0.00
Time since first sex				
Last twelve months (Ref.)	0.00	0.00	0.00	0.00
More than twelve months	0.013	-0.41	-0.17	-0.19
Household wealth index				
Low (Ref.)	0.00	0.00	0.00	0.00
Medium	0.02	-0.32	-0.15	-0.15
High	-0.31	0.07	0.10	-0.07
Level of adolescents' knowledge in contraception. HIV/AIDS and STI in the same survey stratum				
Low (Ref.)	0.00	0.00	0.00	0.00
Medium	-0.78 $\pm$	1.34**	0.03	0.05
High	0.05	0.95*	-0.05	0.17
N	365	270	325	960

*Note* :  $\pm$  :  $p < 0.10$  ; \* :  $p < 0.05$  ; \*\* :  $p < 0.01$  ; \*\*\* :  $p < 0.001$  ; Ref. : Réf rence; na : Not applicable;  $\dagger$  : Weighted results

**Table 5 :** Estimated coefficients ( $\beta$ ) of the relation between age at first sexual intercourse and the condom use at first sex and systematic condom use in the past 12 months among girls in Burkina Faso, Malawi and Uganda ( $\dagger$ )

Variables	Estimated coefficients of logistic regressions models							
	Condom use at first sex				Systematic condom use in the past 12 months			
	Burkina	Malawi	Uganda	All	Burkina	Malawi	Uganda	All
Age at the first sexual relation								
Under 14 years (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14-16 years	0.99	0.13	1.03**	1.02**	0.54	-0.97	0.59	0.42
17-19 years	1.81 $\pm$	0.26	1.56*	1.39**	1.27	-1.09	0.11	0.36
Type of family household								
Both parents (Mother and father) (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mother or father only	1.13*	0.86 $\pm$	-0.06	0.35	0.89	0.59	0.15	0.35
No parent	0.37	0.67	-0.65 $\pm$	0.03	-0.24	0.32	-0.45	-0.19
Parents alive								
Father and mother alive (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Father and/or mother died	-0.19	-0.28	0.39	0.11	-0.62	0.93 $\pm$	0.34	0.21
Living with grandparents								
No (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yes	-0.06	-0.38	-0.18	-0.10	0.16	-1.09*	-0.45	-0.27
Ratio of people under 20 per adult in the household	0.33 $\pm$	-0.14	0.18*	0.13*	0.23	-0.41 $\pm$	-0.04	-0.04
Parental level of control								
Low (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium	0.22	1.00*	0.13	0.23	-0.75 $\pm$	-0.22	-0.18	-0.32
High	1.45***	0.87	-0.38	0.16	-0.06	0.00	-0.21	-0.17
Having discussed sexuality with family members								
No (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yes	0.87*	0.15	1.26***	0.81***	0.75 $\pm$	0.00	0.68*	0.56**
Level of education								
Without instruction or primary (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Secondary	1.12	0.93 $\pm$	0.90**	0.98***	0.93*	0.62	0.67 $\pm$	0.67**
Ethnicity								
1.Burkina Faso 2.Malawi 3.Uganda								
Mossi (Ref.) Chewa (Ref.) Muganda (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Not Mossi Not Chewa Not Muganda	-0.25	-0.01	-0.73 $\pm$	-0.49*	-0.26	0.58	-0.22	-0.19
Place of residence								
Urban (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rural	-0.20	-0.82 $\pm$	-1.35*	-0.77**	-0.30	0.40	-0.01	-0.05
Age at time of survey								
14-16 years	1.38**	0.71	0.08	0.42 $\pm$	0.32	0.03	-0.28	-0.01
17-19 years (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time since first sex								
Last twelve months (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
More than twelve months	0.06	-0.75	-0.50	-0.36	0.48	-0.71	-0.52	-0.20
Household wealth index								
Low (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium	-0.34	0.17	-0.34	-0.17	0.14	0.04	-0.37	-0.19
High	0.10	1.29**	0.64 $\pm$	0.59**	-0.22	0.64	0.03	0.01
Level of adolescents' knowledge in contraception, HIV/AIDS and STI in the same survey stratum								
Low (Ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium	2.37***	0.01	0.74*	0.78**	1.15*	0.15	0.65	0.62*
High	2.60**	0.22	0.78*	0.80**	1.76**	1.21*	0.93*	1.15**
Constant	-4.37***	-1.07	-0.89	-2.37***	-2.97**	-1.56	-2.06 $\pm$	-1.53*
N	364	270	325	959	365	270	325	960

Note :  $\pm$  :  $p < 0.10$  ; \* :  $p < 0.05$  ; \*\* :  $p < 0.01$  ; \*\*\* :  $p < 0.001$  ; Ref. : Réf rence; na : Not applicable;  $\dagger$  : Weighted results

### Models for Boys

Age at first sexual intercourse is significantly associated with number of sex partners, having casual partners (Table 2), using condoms at first sex, and systematic condom use in the past 12 months (Table 3). Boys who initiated sexual intercourse at ages 14 to 16 in Uganda were more likely to have had sexual relations with more than one partner in the past 12 months than boys who first had sex before age 14. This association is maintained in the analysis that includes the three countries together. In Burkina Faso, boys who initiated sexual intercourse at ages 17 to 19 were less likely to have casual sex partners than boys who first had sex before age 14. In the three-country model, the association remains significant for boys who initiated sexual intercourse at ages 17 to 19. Boys who initiated sexual intercourse at ages 17 to 19 in Burkina Faso, 14 to 19 in Malawi and Uganda were more likely to have used condoms during first sex. Boys who initiated sexual intercourse at ages 14 to 19 in Burkina Faso were more likely to have systematically used condoms in the past 12 months. Associations with condom use are significant in models that include all three countries.

Variables pertaining to family environment and family process are associated with one or more dependent variables, and differ among the countries. Burkinans who do not live with their parents are less likely to have more than one sex partner in the past 12 months and less likely to use condoms at first sex. Ugandans who are fatherless or motherless are more likely to have used condom systematically in the past 12 months. Malawians living with grandparents are less likely to have more than one sex partner and less likely to have systematically used condoms in the past 12 months. An increase in the number of individuals under 20 years old in relation to the number of adults in the household is more likely to be associated with having a casual sex partner in Burkina Faso and Malawi and less likely to be associated with systematic condom use in the past 12 months in Burkina Faso. Average or high level of parental control in Burkina Faso and Uganda, and high level in Malawi are less likely to be associated with having more than one sex partner

and having a casual partner. Average parental control is more likely to be associated with condom use at first sex in Malawi and less likely to be associated with systematic condom use over the past 12 months in Uganda. Having discussed sexuality with family members is associated with having more than one sex partner and with systematic condom use over the past 12 months in Malawi.

The other control variables are associated with one or more dependent variables. They include level of education completed (Burkina Faso, Malawi and Uganda), ethnicity (Burkina Faso, Malawi and Uganda), place of residence (Burkina Faso and Uganda), age at time of interview (Burkina Faso, Malawi and Uganda), probable duration of "sex life" (Malawi and Uganda), household wealth index (Burkina Faso and Malawi), and adolescents' level of knowledge in the survey section on contraception, HIV/AIDS and STI (Burkina Faso, Malawi and Uganda).

### Models for Girls

Age at first sexual intercourse is significantly associated with number of sex partners, condom use at first sex, and systematic condom use in the past 12 months. Girls who initiated sexual intercourse at ages 14 to 19 in Burkina Faso and 14 to 16 in Uganda were more likely to have had more than one partner in the past 12 months than girls who first had sex before age 14. In the three-country model, the association remains significant for girls who initiated sexual intercourse at ages 14 to 16. Girls who started being sexually active between the ages of 17 and 19 in Burkina Faso and between the ages of 14 and 19 in Uganda were more likely to use condoms at first sex. These associations persist in the three-country model.

Variables related to family environment and family processes are associated with sexual behaviour indicators. In Burkina Faso and in Malawi, girls who live with their father or mother are more likely to use condoms at first sexual intercourse. In Uganda, girls who do not live with their parents are less likely to use condoms at first sex. Malawians who are fatherless or motherless are more likely to have used condom systematically in the past 12 months. In Malawi,

girls who live with their grandparents are less inclined to have used condoms in the past 12 months. An increase in the number of individuals under 20 years old in relation to the number of adults in the household is more likely to be associated with condom use at first sex in Burkina Faso and Uganda, and less likely to be associated with systematic condom use in the past 12 months in Malawi. Average parental control in Burkina Faso and high parental control in Uganda is less likely to be associated with having more than one sex partner. High parental control in Burkina Faso and average parental control in Malawi are more likely to be associated with condom use at first sexual intercourse. In Burkina Faso, average parental control is less likely to be associated with systematic condom use in the past 12 months. In Uganda, having talked about sexuality with family members is more likely to be associated with having more than one sex partner; it is also more likely to be associated with condom use at first sex and systematic condom use over the past 12 months in Burkina Faso and Uganda.

Other control variables are associated with dependent variables. They include level of education completed (Burkina Faso, Malawi and Uganda), ethnicity (Uganda), place of residence (Malawi and Uganda), age at time of interview (Burkina Faso and Malawi), household wealth index (Malawi and Uganda), and adolescents' level of knowledge in the survey section on contraception, HIV/AIDS and STI (Burkina Faso, Malawi and Uganda).

## Discussion and Conclusion

The percentages of boys and of girls who have not started being sexually active at 19 are respectively 49.6% in Burkina Faso, 23.8% and 48.2% in Malawi, and 30.7% and 52.7% in Uganda. In these three countries, girls delay first sex more than do boys. Multivariate analyses performed with logistic regression demonstrate significant associations between age at first sexual intercourse and other indicators of sexual behaviour for boys in all three countries and for girls in Burkina Faso and Uganda. They are based on the hypothesis that initiation of sexuality at a young age is more likely to be associated with having several sex partners

and having casual partners. Early initiation is less likely to be associated with condom use at first sexual relation and systematic condom use in the past 12 months.

Results pertaining to number of sex partners in the past 12 months were not what had been foreseen. Burkinan girls who initiated sex between the ages of 17 and 19, Malawian boys, and Ugandans of both sexes who first had sex between 14 and 16 years of age were more likely to have had sexual relations with more than one partner in the past 12 months, compared with adolescents for whom first sexual intercourse was before age 14. Other results confirmed what we had expected. For boys in Burkina Faso, first sex at age 14 or over is less likely to be associated with having had a casual partner in the past 12 months. It is more likely to be associated with condom use at first sexual relation among boys from all three countries and girls from Burkina Faso and Uganda, and with systematic condom use in the past 12 months among adolescents of both sexes in Burkina Faso, and girls in Uganda. Analyses of all three countries together confirm evidence of an association between age at first sex and other indicators of sexual behaviour.

Results pertaining to having a casual partner in the past 12 months, to condom use at first sexual intercourse and to systematic condom use in the past 12 months confirm the hypothesis that first sex at an early age (before age 14) is more likely to be associated with sexual behaviours presenting a risk for pregnancy or premature birth, and for sexually transmitted diseases. These results are similar to those of Lugoe et al. (1996) and Gueye et al. (2001) in studies of adolescents from urban areas. In the first study, high-school students in Arusha, Tanzania, who had their first sexual relation before age 13 were less likely to have used condoms the last time they had sex than other youth who had their first sexual intercourse when they were at least 13 years old. In the second study, unmarried 15- to 19-year old adolescents of both sexes living in urban centres in Mali who had their first sexual relation at age 14 or younger were less likely to use modern contraception.

It is probable that there is an underlying logic related to condom use at first sexual intercourse, to number of sex partners and to systematic condom

use over the past 12 months. The youngest adolescents have limited knowledge and inadequate information about sexuality. Their access to modern contraception methods is limited and they do not have the capacity needed to negotiate safe sex. Therefore, first intercourse at an early age is more likely to be unprotected by a condom. Condom use is thus a practice that is cultivated from the beginning. Individuals who are most resistant to its use have probably developed the habit of having sexual relations without a condom since they first became sexually active. Having first sexual relations without a condom contributes to reinforcing and maintaining this practice over time.

However, to better understand condom use behaviour among adolescents who first had sexual intercourse at a young age, it is important to link this behaviour with the context of their sex lives. Perhaps these adolescents had their first sexual relation with someone they knew well and whom they trusted. The NSA reports<sup>23,24,25</sup> indicate that the majority of boys and girls in all three countries were "very willing" or "somewhat willing" to have sex the first time. Most of the time, these relations occurred with a boyfriend or girlfriend. In this context, the issue of protection at first sex could be less of a priority. Furthermore, our findings regarding number of sex partners in all three countries show that "precocious" adolescents tend to have one or no sex partner in the 12 months prior to the survey. They had chosen secondary abstinence or being faithful to a single sexual partner over systematic condom use.

In many countries there is a legal age under which an individual is considered not capable of consenting freely to sexual activity or of exercising free and informed choices in this area. Age of consent for sex often ranges from 15 to 16 years.<sup>26</sup> In some countries, it could be higher. For example, in Uganda, legal age of consent is 18 years. Having sexual relations with a person under 18 years of age is deemed sexual abuse. Punishment can even be death. The main goal of such penal provisions is to dissuade potential adolescent sexual partners; these provisions have had little effect on practices or on adolescents' behaviours. According to Dixon-Mueller (2008),<sup>27</sup> the legal age of consent for sexual relations is only

one of a number of evaluation criteria for sexual precocity. She also considers physiological maturity and the body's readiness for sex, and adolescents' cognitive capacity for making safe, informed, and voluntary decisions. Sexual and reproductive health programs take health risks at adolescence into account for actions designed to raise awareness among a community and provide information to its members. This applies to actions that advocate delaying age at first sex or sexual abstinence, to fight against sexually transmitted infections (STI), HIV/AIDS and unwanted pregnancy.

Delaying onset of sexuality could be a surer and safer way to protect sexual and reproductive health during adolescence.<sup>28</sup> In Uganda and Zambia, two countries where HIV prevalence is high, this strategy was used to determine median age at first sex, reduce levels of premarital sexual activity and number of sex partners, and to increase condom use with non-regular partners.<sup>29</sup> In Uganda, the decline in HIV prevalence could be partly due to delayed onset of sexual activity.<sup>30,31</sup> The validity of higher age at first sexual relation in Uganda is challenged by Gersovitz's findings (2007).<sup>32</sup> Using data from Ugandan demographic and health surveys for 1995 to 2000, the author confirms the rise in age at first sex between 1995 and 2000 but considers that these data also provide proof of bias in respondents' answers or in the sample of individuals surveyed that cancel out elements of proof of this increase. It remains that the scientific evidence is not definite regarding the positive impact of promoting postponement of first sex on adolescents' behaviour.<sup>28</sup>

Sexual and reproductive health programs that advocate abstinence only will have few positive effects on young people.<sup>33</sup> The most efficient programs are those that combine sexual abstinence and provision of information and contraception services.<sup>34</sup> A better application of a strategy to encourage delay of onset of sexual activity must involve sexual education programmes and accountability among educators and other professionals working with adolescents throughout the maturation process. It would be more beneficial to promote non-risky sexual behaviours to adolescents before the first time they have

sexual relations than to modify risky behaviours in adolescents who have initiated sexual activity.

Sexual education should encompass responsible sexual behaviour, reproduction, abstinence, family planning, unsafe abortion, sexually transmitted diseases, and male-female relationships. The role of professionals is to help adolescents understand the meaning of engaging in sexual relations and their motivations, and to encourage youth to choose practices and ways to ensure they lead safer sex lives. These professionals should raise the topics of sexuality and contraception from a public health point of view. The purpose of these programs is to help adolescents who have not yet initiated sexual relations to make good sexual choices in the future, and to encourage sexually active adolescents to better protect themselves during sexual relations.

In the countries of our study, the condom is the method of contraception the most known and used by adolescents.<sup>23, 24, 25</sup> But its level of use to protect adolescents during sexual intercourse remains low and would express several realities. The first explanation would come from the trust between partners that justified their desire to have a sexual intercourse. The second explanation would be situated on the cost and accessibility of condom. Certainly, the cost of condom became relatively low and its geographical accessibility is increased. But, for a Burkinan, Malawian or Ugandan jobless adolescent, it can be difficult to have the necessary money for buying condom. Even if the adolescent has money to buy it, he will need the boldness to go to a shop and buy it without wiping the judgments of the shopkeeper and later of all populations in the district. Our study findings are subject to several limitations. The cross-sectional nature of NSA data does not allow for assessment of anteriority among independent and dependent variables and for evaluation of causal implications. Results are considered from the point of view of simple associations among variables. The findings also depend on the quality of the data on indicators of sexual behaviour, context of first sex, and size and composition of analysis samples. National Surveys of Adolescents (NSA) used face-to-face interviews and data collected from respondents' statements.

These statements may not conform with the adolescents' sexual status: the risks of underreporting and over reporting cannot be ignored. The issue of initiation of sexuality has been considered without regard for context in which this event occurred. First sex could well be a way that adolescent victims of family or psychosocial problems express their distress. Other adolescents could be forced into sex against their will. It is not infrequent that a first sexual relation is forced or occurs under pressure from an older partner. Statistical analyses involved small sample sizes of boys and girls, which could affect the impact of our results. This small sample size resulted in our limiting variable modalities to two or three, thus reducing the variance of variables and the possibility of identifying differences between adolescent groups. The last limitation is linked to the selection of adolescents in the samples analyzed, which affects national representativity of NSA data. This selectivity greatly affects the samples of girls.

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