

Parenting practices and sexual risk-taking among the young in a sub-Saharan African context: What can we learn from a life course perspective?

CONTEXT: Little evidence is available on the role play by parents/guardians in shaping children's sexual behaviors in sub-Saharan African settings.

METHODS: We use repeated measures of parent-child relationships, parental monitoring and parent-child sexual communication over time to examine their association with children's sexual risk-taking. Two lines of investigation are explored: (1) the long-term associations between parenting practices during early adolescence and sexual risk-taking in young ages, and (2) the effect of consistent versus inconsistent parenting practices over time on sexual risk-taking in young ages. Analyses are performed using a subsample of unmarried 19-24-year-olds drawn from the Cameroon Family and Health Survey, and multinomial regression analyses.

RESULTS: A fewer parental knowledge of out-of-home activities during early adolescence appears to double the chances that individuals exhibit a high sexual risk-taking in young ages. Parent/child communication on sexual issues during early adolescence significantly reduces the odd of exhibiting a high sexual risk-taking in young ages through its effect on the timing of first sex. Furthermore, risk factors for high sexual risk-taking in young ages could be found in the consistency of poor parent-child relationships, but also in the variability of the quality of parent-child relationships over time.

CONCLUSIONS: Substantial analyses are required to inform efforts aiming to prevent young people's risky sexual behaviors in sub-Saharan African settings by strengthening parenting. Our study underscores the need to collect more information *over time* to deepen this line of research.

Young people's involvement in risky sexual activities has come under intense scrutiny over the past years in sub-Saharan African countries. A systematic review for a handful of countries indicates that among youth aged 15-24 years, the percentage who report having had sex before 15 varies from 3% in Rwanda to 27% in Guinea among females, and from 4% in Ghana to 31% in Namibia among males.¹ Much more, relatively low proportions of young people report having used condom at last higher risk sex, the percentages ranging from 14% in Mali to 75% in Botswana among females and from 30% in Ethiopia to 88% in Botswana among males. The prevalence of multiple sexual partnerships is also high among the young. For example, about one in three unmarried young men report having had two or more sexual partners in Benin, Guinea, Togo, Gabon and Tanzania.²

Knowing which factors protect the young from having risky sexual behaviors is crucial given that these behaviors highly contribute to the spread of HIV/AIDS and other sexually transmitted diseases. It is acknowledged that HIV/AIDS actually represents the leading cause of deaths among the young in sub-Saharan African countries, and that young people account for approximately half of all new infections.^{3, 4} The situation is particularly burdensome for young women, since almost 76% of the young people infected in sub-Saharan Africa are female. Across countries with nationally representative surveys of HIV prevalence, female to male ratio of infection among youth aged 15-24 years ranges from 1.3 to 12.⁵

Parenting is one of the key aspects that have been targeted in the efforts to decrease sexual risk behaviors among the young. Because they constitute a crucial part in their social

environment and daily interactions, family members and parents in particular, are viewed as influential actors for children's development and health outcomes. This topic has extensively been addressed cross-culturally in explaining a wide range of behaviors including psychological adjustment, social competence, school misconduct, and alcohol use.⁶⁻⁸ Decades of inquiries have also allowed establishing evidence that parenting practices such as monitoring, support, and sexual communication are associated with children's risky sexual behaviors.^{9, 10} In sub-Saharan Africa, the research is just beginning to document the effects of parental involvement on children's sexual behaviors. It is worth mentioning however that a number of programs have been implemented in numerous settings in order to identify and enhance the parenting facets considered to act as protective factors against sexual risk-taking.¹¹ Knowing what special place parents or guardians have in children's life, and which roles they provide that other adults cannot replicate, is particularly meaningful in those settings where it is common to say that "it takes a whole village to raise a child".

In this study, we draw on the findings from previous research to shed light on which salient aspects of parenting practices are associated with individuals' sexual-risk taking in a sub-Saharan African setting. We use multiple assessments to explore two areas of inquiries. The first area is the long-term effects of parenting during early adolescence. Contemporary researches using longitudinal designs have led to important refinements in the ways that parenting practices experienced in early adolescence explain risky behaviors during adolescence and later in life.¹²⁻¹⁵ For example, an analysis of data from females and males in the United States showed that family closeness and parental behavioral control during early adolescence are protective for sexual initiation during middle adolescence and for multiple

sexual partnerships during early adulthood.¹² No study has related early parenting practices to later sexual risk-taking in sub-Saharan African settings yet. Therefore, our study constitutes a contribution in this manner.

The second area of investigation is the variability of parenting practices across individuals' life course. The idea of a static measure of parenting has been challenged by a number of longitudinal studies which have yielded evidence on child-rearing differences across time and across situations.¹⁶⁻¹⁸ According to these studies, parents adjust what they do in line with the circumstances of their own lives, and according to their children's age, needs, and behaviors. Although enough evidence has been gathered on the protective effect of parenting against sexual risk-taking, previous studies have seldom looked at the effect of disparate practices over time. Yang et al¹⁹ provided a glimpse of this kind of relationships by showing that girls were generally less likely to engage in sex and to have a smaller increased rate in the probability of engage in sex while getting older when parental monitoring was consistent. Thus, it would seem interesting to examine children sexual risk behaviors in young ages as a response to a whole chain of parenting experiences rather than a response to an isolated experience. This study looks over two aspects: (i) the extent to which parenting practices are disparate across individuals' life course, and (ii) if the consistency in parenting is a much more protective factor against sexual risk-taking in young ages.

The paper is organized in four sections. The first substantive section focuses on the theoretical bases underlying the associations between the parenting practices and risky sexual behaviors. We also discuss the empirical findings in sub-Saharan African settings. In

the second substantive section, we discuss the longitudinal inquiries that are of interest in the current study and present the hypotheses that will be specifically tested. The third substantive section presents the descriptive and multivariate analyses based on a set of retrospective longitudinal data collected by The Cameroon Family and Health Survey. The final section addresses the implications of the findings for future research and intervention.

Parenting practices and sexual risk-taking: theoretical bases and empirical findings

This section focuses on the three main constructs of parenting that have been consistently associated with children's risky sexual behaviors, namely parent-child connectedness, parental monitoring, and parent-child communication on sexual issues. We review and evaluate the empirical findings relevant to this area from sub-Saharan African settings. To provide an overall extent of the pre-existing literature in sub-Saharan Africa, we included all the published studies looking at the impact of parenting factors on children sexual outcomes in general.

PARENT-CHILD CONNECTEDNESS

The connectedness has been conceptualized as a large spectrum of social experience including the quality of a relationship, the degree of liking an environment and relationship, or the quality of performance in an environment and relationship.²⁰ When focusing on parent-child interaction, connectedness mostly refers to parental warmth, love, support, parent-child closeness, and child attachment to parent. What renders the connectedness to

parents protective against the involvement in risky sexual behaviors is that it may set the conditions to ease the socialization to parental values and the parental guidance.

Numerous studies have linked various sub-constructs of parental connectedness with sexual behavior outcomes in American and European settings. A recent review showed that there is sufficient evidence from both longitudinal and cross-sectional studies to attest that parental connectedness constitutes a protective factor for early sexual debut, pregnancy/birth, and frequency of sex among adolescents.⁹ However, too few longitudinal studies are available to draw conclusions about the associations between family connectedness and sexual risk outcomes (namely the contraceptive use, the number of sexual partners, and the sexual risk index).

Much of the research in sub-Saharan African settings has approached the parental connectedness as the parental presence. The parental presence has been frequently studied in relation to the absent father^{21, 22}, to the physical availability of any significant parent figure²³, and to to some extent to the living arrangements.²⁴⁻²⁸ Data from adolescent females in the slums of Nairobi indicated that the father absence is more detrimental for reproductive health outcomes.²² Adolescent females whom fathers are absent are more likely to have had sex, to have experienced an unwanted pregnancy or to be sexually active. Parental material support and the authoritative role of fathers are presented as possible factors that explain these associations. Fathers are more likely to engage in economic activities, thus more likely to keep their adolescents daughters from risky sexual behaviors driven by survival strategies.

Besides, father-child relationships are much more vertical and authoritative than mother-child relationships and would probably ease the transmission of disciplinary rules.

Studies that have operationalized the parental presence as the physical availability of any significant parent figure have yielded no significant results.^{23, 29} Only two studies have investigated the effects of parent-child connectedness by using scales with different statements related to the perception of parental care, love, support, and the quality of the relationships. The first one pointed out that feeling connected to parents failed to emerge as a significant determinant of sexual behavior among the young in Zambia.³⁰ The second one revealed that a lower parent-child connectedness was positively associated with ever having sex among secondary school students in Nigeria.³¹

PARENTAL MONITORING

The parental monitoring encompasses a set of correlated parental practices aiming to structure children's home, school and community, and to track their behavior in these environments.³² It is conceptualized as being direct (the amount of time that the child is at home or in public space with an adult supervision) and indirect (the amount of knowledge that parents have of their children whereabouts, friends or activities when they are not under their direct supervision). The indirect parental monitoring has extensively been operationalized as a protective factor against children involvement in sexual risk-taking, although its effectiveness has been called into question because it mostly relied on children willing to disclose the information.³³

There is evidence from longitudinal studies in American settings to suggest that direct and indirect parental monitoring has a protective effect on adolescent risk behaviors.^{19, 34, 35} Studies that addressed the associations between parental monitoring and children's sexual behavior in sub-Saharan Africa are rare. Some analyses conducted with cross-sectional designs have indicated significant associations between the low levels of indirect parental monitoring and the greater odds of having had a sexual intercourse among female and male adolescents in Burkina Faso, Ghana, and Uganda.^{23, 29}

PARENT-CHILD COMMUNICATION ON SEXUAL ISSUES

The parent-child communication on sexual issues is probably the parenting dimension for which the effects on sexual-risk taking is not clearly defined in the literature. Evidence on the relationship between the two variables suggests that it is complex and contradictory. The causal narratives in this area have particularly been confronted to the methodological difficulties related to the temporal ordering of the variables. The theoretical argument is that "prior", "open", "frequent", and "positive" parent-child sexual communication will lower the probability of sexual risk-taking by promoting a more responsible behavior. Findings from American settings indicate that adolescents are more likely to use contraceptives and less likely to have multiple partnerships if they discuss sexual issues with their parents.^{36, 37} The review of studies in this area calls attention to the fact that almost all the findings gathered to date rely on cross-sectional designs that mirrored the direction of associations.⁹ Besides, a number of longitudinal studies have shown risk associations or no association at all.

In sub-Saharan African settings, several important issues complicate the understanding of how parent-child communication on sexual issues could contribute to deter young people's involvement in risky sexual behaviors. Thus far, it has been found that parents do not constitute a preferred or highly used source for information on sex-related matters in several settings.³⁸⁻⁴⁰ The analyses on gender differences also indicate that the levels of individuals who cited parents as a source of information on sex-related matters are quite lower for males than for females in various settings.^{39, 41} Researchers' interpretations of the low levels of parent-child communication emphasize two main aspects. In one hand, it has been suggested that the transmission of informations on cultural norms of sexual conduct by parents is not a traditional practice in most African settings.^{42, 43} Initiation rites and ceremonies have traditionnaly serve as communities platfforms through which informations related to puberty, pregnancy risks, personal hygiene, contraceptive use were transmitted to individuals.⁴⁴ It has also been suggested that the low levels of parent-child communication on sexual issues may be explained by the share of responsibilities in this manner between the parents and the other family members from the nuclear or the extended family unit.^{45, 46} On the other hand, the formal nature of parent-child relationship is thought to be a factor that restrain the ease of discussion on sexual issues.⁴⁰

The few empirical studies that have investigated the effects of parent-child communication on sexual behavior have yielded conflicting results. Communication on sex-related matters with parents figures was positively and strongly associated with an increased likelihood of sexual activity among adolescent males in Malawi and adolescent females in Uganda.²³ Others studies showed that communication on sexual issues with parents was related to a

reduced hazard of sexual initiation among adolescent females in Kenya⁴⁷ and an increased likelihood of regular condom use among Nigerian youths.⁴⁸ In a study where the effects of parental communication were disentangled by the gender of the parent involved in the discussion, paternal communication was significantly associated with a reduced onset of sexual activity among adolescents males.²⁹ In contrast, the paternal communication about sex was related to an increased likelihood of being sexually active among adolescent females. All these findings are however based on analyses with cross-sectional designs without a clear assessment of the time order and could hardly be considered as conclusive. The study conducted by Kawai et al. (2008) is the sole attempt to examine the effects of parent-child communication using a longitudinal design.⁴⁹ The authors explored the odds of sexual initiation of 12-14-year-olds virgin primary school students using a baseline assessment and two follow-up after 6 months and 12 months, and revealed that parental communication was not associated with the odds of sexual initiation. Additional research is needed to compare this result.

To summarize, there has been a considerable effort in scholarly research to gather evidence on the associations between parenting practices and children's involvement in sexual risk-taking. More longitudinal research will help to better clarify the direction of the associations, but most importantly, to address the issue of the changes and continuities in these associations with individual developmental stages. Interestingly, the previous studies converge to prove the positive impact that parenting practices have on adolescents but the extent to which this impact continues into young ages is less known. With regard to the literature available for sub-Saharan African settings, there is a clear lack of studies that integrate longitudinal

inquiries, models with parenting practices as the main explanatory variables for sexual risky behaviors, and subsamples of young people (see the summary of the literature review in Table 1). This study is a modest attempt to address these shortcomings.

[Insert Table 1 here]

The longitudinal inquiries on parenting influences

The longitudinal inquiries in the area of parenting are in line with the major issues in life course perspective which consist of analysing the associations between early conditions and later life outcomes, as well as changes in personal characteristics across different life stages.⁵⁰ Researchers are interested in knowing if the positive effect of good parenting during early adolescence persists into late adolescence and early adulthood. There is also a marked interest in knowing if parenting practices are consistent with the life course – in other words if parents rear their children similarly across weeks, months, and years –, or if they are modulated by changes in child characteristics and family life contexts. These two lines of investigations are examined in this section. Besides, we present the hypotheses that will be specifically tested in this study.

THE LONG-TERM EFFECTS OF PARENTING DURING EARLY ADOLESCENCE

The classic research on the long-term effects of parenting sought to identify the enduring effects of parenting practices on children's sexual outcomes over a long period of time. The hallmark of this line of research is to provide evidence that early experiences of parenting practices persist as cohort ages or across different developmental stages. Albeit the developmental inquiry on parenting shows an abiding interest in the enduring effects of

childhood experiences, the contributors to the long-term effects of parenting on child sexual outcomes have particularly tracked the conditions during early adolescence. The emphasis on early adolescence as a critical developmental stage lies in the premise that it constitutes a period of biological and social changes which contribute to expose individuals to a range of risk behaviors, including sexual initiation. In addition, the development of cognitive and social capacities that occurs during early adolescence are believed to make this developmental period an important window to shape healthy attitudes and subsequent behaviors.⁵¹

A handful of studies have provided credence to the long-term influence of parenting practices on sexual risky behaviors. For example, Li et al. (2000)⁵² tracked the long-term effects of parental monitoring on health risk-behavior among low-income African American children and adolescents over 4 years. They found that the parental monitoring at the baseline significantly predicts the use of condom at the 18-month, 24-month, and 36-month follow-up assessments. Also using a sample of African American children and adolescents, Stanton et al. (2002)⁵³ showed that open parental communication was positively correlated with condom use over 18-month observation. A prospective examination of the associations between various parenting practices and the odds of sexual initiation among 12-16-years-old American teenagers revealed the significant protective effect of parental disapproval of sex and parental monitoring/supervision over 1-year period.⁵⁴ What is more relevant to our concern is that studies that have considered a much wider life span are rare. One notable exception is the study of Roche et al (2008)¹² which linked parental closeness and behavioral control during early adolescence (ages 12-14 years) to the number of sexual

partners into early adulthood (ages 19-21 years), using data from the US National Longitudinal Study of Adolescent Health.

An important issue in addressing the long-term effects of parenting practices is the clear identification of the mechanisms that operate to link early parenting conditions to later risky sexual behaviors. The condom use self-efficacy has been found to mediate the association between mother-daughter sexual risk communication and unprotected sexual intercourse.³⁷ In their study, Roche et al. (2008)¹² explored the possibility that parental closeness and behavioral control would be associated to children sexual risk-taking through the delayed onset of sexual activity. Their results indicated a different pathway for females and males. Among females, parental closeness during early adolescence was associated to a fewer number of sexual partners during early adulthood directly, and indirectly through the sexual initiation during middle adolescence. The results for males confirmed only a direct association.

Given the considerations outlined above, two hypotheses will be tested in this study with regard to the long-term effects of parenting practices:

- Parenting practices characterized by good relationships, high level of monitoring, and sexual communication during early adolescence will be related to lower sexual risk-taking in young ages (*Hypothesis 1*);

- The long term-influence of parenting practices during adolescence will be mediated by the delay in sexual initiation (*Hypothesis 2*). Previous research in sub-Saharan African settings

has provided empirical support for the linkage between the early onset of sexual activity and risky sexual behaviors later in life that allows us to speculate on this mediational effect.^{55, 56}

THE VARIABILITY OF PARENTING PRACTICES OVER THE LIFE COURSE

The concept of variability refers to the quality of being changeable, or having a marked tendency to change. When applied to parenting, the concept entails the assumption that parents' behavior are variant or modifiable under different circumstances.¹⁷ Thereby, it contrasts the idea of a stability in parenting which presupposes that parental behavior assessed at one point of time reflect prior and future behavior. The variability approach of parenting overlap with the developmental view of parenting which suggests that parents' behavior are hierarchically structured around the child's basic needs which diminish with further development and consequently lessen the child's dependency on parents. With regard to parental monitoring for instance, a conceptual formulation suggests that it may be viewed as important from infancy through adolescence and through young adulthood.³² It however evolves in accordance with child developmental status and expanding ecology. Empirically, the research points out competing support of variability and stability in parenting practices. According to a number of findings, the stability of parenting practices is evident but coexists with changes in the amount and the content of the perceived meanings of interactions.^{57 17}

The factors that promote the variability or the stability in parenting practices are embedded both in the family life contexts and in children and parents' characteristics. In particular, culture and religion are two factors of the family life context that are believed to set constraints on parenting as they provide implicit or explicit child-rearing models that are

accepted, expected, or taboo.⁵⁸ In a setting where parent-child sexual communication is taboo for example, it would be expected that this discussion will never happen unless other prescriptions (for example gender or age-related prescriptions) are ascertained. In other respects, the economic strata of the family and the neighborhood appear to be two main sources of variability in parenting practices. The links between the family socioeconomic strata and parenting practices has been well documented in studies investigating parental motivations to be involved in their children's education. Significant differences in parental involvement related to the differences in family socioeconomic status have been reported in the United States.⁵⁹ Research on parenting also speculates on how parents adjust their behavior in different settings of varying risk.⁶⁰

Gender, age and behavior are three child characteristics that have been viewed as important triggers of changes in parenting practices. Studies have provided evidence of decline in parenting practices over time that can be related to child's gender and age. Analyses using data on African-American mothers and children revealed a significant decline in parental warmth and monitoring over four years.^{16, 18} Besides, a higher consistency in parenting monitoring was found for girls than for boys. Various studies have also linked children's behavior to the variability in parenting practices.⁶¹

This study examines the variability or inconsistency of parenting practices over time and its association with sexual risk-taking in young ages. Given the scarcity of studies that cross-culturally examined the variability in parenting practices, it is not easy to draw hypotheses on that issue with respect to sub-Saharan African contexts. However, based on a previous

research, we know that the dynamic feature of the parent-child relations over the lifespan is a cross-cultural reality.⁶² The work of Mboya (1995)⁶³ also revealed that parenting practices are a function of the child's age in African contexts. Using a sample of adolescent girls and boys in South Africa, he found that the scores of parental support and involvement significantly decline with age. Besides, one could envision that changes in family life contexts – for example as a change in the locality or a change in the type of residence – will set pressures on parents to modify their monitoring habits in sub-Saharan African settings as well. Thus, we expect that:

- Parenting practices will be inconsistent over an individual's life course (*Hypothesis 3*). Specifically, we predict that the quality of parent-child relationships and the parental knowledge regarding out-of-home activities will not show absolute stability over time. That is, we expect analyses of variance to exhibit a significant change in the group means across different developmental stages.

Beyond this prediction, we also examine if the consistency in parenting practices is a much more protective factor against sexual risk-taking in young ages.

DATA AND PROCEDURES

The Cameroon Family and Health Survey (CFHS)

The hypotheses that are proposed in this study were tested using data collected in 1996-1997 by the Cameroon Family and Health Survey (CFHS) which is a part of a series of surveys carried on by the Population Observatory in Socio-clinical Epidemiology (POSE). The

CFHS was designed with a theoretical approach considering that risk and protective factors for health behaviors should be understood from a dynamic viewpoint, so as to take into account the influences of changes in an individual's family, social and environmental contexts over the life course. To date, five surveys have been conducted (in 1996-1997, 2002, 2005, 2006-2007, and 2008), and nearly 141 urban and rural localities in the West and Northwest regions of Cameroon have been covered (75 localities as intervention sites and 66 as control sites). Our study uses data collected during the 1996-1997 survey whose unique feature for our research hypotheses is that it gathered information on individuals' family and residential trajectories, in addition to other variables conventionally used in sexual behavior research.

The 1996-1997 survey was conducted in the Prefecture of Bandjoun which is a semi-rural area that lies in the Western part of Cameroon. According to the 2005 Cameroon Population and Housing Census, Bandjoun comprises a total population of about 65,021.⁶⁴ The dominant ethnic group is the Bamileke, who inhabit the Western region of Cameroon but are also found in other regions of the country. Regarding the norms and sexual practices, the Bamileke group is believed to share negative opinions about the sexual activity among unmarried females and males and about an opened discussion on sexual issues between parents and children.⁶⁵ It is worth mentioning that initiation ceremonies have been instituted in most of the Bamileke communities in order to give a sexual education to females and males in their early adolescence, as well as to prepare them for their adult lives. For this reason, parent-child communication on sexual issues is not a traditional practice and parents may lack the communications skills that are necessary.

Sampling procedure and study sample

The sampling procedure was preceded by an identification of the population distribution of Bandjoun by sex (female and male) and by different age groups (10-14, 15-19, 20-49, and 50 or more), based on the information given by the latest Census of Population and Housing of Cameroon that precedes the survey (the one conducted in 1987). In order to maximally cover the survey zone, the sampling procedure included two sampling frames. In the first frame, all 75 localities forming the prefecture of Bandjoun were considered. These localities were integrated in the boundaries of 12 socio-sanitary regions (SSRs) framed by two governmental decrees according to their proximity to one or several health centers. In the second frame, households were randomly selected from each SSRs using probability proportional to their size in the SSR. For respondents' identification, respondents aged 10 years or older were identified per each randomly selected private household. Only one eligible respondent was randomly selected per household for interviewing, thus ensuring the absence of correlation between individuals at the family level. The process of respondents selection per selected household was performed until a representative sample by sex and by different age groups was obtained for each SSR. The final sample included 2,381 females and males aged 10 years old and older who are believed to be representative of the various family and residential context in Bandjoun. More details about the sampling procedure are available elsewhere.^{66, 67}

This study uses a subsample of unmarried respondents aged 19-24 years old at the time of the survey. Table 2 displays descriptive statistics on the sample. This subsample includes 359 individuals, with 193 (53.8%) males and 166 (46.2%) females. On average, individuals

were 20.6 years old. More than a half is still enrolled in school (57.7%). The majority (91.4%) identified themselves as Christian. The migration history of this subsample was also examined in order to judge their ties with their community and their exposition to non rural environments. Of the subsample, 71.9 % was born and raised in Bandjoun, and 56.3% has always lived in a rural environment.

[Insert Table 2 here]

Data collected on sexual behavior and parenting practices

The CFHS data on sexual behavior include information on the circumstances around respondent's first sexual intercourse (age, motivations and characteristics of the sexual partner) and the history of sexual relationships in the twelve months that precede the survey. The age at first sexual intercourse corresponds to the respondents' responses in completed years. The history of sexual relationships included a question on the number of sexual partners in the last twelve months. It also retraced each sexual relation with emphasis on information related to the dates of the start and the end of the partnerships, the number of sexual acts, the characteristics of the partners, and the frequency of contraceptive use.

Regarding the quality of the information, it has been recognized that young people's self-reporting of risky sexual behavior in sub-Saharan African settings are fraught with problems of misreporting. The social desirability bias particularly affects the reports of multiple partners⁶⁸ and condom use⁶⁹. The strategies used to reduce the misreporting in the CFHS were showing the confidential rules before each interview, and making respondents aware of

the importance of accurate information for intervention. A previous study has shown that these CFHS data are of good quality.⁷⁰

The data on parenting practices were collected in the section of the questionnaire devoted to the "family and residential influences". Forty four questions were asked in order to have a full grasp of the characteristics of the family and residential context in which respondents' lives were embedded. Each question was formulated in a retrospective life history approach, using predefined key moments or turning points in life to structure the respondents' narratives. These key moments were: age 6, age 12, the moment of sexual initiation (for those who have initiated sex), in addition to the time of survey. In reference to these key moments, the respondents had to report information regarding various aspects of their family and residential environment including: the persons with whom they have lived, the attributes of the parents/guardians who were responsible for their rearing, the relationships they have with the parents/guardians, and the towns or localities they have lived in. Gathered in this way, these data do not constitute a "refined" reconstruction of respondents' event histories (i.e. a reconstruction based on a year or a month scale). However, they constitute a precious source of information to stimulate new channels of research in sub-Saharan African settings that are based on longitudinal inquiries. Besides, each of the selected key moments allows grasping the experience of individuals at different developmental stages.

The dimension of parent-child connectedness was assessed using an item concerning the quality of the relationships with the parent figure. A question was asked about how the respondent perceived the quality of the exchanges with the parent figure at each key

moment. The question had five responses: "very satisfying", "satisfying", "fairly satisfying", "few satisfying", and "not at all satisfying".

The dimension of parental monitoring was assessed using two items. The first item is the amount of parental knowledge regarding out-of-home activities. A question was asked about how frequent the parent figure used to ask about their out-of-home activities at each key moment. The second item refers to the amount of parental approval regarding out-of-home activities. Respondents were asked a question about how frequent the parent figure agreed with their out-of-home activities at each key moment. For both questions, respondents had to choose from out of five possible responses: "a lot", "enough", "a few times", "very few times", and "never".

Finally, the dimension of parent-child communication was assessed by "yes or no" questions asking if respondents ever discussed with their parents or guardians about general sexual issues, or about specific topics such as pregnancy prevention, and HIV/AIDS prevention at each key moment. Because all these parenting dimensions were captured using single questions instead of index or multiple-item scales, the analyses were performed using each item as a single variable. A summary of the parenting measures is presented in table 3.

[Insert Table 3 here]

Plan of analysis

The two hypotheses related to the long-term effects of parenting practices during early adolescence were tested using correlation analyses and multivariate logistic regressions. For this section of the analyses, we used the parenting practices experienced by the respondents

at age 12 as the main independent variables, and the sexual risk-taking in young ages as the dependent variable.

To assess the sexual-risk taking in young ages, we used a composite measure which combines two survey items: the number of sexual partners in the last twelve months, and the frequency of contraceptive use with each sexual partner. The question on the contraceptive use did not specify types of methods (i.e. condom versus other methods). However, it did specify a contraceptive method to avoid the risk of sexually transmitted diseases and/or the risk of pregnancy. Because very few respondents reported a systematic use of contraceptives, consistent use was defined as a "systematically" or "regularly" use. A good strategy of risk avoidance would however require a systematic use of contraceptives.

Respondents were placed into three categories depending on their reports. "Low sexual risk" was assigned to respondents who reported having had no sexual partner or only one sexual partner in the last twelve months. We consider this group to be the least at risk as we believe it includes those who choose either to abstain or to have one faithful partner. "Moderate sexual risk" was assigned to those who reported having had several sexual partners while declaring having consistently used a contraceptive method. Finally, "High sexual risk" included those who reported having had several sexual partners while not using contraceptive methods or using them inconsistently.

Multivariate logistic regressions were performed using mlogit models because the dependent variable has three categories. The mlogit regression permits the classification of individuals

into the different categories such that changes in the dependent variables change the probability of membership in the target group. In this case, the model predicts the probability to fall in the reference category ("0"= low sexual risk-taking) as opposed to fall in the other groups ("1"= moderate sexual risk-taking and "2"= high sexual risk-taking). The different measures of parenting practices at age 12 (parent-child connectedness, parental monitoring, and parent-child sexual communication) plus other potential confounders related to sociodemographic characteristics (age, gender, and religion), schooling status (if still enrolled in school or not), and residential trajectories (if always lived in Bandjoun, and if always lived in a rural environment) were entered on the first model (Model 1). As parenting dimensions in early adolescence are expected to be indirectly associated with sexual risk-taking in young ages through delayed onset of sexual activity, we entered a variable related to whether or not respondent has initiated sex by age 15 in the second model (Model 2).

The hypothesis related to the variability of parenting practices was tested using analyses of variance. We compared the means of measures of parental knowledge about out-of-home activities and parental monitoring across three developmental stages: the childhood (respondents' assessment of parenting practices at age 6), the early adolescence (respondents' assessment of parenting practices at age 12), and the young age (respondents' assessment of parenting practices at the time of the survey). A repeated measure ANOVA was performed to detect if there are significant differences between the different assessments.

Finally, the effect of the consistency (versus inconsistency) of parenting practices was explored by conducting a multivariate logistic regression. To measure consistency in

parenting, we used two variables that recapitulate an individual's experiences at the three time points. The two variables are polychotomic. The different categories for the quality of parent-child relationships are: "0"= Very satisfying at the three time points, "1"= Satisfying at the three time points, "2"= Fairly to not satisfying at the three time points, and "3"= Others patterns. For the amount of parental knowledge about out-of-home activities, the categories are: "0"= A lot at the three time points, "1"= Enough at the three time points, "2"= Few times to never at the three time points, and "3"= Others patterns.

RESULTS

Description of sexual risk-takers

Table 4 presents the percentage distribution of the respondents according to measures of sexual-risk taking in young ages. Overall, the chi-squared test revealed that sexual-risk takers are male ($p < 0.001$). In all, 57.9% of males and 86.4% of females reported having had no sex or only one sexual partner in the last twelve months. Of respondents who reported having had more than one sexual partner, 11.3% of males and 2.9% of females said they had consistently used a contraceptive method with each of their sexual partners, 30.8% of males and 10.7% of males reported an inconsistent use.

[Insert Table 4 here]

Do parenting practices during early adolescence have long-term effects on sexual risk-taking in young ages?

In Table 5, we present correlations among parenting variables and the measure of sexual risk-taking in young ages. It is important to note that the two measures of parental

monitoring during early adolescence were positively correlated with the quality of parent/child relationships. The early sexual debut was positively correlated with parental knowledge of out-of-home activities, parental approval of out-of-home activities and parent/child communication on general sexual issues during early adolescence. The measure of sexual risk-taking in young ages was negatively correlated with the three measures of parent/child sexual communication during early adolescence, and positively correlated with an early sexual debut. There were also some gender differences. Females reported more parent/child sexual communication during early adolescence than young males. Besides, more males reported an early sexual debut, and engaging in sexual risk behavior in young ages.

[Insert Table 5 here]

Table 6 shows the results from the multinomial logistic regressions predicting the long-term associations between parenting practices during early adolescence and sexual risk-taking in young ages. The results from the first model show that parental knowledge of out-of-home activities during early adolescence was directly associated with sexual risk-taking in young ages. Particularly, individuals who reported being asked about their out-of-home activities "few times", "very few times" or "never" were significantly more likely to exhibit a high sexual-risk taking in young ages ($e^b = 2.27$; $p < 0.05$). There was also an indirect path from parental knowledge of out-of-home activities during early adolescence to sexual risk-taking in young ages through the early onset of sex. After adding early sexual debut in the model, a lower parental knowledge of out-of-home activities during early adolescence remained associated with a high sexual risk-taking in young ages but the level of significance was reduced ($e^b = 2.03$; $p < 0.1$ in model 2). Parent-child discussion on general sexual issues

during early adolescence was not directly associated with sexual risk-taking in young ages. However, sexual communication with parents during early adolescence was significantly related to a lower odd of higher sexual risk-taking in young ages after introducing early sexual debut in the model ($e^{\beta} = 0.26$; $p < 0.1$ in model 2). Conversely, the quality of parent-child relationships and the parental approval of out-of-home activities during early adolescence were neither directly nor indirectly associated with sexual risk-taking in young ages.

With regard to the other covariates, the results from the first model (Model 1) indicate that an early sexual debut significantly increase the odds of being involved in moderate ($e^{\beta} = 3.49$; $p < 0.05$) or high ($e^{\beta} = 2.08$; $p < 0.05$) sexual risky behaviors in young ages. Having always lived in Bandjoun was associated with a reduced odd of demonstrating a moderate sexual risk-taking ($e^{\beta} = 0.29$; $p < 0.05$), suggesting that being connected to the community could also work as a protective factor against sexual risk-taking. Finally, the school enrollment which represents another important avenue of interactions with non-family members (peers and other adults) failed to be associated with the odds of sexual risk-taking in young ages. Individuals who were still enrolled in school exhibit a lower odd of moderate ($e^{\beta} = 0.92$) or higher ($e^{\beta} = 0.64$) sexual risk-taking, but the results are not significant.

[Insert Table 6 here]

Are parenting practices consistent over individuals' life course?

Table 7 shows the comparison of parenting practices for each assessment point. An examination of the means indicates a decline in the overall quality of parent-child

relationships and parental knowledge of out-of-home activities across assessments. For parent-child relationships, the proportion of those who reported being "very satisfy" with the exchanges that they have with their parents falls from 32.5 % at first assessment to 25.4% at the third assessment, whereas the proportion of those who reported being "fairly to not satisfy" increases from 16.2% at first assessment to 26.5% at the third assessment. With regard to the parental monitoring, 42.2% reported being asked "a lot" about their out-of-home activities at the first assessment while only 14.5% reported the same answer at the third assessment. Conversely, the proportion of those who reported being asked "few times to never" increases from 27.1% to 69.5%. The repeated measure ANOVA indicates that there was a significant effect for assessments for the quality of parent-child relationships ($F(2, 700) = 18.44, p < 0.01$) and parental monitoring ($F(2, 700) = 151.98, p < 0.01$), causing the hypothesis of an absolute stability in these two parenting practices to be rejected.

[Insert Table 7 here]

Is consistency in parenting a much more protective factor against sexual risk-taking in young ages?

Table 8 displays the results from the multinomial logistic regressions predicting the associations between consistency in parenting practices over time and sexual risk in young ages. There were no significant differences between individuals with respect to the amount of parental knowledge of out-of-home activities. The results for the quality of parent-child relationships indicate that the odds of demonstrating a high sexual risk-taking are significantly higher for individuals who experienced a stable pattern of fairly to not

satisfying relationships ($e^{\beta} = 2.92$; $p < 0.1$) and for individuals who experienced an inconsistent pattern of parent-child relationships ($e^{\beta} = 2.32$; $p < 0.1$).

[Insert Table 8 here]

DISCUSSION

The purpose of this study was to explore what a life course approach could reveal regarding the associations between parenting practices and sexual risk-taking in a sub-Saharan African context. We offered hypotheses related to the long-term effects of parenting practices during early adolescence, the variability in parenting practices over individuals' life course, and the effects related to the consistency (versus inconsistency) of the parenting practices over individuals' life course. These hypotheses were tested using a set of longitudinal retrospective data collected in a semi-rural area in Cameroon.

Overall, our descriptive results revealed that unmarried young people in the study context are quite engaged in high risk sexual behaviors. Surprisingly, although the percentage of young people who reported having had more than one sexual partner is fewer among females than among males; fewer females reported being involved in multiple partnerships with a consistent use of a contraceptive method. Previous research in Cameroon has documented that the rates of young females who were involved in risk behaviors when analyzed in isolation are higher. Indeed, young females are significantly less likely to report multiple partners, casual sex, and inconsistent use of condom.^{71, 72} Despite an interesting result showing that fewer females consistently use condom with casual partners⁷² studies that examine gender patterns of co-occurrence in risky behaviors are rare. It would be interesting to analyze these patterns in future research, using both samples of urban and rural youths.

Concerning parenting practices, two interesting results are highlighted in the study. The first result is that young females reported significantly more sexual communication with their parents or guardians during early adolescence than young males. Previous studies using subsamples of adolescents have highlighted this discrepancy^{39, 41}. One explanation put forward is that parents may perceive that their unmarried daughters are more vulnerable to social and health consequences of sexual activities. The second interesting result is the strong positive correlation between the quality of parent-child relationships and parental knowledge and approval of out-of-home activities during early adolescence. This correlation gives a reason to believe that the quality of parent-child relationship is important for parental indirect monitoring, in the sense that it may ease the self-disclosure or the acceptance of parent's rules.

Our multivariate analyses confirmed that parenting practices during early adolescence have some enduring influences on sexual risk-taking in young ages. Supporting our first two hypotheses, we found that a low level of parental knowledge of out-of-home activities during early adolescence increase the odds of children having their first sex by age 15, but also the odds of children demonstrating high risk sexual behaviors in young ages directly and through this first impact. Considering that the early onset of sexual activity has been identified as an heightened factor of sexual risk-taking in sub-Saharan African settings^{55, 56}, both these direct and indirect influences suggest that parental indirect monitoring is a dimension that is worth considering in explaining individual trajectories of sexual risk-taking from early adolescence to young ages.

There was also a marginal long-term effect of parent/child communication. Parent/child discussion on general sexual issues during early adolescence appeared to decrease the odds of children demonstrating high risk sexual behaviors in young ages. However, the effect appeared to be significant only after the inclusion of the early onset of sexuality in the model. The relevance of this result is twofold. First, it suggests that the influence of parent-child sexual communication on children sexual risk-taking in young ages could work through their effects on the timing of first sexual intercourse. A deep investigation of this mechanism, though beyond the scope of this article, is needed to broaden the conceptualization of the links between parent-child sexual communication and risky sexual behaviors. Second, the result has an implication for programmatic efforts by suggesting that an "early" parent-child communication is protective for high sexual risk-taking in young ages. The low levels of parent-child sexual communication shown by previous studies might raise concerns regarding the efficiency of programs aiming to promote safer sexual practices among young people by targeting parent-child communication as a complementary source of information on reproductive health. Hence, showing that parent-child sexual communication, when it starts during early adolescence, can actually be protective is quite important, even supposing that the effect is marginal.

The results of our investigation regarding the variability of parenting practices over time confirm our suspicion concerning the lack of stability in parenting practices. Our results show decreases in the quality of parent-child relationships and in the amount of parental knowledge about out-of-home activities. Analyses performed with repeated measure ANOVA display significant differences between the different assessments regarding these

two parenting practices. Parenting traits have indeed been presented as being variable depending on parental characteristics, children's behavior, and residential contexts.^{32, 57} Speculations in the literature are abundant to claim that children sexual behaviors promote changes in parenting practices as well. It has been argued for example that parents may use their monitoring to slow the onset of risky behavior, but also increase in response to preexisting risky behaviors.⁷³ With regard to parent-child sexual communication, scholars have suggested that parents may begin or intensify their communication with children once they realize or suspect that they are sexually active.¹⁰ These speculations have not yet resulted in empirical research, thus remain postulates rather than tested hypotheses. Addressing the variability in future research using refined longitudinal data will help clarify how the attributes of parenting change over time, how the change or stability can be relate to children sexual behavior over time, and how the patterns of diverse experiences ultimately contribute to sexual risk-taking in young ages.

One of our main interests in this study was to find out if consistency in parenting practices over time could constitute a more protective factor against sexual risk-taking in young ages. Our attempt to assess these effects regarding the amount of parental monitoring yields no significant result. On the other hand, our results indicate that consistent low levels of parent-child relationships and inconsistent patterns in parent-child relationships are associated with higher and significant odds of children demonstrating high risk sexual behaviors in young ages. Hence, both the inconsistent patterns of parent-child relationships and consistent pattern of poor relationships can be considered as deleterious.

Although this study provides new information on the effects of parenting based on longitudinal inquiries, there are some potential limitations that should be noted. First, the studied sample is relatively small (n=359). Thus, it was not possible for us to perform the multivariate analyses separately for females and males. Gender development theory posits that parenting practices would be differentially linked to risk-taking behavior of males and females. This assumption has been confirmed by empirical works elsewhere.^{74, 75} Whether or not the responses to parenting practices are gendered in sub-Saharan African settings is less investigated. Future research should help clarifying this issue with the use of large samples including adolescents and youths at different developmental stages.

Second, the measures of parenting practices have been assessed solely from the respondents' perspective. Previous research using parent-child dyads have shown that there are some inconsistencies between parents and children reports, suggesting that children reports may not reflect actual parental practices.⁷⁶ More to the point, the retrospective design used to collect the data that we exploited in the current study may have affected the quality of the respondents' reports. Retrospective data are considered to be subjected to recall errors. This problem is particularly pervasive when the recall events happened in a distant past. Because information was gathered by using key time points (i.e. age 6 and age 12, along with the time of the survey), our confidence in the fact that respondents associated their parenting experiences with the correct time period is quite high.

Notwithstanding these shortcomings, our study contributes to the search for life course and culture-informed evidence on the protective effects of good parenting on children's risky

sexual behavior. The findings are uniquely valuable in showing that early experiences in parenting practices have implications for sexual risk-taking in later life. In this manner, our results extend the previous findings in sub-Saharan African settings by showing that parents' behavior toward their adolescent children influences the involvement of their children in risky sexual behavior as they move into young ages. Our findings are also uniquely valuable in showing that the degree of parent-child connectedness and monitoring is not consistent over individual life courses, suggesting that it would be useful to investigate within-individual variation in parenting practices over time and its relationship with sexual risk-taking.

In sum, this is one of the rare studies that use a life course approach in order to examine the complexity of the relationships between parenting practices and sexual risk-taking. Our findings show that risk factors for high sexual risk-taking in young ages could be found in early adolescence in the form of poor relationships with parents, and the silence on sexual issues. They can also be found in the consistency of poor relationships with parents over the life course.

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TABLE 1. Distribution of reviewed studies' findings related to the association between parenting practices and children' sexual behavior in sub-Saharan African settings

Outcomes by parenting sub-constructs	Nature of the association		
	Protective association	Risk association	No association
PARENT-CHILD CONNECTEDNESS			
Parental presence (9 cross-sectional studies and 0 longitudinal study)			
Having had sex in the last 12 months	28 ^{a,*} , ^x		22 ^{a,*}
Having used a contraceptive method at last sex			22 ^{a,*}
Ever had sex	21 ^{a,*} , ^x ; 24 ^{a,*} ; 27 ^{a,*} ; 26 ^{a,\$} , ^x		25 ^{a,\$}
Life time numbers of partners			25 ^{a,\$} ; 20 ^{a,\$}
Had > 1 partner in the last 3 months			25 ^{a,\$} ; 20 ^{a,\$}
Ever had an unwanted pregnancy	21 ^{a,*} , ^x		
Having had sex in the last 4 weeks	21 ^{a,*} , ^x		
Sexual initiation by age 17	23 ^{a,\$}		
Multi-statements scale including statements related to support, love, care and quality of the relationships. (2 cross-sectional studies and 0 longitudinal study)			
Ever had sex	30 ^{a,\$}		
Life time numbers of partners			29 ^{a,\$}
Had > 1 partner in the last 3 months			29 ^{a,\$}
PARENTAL MONITORING (2 cross-sectional studies – with the same source of data – and 0 longitudinal study)			
Having had sex in the last 12 months	22 ^{a,*} ; 28 ^{a,*}		
Having used a contraceptive method at last sex			22 ^{a,*}
PARENT-CHILD COMMUNICATION ON SEXUAL ISSUES (5 cross-sectional studies and 1 longitudinal study)			
Having had sex in the last 12 months	28 ^{a,*} , ^y	22 ^{a,*}	
Having used a contraceptive method at last sex		22 ^{a,*}	
Had > 1 partner in the last 3 months			20 ^{a,\$}
Sexual initiation in early adolescence			49 ^{b,*}
Timing of sexual initiation	47 ^{a,*} , ^x		
Regular condom use	48 ^{a,\$}		

a Indicates that the study was cross-sectional in design

b Indicates that the study was longitudinal in design

* Indicates that the analyses were based on a sample of adolescents (aged 19 years old or less)

\$ Indicates that the analyses were based on a sample of adolescents and young people

x Indicates that the effects stand for females

y Indicates that the effects stand for males

Notes: Our review is limited to studies that have been published in a peer reviewed journal, and which include parenting practices as main explanatory variables; No association means that no statistical difference was found.

TABLE 2. Sample characteristics of unmarried 19-24-year-olds in the Cameroon Family and Health Survey, 1996-1997

Characteristic	Total (N= 359)	Males (N= 193)	Females (N= 166)
Mean			
Age (yrs.)	20.6	20.5	20.7
Still enrolled in school			
Yes	42.3	44.6	39.8
No	57.7	55.4	60.2
Religion			
Christian	91.4	87.1	96.4
Others	8.6	13.0	3.6
Residential trajectories			
Always lived in Bandjoun			
Yes	71.9	72.5	71.1
No	28.1	27.5	28.9
Always lived in a rural environment			
Yes	56.3	61.7	50.0
No	43.7	38.3	50.0

TABLE 3. Items used to measure parenting dimensions in the Cameroon Family and Health Survey

Dimension	Content	Measure
PARENT-CHILD CONNECTEDNESS		
Quality of parent/child relationships	Perception of the quality of the exchanges with the parent figure at each key moment	5-point scale (ranged from 1= "very satisfying" to 5= "not at all satisfying")
PARENTAL MONITORING		
Monitoring of out-of-home activities	Amount of parental knowledge regarding out-of-home activities at each key moment (Assessed by how often the parent figure asked about)	5-point scale (ranged from 1= "A lot" to 5= "never")
Approval of out-of-home activities	Level of parental approval regarding out-of-home activities at each key moment (Assessed by how often the parent figure agreed about)	5-point scale (ranged from 1= "A lot" to 5= "never")
PARENT-CHILD COMMUNICATION ON SEXUAL ISSUES		
Discussion on general sexual issues	Occurrence of the discussion on general sexual issues at each key moment	"Yes" or "No" question
Discussion on pregnancy prevention	Occurrence of the discussion on pregnancy prevention at each key moment	"Yes" or "No" question
Discussion on HIV/AIDS prevention	Occurrence of the discussion on HIV/AIDS prevention at each key moment	"Yes" or "No" question

Notes: Parenting dimensions have been assessed from respondents' perspective
 The key moments included: age 6, age 12, and the time of survey

TABLE 4. Among unmarried 19-24-year-olds, descriptive statistics of sexual risk-takers

Measure	Total (N= 359)	Males (N= 193)	Females (N= 166)
		p<0.001	
Had no sex or only one sexual partner	74.9	64.3	87.4
Had two or more sexual partners, used contraceptives consistently	5.9	8.8	2.4
Had two or more sexual partners, used contraceptives inconsistently	19.2	26.9	10.2

Note: Chi-square test were used to assess differences between male and female distributions

TABLE 5. Among unmarried 19-24-year-olds, correlations among measures of parenting dimensions during early adolescence[#], early sexual debut, and sexual risk-taking in young ages, CFHS 1996-1997

Measure	1	2	3	4	5	6	7	8
Parenting dimensions								
PARENT-CHILD CONNECTEDNESS								
1. Quality of parent/child relationships	1.00							
PARENTAL MONITORING								
2. Knowledge of out-of-home activities	0.28***	1.00						
3. Approval of out-of-home activities	0.16***	0.02	1.00					
PARENT-CHILD COMMUNICATION ON SEXUAL ISSUES								
4. Discussion on general sexual issues	-0.06	0.03	-0.05	1.00				
5. Discussion on pregnancy prevention	-0.09*	-0.03	-0.04	0.62***	1.00			
6. Discussion on HIV/AIDS prevention	-0.08	-0.03	-0.10*	0.61***	0.75***	1.00		
7. Early sexual debut (sexual initiation by age 15)	0.06	0.10*	0.10*	0.13**	0.07	0.06	1.00	
8. Sexual risk-taking in young ages [§]	0.08	0.07	0.05	-0.12**	-0.11**	-0.15***	0.17***	1.00
9. Gender (0 = males, 1 = females)	0.03	0.04	-0.02	0.24***	0.23***	0.19***	-0.11**	-0.24***

[#] Measures of parenting practices at age 12 [§] Risky sexual behaviors in the last 12 months

Level of significance: * p<0.1; ** p<0.05; ***p<0.001

TABLE 6. Results from the multinomial logistic regression analysis identifying the long-terms associations between parenting practices during early adolescence[#] and the odds of moderate or high sexual risk-taking versus the odds of low sexual risk-taking in young ages, CFHS 1996-1997

Variable	Model (1)		Model 2	
	Moderate	High	Moderate	High
PARENT-CHILD CONNECTEDNESS				
Quality of parent-child relationships				
Very satisfying (ref.)	1.00	1.00	1.00	1.00
Satisfying	0.60 (0.58)	1.27 (0.41)	0.67 (0.59)	1.34 (0.41)
Fairly to not satisfying	0.64 (0.76)	1.75 (0.46)	0.64 (0.76)	1.72 (0.46)
PARENTAL MONITORING				
Knowledge of out-of-home activities				
A lot (ref.)	1.00	1.00	1.00	1.00
Enough	0.70 (0.62)	1.01 (0.40)	0.66 (0.62)	0.99 (0.41)
Few times to never	0.58 (0.74)	2.27 (0.38)**	0.47 (0.75)	2.03 (0.39)*
Approval of out-of-home activities				
A lot (ref.)	1.00	1.00	1.00	1.00
Enough	1.72 (0.92)	1.72 (0.55)	0.32 (0.94)	1.49 (0.56)
Few times to never	2.39 (0.84)	1.82 (0.53)	1.75 (0.86)	1.58 (0.53)
PARENT-CHILD COMMUNICATION ON SEXUAL ISSUES				
Discussion on general sexual issues				
No (ref.)	1.00	1.00	1.00	1.00
Yes	0.91 (1.12)	0.33 (0.78)	0.54 (1.15)	0.26 (0.79)*
Other covariates				
Age	1.43 (0.14)**	1.42 (0.09)***	1.48 (0.14)***	1.45 (0.09)***
Gender (ref. = male)	0.16 (0.63)***	0.25 (0.34)***	0.20 (0.63)**	0.28 (0.34)***
Still enrolled in school (ref. = no)	0.90 (0.53)	0.64 (0.32)	1.13 (0.55)	0.70 (0.33)
Religion (ref. = Christian)	0.58 (0.88)	0.44 (0.58)	0.66 (0.89)	0.49 (0.58)
Always lived in Bandjoun (ref. = no)	0.29 (0.55)**	0.61 (0.37)	0.37 (0.57)*	0.68 (0.38)
Always lived in a rural environment (ref. = no)	1.35 (0.54)	0.94 (0.33)	1.16 (0.56)	0.85 (0.34)
Early sexual debut (by age 15)			3.49 (0.57)**	2.08 (0.36)**
- 2 log-likelihood	415.1	415.1	407.8	407.8
Total sample (N)	351	351	351	351

Model (1): Parenting variables + others covariates; Model (2): Parenting variables + other covariates + early sexual debut

Level of significance: * p<0.1; ** p<0.05; *** p<0.001

Notes: [#] Measures of parenting practices at age 12. Reflecting our concern to establish the temporal ordering between the constructs of parenting practices and the sexual outcomes, we only included respondents not engaged in sexual activity at age 12 (this consideration results in the exclusion of 8 individuals). The measures related to the discussion on specific sexual topics were not included in the models since they are strongly correlated with the measure related to the general discussion (See table 5).

The coefficients have been exponentiated in order to obtain the odds, standard errors are in brackets.

TABLE 7. Summary of variance analyses comparing the means of parenting practices at different developmental stages, CFHS 1996-1997

Assessments	Time point	Quality of parent-child relationships					
		Means			F	ANOVA results	
		Very satisfying	Satisfying	Fairly to not satisfying		Prob > F	
					Regular	Box	
1	Childhood (assessment at age 6)	32.5	51.3	16.2	18.44	0.0000	0.0000
2	Early adolescence (assessment at age 12)	28.2	51.6	20.2			
3	Young ages (assessment at the time of the survey)	25.4	48.2	26.5			
		Parental knowledge of out-of-home activities					
		Means			F	ANOVA results	
		A lot	Enough	Few to never		Prob > F	
							Regular
1	Childhood (assessment at age 6)	42.2	30.8	27.1	151.98	0.0000	0.0000
2	Early adolescence (assessment at age 12)	37.9	33.3	28.8			
3	Young ages (assessment at the time of the survey)	14.5	16.0	69.5			

TABLE 8. Results from the multinomial logistic regression analysis identifying the associations between consistency in parenting practices over time and the odds of moderate or high sexual risk-taking versus the odds of low sexual risk-taking in young ages, CFHS 1996-1997

Variable	Moderate	High
CONSISTENCY IN THE QUALITY OF THE RELATIONSHIPS WITH PARENTS		
Very satisfying at the three time points (ref.)	1.00	1.00
Satisfying at the three time points	1.93 (0.80)	1.34 (0.49)
Fairly to not satisfying at the three time points	3.06 (1.05)	2.92 (0.55) *
Other patterns	2.34 (0.79)	2.32 (0.48) *
CONSISTENCY IN THE AMOUNT OF PARENTAL KNOWLEDGE OF OUT-OF-HOME ACTIVITIES		
A lot at the three time points (ref.)	1.00	1.00
Enough at the three time points	0.84 (1.08)	0.61 (0.84)
Few times to never at the three time points	0.17 (1.31)	1.88 (0.63)
Other patterns	0.76 (0.79)	0.89 (0.58)
Other covariates		
Age	1.51 (0.14) ***	1.40 (0.09) ***
Gender (ref. = female)	0.16 (0.61) ***	0.25 (0.34) ***
Still enrolled in school (ref. = no)	0.98 (0.53)	0.71 (0.33)
Religion (ref. = Christian)	0.85 (0.88)	0.54 (0.59)
Always lived in Bandjoun (ref. = no)	0.32 (0.56) **	0.67 (0.37)
Always lived in a rural environment (ref. = no)	1.07 (0.55)	0.94 (0.33)
Early sexual debut (sexual initiation by age 15)	2.89 (0.53) *	1.97 (0.34) *
- 2 log-likelihood	408.1	408.1
Total sample (<i>N</i>)	351	351

Level of significance: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.001$

Note: The three time points are when respondents were 6 and 12, and at the time of the survey