Effects of Family Structure on Premarital Sexual Intercourse

Zacharie Tsala Dimbuene and Barthelemy Kuate-Defo

PRONUSTIC Research Laboratory & Department of Demography
University of Montreal, Canada

Contacts:
z.tsala.dimbuene@umontreal.ca
barthelemy.kuate.defo@umontreal.ca

ABSTRACT

This study examined the linkages between several types of family structure and premarital intercourse. Data were drawn from two surveys (N = 1,445 in 1996 and N = 2,465 in 2002) which collected retrospective information on family living arrangements at ages 6 and 12, and reproductive health outcomes. Using discrete-time hazard models, the study demonstrated that living with two biological parents, with a biological father, and in a monogamous two-parent family is associated with lower risks of premarital intercourse after controlling for family processes (parent/guardian-child communication, parent/guardian-child relationships, parental supervision, parental financial support, family changes and parental death).

Keywords: Family Structure; Family Processes, Adolescence and Youth; Premarital Sexual Intercourse

The linkages between family and child outcomes are widely documented in Western countries. Yet, little is known in developing world, especially in Sub-Saharan Africa. Recent studies have underscored the protective role of two-parent families on early sexual initiation (Albrecht & Teachman, 2004; Wu & Thomson, 2001), premarital birth (Wu, 1996), and other positive outcomes such as school performance (Heard, 2007) or child health (Gage, 1997; Omariba & Boyle, 2007). These studies have identified psycho-social mechanisms (e.g., parental conflict, parenting skills, parent-child relationships) that contribute to the family experiences of young people and affect subsequent outcomes (Miller, Benson, & Galbraith, 2001). They have also established that family socialization, social control mechanisms and parent-child communication, play significant roles in sexual initiation among young people (Jaccard, Dittus, & Gordon, 1996). For instance, good parent-child relationships are associated with late sexual debut, low frequency of sexual intercourse and fewer sexual partners (Miller et al., 2001). In sum, research showed that young people who grew up in two-parent families (often called *intact families*) exhibit better adjustment and positive outcomes compared to their counterparts in one-parent or neither-parent families.

Despite the abundant literature in the developed world about the role of family structure in shaping young people's sexual behaviors, especially sexual initiation, research in Sub-Saharan Africa has not addressed this issue adequately. The few exceptions that have examined these linkages are based on cross-sectional data and have not used family structure as the focal independent variable (Diop-Sidibé, 2005; Djamba, 2003; Ngom, Magadi, & Owuor, 2003; Tambashe & Shapiro, 1996; Thurman, Brown, Richter, Maharaj, & Magnani, 2006). Other studies had emphasized the effect of family processes on sexual initiation (Davis & Friel, 2001). They concluded that rather than family structure per se, family processes (e.g., parent-child communication, parental control, and family support) can be more influential. Finally, previous studies in both developed and developing

countries have used only one of the possible configurations of family structure within a sample; for a discussion, see (Schneider, Atteberry, & Owens, 2005). Consequently, findings about the associations between family structure and sexual initiation are inconsistent and are often non comparable (Miller et al., 2001; Popenoe, 1993).

This study extends previous research on this subject in Sub-Saharan Africa by using a large age span (10-29 years) rather than the conventional age-group 15-24 years, and a set of family structures to provide findings that are easily comparable because they are based on the same sample. Since young people may experience first sexual intercourse before age 15, and because age at first marriage is increasing in Sub-Saharan Africa (Mensch, Grant, & Blanc, 2006), many young adults remain celibate after age 25. Indeed, in the data used here, about half of the respondents aged 25-29 years were celibate at the time of the survey.

The remainder of this paper is organized as follows. Section two presents the theoretical foundations and the main hypotheses. Section three describes data and methods used in the research. Results are presented in section four. The final section is a discussion and concluding remarks.

THEORETICAL PERSPECTIVES AND HYPOTHESES

Studies in Western countries provide three types of explanations about the effects of family structure on premarital intercourse which are also relevant to Africa settings. These are the socialization perspective, social control perspective and family changes perspective (Albrecht & Teachman, 2004; 1994; Wu, 1996; Wu & Martinson, 1993). In any society, family is the main socializing agent for children: it provides guidance and supervision. Thus, socialization and social

control as the routes through which young people learn and internalize normative patterns are of prime importance for each society. In addition, families are not static but change over time as a result of a number of factors such as divorce, remarriage, and parental death. This study draws on the literature about child development and lifecourse to conceptualize the process by which family structure shapes young people's sexual debut in African settings.

Socialization perspective

The main assumptions of socialization can be summarized as follows. Children who grew up in two-parent families are expected to adapt well in their life compared to those in other families (Albrecht & Teachman, 2004; Wu & Martinson, 1993; Wu & Thomson, 2001), partly due to high emotional support, presence of the biological father in the home, parental modeling, and economic resources (Young, Jensen, Olsen, & Cundik, 1991). Father absence was correlated with higher risk of negative outcomes, including premarital intercourse (East, Jackson, & O'Brien, 2006; Ellis et al., 2003). Adolescents whose parents are not married tended to believe that premarital sexual intercourse was acceptable and therefore initiated sexual debut early (Wu & Thomson, 2001). Studies also found that adolescents who resided in two-parent families during childhood and adolescence took advantage of the presence of both genders in the home and internalized values and roles about love and commitment, and thereafter choose to delay sexual debut (Davis & Friel, 2001; Santelli, Lowry, & Robin, 2000). Since economic deprivation was found to hasten premarital intercourse, single-parent families (mainly mother-only) that are often poor can be detrimental for young people (Upchurch, Levy-Storms, Sucoff, & Aneshensel, 1998; Wu, 1996).

The impact of father presence on sexual debut was also found in African settings. For instance, living in family structure other than two-parent or father-only families correlated significantly with

higher risks of sexual initiation for girls in Rwanda but not for boys (Babalola, 2004). Ngom et al. (2003) examined the effect of parental presence on reproductive health outcomes in the slums of Nairobi among adolescents girls aged 12-19 years. These authors found that father presence reduced the risk of early sexual initiation and other risky behaviors such as frequency of sexual intercourse and unintended pregnancies. Due to economic deprivation at both national and household levels in Sub-Saharan Africa, researchers had argued that sexual behaviors among youths are economically motivated (Jewkes, Vundule, Maforah, & Jordaan, 2001; Kuate-Defo, 2004; Luke, 2003; Meekers & Calvès, 1999).

Social control perspective

Also called parental supervision or monitoring during adolescence, this perspective assumes that young people are naturally inclined toward deviance, but that bonds to conventional society cause most individuals to refrain from such behavior (Crockett, Bingham, Chopak, & Vicary, 1996). According to this perspective, two-parent families provide a better supervision than do other types of families. Because children gain a sense of self and independence during adolescence, parents and other family members are critically influential on the decisions they make in sexual matters (National Research Council & Institute of Medicine, 2005). In this vein, studies had also emphasized the role of a second caregiver (*often the father*), especially during adolescence when the authority of the mother weakens due to extra-familial factors, including peer influences and community opportunities (Roche et al., 2005; Simons, Chen, Simons, Brody, & Cutrona, 2006).

In African traditional societies, guidance and supervision of young people were a social and collective task, in which families play the most important role (Verhoef, 2005). Consequently, parents are expected to guide children in the frame of available time; other adults (uncles, aunts,

grandparents) could nevertheless relieve the immediate parents. In African settings like Bandjoun (west Cameroon) with an extensive practice of polygamy, it is also possible that parents, especially the father, lack time to supervise children. This can explain partly the differences observed in the high rates of risky sexual behaviors among young people living in polygamous families compared to monogamous ones. For instance, and relative to those in monogamous families, Nigerian adolescents who lived in polygamous family structures were more likely to engage in early sexual intercourse (Slap et al., 2003).

Family change perspective

Family changes following divorce, remarriage, or parental death affect the likelihood of first sexual intercourse (Albrecht & Teachman, 2004; Wu & Martinson, 1993). Authors have argued that young people who resided in stepfamilies were more likely to experience conflicts and stressful events, which thereafter can lead to premarital intercourse (Wu & Martinson, 1993). The parental death had been found to be a strong, traumatic and stressful event which is associated with negative outcomes for young people such as early school drop out (Case, Paxson, & Ableidinger, 2004; Gertler, Levine, & Ames, 2004). This explanation was also supported in African settings (Djamba, 1997; Thurman et al., 2006). In South Africa, both male and female orphans reported early onset of sexual initiation compared to non-orphans (Thurman et al., 2006).

"Complementary" perspective

It has been conjectured that the three hypotheses discussed above can be viewed fruitfully as complementary rather than competing (Wu & Thomson, 2001). For instance, both divorce and parental death represent stressful events for both parents and children that affect the daily life. Divorce and parental death often mark the beginning of various sequences and multiple changes in

the young people's family context, which can thereafter affect socialization and social control processes among young people, and subsequently allow young people to engage in risky sexual behaviors, including premarital intercourse.

Drawing on this literature, the study assumes that (*a*) young people from two-parent families initiate sexual intercourse later than those from other types of families because they internalize values about the time of love and the sense of dating, (*b*) young people living with a biological father in the home initiate premarital intercourse later than their counterparts without fathers in the home because fathers are stronger authority figures than are mothers, and that two-parent families are better able to supervise their children, (*c*) young people in monogamous families experience premarital intercourse later than their counterparts in neither-parent families. Nevertheless, young people in polygamous families are associated with greater risk of premarital intercourse, relative to those who are from monogamous families, and (*d*) these processes interact to mediate the influence of family structure on sexual initiation.

METHOD

Data and Samples

Data are drawn from two random and representative samples of the Cameroon Family Life and Health Surveys (CFLHS) carried out, in 1996 and 2002, under the auspices of the Population Observatory in Socio-Clinical Epidemiology (POSE) in Bandjoun, a semi-urban zone in the province of West Cameroon (Kuate-Defo, 2005). Given the population's ethnic diversity in the country (about 200 ethnic groups), sexual behaviors may vary considerably between ethnics. Thus, community-based studies are of great interest. In Bandjoun, sexuality is a taboo topic (Kouinche & Tagne, 1998). Households were randomly selected and individuals aged 10 years and above were

interviewed using face-to-face technique. Sample sizes were 2,377 and 4,950 men and women in 1996 and 2002, respectively. This study used two sub-samples of 1,445 in 1996 and of 2,461 young people in 2002 of both sexes, aged 10-29 years. Surveys collected retrospective data on family histories at ages 6 and 12, referred to as the inception of primary school and adolescence in Cameroonian society. Using these two markers makes it possible to address the recall bias inherent in retrospective data.

Measures

Dependent variable: Timing of premarital sexual intercourse. The dependent variable is the waiting time to premarital sexual intercourse. It is measured by the respondents' age at first intercourse (recorded in years). From an event history perspective, the occurrence of premarital sexual intercourse at each age is defined as a single event and the nonoccurrence of first sexual initiation is defined as censoring (e.g., young people who are not sexually experienced at the time of interview but might experience transition to sexual initiation in the future). In practice, the probability of sexual debut in each interval of time (a year) is estimated using a binary variable taking the values 1 if the premarital intercourse occurred and 0 otherwise. Respondents were asked the questions "have you ever had sexual intercourse?" and, if so, "how old were you when you had first sexual intercourse?" Age at first marriage was used to determine whether premarital intercourse occurred within or before marriage. The following questions addressed this issue: "have you ever been married?" and "how old were you when you first got married?" Preliminary results showed that 13 % and 10.1 % of young people were married at the time of the survey in 1996 and 2002, respectively. Among those ever married, 76 % and 68 % experienced their first sexual intercourse before marriage in 1996 and 2002, respectively.

Family structure. Defining and measuring *family structure* has been a subject of debate, and the resulting ambiguity in terminology has nurtured confusions about its effects on young people's sexual behaviors (Popenoe, 1993). In this study, family structures were constructed by placing emphasis on the presence or absence of biological parents. Subsequently, the presence of other adults and grandparents is emphasized to account for one of the features of African families. Family structure at a given age *t* in the lifecourse was captured by a series of dichotomous (yes/no) questions about the potential members of a typical African family in rural, semi-rural and urban areas: "With whom did you live at [age *t*]?" Responses included father, mother, brother/sister, cousins, uncle/aunt, grandfather/grandmother, friend, playmate, in institution, and alone. These items allowed the construction of six types of family structure. In Type 1 family structure, the presence of two biological parents in the home is the emphasis and is contrasted with all other family configurations. Type 2 family structure is comprised of the father-and-mother family as in type 1 family structure, mother-only family, father-only family and other family configurations. Type 3 family structure is concerned with the presence of the father co-residing in the home with the young person. Type 4 family structure distinguishes nuclear and extended families with one or two biological parents as opposed to other family configurations. Type 5 family structure put emphasis on the presence of grandparents within the family with at least one biological parent. Type 6 family structure accounts for the type of union, and contrasts monogamous versus polygamous families, and other types of families. These later include one- and neither-parent families. In the remainder of the paper, the six types of family structures are referred to as family structure 1 to 6.

Family processes and other correlates

Variables related to family processes that were previously identified as mediators of the effects of family structure on sexual initiation are described below. These variables were measured at ages 6 and 12 and are used in the modeling process as time-varying covariates.

Quality of parent-child relationships at age t was captured through the question "How did you see the quality of your relationships with your parents/guardian at age *t*?" Reponses ranged from 1 = *very good* to 5 = *difficult or bad*. This variable was reversely recorded.

Parent-child communication. Five yes/no questions captured parent/guardian-communication: "Did you ever have conversations with your parents/guardians about puberty, sexual education, STDs and HIV/AIDS, pregnancies, and alcohols or drugs at age *t*?" These items were summed and the score ranged from 0 to 5 (Cronbach-α ranged from 0.64 and 0.86 in the two-surveys).

Parental control. This study used direct measures of parental supervision at age *t*, which indicated whether parents had control over the young people's activities outside home using the question "Were your parents or guardians controlling your leisure at age *t*?" Responses ranged from 1 = *a lot* to 5 = *not at all*. Responses were reversely recorded.

Financial support was captured by the question "Who was giving you most of your pocket money at age *t*?" Responses (yes/no) to the question included: father and mother, mother, father, grandmother/grandfather, brother/sister/uncle/aunt, cousin, parents' friend, respondents' friend, institution, oneself, or other. In this study, parental financial support is a dummy variable coded 1 if adolescents received financial support from at least one biological parent and 0 otherwise.

Family changes were measured by comparing family structures at age 6 and 12, using a dichotomous variable coded 1 if young people experienced a change. Obviously, this is a crude

measure of family changes since multiple changes can occur both between ages 6 and 12, and between age 12 and the age at which young people experienced first sexual intercourse.

Parental survival. The question "What was the main reason why you weren't living with your biological parents at age *t*?" captured the parents' survival status. Responses were: mother and father died, father died, mother died, school, and other. This variable was coded 1 if at least one parent was dead and 0 otherwise.

Economic deprivation is a set of three variables. First, "What was the lighting type that you were using in the home at age *t*?" Responses were electricity, lamp, candle and other. This variable was coded 1 if the lighting mode was electricity and 0 otherwise. Second, the presence of radio or television at home captured by the question "Did you have a radio or a television at home at age *t*?" coded 1 = *yes* and 0 = *otherwise*. Third, the educational attainment of parents or tutor was measured by the question "What was the education level of the person in charge of you at age *t*" Responses were recorded as follow: 0 = *none*, 1 = *primary*, 2 = *high school* and 3 = *university*.

Involvement in prosocial activities. Three questions in a 5-point scale captured the involvement of young people in prosocial activities at age *t*. These include religious, associative and community activities. In 1996 and 2002, Cronbach-α was moderate and ranged from 0.52 to 0.57.

Other variables included age cohort (10-14 years, 15-19 years, 20-24 years and 25-29 years), gender (male vs. female), and migratory status (migrant vs. non-migrant).

Analysis plan

Bivariate and multivariate analyzes were performed. Kaplan-Meier life tables were used to determine the median age at premarital intercourse and the estimated probabilities of sexual initiation at each age. For comparison between 1996 and 2002, the probabilities were standardized, using direct standardization technique. For multivariate analyzes, discrete-time hazard modeling

was used because the timing of premarital intercourse can be viewed as an age-dependent process. Using the person-age observation (in a person-year file) as the unit of analysis, multivariate discrete-time hazard models using logistic function (Allison, 1984), were fitted to capture the effects of family structure during childhood and adolescence on the hazard of premarital intercourse. The hazard of premarital sexual intercourse can be parameterized with a general formulation as follows:

$$h[(t_i) \mid X_{(ti)}] = \exp[\alpha_{(ti)} + \beta * FS_{(ti)} + \delta * X_{(ti)} + \xi * Z]$$

where $h(t_i)$ represents the risk of premarital sexual intercourse at age t given that the individual i has not yet experienced a first sexual intercourse before t; β designs the effect of family structure, δ is a vector of parameters corresponding to time-varying covariates X which are referred to as potential mechanisms and control variables in each hypothesis; ζ is a vector of time-invariant covariates Z, and α represents the specific effect of being in a given age interval. The hazard coefficients represent the effects that being in the estimated variable category has on the odds of having a premarital intercourse relative to remaining virgin.

To test the hypotheses enunciated above, six models were fitted. The baseline model (Model 0) displays the effect of duration and age cohort on the risk of premarital intercourse. Model 1 includes family structure. Models 2 to 4 display the net effect of family structure in the presence of family processes related to socialization (parent-child communication and parent-child relationships), social control (parental supervision and financial support) and family changes (number of family transitions, parents' survival). Model 5 captures the effects of family structure, net of control of the six mechanisms and all other variables; then tests the complementary perspective that put together socialization and social control processes, and family changes.

RESULTS

Descriptive results

< TABLE 1 ABOUT HERE >

Table 1 presents the distribution of the samples (1996 and 2002) by family structure at ages 6 and 12. The frequency distribution of young people by age of co-residence status with their two biological parents when they were aged 6 and 12 showed as expected a consistent and declining trend in the percentage of young people who co-reside with their biological parents (mother-and-father, father-only, mother-only) as they move from childhood to adolescence.

In family structure 1, about three-quarters of young people aged 10-29 years old in Bandjoun belonged to a father-and-mother family type during childhood. By the time they are 12 years old, only 61 % of them in 1996 and 66 % in 2002 were still residing with their biological parents. As expected, there are more young people living in mother-only families than father-only families in family structure 2, over time and irrespective of age of co-residence. As regards to family structure 3 and by age 6, about 80 % and 77 % of young people were living in a family with a living co-residing father in 1996 and 2002, respectively. By age 12, only 67 % and 69 % of them were still living in a home with a present father in 1996 and 2002, respectively. In family structure 4, consistent with the higher proportions of young people who lived with their two biological parents when they were 6 or 12 years old than those who resided in other family configurations, there are significantly more young people who lived with their two biological parents in nuclear or extended families. Extended families with two biological parents predominate at age 6 (54 % and 33 % in 1996 and 2002, respectively) and 12 (24 % and 22 % in 1996 and 2002, respectively).

Family structure 5 indicates that the dominant configuration of co-residence of young people when they were 6 years old (72 % in 1996 and 2002) or 12 years old (over 55 % in 1996 and over 63 % in 2002) was the mother-and-father without grandparents. Family structure 6 that accounts for the type of union indicated that the proportions of young people who were living at 6 years of age with their two biological parents in monogamous families are 48 % in 1996 and 54 % in 2002 and decline by the time they reached 12 years old to 39 % in 1996 and 47 % in 2002. It is worth noting the extensive practice of polygamy in Cameroon. About one-fifth of young people resided in polygamous families at age 6 (over 26 % in 1996 and 20 % in 2002) and age 12 (21 % in 1996 and 18 % in 2002).

Table 1 also displays the percentage of young people who ever had premarital intercourse in 1996 and 2002. To be comparable, these percentages were standardized using direct standardization technique to adjust for age composition in the samples. Overall, 42 % and 35 % of young people ever had premarital intercourse in 1996 and 2002, respectively. This denotes a significant decline of 7 % ($t = 6.90$; $p < 0.001$). Median age at premarital intercourse rises from 16.9 years in 1996 to 17.7 years in 2002. The bivariate results provide preliminary evidence of the effects of family structure in childhood and adolescence on premarital sexual intercourse. However these relationships indicate only the average effects. Although significant differences were found, several types of family structure exhibit quite constant median age at premarital intercourse. Indeed, age at premarital intercourse did not vary much by family structure over time. In 1996, the values of median age at premarital intercourse ranged from 16.4 to 17.0 years while they varied between 17.4 and 18.3 years in 2002.

Multivariate Results

< TABLE 2 ABOUT HERE >

Because the probability of premarital intercourse is estimated, a baseline model was fitted to determine the age-specific effect at each interval of time. Results are reported in Table 2. Positive (or negative) coefficients increase (decrease) the likelihood of premarital intercourse when belonging to a specific category, compared with the reference category. Significantly, the older the young people, the higher the likelihood of premarital intercourse in 1996 (OR ranged from 4.3 to 42.5) and 2002 (OR ranged from 4.0 to 119.1). In other words, the risk of premarital intercourse increased significantly with the length of the exposure period. Examining the likelihood of premarital intercourse by current age, findings show that older young people were more likely to report they were sexually experienced when they were aged 10 – 14 years, compared to younger cohort. Although the same pattern is observed over time, this association was stronger in 1996 than in 2002.

< TABLE 3 ABOUT HERE >

The next step was to estimate the effects of each family structure on the risk of premarital intercourse using discrete-time hazard models. Although estimated coefficients are reported in the Tables, interpretations of the effects of family structure on premarital intercourse will be made using odds ratio (OR = exp(β)) that is the exponential values of the estimated coefficients. In family structure 1, compared with other types of family configurations, living with two biological parents is associated with lower risk of premarital intercourse in 1996 (b = - .17, p < .10) and 2002 (b = - .16, p < .05). These effects remained strong and statistically significant after controlling for family processes (Model 2 to Model 4), and after controlling for the six mechanisms identified above (Model 5). Model 5 shows that young people who resided with two biological parents are more

likely to postpone premarital intercourse (b = - .23, p < .05 and b = - .25, p < .05 in 1996 and 2002, respectively).

In family structure 2, living with two biological parents is associated lower risk of premarital intercourse as in Type 1. Thus, the emphasis is put on one-parent families, including mother-only and father-only families. Firstly, mother-only and father-only families do not influence significantly the risk of premarital intercourse. Secondly, while mother-only family is associated with higher risk of premarital intercourse in 1996 (b = .18, p = ns), it is associated with a lower risk of premarital intercourse compared to young people who resided in neither-parent families (b = - .11, p = ns), except in Model 4 and (for 2002) in which the association is somewhat significant (b = - .47, p < .10 in Model 4 and b = - .52, p < .10 in Model 5).

Results for family structure 3 show substantively and across models, that young people who resided with biological father have lower risk of premarital intercourse compared with their counterparts (in Model 1: b = - .22, p < .05 and b = - .20, p < .05, in 1996 and 2002, respectively). These effects become stronger than are gross effects after controlling for the socialization factors including parent-youth relationships and parent-youth communication about sexuality (Model 2 in 2002: b = -.26, p < .01), for parental financial support and parental supervision (Model 3 in 1996: b = -.30, p < .01), and for parental survival and family changes (Model 4 in 2002: b = -.27, p < .01). These results provide a strong support of the modeling role of fathers within the family in Cameroonian society. Model 5 shows that living with the biological father is associated with lower risks of premarital intercourse in 1996 (b = - .31, p < .01) and 2002 (b = - .29, p < .01). In other words, living with biological father decreased the risk of premarital intercourse by 27 % (OR = .73) in 1996 and 25 % (OR = .75) in 2002, respectively.

How likely are young people to experience premarital intercourse when living in nuclear or extended families is explored in family structure 4. Except nuclear two-parent families, other types of families poorly predict the risk of premarital intercourse. Indeed, living in nuclear two-parent families is associated with lower risk of premarital intercourse in Model 1 (b = - .38, p < .001 in 1996 and b = - .24, p < .05 in 2002) and the association persists in all models. Extended one-parent families provide mixed results in such a way that they exhibit both positive (in 1996) and negative effects (in 2002) on the risk of premarital intercourse. It was expected a negative effect of extended families on the risk of premarital intercourse. Indeed, the social control hypothesis states that two-parents are more likely to oversee their children; and extended families (one or two parents) would exhibit a greater supervision compared to nuclear one-parent families due to the presence of other adults in the home. But it is possible that economic hardship can explain partly the positive effect observed in 1996. Indeed, the lack of resources in one-parent families can be exacerbated with the presence of other adults in the home and can hamper positive outcomes among children. To some extent, extended two-parent families are associated the risk of premarital intercourse compared to neither-parent families. This result suggests that the presence of other adults in the home may provide positive roles and supervision over young people.

The presence of grandparents within the families is highlighted in family structure 5. Compared with neither-parent families, one or two-parent families hosting grandparents show lower risk of premarital intercourse (b = - .46, p < .05 in 1996 and b = - .17, p = ns in 2002). Nevertheless, the mechanisms through which the presence of grandparents in the families may be associated with lower risk of premarital intercourse in African settings are not well known today and call for further research. In fact, grandparents are rarely viewed as figures of authority despite their attachment to

traditional values about sexuality. In addition, they do not talk openly with their grandchildren about sexuality.

Polygyny is another trait of African families that can alter parental bonds and children's adaptation. Findings establish clearly that relative to other family configurations, monogamous two-parent families are associated with lower risk of premarital intercourse in Model 1 (b = - .25, p < .05 in 1996 and b = - .17, p < .10 in 2002). These effects increased significantly in the presence of family changes (Model 4: b = - .29, p < .001 in 1996 and b = - .27, p < .001). One explanation of this shift is that young people in two-parent families were less likely to experience changes and parental death than those in other families. Results (*not shown*) indicate that parental death was the main reason young people were not living with their parents at ages 6 and 12. Although polygamous two-parent families are associated with lower risk of premarital intercourse compared to other families across models (Models 1 - 5), these effects do not necessarily reach statistical significance.

DISCUSSION AND CONCLUDING REMARKS

This study has examined the effects of various family structures on the risk of premarital sexual intercourse. Using socialization, social control and instability and change perspectives, several findings have emerged. Firstly, young people from two-parent families are less likely to initiate premarital intercourse. There are strong and negative effects of living in two-parent families on the risk of premarital intercourse as found in previous studies both in developed countries (Albrecht & Teachman, 2004; Wu & Thomson, 2001) and developing countries (Babalola, 2004; Rwenge, 2003). These effects persisted in the presence of the family processes related to socialization (quality of parent/guardian-child relationships and parent/guardian-child communication about sexual topics), social control (parental supervision and parents' financial support) and family

changes (parental death and number of family transitions), thus providing support of the three theoretical perspectives. The significant effect of family remained, after controlling for the overall mechanisms, as shown in Model 5. Although parenting styles and skills may differ across time, within and between societies, this study provides strong evidence that parents are significant figures in the socialization and social control processes.

Secondly, young people who resided with their biological father during childhood and adolescence exhibited lower risk of premarital intercourse both in 1996 and 2002. These results are in the lines with previous research in African settings (Babalola, 2004; Ngom et al., 2003). They support the assumption that the biological father is an important figure within the families and, rather than being only a breadwinner, he provides guidance and supervision to young people. Previous research have highlighted the important role of the biological father in the Cameroonian society, stating that traditions sanction the authority of the father over family members and resources (Nsamenang, 2000). Additional analyzes in the study showed that two-parent families provide greater financial support than do other families. Financial support was associated with a lower risk of premarital intercourse (*results not shown*), which is consistent with conjectures from previous studies (Kuate-Defo, 2004; Meekers & Calvès, 1997).

Thirdly, young people in monogamous and polygamous families had lower risk of premarital intercourse compared to their counterparts in other types of family structure. In addition, young people in monogamous families showed lower risks of premarital intercourse than those in polygamous families. Despite the relative protective effect of living with two biological parents, the type of union appeared to be an important factor shaping young people's sexual behavior. This finding is consistent with a similar finding from a study on sexual behavior in Nigeria which

showed that young people in polygamous families were more likely to initiate sexual intercourse (Slap et al., 2003). Although polygamy is common in many societies, especially in Africa, understanding the paths through which it affects child's upbringing may be of great interest. In a recent review, Elbedour, Bart, & Hektner (2007) found that polygamy is associated with marital conflict, family violence, and large family size. They have argued that polygamous family life weakens the parent-child bonds, and reduces child's emotional satisfaction and psychological security. Together, these characteristics partly explain why young people who resided within these families exhibited a higher risk of premarital intercourse compared to those in monogamous two-parent families.

The study reported other interesting findings related to extended families and the presence of grandparents in the home. In lines with the common view that African families are extended, the study sought to understand how this characteristic could be detrimental or protective for premarital sexual intercourse. To some extent, associations between extended families and the risk of premarital intercourse can be interpreted with caution because they differ in sign and magnitude in 1996 and 2002. Findings in 2002 show that additional adults in the home lower the risk of premarital intercourse in one-parent families, but do not reach statistical significance (*Type 4*). Thus, the presence of other adults in one-parent families may be important and provide support for the social control perspective. The effect of extended two-parent families went in the expected direction. Living in extended two-parent families was associated with lower risk of premarital intercourse.

How extended families with grandparents may be protective or risky for young people is little understood in Sub-Saharan Africa. Researchers around the world have not reached a consensus

about the role of three-generation families on youth's positive adjustment. There is some evidence from the United States that teens from one-parent families with grandparents had similar or better educational and health outcomes than those in two-parent families (Deleire & Kalil, 2002). Nevertheless, further research is needed to understand the role of grandparents on sexual transition. In fact, grandparents can send mixed messages to young people, especially about parental supervision and discipline in the home. They can interfere positively or negatively on parenting skills in the home. Our findings indicate that families with grandparents are associated with lower risk of premarital intercourse, compared with neither-parent families.

In each family structure, Model 5 reports the effect of family structure when the six family processes are included. Overall, the significant effects of family structures observed in previous models remained, and then support the complementary perspective that the three perspectives can be viewed as complementary. In fact, socialization, social control and family changes are a part of a continuum of the child development and well-being. As the child grows, family processes also change and are necessary to ensure good adaptation and positive transitions among young people. In spite of the contribution of previous research in this field (Albrecht & Teachman, 2004; Wu & Thomson, 2001), some studies do not control for family processes and do not test the complementary perspective. Family processes are interactive and salient of the lifecyle of the individuals before marriage, especially in the domain of sexuality. Finally, using two independent and representative samples provides robust findings of the effects of family structures during childhood and adolescence on sexual debut.

Acknowledgements

This work was carried out as a part of the research program on "Reproductive Behavior, Population Health and Nutrition in Africa" of the PRONUSTIC Research Laboratory at the University of Montreal. The data collection and fieldwork activities were supported by the Rockefeller grants RF 97045 #82 and RF 97045 # 90. This study was supported by these grants as well as a doctoral fellowship grant from the Mellon Foundation. We thank Ann Biddlecom for her comments on an earlier version of this paper.

References

Albrecht, C., & Teachman, J. A. (2004). Childhood living arrangements and the risk of premarital intercourse. *Journal of Family Issues, 24*, 867 - 894.

Allison, P. D. (1984). *Event history analysis: Regression for longitudinal event data*. Beverly Hills, London, New Delhi: Sage Publications.

Babalola, S. (2004). Perceived peer behavior and the timing of sexual debut in Rwanda: A survival analysis of youth data. *Journal of Youth and Adolescence, 33*, 353 - 363.

Case, A., Paxson, C., & Ableidinger, J. (2004). Orphans in Africa: parental death, poverty and school enrolment. *Demography, 41*, 483 - 508.

Crockett, L. J., Bingham, C. R., Chopak, J. S., & Vicary, J. S. (1996). Timing of first sexual intercourse: The role of social control, social learning, and problem behavior. *Journal of Youth and Adolescence, 25*, 89 - 111.

Davis, E. C., & Friel, L. V. (2001). Adolescent sexuality: Disentangling the effects of family structure and family content. *Journal of Marriage and the Family, 63*, 669 - 681.

Deleire, T., & Kalil, A. (2002). Good things come in threes: Single-parent multigenerational family structure and adolescent adjustment. *Demography, 39*, 393 - 413.

Diop-Sidibé, N. (2005). Siblings and the timing of first sex in three major cities of Côte d'Ivoire. *International Family Planning Perspectives, 31*, 54 - 62.

Djamba, K. Y. (1997). Financial Capital and Premarital Sexual Activity in Africa: The Case of Zambia. *Population Research and Policy Review, 16*, 243 - 257.

Djamba, K. Y. (2003). Social capital and premarital sexual activity in Africa: The case of Kinshasa, Democratic Republic of Congo. *Archives of Sexual Behavior, 32*, 327 - 337.

East, L., Jackson, D., & O'Brien, L. (2006). Father absence and adolescent development: A review of literature. *Journal of Child Health Care, 10*, 283 - 295.

Elbedour, S., Bart, W., & Hektner, J. (2007). The relationship between monogamous/polygamous family structure and the mental health of Bedouin Arab adolescents. *Journal of Adolescence, 30*, 213 - 230.

Ellis, B. J., Bates, J. E., Dodge, K. A., Fergusson, D. M., Horwood, L. J., Petit, G. S., et al. (2003). Does father absence place daughters at special risk for early sexual activity and teenage pregnancy. *Child Development, 74*, 801 - 821.

Gage, A. J. (1997). Household structure and childhood immunization in Niger and Nigeria. *Demography, 34*, 295 - 309.

Gertler, P., Levine, D. I., & Ames, M. (2004). Schooling and parental death. *The Review of Economics and Statistics, 86*, 211 - 225.

Heard, H. E. (2007). The family structure trajectory and adolescent school performance. *Journal of Family Issues, 28*, 319 - 354.

Jaccard, J., Dittus, P. J., & Gordon, V. V. (1996). Maternal correlates of adolescent sexual and contraceptive behavior. *Family Planning Perspectives, 28*, 159 - 165, 185.

Jewkes, R., Vundule, C., Maforah, F., & Jordaan, E. (2001). Relationship dynamics and teenage pregnancy in South Africa. *Social Science and Medicine, 52*, 733 - 744.

Kouinche, A., & Tagne, E. (1998). Traditional Norms, Beliefs and Practices Regarding Adolescent Sexuality in Bandjoun (Western Cameroon) In B. Kuate-Defo (Ed.), *Sexuality and Reproductive Health during Adolescence in Africa with a Special Attention to Cameroon* (pp. 109 - 117). Ottawa: University of Ottawa Press.

Kuate-Defo, B. (2004). Young people's relationships with sugar daddies and sugar mummies: What do we know and what do we need to know? *African Journal of Reproductive Health, 8*, 13 - 37.

Kuate-Defo, B. (2005). Facteurs associés à la santé perçue et à la capacité fonctionnelle des personnes âgées dans la préfecture de Bandjoun au Cameroun. *Cahiers québécois de démographie, 34*, 1 - 46.

Luke, N. (2003). Age and Economic Asymetries in the Sexual Relationships of Adolescent Girls in Sub-Saharan Africa. *Studies in Family planning, 34*(2), 67-86.

Meekers, D. (1994). Sexual initiation and premarital childbearing in Sub-Saharan Africa. *Population Studies, 48*, 47 - 67.

Meekers, D., & Calvès, A. E. (1997). Main Girlfriends, Girlfriends, Marriage and Money. *Health Transition Review, Supplement*(7), 361-375.

Meekers, D., & Calvès, A. E. (1999). Gender differentials in adolescent sexual activity and reproductive health risks in Cameroon. *African Journal of Reproductive Health, 3*, 51 - 67.

Mensch, B. S., Grant, M. J., & Blanc, A. K. (2006). The changing context of sexual initiation in Sub-Saharan Africa. *Population and Development Review, 32*, 699 - 724.

Miller, B. C., Benson, B., & Galbraith, K. A. (2001). Family relationships and adolescent pregnancy risk: A research synthesis. *Developmental Review, 21*, 1 - 38.

National Research Council, & Institute of Medicine. (2005). *Growing up global: The changing transitions to adulthood in developing countries*. Washington, D.C: The National Academy Press.

Ngom, P., Magadi, M. A., & Owuor, T. (2003). Parental presence and adolescent reproductive health among the Nairobi urban poor. *Journal of Adolescent Health, 33*, 369 - 377.

Nsamenang, A. B. (2000). *Fathers, families, & child well-being in Cameroon: A review of literature*. Philadelphia: National Center on Fathers and Families.

Omariba, D. W., & Boyle, M. H. (2007). Family structure and child mortality in Sub-Saharan Africa: Cross-national effects of polygyny. *Journal of Marriage and Family, 69*, 528 - 543.

Popenoe, D. (1993). American family decline, 1960-1990: A review and appraisal. *Journal of Marriage and the Family, 55*, 527 - 542.

Roche, K. M., Mekos, D., Alexander, C. S., Astone, N. M., Bandeen-Roche, K., & Ensminger, M. E. (2005). Parenting influences on early sex initiation among adolescents: How neighborhood matters. *Journal of Family Issues, 26*, 32 - 54.

Rwenge, M. (2003). Poverty and sexual risk behaviour among young people in Bamenda, Cameroon. *African Population Studies, 18*, 91 - 104.

Santelli, J. S., Lowry, R., & Robin, L. (2000). The association of sexual behaviors with the socioeconomic status, family structure and race/ethnnicity among U.S. adolescents. *American Journal of Public Health, 90*(10), 1582 - 1587.

Schneider, B., Atteberry, A., & Owens, A. (2005). *Family matters: Family structure and child outcomes*. Alabama: Alabama Policy Institute.

Simons, L. G., Chen, Y., Simons, R. L., Brody, G., & Cutrona, C. (2006). Parenting practices and child adjustment in different types of households. A study of African American families. *Journal of Family Issues, 27*, 803 - 825.

Slap, G. B., Lot, L., Huang, B., Daniyam, C. A., Zink, T. M., & Succop, P. A. (2003). Sexual behaviour of adolescents in Nigeria: Cross-sectional survey of secondary school students. *BMJ, 326*, 1 - 6.

Tambashe, B. O., & Shapiro, D. (1996). Family background and early life course transitions in Kinshasa. *Journal of Marriage and the Family, 58*, 1029 - 1037.

Thurman, T. R., Brown, L., Richter, L., Maharaj, P., & Magnani, R. (2006). Sexual risk behavior among South African adolescents: Is orphan status a factor? *AIDS Behavior, 10*, 627 - 635.

Upchurch, D. M., Levy-Storms, L., Sucoff, C. A., & Aneshensel, C. S. (1998). Gender and Ethnic Differences in the Timing of First sexual Intercourse. *Family Planning Perspectives, 30*(3), 121-127.

Verhoef, H. (2005). 'A child has many mothers'. Views of child fostering in Northwestern Cameroon. *Childhood, 12*, 369 - 390.

Wu, L. L. (1996). Effects of family instability, income, and income instability on the risk of a premarital birth. *American Sociological Review, 61*, 386 - 406.

Wu, L. L., & Martinson, B. C. (1993). Family structure and the risk of a premarital birth. *American Sociological Review, 58*, 210 - 232.

Wu, L. L., & Thomson, E. (2001). Race differences in family experience and early sexual initiation: Dynamic models of family structure and family change. *Journal of Marriage and the Family, 63*, 682 - 696.

Young, E. W., Jensen, L. C., Olsen, J. A., & Cundik, B. P. (1991). The effects of family structure on the sexual behavior of adolescents. *Adolescence, 26*, 977 - 986.

Table 1

Percentage Distribution of Young People by Family Structure at age 6 and 12, percentage who ever had premarital intercourse, and median age at premarital intercourse, Bandjoun (West Cameroon) in 1996 (n = 1,445) and 2002 (n = 2,461)

	Family structure by age 6		Family structure by age 12		% who ever had sex	Median age at first sex	% who ever had sex	Median age at first sex
	1996	2002	1996	2002	1996		2002	
Family Structure								
Type 1								
Father-and-Mother	74.7	74.6	60.8	65.8	42.7	17.0*	32.3	17.9†
Other relatives	25.3	25.4	39.2	34.2	52.5	16.6	36.9	17.5
Type 2								
Father-and-Mother	74.7	74.6	60.8	65.8	42.7	17.0†	32.3	17.9†
Mother-only	7.1	7.7	8.8	9.8	55.9	16.4	29.1	17.3
Father-only	5.0	2.3	6.0	2.7	40.3	16.7	29.8	18.3
Other relatives	13.3	15.4	24.4	21.6	55.2	16.7	41.8	17.4
Type 3: Father's presence								
No	20.3	23.0	33.2	31.5	55.4	16.5*	37.6	17.4*
Yes	79.7	77.0	66.8	68.5	42.6	17.0	32.2	17.9

Table 1

Continued

Type 4								
One parent, nuclear	7.3	7.2	7.8	8.0	46.7	16.4*	29.8	17.6†
One parent, extended	4.8	2.8	7.0	4.6	53.6	16.6	27.9	18.0
Two parents, nuclear	20.7	41.6	17.2	36.2	40.1	16.6	33.1	17.9
Two parents, extended	54.0	33.0	43.5	29.6	43.7	16.8	31.2	17.8
Other relatives	13.3	15.4	24.4	21.6	55.2	16.7	42.2	17.4
Type 5								
One parent, no grandparents	11.3	9.6	13.8	11.7	49.1	16.5†	29.5	17.5†
One or Two parents, with grandparents	3.7	2.9	3.6	2.9	37.7	16.4	35.7	17.8
Two parents, no grandparents	71.8	72.2	58.2	63.7	43.1	17.0	32.1	17.9
Other relatives	13.3	15.4	24.4	21.6	55.2	16.7	41.8	17.4
Type 6								
Two parents, monogamous	47.8	54.4	39.0	46.5	40.2	17.2*	31.2	17.9†
Two parents, polygamous	26.9	20.2	21.3	17.8	47.2	16.8	35.2	17.7
Other family configurations	25.3	25.4	39.7	35.8	52.5	16.5	36.9	17.5

Note: Significance testing is based on Wilcoxon test for homogeneity across survival strata in Kaplan-Meier life tables. †$p < .10$. *$p < .05$.

Table 2

Logistic Estimates of the Duration-specific Effects on Premarital Sexual Intercourse (1996 and 2002)

	1996		2002	
Predictor	*B*	*SE B*	*B*	*SE B*
Duration (*≤ 11 years*)				
12 years	1.46***	.26	1.39***	.32
13 years	2.52***	.20	2.51***	.25
14 years	3.16***	.19	3.53***	.23
15 years	3.61***	.19	3.93***	.23
16 years	3.75***	.20	4.42***	.22
17 years & +	3.73***	.19	4.78***	.22
Age cohort (*10-14 years*)				
15-19 years	1.89***	.51	.92*	.44
20-24 years	1.83***	.51	1.39***	.45
25-29 years	1.88***	.52	1.44***	.46

†p < .10. *p < .05. **p < .01. ***p < .001.

Source: CFHS-1996 and CFHS-2002

Table 3

Logit Estimates of the Effects of Family Structure in Discrete-Time Hazard Models

	Model 1		Model 2		Model 3		Model 4		Model 5	
Family Structure	1996	2002	1996	2002	1996	2002	1996	2002	1996	2002
Type 1 (*Other families*)										
Father-and-Mother	-.17† (.09)	-.16* (.08)	-.18† (.10)	-.22* (.09)	-.21* (.10)	-.20* (.10)	-.21* (.10)	-.24*** (.09)	-.23* (.11)	-.25* (.11)
Type 2 (*Neither-parent family*)										
Father-and-Mother	-.16 (.12)	-.23* (.09)	-.15 (.12)	-.28*** (.10)	-.21 (.15)	.32* (.14)	-.21† (.12)	-.28*** (.10)	-.25† (.15)	-.34* (.14)
Mother-only	.18 (.18)	-.11 (.17)	.24 (.19)	-.09 (.17)	.19 (.20)	-.14 (.20)	.19 (.19)	-.13 (.17)	.14 (.21)	-.19 (.20)
Father-only	-.22 (.23)	-.38 (.27)	-.25 (.23)	-.43 (.28)	-.31 (.25)	-.48 (.29)	-.36 (.24)	-.47† (.28)	-.40 (.25)	-.52† (.29)
Type 3 (*Lived without his/her father*)										
Lived with his/her father	-.22* (0.09)	-.20* (.09)	-.25* (.10)	-.26** (.09)	-.30** (.11)	-.27* (.11)	-.27* (.11)	-.27** (.09)	-.31** (.12)	-.29* (.11)
Type 4 (*Neither-parent family*)										
Nuclear one-parent	-.05 (.19)	-.15 (.17)	-.05 (.20)	-.15 (.18)	-.13 (.21)	-.21 (.20)	-.11 (.19)	-.19 (.26)	-.18 (.22)	-.25 (.20)

Table 3

Continued

Extended one-parent	.14	-.26	.20	-.24	.11	-.27	.13	-.28	.06	-.35
	(.21)	(.26)	(.21)	(.26)	(.23)	(.27)	(.22)	(.26)	(.24)	(.27)
Nuclear two-parent	-.38***	-.24*	-.39**	-.28***	-.48***	.32*	-.44***	-.30***	-.51***	-.36*
	(.14)	(.10)	(.15)	(.11)	(.17)	(.14)	(.15)	(.11)	(.18)	(.14)
Extended two-parents	-.07	-.22*	-.08	-.28*	-.15	-.31*	-.12	-.27*	-.18	-.34*
	(.12)	(.11)	(.12)	(.11)	(.17)	(.15)	(.13)	(.12)	(.15)	(.15)
Type 5 (*Neither-parent family*)										
One-Bio, No grandparents	.02	-.13	.04	-.13	-.01	-.19	-.02	-.15	-.06	-.22
	(.16)	(.16)	(.17)	(.16)	(.19)	(.19)	(.17)	(.16)	(.19)	(.19)
One/Two-Bio, with grandparents	-.46†	-.17	-.48†	-.18	-.53†	-.23	-.54*	-.24	-.56*	-.30
	(.26)	(.23)	(.27)	(.24)	(..27)	(.25)	(.27)	(.24)	(.28)	(.25)
Two Bio, No grandparents	-.14	-.24*	-.14	-.29***	-.19	-.33*	-.18	-.28***	-.21	-.35*
	(.12)	(.10)	(.12)	(.10)	(.15)	(.14)	(.12)	(.10)	(.15)	(.14)
Type 6 (*Neither-parent family*)										
Two parents, Monogamous	-.25*	-.17†	-.27***	-.23*	-.30***	-.21*	-.29***	-.27***	-.31***	-.27*
	(.10)	(.09)	(.10)	(.09)	(.11)	(.11)	(.11)	(.10)	(.12)	(.11)
Two parents, Polygamous	-.04	-.16	-.03	-.19†	-.05	-.18	-.04	-.24*	-.06	-.24†
	(.11)	(.11)	(.12)	(.11)	(.12)	(.12)	(.12)	(.12)	(.13)	(14)

Table 3

Continued

Model 1: Gross Effects of family Structure

Model 2 expands Model 1 by including parent/tutor-child relationships and parent/tutor-child communication about sexuality.

Model 3 expands Model 1 by including parental supervision and parents' financial support.

Model 4 expands Model 1 by including number of transitions and parents' survival.

Model 5 expands Model 1 by including the six mechanisms in previous models.

Note: Controls in these models include duration, age, gender, migratory status, socioeconomic variables (education for parent or guardian, lighting mode, and possession of radio/TV). Standard Errors are reported in parentheses. Reference category is reported in italics for each type of family structure.

†p < .10. *p < .05. **p < .01. ***p < .001.

Source: CFHS-1996 and CFHS-2002