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Gendered Differences in the Predictors of Sexual Initiation among Young Adults in Cebu, Philippines

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Abstract

Purpose—Social environment and family context exert substantial influence on adolescent sexual behaviors. These influences are especially important to examine in countries undergoing rapid demographic and social change. This study employs unique, intergenerational and longitudinal data (1998–2009) to examine the effects of parental, peer, and household influences on sexual initiation among young adults in Cebu, Philippines.

Methods—Intergenerational and longitudinal cohort data from the 1998 Cebu Longitudinal Health and Nutrition Survey (CLHNS) are analyzed to examine the effects of household, peer, family, and young adults' sexual attitudes on age at first sex by 2009 among young men and women. Gender-stratified Cox proportional hazards models and Cox regression models are used to model time to first sex.

Results—Household, family, peer, and individual characteristics have disparate influences on sexual initiation among Filipino boys and girls. Boys' sexual initiation was positively associated with urbanicity, household wealth, and the presence of a family member working abroad, whereas for girls, these variables had no significant effects. Unique effects were also found for girls - mother's education was negatively associated, and girls' number of siblings was positively associated, with higher hazards of sex. Additionally, the effects of some variables on the

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occurrence of first sex differed across time, indicating that boys and girls may be differentially influenced by contextual characteristics across adolescence.

Conclusions—Amid substantial sociodemographic changes and persistence of traditional gender norms, this study highlights the importance of examining the unique influences and intersections of gender and context on sexual initiation in the Philippines.

Keywords

Philippines; sexual initiation; young adults; adolescents; gender; intergenerational

Introduction

Social environment and family context exert important influences on adolescent sexual behaviors and subsequent adult behaviors. Examination of these contextual influences is especially important in countries undergoing rapid demographic and social change, where young adults' social environments are much different from those of past generations.

Global trends indicate that age at puberty, and in some settings, age at first sex is decreasing while age at marriage is increasing¹. These changes have important implications for health and demographic outcomes². Young adults who have sex at an earlier age are more likely to truncate schooling due to pregnancy, not use contraception, acquire HIV or other sexually transmitted infections (STIs), and have higher rates of unwanted pregnancies^{3–6}.

Empirical evidence from global settings has indicated the strong influence of gender norms and the importance of socioeconomic inequality in determining the timing and patterns of adolescent sexual behavior, overall, and in explaining the differences between young men's and women's behavior^{7,8}. Longitudinal studies in rapidly changing, developing country contexts also indicate the importance of family characteristics in influencing individual sexual and fertility behavior, including mother's and siblings' fertility behavior, family structure, and family religiosity^{9–11}. Additionally, as the world becomes more interconnected, it is more likely that adolescents are exposed to alternate ideas and norms regarding sexuality and childbearing^{12,13}.

Similar to other global settings, the Philippines has witnessed rapid urbanization and industrialization, with concurrent changes in educational and employment opportunities. These broader contextual changes wield important influence on Filipino adolescents as they attempt to reconcile differences in norms and attitudes between older and younger generations¹⁴. As compared to their parent's generation, young Filipinos are more likely to delay marriage, to choose cohabitation over formal marriage, and to engage in premarital sex. The mean age at marriage has increased for men - from 24.8 in 1980 to 26.5 years in 2007 - and for women - from 22.4 in 1980 to 23.8 in 2007¹⁵. National survey data from 2002 indicate that 31% of men and 16% of women between the ages of 15 and 24 reported having premarital sex, an increase from 1994 levels¹⁶.

Studies from the Philippines indicate earlier sexual initiation among boys and disparate determinants of sexual behavior between young men and women^{17–20}. A recent analysis

found that 67% of men and 47% of women had sex before age 21, of whom 98% of men and 91% of women had sex before marriage²⁰. Changes in sexual initiation signify broader social changes, as well as potentially increased risk of pregnancy and STIs. In a nationally representative survey of young adults, only 15% of women and 28% of men reported that they used contraception during their first premarital sexual encounter and nearly 40% reported using the withdrawal method, a method that is less efficacious in preventing pregnancy and STIs, as compared to other methods¹⁶. These gendered patterns are mirrored by persistent norms regarding ‘appropriate’ sexual behavior for young men versus young women in the Philippines. Social norms typically allow more freedom for young men in expressing and experimenting with their sexuality, whereas for young women, these norms are more conservative and discourage young women from expressing interest in or knowledge about sex or contraception, especially before marriage^{14,17,21}.

This study examines the effects of multiple, contextual influences on young adults’ sexual debut in the Philippines. Unique longitudinal and intergenerational data from adolescents and their mothers (1998–2009) are used to assess the independent and synergistic effects of multiple domains on adolescent lives – household characteristics, parental sociodemographic and marital characteristics, family and peer influences, and adolescents’ own sexual attitudes and behaviors from 1998 – to predict sexual initiation by 2009.

Methods

Sample and procedures

Data for this study come from the Cebu Longitudinal Health and Nutrition Survey (CLHNS), a longitudinal study of Filipino mothers and their children born in 1983–84. The study location, Metro Cebu, is located on the island of Cebu and is the second largest metropolitan area in the Philippines. (Further details of the study are described elsewhere^{22,23}).

This analysis focuses on data collected in 1998 from mothers and their children (index children - ICs), when the ICs were approximately 15 years old. ICs were followed as long as they remained in the survey and follow-up data was provided by the ICs in 2002, 2005, and 2009. The analytic sample comprises ICs who had not had sex prior to 1998 (98% of females and 81% of males) and who were living with their mothers at the time of the 1998 survey. An additional 28 females and 1 male (2% of sample) were excluded based on their reports in the 2005 survey of forced first sexual intercourse. (We did not have this measure available to us in other surveys.) The final sample includes 1,781 mother-and-child pairs, including 838 girls and 943 boys.

Measures

Age at first sex—The outcome variable is age at first sex, as reported by the ICs in 2002, 2005, and 2009. Reports of first sex were abstracted for all ICs who participated in the 2009 survey; if absent or lost to follow-up by 2009, previous data points were used. Participants who had not had sex by 2009 were right censored at their age during the 2009 survey. For

5% of boys and 14% of girls, the age at first sex was reported as occurring during the same year as marriage; therefore, their responses were right censored at age of marriage.

Household characteristics—The first block of variables includes household characteristics of the ICs in 1998: number of persons in the household, nuclear versus extended family household, household wealth, and an urbanicity score of the household's barangay. The household wealth index was constructed using housing construction indicators and ownership of household assets (e.g., type of toilet, owns refrigerator, etc.)^{24,25}. The urbanicity scale was constructed following a modified version by Dahly and Adair of CLHNS data²⁶. Principal component analysis was performed on five categories of variables relating to urbanization: population size, population density, communication infrastructure, availability of transportation, and presence of markets. Only the first component was necessary based on results of parallel analysis²⁷.

Mother's sociodemographic and marital characteristics—Mother's age, education, religiosity, number of living children, and presence of the IC's father in the household were included. Religiosity was determined by church attendance, with mothers attending church at least once a week considered to be 'religious'. In addition, two measures of women's status found to be predictive of sexual debut among CLHNS adolescents in an earlier study²⁰ were included: whether the husband turned over all income to the mother and an interviewer-determined measure of whether the woman, her household, and her children were "well-kept", a locally developed measure of women's status (see²⁰ for further description).

Mother-child relationship—This set of variables included the mother's educational aspirations for the IC and the reported communication and closeness between the mother and IC. Mothers were coded as having high educational aspirations if they wished the IC to graduate from college. High mother-child communication was determined if both mother and child separately reported they had discussed at least two of seven topics (e.g., friendships, sex, and family planning). Similarly, if both mother and IC separately reported being close to each other, the mother-child pair was rated as being close.

Peer and family influences—This set of variables included: perception of friends' sexual behavior, having a sibling less than 20 years old in a romantic relationship or who had children, having a family member or friend working abroad and contributing to the household income, and a scale of the mother's reported adolescent behaviors. Perception of friends' sexual behavior indicated whether the IC reported at least one friend who had engaged in kissing or other sexual behaviors. Having a family member or friend working abroad and contributing to the household income was included as a proxy measure for exposure to global settings, a measure shown in other studies to be associated with adolescents' values regarding sexuality and other social issues¹³. Mother's reported adolescent behavior was a sum score (0–3) based on the mother's answers to 3 questions: if she had a boyfriend when she was 14–16 years old, if she had sex before she was 18 years old, or if she had engaged in premarital sex.

Young adult sociodemographic characteristics—This set of variables included age, completed education, educational aspirations, religion, religiosity, and media exposure. Age of male and female respondents was collected at the time of survey. Educational aspiration was categorized as wanting to achieve at least a college education, or not. Religion was categorized as Catholic or not. Religiosity was categorized as indicated previously. Media exposure was a sum scale based on exposure to television, radio, and reading magazines.

Young adult sexual attitudes and behaviors—This last set of variables comprised four variables: an index of the adolescent’s attitudes regarding dating and marriage, whether the child had heard of family planning, the child’s perception of their mother’s attitudes about sex, and whether the child reported any precoital behaviors. The adolescent attitude index was created via factor analysis based on the IC’s answers to four questions regarding the “appropriate age” for young people to have crushes, court, date, and marry, with higher scores corresponding to more conservative attitudes. The IC’s perception of their mother’s attitudes about sex was determined based on three questions regarding the “appropriate” ages at which boys and girls should have sex, and endorsement of the belief that “only married couples should have sex”. The child was coded as perceiving the mother “strongly disapproves” if the mother agreed with all three statements. Finally, the child was coded as having precoital behavior if the child reported “kissing, holding hands, more than kissing, or petting”.

Analysis

Cox proportional hazards models and Cox regression models for males and females were conducted to predict the hazards of first sex. For the multivariate models, variables were retained if they were significant ($p < 0.10$) for either males or females in the bivariate models. Wald tests confirmed fit of the full model. To evaluate the proportional hazards assumption of the models we performed tests of nonzero slope in a generalized linear regression of the scaled Schoenfeld residuals on time. Interaction terms were added to allow non-proportional variables to vary across time. We also tested the inclusion of later data points for key independent variables, but did not find enough variation across time points to warrant their inclusion.

Results

Table 1 depicts significant differences between male and female ICs in our analytic sample. Female participants were younger than male participants at the time of the survey, reflecting the approximate one-year difference between the fielding of the CLHNS survey among females, followed by male participants. Female participants were significantly more likely to have younger mothers, fathers who were present in the household, and mothers with higher educational aspirations for their children; however, they had mothers who were significantly less likely to be “well-kept” and with whom they reported to be close, as compared to male respondents. Females were also less likely to report friends who had engaged in sexual behaviors and mothers who reported adolescent sexual behaviors as compared to males; however, they were more likely to report a sibling with a relationship/kids and a family member working abroad, as compared to male participants. Lastly, girls were also more

likely to have higher educational aspirations, as well as higher levels of church attendance, media exposure, awareness of family planning, and perceptions that their mothers had more conservative attitudes regarding sex, as compared to boys.

Table 2 depicts the unadjusted and adjusted hazards ratios from the gender-stratified models predicting age at first sex. In total, and among the ICs in our analytic sample (had sex after 1998), 88 percent of boys and 70 percent of girls reported having sex prior to leaving the survey, with an average age at first sex of 18 years for boys and 20 years for girls (data not shown).

In the full, multivariate models, males living in urban areas (HR: 1.05; $p < 0.05$) and in wealthier households (HR: 1.05; $p < 0.10$) had higher hazards of first sex, as compared to males living in rural areas and in poorer households, though the effects of household wealth were marginal.

Mothers' sociodemographic characteristics had significant, but disparate effects on the hazards of first sex among boys and girls. Mothers' higher education and mothers' older age were significantly associated with lower hazards of first sex among their daughters (HR: 0.97; $p < 0.05$ and HR:0.98; $p < 0.05$, respectively). In contrast, mothers' age was positively associated with higher hazards of first sex among boys (HR:1.04; $p < 0.05$). Mother's number of living children (siblings of ICs) was associated with higher hazards of first sex among their daughters (HR:1.08; $p < 0.05$); however, there was no effect on sons.

Mothers' educational aspirations were associated with lower hazards of first sex among their sons (HR: 0.75; $p < 0.01$); however, there was no significant effect for daughters. Mothers' and daughters' simultaneous reports of communication were associated with higher hazards of first sex among daughters (HR:1.27; $p < 0.05$), with no effect found for sons.

For both boys and girls, the perception of friends' sexual behavior was strongly and significantly associated with higher hazards of first sex (HR: 1.26; $p < 0.01$ and HR:1.46; $p < 0.001$, respectively). For boys only, a significant and positive effect was found for remittances to the household from a friend or family member (HR:1.31; $p < 0.01$). Although the presence of adolescent siblings in relationships or with kids, and mothers' reported adolescent behaviors were significant in the bivariate models, they did not persist in the multivariate models.

Significant effects of adolescent sociodemographic characteristics were found for boys only, with the exception of completed education and educational aspiration being associated with lower hazards of first sex for girls (HR:0.83; $p < 0.05$ and HR:0.79; $p < 0.10$, respectively). Although educational attainment was associated with lower hazards of first sex among boys (HR:0.90; $p < 0.01$), higher hazards of first sex were found among boys with higher educational aspirations (HR:1.17; $p < 0.01$) and Catholic boys (HR:1.39; $p < 0.05$). Higher levels of media exposure were also marginally associated with higher hazards of first sex among boys (HR:1.15; $p < 0.10$).

For both boys and girls, the report of any precoital behaviors by the 1998 survey was associated with significantly higher hazards of first sex (HR:1.45; $p < 0.001$ and HR:3.28;

p 0.001, respectively). Lastly, girls with more conservative attitudes regarding dating, sex, and marriage had significantly lower hazards of first sex, as compared to girls with less conservative views (HR:0.82; p 0.001).

Proportional hazards tests for individual covariates indicated that the hazards (risk) of first sex among boys associated with mothers' age and boys' completed education varied across the follow-up period and, for girls, the risk associated with completed education and reports of precoital behaviors varied. Time by covariate interactions were included and indicate (see Table 3) that although mother's age is positively associated with higher hazards of first sex, the effect of mother's age on the occurrence of first sex among decreases with time. In contrast, the time/education interaction for boys reveals that the effect of education on the initiation of sex increases with time. In the girls' multivariate model, the coefficients for completed education and precoital behavior are allowed to vary across time in the girls' multivariate model. The effect of reported precoital behavior significantly decreases with time in the girls' model, while the effect of education behaves similarly as in the boys' model.

Discussion

Findings from this study indicate a constellation of household, peer and family, and individual sociodemographic characteristics that affect time to first sex among Filipino young adults. A key finding is that boys' and girls' sexual initiation were differentially influenced by household, family and peer, and individual sociodemographic characteristics. In this analysis, differential effects were found not only in the hazards associated with our independent variables, but also in the effect or persistence of these hazards across time.

Urban residence and household wealth were uniquely and positively associated with boys' sexual initiation, a finding mirroring previous studies in this setting^{19,20,28} and supporting the notion that elements of urban settings may hasten boys' initiation of sex. Evidence from the Philippines and other international settings point to the influences of urbanization, poverty, and changes in family structure that may reduce social support and facilitate greater engagement in risk behaviors^{14,28}. These influences may be particularly pronounced for Filipino boys who also have higher levels of engagement in non-sexual risk behaviors and higher likelihood of school dropout, as compared to Filipino girls^{29,30}.

Similar to other analyses from this setting, there were lower hazards of first sex among more educated boys and girls^{17,19}. This analysis also found that the protective effects of education increased similarly over the study period for both boys and girls, indicating that there are likely to be different forces affecting the risk of sex among the young adults who remain in the risk set for longer (i.e., those that remain abstinent). Further investigation could help to illuminate these different groups or 'types' of young adults in the cohort, as well as to further explore the effects of predictors at several time points on the initiation of sex (see for example,³¹).

Perhaps most importantly, this analysis examined the unique influences of social and family environment on sexual initiation among Filipino young adults. First, attitudinal measures of

both the young adult and the mother were highly predictive of age at first sex. The mother's stated educational aspiration for her child was a significant predictor for boys' sexual initiation, whereas the measure of attitudes regarding appropriate ages for dating and marriage was significant for girls. Mother's parity (IC's siblings) was also predictive of earlier sexual initiation among the girls. Similar to studies from other settings, these results indicate that parental expectations and childbearing practices may be transmitted intergenerationally¹⁰. This latter finding has two, possible explanations: exposure to a larger family size norm may have prompted female ICs to engage in sex earlier, and/or with more children in the household, the female ICs may have had less parental monitoring, thereby providing greater leniency and opportunity for sexual relationships.

Second, daughters from mother-daughter pairs who reported more communication in 1998 subsequently had higher hazards of first sex, as compared to other mother-daughter pairs. These findings are similar to U.S. studies and suggest that communication may consist of parents granting permission to their child to become sexually active³², or may be triggered by a parent's perception or concern about their child's sexual activity^{33,34}. Interestingly, this finding persisted even after controlling for reports of pre-coital behaviors; the integration of additional measures on the content and nature of communication between mothers and daughters would provide further exploration of this relationship.

A third, novel finding is that of higher hazards of first sex among boys who had a family member or friend working abroad and sending remittances to the household (HR:1.31; p 0.01). This effect persists after controlling for household wealth, household size, and father's presence in the household, indicating that this variable may be capturing exposure to other sexual and childbearing norms vis-à-vis friends' or family member's exposure to settings outside of the Philippines. This finding is similar to that from a recently-conducted study in three cities in Asia¹³ and suggests that as the world becomes increasingly interconnected, both economically and socially, family members living and working abroad may influence the attitudes, norms and practices within their home families through both financial and "social remittances"^{12,35}. Given the large proportion of Filipinos working abroad (approximately 10% of the population), further investigation is needed to understand the mechanisms underlying this finding, and why an effect was found only for boys.

A few caveats should be mentioned in the interpretation of these findings. First, the selection of the 1998 CLHNS survey provided the first direct reports of sexual attitudes and behaviors from the adolescents themselves. As such, and without direct reports from the ICs before 1998, we were unable to model hazards of sex for adolescents who had sex prior to 1998 (19% of the boys and 2% of the girls). We believe that this limitation is balanced, however, by the opportunity to incorporate independent variables, as reported by the adolescents themselves, which predict the subsequent outcome of occurrence of first sex. Further analysis shows that our results are not sensitive to inclusion of the omitted respondents. Similarly, continued follow-up would allow for the examination of sexual initiation among the 12% of boys and 30% of girls that did not report sex prior to 2009. Lastly, although we were able to exclude participants who reported a forced, first sexual experience in the 2005 CLHNS survey, this question was only asked at this one time point. Despite these considerations, this analysis examines an extensive set of individual-, family- and peer-level

predictors of the occurrence of first sex among a cohort of young Filipinos. Findings from this study corroborate and complement previous investigations from this setting and population, while also providing insight in to additional mechanisms that affect sexual initiation in this, and possibly other, global settings.

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Implications and Contribution Statement

Household, family, peer, and individual characteristics have disparate influences on sexual initiation among Filipino boys and girls. Among other factors, presence of household remittances and number of siblings emerged as important predictors for boys' and girls' sexual initiation, indicating the importance of contextual- and family-level influences on adolescent sexual initiation.

Table 1

Characteristics of households, families, and adolescents, according to sex: Cebu, Philippines, 1998–2000
CLHNS Survey

Characteristics	Total no. (%)	Males	Females
Total Sample	1584 (100%)	761 (48%)	823 (52%)
Household Characteristics			
Urbanicity scale			
urbanpc1 (mean) (range: -4.5–4.5)		0.5	0.5
Nuclear household (%)			
One nuclear family		72.1	70.0
Extended family household		12.6	15.2
Multi-nuclear family		15.2	14.9
Number of persons in household (mean) (range: 2–19)		6.8	7.0
Household wealth index (mean) (range: -2.6–7.18)		0.1	0.0
Parental Sociodemographic and Marital Characteristics			
Mothers			
Education (mean years) (range: 0–19)		7.4	7.4
Age (mean years) (range: 29–62)		42.8	41.4 ***
Religiosity: Attends weekly (%)		62.2	58.8
Number of mother's children alive in 1998 (mean) (range: 1–14)		5.2	5.1
Marital Characteristics			
Presence of father in household (%)		87.1	90.3 *
Husband turns over all income to wife (%)		62.0	59.3
Status of the mother (well-kept) (%)		68.6	39.4 ***
Mother-Child Relationship			
Mother's educational aspiration for child: college graduate (%)		64.5	77.8 ***
Closeness between mother and child (%)		84.5	77.6 ***
Communication between mother and child (%)		15.4	17.9
Peer and Family Influences			
Perception of friends' sexual behavior: kissing (%)		35.5	19.0 ***
Household member <20 relationship (%)		26.5	31.0 *
Family member working abroad (%)		55.6	58.1 **
Scale of mother's reported adolescent behaviors (mean) (range: 0–3)		1.1	0.95 *
Adolescent Characteristics			
Sociodemographic			

Characteristics	Total no. (%)	Males	Females
Age at 1998 survey (mean years) (range: 14–16)		15.6	14.4 ***
Completed education (mean years) (range: 0–11)		7.7	7.8
Educational aspiration: college graduate (%)		69.9	85.6 ***
Religion: Catholic (%)		94.7	95.5
Religiosity: Attends weekly (%)		58.9	71.7 ***
Media exposure index (mean) (range: 0–4)		3.2	3.4 ***
<u>Sexual Attitudes and Behaviors</u>			
Attitudes regarding dating and marriage index (mean) (range: –2.7–6.0)		0.1	0.0
Has heard of family planning (%)		64.1	80.8 ***
Perception of mother's attitude re: sex (strong disapp.) (%)		88.8	96.8 ***
Any reported precoital behavior (%)		30.7	25.3 *

Difference between males and females is significant at:

p 0.001;

**
p 0.01;

*
p 0.05

Table 2

Unadjusted and adjusted hazards ratios of CLHNS index children having sex by 2009 (age ~25), by sex

	Unadjusted Models		Full Model	
	Males N=761	Females N=823	Males N=761	Females N=823
Household Characteristics				
Urbanicity	1.05**	1.01	1.05*	1.03
Extended family household				
Extended family household	0.98	0.87	-----	-----
Multi-nuclear household	1.11	1.06	-----	-----
Number of persons in household	0.99	1.00	1.00	0.94
Household wealth	1.03 [†]	0.96*	1.05 [†]	1.01
Parental Sociodemographic and Marital Characteristics				
<u>Mothers</u>				
Education (years)	1.00	0.97**	0.98	0.97*
Age	0.99*	0.99	1.04*	0.98*
Religiosity: Attends weekly	1.05	0.86	-----	-----
Number of mother's children alive in 1998	0.98	1.03 [†]	0.97	1.08*
<u>Marital Characteristics</u>				
Presence of father in household	0.90	0.95	-----	-----
Husband turns over all income to wife	0.87	0.99	-----	-----
Status of mother (well-kept)	0.95	0.89	-----	-----
Mother-Child Relationship				
Mother's educational aspiration for child	0.94	0.71***	0.75**	0.88
Closeness between mother and child	1.05	0.83 [†]	1.03	0.95
Communication between mother and child	1.23**	1.39**	1.12	1.27*
Peer and Family Influences				
Perception of friends' sexual behavior	1.38***	1.86***	1.26**	1.46***
Household member <20 relationship	1.15*	1.25*	1.11	1.12
Family member working abroad	1.29**	1.16	1.31**	1.17
Scale of mother's reported adolescent behaviors	1.04	1.15**	1.01	1.08
Adolescent Characteristics				
Age	1.08	1.05	1.19*	1.10

[†]Hazards associated with time=0 (1998 survey)

	Unadjusted Models		Full Model	
	Males	Females	Males	Females
Completed education	1.01	0.90 ^{***}	1.09 ^{**}	1.08 ^{**}
Educational aspiration	1.08	0.63 ^{***}	1.17 [†]	0.79 [†]
Religion	1.34 [*]	1.26	1.39 [*]	1.33
Religiosity	1.00	0.91	0.94	0.88
Media exposure	1.17 [*]	1.09	1.15 [†]	1.13
<u>Sexual Attitudes and Behaviors</u>				
Attitudes regarding dating, sex, and marriage	0.90 [*]	0.75 ^{***}	0.99	0.82 ^{***}
Has heard of family planning	1.03	0.79 [*]	0.98	1.02
Perception of mother's attitudes re: sex (strong disapp.)	0.87	1.17	----	----
Any reported precoital behaviors	1.62 ^{***}	1.85 ^{***}	1.45 ^{***}	1.32 ^{***}
<u>Time-varying Coefficients</u>				
Mother's age × time			0.99 ^{***}	
IC's completed education × time			1.03 ^{***}	1.03 [*]
IC's reported precoital behaviors				0.86 ^{***}

p 0.001;

**
p 0.01;

*
p 0.05;

†
p 0.10

¹Hazards associated with time=0 (1998 survey)

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¹Hazards associated with time=0 (1998 survey)