

Age differences at sexual debut and subsequent reproductive health: Is there a link?

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Abstract

Background

Experiences at sexual debut may be linked to reproductive health risk later in life. Additionally, young women with older sexual partners may be at greater risk for HIV and sexually transmitted infections. This study examines the relationship between sexual debut with an older partner and subsequent reproductive health outcomes among 599 sexually experienced women aged 15-24 who utilized voluntary counseling and testing or reproductive health services in Port-au-Prince, Haiti.

Methods

Logistic regression analyses were conducted to establish, controlling for socioeconomic and demographic factors, whether age differences at first sex are significantly associated with STI diagnosis in the previous 12 months and family planning method use at last intercourse.

Results

Sixty-five percent of women reported sexual initiation with a partner younger or less than 5 years older, 28% with a partner 5 to 10 years older, and 7% with a partner 10 or more years older. There was a marginally significant relationship between sexual debut with a partner 5 to 9 years older and decreased likelihood of recent use of family planning methods compared with clients with a smaller age difference interval with their partners at sexual debut. Age differences were not linked to recent STI diagnosis.

Conclusions

These results indicate that programs focused on delaying sexual debut should also consider age mixing and power relations between young women and older men. Future research should consider whether wide age differentials at sexual debut are predictive of continued involvement in intergenerational relationships and other risky sexual behaviors.

Background

A woman's experience at sexual debut is associated with future reproductive health outcomes. Women who sexually debut at earlier ages are more likely to participate in high-risk behaviors and experience unintended pregnancy, HIV and sexually transmitted infections (STIs) [1-3]. Though research has examined how age differentials in current sexual relationships influence reproductive health, few studies have focused on how age differences between women and their partners at *first sex* affect subsequent reproductive health outcomes.

Relationships between young women and older men are considered normative in many cultural contexts. However, women in sexual relationships with older male partners have been found to have poor reproductive health outcomes, including increased risk for HIV infection [4-6]. Dissassortive sexual age mixing patterns can provide an entryway for HIV and STIs into the younger generation [6]. Research shows that adolescent women who are pregnant have, on average, older sexual partners compared to representative samples of sexually active adolescent women [7, 8]. In the context of poverty and gender inequity, intergenerational sex often involves sex in exchange for money or goods (transactional sex), characterized by less condom use and greater sexual coercion [5, 9-11].

The biological risks of intergenerational sex may be, in part, due to the power imbalances associated with the wide age differentials between partners [12, 13]. Particularly if a young woman is dependent on an older man for financial support, she may have little power to negotiate safe sex [10]. Furthermore, in instances where a young woman does assert herself, she may be faced with sexual and physical violence [14, 15].

One of the least developed countries in the world and the poorest in the Western hemisphere, Haiti has the highest HIV prevalence in Latin America and the Caribbean. HIV prevalence for females was estimated in 2005-06 to be 2.3%, with the highest rates among women ages 25-29 (3.5%) and 30-35 (4.1%) [16]. The HIV epidemic in Haiti is fueled by an unstable economy and violence against women. At the population level, 16% of women in union reported experiencing sexual violence in the past 12 months in 2000,[17]. Economic insecurity forces women to initiate sexual activity earlier and to depend on sexual relationships for financial support, often with older men [18, 19]. To date, little is known about the circumstances and ramifications of power imbalances and transactional sex experienced by young women in Haiti.

While it is apparent that partner age differences in current relationships may affect women's reproductive health, little is known about the effect of partner's age at sexual debut on reproductive health. This study begins to fill this gap by examining the association between intergenerational first sex and reproductive health outcomes among young women ages 15-24 in Port-au-Prince, Haiti.

Methods

The data for this study were collected in 2004 from youth users of five Fondation pour la Sante Reproductrice et l'Education Familiale (FOSREF) facilities in Port au Prince, Haiti. Young women and men between the ages of 15-24 years visiting one of four youth centers for reproductive health services, voluntary counseling and testing for HIV (VCT) or to receive condoms were approached for interview after they had received services. Additionally, young women visiting a reproductive health clinic for all ages were approached for interview after receiving services. Prior to initiating the interview, interviewers read a consent statement and received written informed consent from all respondents. The exit interviews were conducted in Creole

by trained interviewers from FOSREF using a structured questionnaire. The methods of the study have been described in further detail elsewhere [20]. A total of 478 young men and 807 young women were interviewed. This secondary data analysis relies on a subset of 599 young women who had initiated sexual activity at the time of the interview and excludes women who responded negatively or were missing data when asked if they had ever had sex (n = 84). Additionally, sexually experienced women with missing information about age of sexual initiation (n = 38) and age of partner at first sex (n = 106) were excluded.

The independent variable of interest is categorical and describes intergenerational first sex, or the difference between the age of the respondent and her partner. Respondents were asked, “What was the age of the person with whom you had your first sexual intercourse?” Responses were categorized into three binary variables: younger than the woman or less than 5 years older, 5-9 years older than the woman, and 10 or more years older than the woman. While there are no standard age difference categories [10], these age groupings were formulated based on other studies examining sexual mixing patterns between older men and younger women [4, 5, 9]. Outcomes of interest included binary variables indicating whether the respondent reported being diagnosed with an STI in a clinic in the previous 12 months and use of a family planning method to prevent pregnancy at last sex. Family planning methods included birth control pills, injectable contraceptives, implants, condoms, intrauterine devices, withdrawal and other traditional methods.

The following sociodemographic characteristics were included as categorical variables in all multivariate logistic regression models: number of years since sexual initiation (0-2 years, 3-5 years, and 6 or more years); religion (Catholic, Protestant, and other); whether the respondent was currently employed; current age (15-18, 19-

22, and 23-24); highest level of education completed (primary, secondary, and higher); and which type of facility the client was visiting (youth center or reproductive health clinic for all ages). Additionally, a dummy variable indicated the respondent's union status, coded as "1" if the respondent reported being married, living with her partner or *placé*, a socially binding union involving economic and sexual exchanges or a common-law marriage in Haiti, and coded as "0" if they reported not being in union [21]. Principal components analysis was used to create a standards of living index as a proxy measure for socioeconomic status for the entire sample of men and women [22]. Respondents were considered to be of low socioeconomic status if she was in the lowest 40% of the index, medium socioeconomic status in the next 40%, and high socioeconomic status for the top 20%.

Descriptive statistics were calculated. We used cross-tabulations of the age difference between the respondent and her first sexual partner, and characteristics of sexual debut to better understand the circumstances of first sex. Pearson's chi-squared tests were used to assess significant differences in sexual initiation by partner age difference. Bivariate and multivariate logistic regression models were used to examine the relationship between intergenerational first sex and reproductive health outcomes. All analyses were performed in STATA version 9.2.

Results

Among the 599 women who met inclusion criteria for this study, 28% experienced first sex with a partner 5 to 9 years older, while 7% had a first sexual partner 10 or more years older (Table 1). The majority of respondents (65%) initiated sexual activity with a partner younger or fewer than 5 years older. Less than 13% reported being diagnosed with an STI in the previous year, while 42% said they used a family planning method at last sex. More than half of the participants had ever been

pregnant, and 56% reported being in union. Less than 20% of respondents initiated sexual activity before age 15, with a mean age of sexual debut of 16.3 years. Most women (76%) had completed secondary education. The mean age of respondents was 20.5 years.

In cross tabulations of characteristics of the respondent's sexual debut by the age difference between her and the partner, 23% of women with partners 5 to 9 years older initiated sex before age 15, as compared to 19% of women with partners less than 5 years older and 14% with partners 10 or more years older (see Table 2).

Conversely, women who initiated sex with a partner who was 10 or more years older were the most likely to be age 18 or older at the time of first sex; these partners would have been close to their thirties or older. These differences were not statistically significant. Among women with first sexual partners 10 or more years older, 5% described their partner as their husband, while less than 1% of women with partners less than 5 years older and 2% with partners 5 to 9 years older did so. Among respondents with partners less than 5 years older, 96% described the first partner as a boyfriend, compared to 95% of women with partners 5 to 9 years older and 88% with partners 10 or more years older. The differences were marginally significant ($p = .091$). Women with partners 5 to 9 years older were the least likely to use a condom at first sex (18%), followed by those with first sexual partners 10 or more years older (19%). Women who were closer in age to their first sexual partners were more likely to use a condom (23%) but only slightly so. These differences were not statistically significant.

Bivariate logistic regression models demonstrated a significant relationship between partner age difference at first sex and using a family planning method at last sex. In particular, women who reported having a partner 5 to 9 years older at first sex

were significantly less likely (OR: 0.7, 95% CI: 0.5-1.0) to report using a family planning method at last sex, compared to women whose first sexual partner was younger or less than 5 years older (see Table 3). Having a partner 10 or more years older did not have a statistically significant effect on family planning use. There was no significant relationship between age differences at first sex and recent STI diagnosis.

Controlling for sociodemographic and reproductive characteristics, women who sexually debuted with partners 5 to 9 years older continued to be less likely to report using a family planning methods at last sex (OR: 0.7, 95% CI: 0.4 – 1.0; see Table 4). This relationship was marginally significant ($p=0.052$). Having a partner 10 or more years older did not have a significant influence on family planning use, nor did age difference have an impact on recent STI diagnosis.

Other multivariate results suggest that having ever been pregnant was significantly associated with a decreased likelihood of using a family planning method at last sex. Seeking services at the women's reproductive health clinic was linked with a decreased likelihood of a recent STI diagnosis as compared to clients of the youth centers. Female youth who were employed were more likely to report using a family planning method at last sex, and those who reported other religions were less likely to use methods compared to Catholics. The socioeconomic status, education, current age, relationship status and time since sexual debut variables were not significantly linked with either reproductive health outcome.

Discussion

This analysis demonstrates a significant relationship between sexual debut with a partner 5 to 9 years older and decreased likelihood of family planning method use at last sex compared with clients with a smaller age difference with their partners

at sexual debut. Sexual debut with a partner 5 to 9 years older was not significantly linked to recent STI diagnosis. Initiating sexual activity with a partner 10 or more years older was not significantly associated with any of the outcomes of interest, though the number of women with first sexual partners 10 year or older at sexual debut was small (n=43).

We hypothesize that the lower likelihood of family planning method use at last sex among women whose first sexual partner was 5 to 9 year older is potentially due to an imbalance in power differentials that began at sexual debut. It may be that these women's sexual initiation with an older partner was coercive and/or disempowering, thereby setting a relationship pattern which limits their ability to negotiate for condom and contraceptive use later in life. Power imbalances may lead to a lack of communication between partners, thus limiting a young woman's ability to advocate for condom and contraceptive use [12]. While the data utilized in this study did not have any measures of gender-based power in current or recent relationships, future research in this area should consider power as a mediator between intergenerational first sex and subsequent reproductive health.

It is curious that the group of women whose first sexual partners were 5 to 9 years older had a significant risk for family planning non-use at last sex, but those with partners 10 years or older did not. It may be that there was not enough power in the sample to detect a significant association between the oldest partner age difference and the reproductive health outcomes. We also note that women's relationships with first partners who were 5 to 9 years older were different from those relationships women had with partners 10 or more years at a marginal significance level ($p = 0.091$). Though partners 10 years or older are typically considered to be of higher

risk, a partner 5 to 9 years older may be more likely to be less faithful, as they are not yet looking for a long-term partner [23].

Intergenerational first sex did not have a significant effect on recent STI diagnosis. Because this convenience sample was recruited from reproductive health and youth clinics, they may have better access to family planning methods and STI treatment as compared to adolescents who do not seek reproductive health services. Furthermore, respondents were only asked about a STI diagnosis in the past year rather than ever. A comparison of this sample to youth from Port-au-Prince in the 2000 Haiti DHS found that youth interviewed in FOSREF clinics had more access, motivation and need to use reproductive health service than sexually experienced youth in the general population [20].

This analysis was limited by the cross-sectional, non-representative nature of the sample. We were unable to establish a causal relationship between age differences at first sex and later reproductive health behaviors. Respondents were not surveyed about the lifetime number of sexual partners or age of current sexual partners. It is possible that a woman's first sexual partner was also her current sexual partner and that the relationship between intergenerational first sex and family planning method use at last sex is reflective of current sexual relationships. Additionally, family planning method use at last sex captures one event in the respondent's sexual history and is not necessarily representative of their experiences. It would be interesting to examine age differentials at sexual debut and transactional sex. Although respondents were asked if they had ever given or received money or gifts in exchange for sex, only a very low proportion of women responded affirmatively (less than 2%). While this may reflect a low occurrence of transactional sex among the study population, these data are limited by the wording of this questions, as young women may have

perceived an affirmative answer to the question to imply commercial sex work [9]. Additionally, 17% of sexually experienced women were excluded from this analysis due to missing data on age of sexual initiation and/or age of first sexual partner. Though most women with missing data reported their first sexual partner to be a boyfriend, perhaps their lack of knowledge about this partner's age may reflect a more casual and potentially risky relationship.

Respondents were not asked if their first sex was forced or consensual, nor were they asked about violence in their current or most recent relationships. Past research implies that forced sex is not uncommon in Haiti [17, 24, 25]. When considering the intersections between power imbalances and age differences in partners, violence may be an important and relevant factor in investigating intergenerational first sex and adverse reproductive health outcomes [10].

Conclusions

This is one of the few studies to examine partner age differences at sexual debut and subsequent reproductive health outcomes. Most studies focus on age differences between young women and current partners. Despite the limitations, the results suggest that the risky circumstances at sexual debut, specifically age differentials, may be indicative of a pattern of sexual risk behavior later in life. More information is needed to confirm this assertion and also to better understand the mechanisms by which age differences at sexual debut and later reproductive health risk are linked and to understand the motivations of men and young women to engage in such relationships. Future research should investigate links between intergenerational first sex and subsequent reproductive health should take into account the possible co-occurrence with sexual violence and transactional sex and the influence of power in relationships. Additionally, research should explore whether

age differences between partners at first sex is associated with intergenerational sex later in life. In the creation of programs to delay sexual debut, age and gender-based power imbalances should be considered, particularly among economically vulnerable young women.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

AMG conceived and designed this research paper, conducted data analysis, and drafted and revised the manuscript. ISS and HR participated in designing the study, interpretation of results, and drafting and critically reviewing the manuscript. NM, at the time of paper writing, was based at the lead organization that initiated the research study. She designed the study and reviewed the manuscript. HB is from the local implementing firm and played a key role in collecting the data and revising the manuscript. All authors read and approved the final manuscript.

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Tables

Table 1 - Characteristics of sexually experienced, female VCT and reproductive health clients aged 15-24, Port-au-Prince, Haiti, 2004

Age difference between respondent and first sexual partner	% (n)
≤ 4 years	65.3 (391)
5 years to 9 years	27.6 (165)
≥ 10 years	7.2 (43)
Diagnosed with an STI in past 12 months*	12.5 (75)
Used a family planning method at last sex	42.2 (253)
Has ever been pregnant	56.9 (341)
Clinic type	
Women's reproductive health	24.9 (149)
Youth center	75.1 (450)
Age of sexual initiation	
≤ 14	19.5(117)
15-17	52.4 (314)
≥ 18	28.1 (168)
Years since sexual initiation	
0-2	29.2 (175)
3-5	39.6 (237)
≥ 6	31.2 (187)
Socioeconomic status	
Highest	18.4 (110)
Middle	35.6 (213)
Lowest	46.1 (276)
Religion*	
Catholic	51.6 (309)
Protestant	33.6 (201)
Other	13.5 (81)
Employed*	18.5 (111)
Current age	
15-18	22.9 (137)
19-22	50.1 (300)
23-24	55.9 (162)
Relationship status*	
Not in union	42.7 (256)
In union	55.9 (335)
Highest level of education completed*	
Primary	13.2 (79)
Secondary	76.3 (457)
Higher	7.4 (44)

Notes: n = 599. *The following variables were missing data (n in parentheses): STI (81); religion (8); employment status (2); relationship status (8); and education (19).

Table 2 - Characteristics of sexual initiation by first sexual partner's age

Age difference between respondent and partner at first sex	Younger or less than 5 years older % (n)	5 to 9 years older % (n)	10 or more years older % (n)
Age of sexual initiation			
≤ 14	18.7 (73)	23.0 (38)	14.0 (6)
15-17	54.2 (212)	49.7 (82)	46.5 (20)
≥ 18	27.1 (106)	27.3 (45)	39.5 (17)
<i>χ² p-value</i>	0.307		
<i>Mean (yrs)</i>	16.3	16.2	16.9
Age difference between respondent and partner			
<i>Mean (yrs)</i>	2.1	6.3	13.0
Relationship to first sexual partner*			
Husband	0.5 (2)	1.8 (3)	4.9 (2)
Boyfriend	96.4 (376)	95.2 (157)	87.8 (36)
Friend	2.3 (9)	1.2 (2)	4.9 (2)
Other	0.8 (3)	1.8 (3)	2.4 (1)
<i>χ² p-value</i>	0.091		
Used a condom at first sex			
Yes	23.0 (90)	17.6 (29)	18.6 (8)
No	77.0 (301)	82.4 (136)	81.4 (35)
<i>χ² p-value</i>	0.326		

Notes: n = 599. *3 women were missing data.

Table 3 - Odds ratios (and 95% confidence intervals) from bivariate logistic regression models assessing the association of reproductive health outcomes with intergenerational first sex

	STI diagnosis in previous 12 months n = 518		Did not use a family planning method at last sex n = 590	
Age difference between respondent and first sexual partner				
≤ 4 years	1.00		1.00	
5 years to 9 years	1.00	(0.57 - 1.76)	0.67	(0.46 - 0.98)*
≥ 10 years	1.65	(0.71 - 3.81)	0.93	(0.49 - 1.78)

Notes: 81 respondents were missing data on STI diagnosis, and 9 were missing data on family planning method use at last sex. * p<0.05.

Table 4 - Odds ratios (and 95% confidence intervals) from multivariate logistic regression models assessing the association of reproductive health outcomes with intergenerational first sex

	STI diagnosis in previous 12 months n = 489		Did not use a family planning method at last sex n = 558	
Age difference between respondent and first sexual partner				
≤ 4 years	1.00		1.00	
5 years to 9 years	0.93	(0.51 - 1.69)	0.67	(0.44 - 1.00) [†]
≥ 10 years	1.49	(0.61 - 3.66)	1.05	(0.52 - 2.10)
Years since sexual debut				
≥ 6 years	1.00		1.00	
3-5 years	0.79	(0.40 - 1.55)	1.08	(0.67 - 1.74)
1-2 years	0.74	(0.33 - 1.66)	1.10	(0.63 - 1.93)
Ever pregnant				
No	1.00		1.00	
Yes	1.28	(0.69 - 2.36)	0.49	(0.32 - 0.75) ^{***}
Clinic type				
Youth center	1.00		1.00	
Women's reproductive health	0.40	(0.18 - 0.86) [*]	1.18	(0.75 - 1.87)
Socioeconomic status				
Highest	1.00		1.00	
Middle	0.84	(0.41 - 1.68)	0.87	(0.52 - 1.45)
Lowest	0.59	(0.27 - 1.26)	0.75	(0.44 - 1.28)
Religion				
Catholic	1.00		1.00	
Protestant	0.84	(0.46 - 1.54)	0.72	(0.48 - 1.06)
Other	1.55	(0.73 - 3.31)	0.46	(0.26 - 0.80) ^{**}
Employment status				
Not employed	1.00		1.00	
Employed	0.62	(0.28 - 1.36)	2.05	(1.23 - 3.42) ^{**}
Current age				
15-18	1.00		1.00	
19-22	1.48	(0.69 - 3.20)	0.95	(0.59 - 1.54)
23-24	1.52	(0.59 - 3.93)	0.91	(0.49 - 1.69)
Relationship status				
Not in union	1.00		1.00	
In union	1.62	(0.90 - 2.92)	0.88	(0.59 - 1.31)
Education level				
Primary	1.00		1.00	
Secondary	1.41	(0.53 - 3.73)	0.83	(0.47 - 1.46)
Higher	1.35	(0.36 - 5.09)	1.20	(0.49 - 2.91)

Notes: N's vary from Tables 3 due to missing data on control variables.

[†]p=0.52. * p<0.05. ** p<0.01. *** p<0.001