Older male sexual partners and teenage fertility in Colombia according to women's age at sexual initiation

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ABSTRACT

Teenage childbearing in Colombia is high and there has also been a disturbing increase in the teenage fertility rate in recent decades. Teenage fertility in Colombia is associated with many characteristics of women's lives, including having an older male sexual partner, a characteristic related to relationship power dynamics and decision making. It has also been shown that in Colombia dramatic narrowing in the average age difference between partners has occurred over the same time period as increased teenage fertility rates, an association which is inconsistent with the fact that with narrowing age differences one would expect fertility rates to decrease. The aim of this study is to disentangle this paradox in the relationship between teenage fertility and age differences between sexual partners by exploring how age differences between partners may depend on age of the woman at sexual initiation.

A sample of 20-24 year old women from the 2015 Colombian Demographic and Health Survey (DHS) is used to examine the effect of interaction terms between age differences between partners and age of the woman at sexual initiation on the odds of experiencing a teenage birth. Results reinforce the fact that older partners still put teenager girls (particularly those who have sex for the first time at age 16 or over) at higher risk of pregnancy, but the effect of reductions over time in age differences was not strong enough to counteract the increased risk of teenage pregnancy due to younger average age at sexual initiation. Among teenage girls who experience sexual initiation below age 16 (approximately 37% of 20-24 year old women in 2015), there was a very high risk of pregnancy which further increased with similar aged partners as compared to older partners. Given the general narrowing of age differences between partners over time, this "younger coupling" may mean that these couples have less collective contraceptive knowledge, which highlights a great need for improvements in comprehensive sexual education at younger ages. However, in Colombia there is also a very large portion of very young teenage girls with significantly older male partners, a tendency that most likely leads to high rates of sexual coercion and other negative outcomes, even if teenage childbearing risk is not as high as for young, similar aged couples. This study highlights the importance of understanding the unique risk factors according to the age at which teens begin to have sexual relationships, as well as the age of their sexual partners. In general, this study also draws attention to the importance of female empowerment and more gender egalitarian social norms, in order to ensure that young women have sufficient control over their own sexual and reproductive health choices.

Introduction

In Colombia, rates of teenage fertility declined continuously in the 1980s and early 1990s with a low of 70 births to every 1,000 women between 15-19 years of age in 1990 (DHS 2011; DHS 2005; Flórez et al. 2004). However, rates then suddenly began to rise again in the late 1990's, wavering between 85-90 births per 1,000 teenage women until finally beginning to decrease again in 2015 when there were 74 births to every 1,000 teenage women, a rate that was still higher than the lowest point in 1990 (DHS 2017). Older male sexual partners to teenage girls is a risk factor for teenage fertility, most likely due to gender-based power imbalances within the relationship that are exacerbated by age differences (Landry and Forrest 1995; Morrison-Beedy, Xia, and Passmore 2013; Rosenbaum et al. 2016; Simon et al. 2014; WHO 2014; WHO 2011). Teenage girls with older male sexual partners potentially have less bargaining power within relationships meaning that they lack sufficient control over condom use or even the decision to have sex or not at all (Connell 1987; Elo, King, and Furstenberg 1999; Landry and Forrest 1995; Rosenbaum et al 2016). A recent World Bank Report on teenage pregnancy in Colombia stated, "The majority of teenage pregnancies remain unplanned, signaling a lack of opportunity and agency for young girls" (Gimenez Duarte et al. 2015). Older male partners have been found to be associated with a higher risk of teenage birth in Colombia, however, age differences between partners in Colombia have also been narrowing over time, including for teenage mothers (Fedor 2018, *manuscript under review*). That is, teenage fertility rates rose over the last several decades in Colombia, rather than declined as might be expected given the observed narrowing of age differences over the same period of time and the fact that narrower age differences between partners is associated with lower risk of teenage childbearing in Colombia. Developing a better understanding of these puzzling trends is the focus of the current study.

The period of increase in teenage births in Colombia is associated with many characteristics of women's lives. For example, women with less education, women who are younger at the time of marriage or first union, and women who lack sufficient knowledge or access to contraception have been found to be at higher risk of teenage childbearing (Flórez et al. 2004; Flórez 2005). The average age at sexual initiation has also been decreasing drastically over time in Colombia, a factor which greatly increases chances of teenage fertility (Daniels 2015; DHS 2011; Flórez et al. 2004). The potential effect of age differences between partners may be greatly dependent on the age of the woman at sexual initiation. For example, the relationship between a 15 year old girl and a 20 year old partner may be different than the relationship between an 18 year old girl with a 23 year old partner. The aim of this study is to disentangle the paradox in the relationship between teenage fertility and age differences between sexual partners by exploring how age differences between partners may depend on the age of the woman at sexual initiation.

Several hypotheses are explored in this study that may explain this counterintuitive pattern. First, it is possible that other factors contributing to increasing rates of teenage fertility are stronger, so that the presumably positive effect of a narrowing gap in age differences between partners during a woman's teenage years is not strong enough to counteract these other, more influential factors. For example, younger average age at sexual initiation alone may be a tendency that is too strong to overcome, even with the help of other factors that might otherwise suppress increasing rates of teenage fertility. Second, given the overall trend in younger age at sexual initiation among women in Colombia, even a similar age difference between partners now as compared to 20 years ago, for example, would imply that both partners are younger. Because findings show that age differences are narrowing between partners at women's sexual initiation, and that sexual initiation is occurring at younger ages, this would imply a greater number of even

younger males involved with increasingly younger teenage girls. If the overall ages of both partners are younger now than in previous generations, we might expect that there is less collective knowledge about contraception and pregnancy prevention within each couple. On one hand this "younger coupling" may help explain the counterintuitive trends in rising rates of teenage childbearing alongside narrowing age differences between partners in Colombia, while, on the other hand, the potential effect of gender inequality in couples that still have wide age differences between themselves could still be a factor that increases teenage fertility risk. The important association between the age of the woman at sexual initiation and the age difference between the woman and her sexual partner at sexual initiation therefore creates the need to carefully examine both characteristics simultaneously.

There are several goals in this analysis: (1) quantify the extent to which age differences contribute to the risk of teenage birth in Colombia and whether the association between age differences between partners and risk of teenage childbearing is negated once taking into account other potentially stronger risk factors associated with teenage fertility (a test of the hypothesis that the effect of narrowing age differences in reducing teenage childbearing risk is not strong enough to counteract the effect of other stronger characteristics that put young women at risk); and (2) examine whether the effect of age differences between partners on the chances of a teenage birth depends on the age of the woman at sexual initiation (a test of the hypothesis that the overall effect of "younger coupling" is contributing to increasing rates of teenage fertility).

METHODS

Data from the 2015 Colombian Demographic and Health Survey (DHS) were used to examine changing age differences between sexual partners and its association with changing rates of teenage fertility. The sample was restricted to (1) women who had already experienced first sexual intercourse at the time of the survey and reported the age of their partner at first

sexual intercourse, (2) those who experienced sexual initiation during their teenage years (in order to capture only those who were at risk of a teenage pregnancy) and (3) those who were 20 years of age or older at the time of the survey (in order to ensure equal exposure time to the risk of a teenage birth). Only women up to age 24 were asked about the age of their partner at sexual initiation in the 2015 Colombian DHS, therefore the sample consists of 20-24 year old women (n=5,012). Respondents missing data on predictor variables (n=12) were eliminated through listwise deletion resulting in a final sample of 5,000 women. In regards to the second restriction, 88% of 20-24 year old women in the original sample experienced sexual initiation before 20 years of age, meaning that this restriction still yields a fairly representative sample of 20-24 year old Colombian women in 2015. No significant differences were found in the effect of age differences between partners on age at first birth for those who initiated sex during teenage years as compared to those who initiated sex at 20 years of age or older (results available upon request).

The main variables used in the analysis are (1) whether the woman gave birth as a teenager (19 years of age or less), (2) the age difference between women and their sexual partners at women's first sexual intercourse, and (3) women's age at sexual initiation. Although teenage pregnancy would have been the preferred variable to use in the analysis, teenage birth was used instead due to the inability to identify women who became pregnant during teenage years but experienced a miscarriage or abortion. Both the age difference between women and their sexual partners and women's age at sexual initiation are measured as categorical variables in initial regression models (table 2) in order to capture any potential deviations from linearity in their effects on the risk of teenage birth as well as to facilitate interpretation. Interaction terms between these variables (table 3) are based on the continuous form of both variables for

computational parsimony. Results are substantively the same when using continuous or categorical versions of these variables.

Sociodemographic control variables in the analysis included: region, wealth quintile, marital status at first birth, condom use at sexual initiation, age at the time of the survey, whether the woman visited a health facility in the last 12 months, and whether she has ever been forced to perform sexual acts. Only the variables for a teenage birth, age difference, woman's age at sexual initiation, marital status at first birth, and condom use at sexual initiation were measured at the time of sexual initiation or first birth. The remaining variables reflect characteristics of women's lives at the time of the survey (region, wealth quintile, whether the woman visited a health facility in the last 12 months, and whether she has ever been forced to perform sexual acts). Although measurements of the remaining variables during teenage years would be ideal, there are often strong associations between these factors during teenage years and later in life. We therefore use them as control variables meant to reflect characteristics of the women's lives in general.

Descriptive statistics are reported in table 1 for all women in the sample (n = 5,000) and separately for those who experienced a teenage birth (n = 2,223), and those who did not experience teenage birth (n = 2,777). Table 2 provides results for logistic regression models predicting the odds of teenage birth according to age differences between partners, age at sexual initiation and the control variables. Table 3 includes interaction terms in logistic regression models in order to test whether the effect of age differences between partners depends on age at sexual initiation (i.e. moderation effect) in predicting teenage fertility.

RESULTS

Among this sample of women who experienced sexual initiation during teenage years, 44.5% experienced a teenage birth (table 1). Note that in the original sample of 20-24 year old

women (and using DHS provided sample weights to improve generalizability), 35% experienced a teenage birth. Among women who experienced a birth during their teenage years, the average age difference between themselves and their sexual partners was 5.59 years while those who did not experience a teenage birth had an average age difference with their partner of 4 years (a statistically significant (s.s.) difference at p=0.000). The average age at sexual initiation among teenage mothers was also younger (approximately 15 years of age for teenage mothers and 16.6 years of age for those who did not give birth as a teenager, p=0.000). Teenage mothers were also more often from rural areas, more often from poorer households, and more likely to have been married in their lifetime, often after giving birth to their first child or around the time that they gave birth to their first child. Among teenage mothers, only 39% reported condom use at sexual initiation and 9% reported ever being forced to have sex or perform sexual acts.

Table 2 presents logistic regression models predicting the odds of teenage fertility. Based on bivariate results (model 1), the larger the age difference between partners the higher the risk of teenage childbearing. As compared to girls with similar age partners, teenage girls with partners who were four to five years older had 2.3 times the odds of experiencing a teenage birth ($p<0.001$), those with partners six to seven years older had 2.2 times the odds ($p<0.001$) and girls with partners who were eight or more years older had 2.8 times the odds ($p<0.001$) of a teenage birth. Model 2 shows that although the coefficients for age differences between partners at sexual initiation remained statistically significant when controlling for woman's age at sexual initiation, the size of the association between age differences of partners and teenage pregnancy was greatly diminished, although still high. As compared to girls with similar age partners, teenage girls with partners who were four to five years older had 45% higher odds of experiencing a teenage birth ($p<0.001$), those with partners six to seven years older had 28% higher odds ($p<0.05$) and girls

with partners who were eight or more years older had 56% higher odds ($p<0.001$), while controlling for age at sexual initiation.

In table 2, model 3 we see that even when controlling for all other sociodemographic factors related to higher risk of teenage fertility combined, with the exception of age at sexual initiation, the coefficients for age differences between sexual partners remained strong predictors of teenage birth, paralleling levels found in model 1, the bivariate model between age differences and teenage birth. However, in the full model (model 4) including all control variables as well as age at sexual initiation, the size and strength of the association between age differences and the odds of experiencing a teenage birth were greatly reduced once again. When controlling for age at sexual initiation and sociodemographic characteristics together, teenage girls with partners who were two or three years older had 35% higher odds of pregnancy ($p<0.05$) as compared to girls with similar age or younger partners. Girls with partners who were 8 or more years older had 27% higher adjusted odds of having a child during their teenage years, although these results were only marginally significant ($p<0.10$).

Not surprisingly, age at sexual initiation proved to be the strongest predictor of teenage fertility risk: while controlling for sociodemographic characteristics and the age difference between partners, girls who were 15 years old at sexual initiation had 40% lower odds of a teenage birth ($p<0.01$) as compared to girls who were 13 years old at sexual initiation, girls who were 16 years old at sexual initiation had 60% lower odds ($p<0.01$), and girls who were 18 had 93% lower odds ($p<0.01$) of experiencing a teenage birth. The -2 log likelihood and pseudo R-squared comparisons between models indicate that the age of women at sexual initiation alone (model 2) was a very strong predictor of odds of teenage pregnancy, even as compared to all other sociodemographic variables combined (model 3). Other factors associated with teenage

fertility include lower socioeconomic status (wealth index), being married before or at the time of first birth, non-condom use at sexual initiation, and a history of sexual abuse or sexual assault.

In table 3 results from logistic regression models are shown assessing whether the effect of age differences between partners on the risk of teenage fertility depends on women's age at sexual initiation, assessed through interaction terms. Results indicate a statistically significant difference in the effect of age differences between partners depending on women's age at sexual initiation, although the size of the difference was not particularly large. For example, focusing on model 2 which includes all control variables, among those who experienced sexual initiation at age 13, there were actually 10% lower adjusted odds of a teenage birth with partners who were five years older as compared to same age partners. Whereas among women who experienced sexual initiation at 16 years of age there were approximately 10% higher adjusted odds of a teenage birth with partners who were five years older and for women who experienced sexual initiation at ages 18 or 19 there were 15% to 20% higher odds of a teenage birth with a partner who was five years older as compared to same age partners (all interactions s.s. with chi2(3) for interaction = 444.53, $p<0.001$).

It is interesting to observe that older male partners were associated with larger increases in the odds of a teenage birth as age at sexual initiation increases, although it is also important to still keep in mind the much greater risk of teenage fertility directly associated with younger age at sexual initiation. Furthermore, a previous study found that the younger the age at sexual initiation, the greater the proportion of women who had partners who were drastically older than themselves [citation retracted for author anonymity]. In this sample of 20-24 year old women from the 2015 Colombian DHS, 30% of those who experienced sexual initiation at 14 years of age or younger had a partner who was eight or more years older than themselves while only 16% of those who were 17-19 years old at sexual initiation had a partner who was eight or more years

older than themselves (author's calculations). Also, 69% of those who were 14 years of age or younger at sexual initiation had partners who were four or more years older than themselves while only 39% of women who were 17-19 years old at sexual initiation had a partner who was four or more years older (author's calculations).

DISCUSSION

The narrowing in age differences between sexual partners that occurred at the same time as increases in teenage fertility rates in Colombia is counterintuitive given evidence that suggests that a smaller gap in age differences between sexual partners is associated with lower risk of teenage fertility in Colombia (Fedor 2018, *manuscript under review).* Although in general younger age at sexual initiation puts sexually active teenage girls at a much higher risk of having a child, "younger coupling", that is, two young partners together, leads to even higher risk of a teenage birth. If the overall age of both partners is younger now than in previous generations, we might expect that there is less collective knowledge about contraception and pregnancy prevention within each couple. Conversely, these results suggest the illusion of a slightly "protective" effect of older male partners among extremely young teenage girls, however, this result should be interpreted with extreme caution. Given the much higher risk of teenage fertility at very young ages of sexual initiation in general, girls who initiate their sexual lives at such young ages are still at risk with any partner. Additionally, the reason that some women have sex for the first time at such a young age could very well be related to coercion or even rape, and even more so with an older partner, regardless of whether or not contraception was used and pregnancy was avoided (Elo, King, and Furstenberg 1999). Furthermore, there is a chance that there is a higher prevalence of abortion when women get pregnant at these extremely young ages, a factor that is particularly difficult to measure in a country where abortion is illegal under almost all circumstances. None the less, in the case of very large age differences between

partners when the woman is very young, there are most probably unequal power dynamics between such partners, which could lead to sexual coercion and rape, as mentioned, but also sexually transmitted infections, interpersonal violence, and negative mental health outcomes (Elo, King, and Furstenberg 1999; Jones and Ferguson 2009; Meier, Erickson, and McLaughlin 2016; Morrison-Beedy, Xia, and Passmore 2013; Rosenbaum et al. 2016; Ryan et al. 2008). Therefore, this result should be carefully considered in the context of all potential negative outcomes for teenage girls. That is, there could be risk with having either a young partner or an older partner among teenage girls who experience sexual initiation at especially young ages, but for different reasons and with different consequences. A previous study has also shown that there is a much larger proportion of younger teenage girls with significantly older partners as compared to older teenage girls (Fedor 2018, *manuscript under review*). In this particular sample of 20-24 year old women in 2015, among women who experienced sexual initiation at 14 years of age or younger, 69% had partners who were four or more years older than themselves. Elo, King and Furstenberg (1999) found that when teenage girls have sexual partners who are more than four year older, they are twice as likely to report that they were raped or that sexual activity with their older partner was not voluntary. Furthermore, when sexual initiation occurs at very young ages, below 15 years old, these encounters were also more likely to be reported as rape or not voluntary. Future research is needed to investigate the specific relationship between age differences between partners, women's age at sexual initiation and factors such as sexual coercion, rape, abortion, sexually transmitted infections, interpersonal violence, and women's mental health.

When thinking about women who experienced sexual initiation during their later teenage years, the average situation is quite different. Among women who experienced sexual initiation at 16 to 19 years of age, having an older sexual partner puts them at a higher risk of experiencing

a teenage birth. Therefore, the trend towards narrowing age differences may have helped keep rates of teenage fertility lower than they otherwise would have been, although the extremely strong effect of the trend towards a younger average age at sexual initiation, in addition to the opposite trend in the effect of older male partners for women who experienced sexual initiation at younger ages, still resulted in an overall increase in rates of teenage fertility for a time. The influence of narrowing age differences between partners was not strong enough to overcome the trend in younger age at sexual initiation in its influence on teenage childbearing.

Clearly normative behavior related to premarital sex has been changing in Colombia, and apparently very dramatically and very quickly, making it more acceptable to have premarital sex between teenagers now as compared to in the past. Furthermore, rates of out of union births have increased in Colombia [5], indicating the possibility that while in the past teenage girls who became pregnant were more likely to be married to the father or to marry the father, in recent years this has become less common. This also implies that the share of single teenage mothers has increased relative to teen mothers who have spousal support. This puts teenage mothers at even greater risk of poverty and economic struggle, as well as the potential for greater social rejection and difficulties at home (Daniels 2015; Flórez et al. 2004; Urdinola and Ospino 2015).

Limitations

There are several limitations to this study. Data was available on the age difference between partners at women's sexual initiation, but not on the age difference between partners that actually resulted in a teenage birth or first birth. The age of the father for first births would be a better, more direct measure of the risk of age differences on teen pregnancy. Also, an estimated 36% of teenage pregnancies in Colombia end in abortion (Daniels 2015). Given that abortion is illegal in Colombia except under extreme circumstances, the women surveyed most likely did not report these pregnancies accurately. Therefore, we were only able to capture

teenage motherhood, not teenage pregnancy, meaning that there may be noise in our results if some women who did become pregnant during their teenage years did not become teenage mothers and were placed in the category of women who did not experience a teenage pregnancy. Finally, addressing which of these pregnancies were planned versus unplanned, as well as a more detailed analysis of the role of marital status, were beyond the scope of the current paper, although these factors were controlled for in regression analyses. Quantifying unplanned pregnancies as well as defining marital status at birth, are very important characteristics when considering the situation faced by teenage girls and teenage mothers. However, whether intended or not, or married or not, a teenage pregnancy still carries with it some of the same health risks for mother and child, as well as other difficulties such as the mother's ability to complete her education.

CONCLUSION

The changes observed over time in Colombia related to teenage pregnancy reflect very rapid, drastic cultural shifts towards more secular views of sexuality, the initiation of sexual behavior and family formation. Under such rapid conditions of cultural change it is not surprising that sexual education of teens and adequate access to contraception may have lagged behind, in particular given the apparent generational gap in how one understands adolescent sexual behavior or "ideal" adolescent sexual behavior. Given the rapid speed of changes in adolescent sexual behavior in Colombia, special attention and analysis of all determinants of teenage pregnancy need to be closely examined and monitored to enable a smoother transition in the future, ensuring that teenagers are well informed to make the best decisions for themselves. It is also vital that teenage pregnancy prevention programs understand the unique combination of risk factors that contribute to teenage pregnancy risk, and how these factors may differ for

younger versus older adolescents, as well as the important role that gender inequality plays within relationships.

table 1. Descriptive characteristics (means, percentages, and p-values for t-tests and proportion tests of differences between teenage mothers & non-teenage mothers)

	Among all women	NON-teenage mothers	Teenage mothers	p-value
Had a teenage pregnancy				
yes	44.5%			
no	55.5%			
Average age difference (between woman and partner at sexual initiation)	4.71	4.02	5.59	0.000
Average age at sexual initiation	15.90	16.64	14.98	0.000
Average age at first birth	18.14	20.97	17.03	0.000
Average age at first marriage	17.57	19.12	16.53	0.000
Marital status at first birth				
birth before married	20.9%	14.2%	29.2%	0.000
married while pregnant or within 1 year of birth	23.9%	10.0%	41.1%	0.000
married before birth	7.2%	1.1%	14.9%	0.000
never married or never gave birth	48.0%	74.7%	14.7%	0.000
Condom use at sexual initiation				
yes	52.1%	62.4%	39.2%	0.000
no	47.9%	37.6%	60.8%	
Visited a health facility in the last 12 months				
yes	68.2%	70.1%	65.9%	0.001
no	31.8%	29.9%	34.1%	
Ever forced to have sex or perform sexual acts				
yes	6.9%	4.9%	9.3%	0.000
no	93.1%	95.1%	90.7%	
Region				
Atlantic	24.5%	23.5%	25.7%	0.071
Eastern	12.8%	12.8%	12.7%	0.925
Central	23.0%	24.3%	21.4%	0.013
Pacific	15.8%	15.4%	16.4%	0.355
Bogotá	6.2%	7.1%	4.9%	0.001
National territories	17.7%	16.8%	18.9%	0.056
Type of place of residence				
rural	22.9%	16.1%	31.4%	0.000
urban	77.1%	83.9%	68.6%	
Wealth index				
poorest quintile	24.2%	16.2%	34.1%	0.000
poorer quintile	32.4%	30.2%	35.1%	0.000
middle quintile	22.1%	24.4%	19.3%	0.000
richer quintile	13.4%	17.8%	8.0%	0.000
richest quintile	7.8%	11.3%	3.5%	0.000
Sample size	5,000	2,777	2,223	

table 2. Odds ratios for logistic regression models predicting teenage birth among 20-24 year old women (DHS Colombia 2015)

	Model 1	Model 2	Model 3	Model 4
Age difference between woman and partner at sexual initiation (male younger, zero or one year older)				
2-3 years older	1.511***	0.996	1.510***	0.995
	(0.126)	(0.093)	(0.166)	(0.118)
4-5 years older	2.319***	1.445***	2.164***	1.354*
	(0.212)	(0.149)	(0.260)	(0.178)
6-7 years older	2.202***	1.279*	2.000***	1.243
	(0.226)	(0.149)	(0.270)	(0.185)
8 or more years older	2.828***	1.555***	2.171***	1.265[†]
	(0.251)	(0.158)	(0.252)	(0.163)
Age at sexual initiation (13 yrs old)				
14 yrs old		0.677**		0.797
		(0.099)		(0.144)
15 yrs old		0.412***		0.599**
		(0.055)		(0.098)
16 yrs old		0.261***		0.404***
		(0.035)		(0.067)
17 yrs old		0.123***		0.186***
		(0.017)		(0.032)
18 yrs old		0.047***		0.069***
		(0.007)		(0.013)
19 yrs old		0.010***		0.011***
		(0.003)		(0.004)
Region (Bogotá)				
Atlantic			0.861	1.080
			(0.154)	(0.209)
Eastern			1.300	1.430[†]
			(0.249)	(0.298)
Central			1.307	1.152
			(0.233)	(0.221)
Pacific			1.301	1.082
			(0.245)	(0.219)
National territories			1.130	1.069
			(0.213)	(0.217)
Wealth index (richest quintile)				
poorest quintile			2.812***	2.612***
			(0.525)	(0.523)
poorer quintile			2.124***	2.050***
			(0.385)	(0.396)
middle quintile			1.500*	1.360
			(0.275)	(0.267)
richer quintile			1.068	1.024

			(0.212)	(0.216)
Marital status at first birth (birth before marriage)				
married while pregnant or within 1 year of birth			2.366***	3.271***
			(0.237)	(0.370)
married before birth			8.265***	8.228***
			-1.716	-1.823
never married or never gave birth			0.102***	0.130***
			(0.010)	(0.013)
Age			0.795*	0.833***
			(0.022)	(0.025)
Condom use at sexual initiation			0.505***	0.570***
			(0.039)	(0.048)
Visited a health facility in the last 12 months			0.795**	0.808*
			(0.065)	(0.071)
Ever forced to have sex or perform sexual acts			1.476**	1.089
			(0.220)	(0.172)
Sample size	5,000	5,000	5,000	5,000
-2 Log Likelihood	-3347	-2805	-2209	-1920
Pseudo R-squared	0.03	0.18	0.36	0.44

Notes: Reference categotries in parentheses. Standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05, † p<0.1

table 3. Logistic regression models assessing whether the effect of age differences between partners on the risk of teenage birth depends on women's age at sexual initiation among 20-24 year old women (DHS Colombia 2015)

	Model 1 (interactions only)		Model 2 (with covariates)	
	Coef. (S.E.)	OR	Coef. (S.E)	AOR
Age difference (between woman and partner at sexual initiation)	-0.050		-0.147*	
	(0.063)		(0.062)	
Age at sexual initiation	-0.628***		-0.601***	
	(0.016)		(0.035)	
Age difference x age at sexual initiation (si)	0.005		0.010**	
	(0.004)		(0.004)	
age difference x 13 yrs old at si		1.01		0.98
age difference x 14 yrs old at si		1.02		0.99
age difference x 15 yrs old at si		1.02		1.00
age difference x 16 yrs old at si		1.03		1.01
age difference x 17 yrs old at si		1.03		1.02
age difference x 18 yrs old at si		1.04		1.03
age difference x 19 yrs old at si		1.05		1.04
Sample size	5,000		5,000	
-2 Log Likelihood	-2858		-1974	
Pseudo R-squared	0.17		0.43	

Notes: Adjusted odds ratios (model 2) are controlling for region, wealth, marital status at first birth, condom use at sexual initiation, visited health facility in the last 12 months, and ever forced to have sex or perform sexual acts. Standard errors in parentheses. The odds ratios for the interactions terms are comprised of the coefficient for age difference plus the coefficient for the interaction term. The odds ratios indicate the total effect of age difference between partners according to woman's age at sexual initiation. *** p<0.001, ** p<0.01, * p<0.05, + p<0.1

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