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Adolescent Parent–Child Relationships and Non-Marital Fertility in Adulthood: Variation by Race and Ethnicity

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Abstract: Factors leading to racial and ethnic differences in non-marital fertility, which account for nearly 41% of all births in the U.S., are not well understood. This study examines how mother–child relationships and parental control shape the likelihood of having a non-marital birth in adulthood among non-Hispanic White, non-Hispanic Black, Hispanic, and non-Hispanic Asian women from 1994–2009. This paper uses data from Waves I, III, and IV of Add Health ($n = 7171$) and event-history analysis to find that mother–child relationships are associated with the likelihood of having a non-marital birth, with variation by race and ethnicity. Maternal warmth and communication in adolescence are associated with a decreased likelihood of having a non-marital birth in adulthood, but only among non-Hispanic Black and non-Hispanic Asian women. Parent–child relationships are dynamic and can have lasting impacts on children’s fertility behaviors across the life course.

Keywords: adolescent sexual/contraceptive behavior; youth/emergent adulthood; intergenerational relations; parent–child relationships

1. Introduction

From 1970 to 2009, the percentage of non-marital births increased from 11% to 41% in the United States, with higher rates among non-Hispanic Black women and Hispanic women relative to non-Hispanic White and non-Hispanic Asian women (Kim and Raley 2015). Recent estimates, however, show a decline in non-marital births among non-Hispanic White, non-Hispanic Black, and Hispanic women from 2004–2014, with the steepest declines among non-Hispanic Black and Hispanic women (Burke and Raley 2022). Reflecting family privilege or a society and policies that uphold marriage as an “ideal” family form in the United States, relative to married mothers, unmarried mothers are more likely to live in poverty, have fewer socioeconomic resources, and have children who experience earlier sexual debut (Aquilino 1996; Letiecq 2019; McLanahan 2004). The processes contributing to the rise of non-marital fertility among racial and ethnic groups are unknown and not fully explained by socioeconomic status (Sweeney and Raley 2014). An exploration of racial and ethnic differences from a racialized social systems framework (Bonilla-Silva 1997) and racial socialization perspective (Harris-Britt et al. 2007), exploring the role of structural racism on marriage and fertility outcomes, is required for any explanation of the comparative differences in non-marital fertility by race and ethnicity that does not attribute racial and ethnic differences in fertility outcomes to individuals’ behaviors. This study addresses the following research questions: (1) Are maternal attitudes on sexual activity in adolescence associated with the odds of having a non-marital birth in young adulthood? (2) Do maternal warmth and communication and parental control moderate the relationship between maternal attitudes on sexual activity in adolescence and the odds of having a non-marital birth? (3) How do the associations of parent–child relationships and non-marital fertility vary across racial and ethnic groups?

This paper seeks to understand whether and how the mother–child relationship is associated with racial and ethnic differences in rates of non-marital fertility. The rise of non-marital fertility falls in the context of the delaying transition to adulthood, which has



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led to greater dependence on parents as children age, as well as growing societal acceptance of non-marital fertility due to declines in the significance and prevalence of marriage (Livingston 2018; Zhang and Sassler 2022). As parents and children navigate new roles and responsibilities from adolescence to adulthood, parents play a key role in teaching, shaping, and monitoring their children's attitudes about sexual activity and fertility (Longmore et al. 2009, 2013), which can shape children's developmental trajectories over the life course (Elder 1998). While there have been many studies that have examined the role of individual attitudes, the rising median age at marriage, the growing prevalence of cohabiting unions, and socioeconomic factors on understanding the rise of non-marital fertility and the role of parents, who are key agents of sexual activity in adolescence, has not been addressed (Longmore et al. 2009; Raffaelli and Green 2003). Given that there are racial and ethnic differences in parent–child relationships as a protective factor for navigating structural racism (Chao and Aque 2009; Dow 2019; Zhang and Sassler 2019), it is important to consider how and whether the parent–child relationship matters for shaping non-marital fertility.

This study examines how and whether the mother–child relationship and parental control are associated with the odds of having a non-marital birth in young adulthood among women. The study focuses on women because prior studies have found greater parental control and monitoring over sexual activity for daughters relative to sons (Perilloux et al. 2008; Sassler et al. 2008; Zhang and Sassler 2019). In addition, the analysis focuses on women because they have more complete and accurate reports of their non-marital births compared to men in national survey data (Joyner et al. 2012), and women's decisions play a larger role than men's decisions on contraception use and having a birth (Shattuck 2017). Using data from the National Longitudinal Study of Adolescent to Adult Health (Add Health), the study uses social learning theory (Longmore et al. 2013), racialized social systems theory (Bonilla-Silva 1997), and racial socialization (Harris-Britt et al. 2007) to understand factors shaping youths' odds of having a non-marital birth in young adulthood, with variation by race and ethnicity. By understanding the processes during adolescence that shape non-marital fertility in adulthood, this study provides two contributions to the literature. First, although adolescent attitudes on non-marital fertility predict the likelihood of having non-marital birth in young adulthood (Shattuck 2017), the role of the mother–child relationship in shaping this outcome is unknown—specifically, the role of maternal attitudes regarding sexual activity and mother–child relationship quality. Second, although parental attitudes about sexual activity have been linked to children's sexual debut (Longmore et al. 2009), little is known on how mother–child relationships shape non-marital fertility outcomes across race and ethnicity.

1.1. The Role of Parents' Attitudes on Fertility Intentions and Behaviors: Social Learning Theory

This paper examines the pathways in which parents, particularly through their attitudes on sexual activity when their children are adolescents, can influence their children's fertility behaviors through the framework of social learning (Bandura 1977; Longmore et al. 2013). In the social learning approach, adolescent children learn and model their parents' attitudes and behaviors from direct and indirect learning (Bandura 1977; Longmore et al. 2013). Direct learning may come from parent–child communication, which is a particularly important form of socialization (Longmore et al. 2013; Moore et al. 1986). Parents may communicate to their children about their expectations on fertility and union formation. Although there is no direct measure of parents' attitudes on non-marital fertility, the study uses a measure of perceived maternal attitudes towards sexual activity for a broad measure of attitudes towards fertility (Barber 2001). Adolescents who perceive that their parents have less permissive attitudes towards sex will be less likely to have a non-marital birth in young adulthood. Indirect learning may also come from direct observation of parents' fertility behaviors—parents can be role models for their children's attitudes towards fertility and union formation. For example, prior research has found that adolescents who grew up outside of a two-biological parent household were less likely to approve of marriage and more likely to approve of divorce (Axinn and Thornton 1996); therefore, adolescents who grew up in single-parent households may be more likely to approve of having a non-marital birth.

Prior literature suggests that parents' attitudes influence children's fertility behaviors and have been associated with the onset of sexual activity and birth control use. Children may internalize their parents' attitudes towards sex, which may therefore shape and affect their fertility behaviors (Longmore et al. 2009). There have been mixed results with regard to the associations of maternal communication about sex on children's sexual activity, with some studies finding links to an earlier sexual debut (Resnick et al. 1997), and others finding links to a later sexual debut (Pearson et al. 2006), but this may depend on whether parents themselves are open towards sexual activity (Moore et al. 1986).

1.2. The Independent and Moderating Roles of Maternal Warmth and Communication and Parental Control on Sexual Activity

Parents can have the best intentions to instill their values to their children. However, when discussing a sensitive subject like sexuality, conflict can ensue (Longmore et al. 2013). Therefore, parent-child relationship quality may shape whether parents' values and attitudes actually transmit to their children (Cavanagh et al. 2008). For example, parents may wish for their children to delay their sexual activity and communicate these values to their children, but if children have strained relationships with their parents, they may not necessarily wish to follow their parents' guidelines.

The study examines parent-child relationship quality through maternal closeness, warmth, and communication and also include parental control. Parental control is defined as "behavioral constraints and is often measured as monitoring" (Longmore et al. 2009, p. 970). Parental closeness, on the other hand, is "characterized by support, warmth, nurturance, and involvement" (McElwain and Bub 2016, p. 3), and measures the degree of attachment to the parent (Kapinus and Gorman 2004). Adolescents who are emotionally close to their parents may be less likely to engage in risky behaviors in order to prevent parental disappointment. Parental warmth is defined as "verbal and non-verbal behaviors that reflect overall acceptance, including expressions of affection, support positive affect and positive involvement regarding a child" (Epkins and Harper 2016, p. 126). Adolescents who feel that their parents care about them are more likely to take parental values into account because adolescents who are emotionally attached to their parents are more likely to listen to them (Longmore et al. 2013).

Empirically, there has been support for the independent and moderating roles of parental closeness, warmth, and control on the sexual activity of children. Perceived maternal disapproval of children having sex in adolescence has been associated with children's later age of sexual debut (Jaccard and Dittus 2000; Kapinus and Gorman 2004; Longmore et al. 2009), particularly if respondents report being emotionally close to their mothers (Johnson and Tyler 2007). Close parent-child relationships lead to communication that is more open and approachable (McElwain and Bub 2016). Maternal closeness in adolescence is also linked to decreased frequency of sexual intercourse, but not when controls are included (McElwain and Bub 2016), while maternal warmth has been associated with a decreased likelihood of sexual initiation (Longmore et al. 2009).

Parental attitudes towards marriage and parenthood are also associated with children's attitudes on family and union formation (Starrels and Holm 2000). Studies examining the link between parental control and fertility behaviors find that parental control is associated with a later onset of sexual initiation among adolescents (Johnson and Tyler 2007; Longmore et al. 2009; Manlove et al. 2012). Parental control has also been associated with delayed sexual debut and contraceptive use (Dittus et al. 2015).

1.3. Racial and Ethnic Differences in Union Formation, Fertility, and Parent-Child Racial Socialization Practices

This study draws from racialized social systems theory to examine the role of structural racism on fertility outcomes among non-Hispanic Black, Hispanic, non-Hispanic Asian, and non-Hispanic White women (Bonilla-Silva 1997). Due to a legacy of structural racism in the United States, historical and contemporary policies related to marriage and fertility have often disadvantaged Black, Hispanic, and Asian people from marriage and fertility relative

to White people (Bonilla-Silva 1997). For example, the legacy of slavery and Jim Crow laws separated Black families and prevented them from marrying, and harsh immigration laws prevented Hispanic and Asian families from reuniting in the United States (Cross and Zhang 2022; Fox 2012). More recently, higher rates of incarceration among Black and Hispanic families due to disproportionate policing and deportation have also separated families in the United States (Edwards et al. 2019; Wood 2018). Thus, it is structural racism itself, rather than individual attributes within racial and ethnic groups, that affect marriage and fertility patterns (Cross et al. 2022) and may lead to higher rates of non-marital fertility among non-Hispanic Black, Hispanic, and non-Hispanic Asian women. Thus, women of color may be less likely to get married than white women, and these patterns are reflected in current patterns of those most likely to get married (Bloome and Ang 2020; Zhang and Sassler 2022). In addition, non-Hispanic Black, Hispanic, and non-Hispanic Asian women are less likely to get married than White women due to worse economic circumstances on average, which is a strong predictor of marriage (Chetty et al. 2020; Gibson-Davis et al. 2018). The lower likelihood of marriage affects the likelihood of childbearing within a marital context among women of color—previous studies have found that non-Hispanic Black and Hispanic women were less likely to be married at childbirth relative to White women, at the same level of education (Conwell and Doren 2021).

Another stream of literature shows that parents of racial and ethnic minority children engage in racial socialization or “implicit, explicit, purposeful, and unintended ways that parents’ beliefs and behaviors convey views about race to children,” (Harris-Britt et al. 2007, pp. 670–71) to navigate racism and sexism, particularly negative stereotypes of women of color as hypersexualized and as single mothers (Collins 2000; Dow 2019; Guilamo-Ramos et al. 2006). Prior research has also shown that parental control varies by race and ethnicity, with parental control being lowest among Non-Hispanic White adolescents and highest among Hispanic adolescents, followed by non-Hispanic Asian and non-Hispanic Black adolescents (Chao and Aque 2009; Zhang and Sassler 2019), as a protective factor against experiences of racial discrimination (Pezzella et al. 2016). Therefore, the influence of parental control may be greater for non-Hispanic Black women, Hispanic women, and non-Hispanic Asian women relative to Non-Hispanic White women. Prior work has also documented differences by race and ethnicity with regard to perceived maternal attitudes about sexual activity (Meneses et al. 2006), though not all mothers or daughters within a given racial and ethnic group may have the same perceptions regarding their own sexual behaviors.

In a study focused on non-Hispanic White mothers, communication about sex to adolescent children was used primarily as a means to delay sexual debut, but it was also important to establish an honest and approachable relationship with adolescent children in order to facilitate conversations on sexuality (Wilson et al. 2010). Non-Hispanic White adolescent daughters discussed sex with their mothers most frequently relative to non-Hispanic Black, Hispanic, and non-Hispanic Asian adolescent daughters (Chao and Aque 2009; Zhang and Sassler 2019). In addition, non-Hispanic White mothers felt the least discomfort discussing sex with their daughters in adolescence, followed by non-Hispanic Black, Hispanic, and non-Hispanic Asian mothers, who felt the most discomfort discussing sex to their daughters in adolescence (Meneses et al. 2006).

Previous work has found that non-Hispanic Black mothers who communicated with their daughters about sex emphasized abstinence and waiting until marriage for sex (Sneed et al. 2013), and often discussed not wanting to perpetuate societal stereotypes of Black women as single mothers for their daughters (Dow 2019). Among non-Hispanic Black adolescent girls, those who perceived greater maternal relationship quality (such as greater warmth, relationship satisfaction, and feeling independent) were less likely to have sexual intercourse (Usher-Seriki et al. 2008). Non-Hispanic Black adolescents who reported mothers that had more conservative attitudes about premarital sex were more likely to also report conservative attitudes about sexual activities in relationships (Bynum 2007).

Racial and ethnic differences in maternal attitudes about sexual activity may persist especially among Hispanic and non-Hispanic Asian women due to immigrant generation

status, which may lead to cultural and language barriers in discussing sexual activity between first-generation mothers and second- and third-generation adolescent children (Flores and Barroso 2017). Among Hispanic women, parental communication about the consequences of sexual intercourse and perceived parental permissiveness of sex in adolescence was associated with an increased likelihood of having sex the next year. On the other hand, immigration status factored in—third-generation Hispanic youth were more likely to have greater discussions regarding sexual activity relative to first- and second-generation youth (Deutsch and Crockett 2016). Prior work has found that among non-Hispanic Asian adolescents, 89% perceived that their mothers did not approve of sexual activity (Hahm et al. 2008), and most did not report speaking to their parents about sexuality (Kim and Ward 2007). Non-Hispanic Asian adolescents were also more likely to have an earlier sexual debut before the age of 15 if there was perceived maternal approval of sexual activity (Hahm et al. 2008). Among non-Hispanic Asian American college students in the Midwest, mothers who did not speak English to their children were less likely to discuss sex with their children who spoke English to them (Kim and Ward 2007).

1.4. Parental Influence from Adolescence to Adulthood

Relationships between parents and children are interdependent and can change across the life course across developmental stages, such as adolescence and young adulthood (Elder 1998). However, parental closeness and parental control in adolescence is strongly associated with parental control and closeness in young adulthood—therefore, parent-child relationships early on in the life course may set the stage for later life parent-child relationships (Aquilino 1997; Rossi and Rossi 1990) and may continue to have an impact on children's outcomes beyond adolescence, such as on their romantic relationship outcomes (Zhang and Sassler 2019).

1.5. Other Factors Shaping Non-Marital Fertility

Other individual factors associated with a decreased likelihood of having a non-marital birth include individual preferences on fertility (Shattuck 2017), high educational expectations (Plotnick 1992), and age (Taylor and Wang 2010). In general, research has supported that fertility attitudes and intentions predict fertility outcomes. Adolescents' expectations on whether they will have a premarital pregnancy have been associated with their actual fertility outcomes (Plotnick 1992; Schoen et al. 1999; Shattuck 2017). Relative to women who have not completed a high school education and are unemployed, women who are more highly educated and are employed are also more likely to delay marriage and childbearing (Thornton 1991). Attitudes about whether the growing proportion of single mothers are a “bad thing for society” vary by age, with older individuals being more disapproving than younger individuals. Approximately 63% of 18- to 29-year-olds believed that single mothers are a “bad thing for society,” relative to 70% of 50–64-year-olds (Taylor and Wang 2010).

Other important predictors of attitudes towards family formation include family structure, maternal education, and race and ethnicity (Hayford 2009; Thornton 1991; Trent and South 1992). These studies find that respondents who lived with a single mother or who were in stepfamilies were more likely to expect non-marital childbearing relative to those who grew up in two-biological parent families (Plotnick 1992; Trent 1994). In addition, adolescents whose mothers have more educational attainment were more likely to have expectations to marry before childbearing (Trent 1994).

1.6. Hypotheses

Hypotheses are listed as follows:

Hypothesis 1. *Maternal warmth and communication, parental control, and perceived maternal attitudes on sexual activity in adolescence will be associated with the odds of having a non-marital birth in young adulthood. Increased maternal warmth and communication and parental control will be associated with decreased odds of having a non-marital birth, while perceived maternal*

permissiveness on sexual activity will be associated with increased odds of having a non-marital birth in young adulthood.

Hypothesis 2. *Maternal warmth and communication will moderate the association between maternal attitudes on sexual activity and the odds of having a non-marital birth in young adulthood.*

Hypothesis 3. *Parental control in adolescence will moderate the association between maternal attitudes on sexual activity in adolescence and the odds of having a non-marital birth in young adulthood.*

Hypothesis 4. *As a protective factor for structural racism, mother–child relationships and parental control will have greater salience for explaining racial and ethnic differences in non-marital fertility among non-Hispanic Black, Hispanic, and non-Hispanic Asian women relative to Non-Hispanic White women.*

2. Results

2.1. Summary of the Sample

Table 1 presents an overview of the descriptive characteristics of the sample, including respondents' parent–child relationships and demographic characteristics. Most respondents reported that their mothers were warm and communicative. Parental control during adolescence was relatively low. Perceived maternal permissive attitudes about sexual activity was also low—most respondents felt like their mothers would not allow them to have sex at the time of interview, with someone special such as a significant other, or allow them to use birth control in adolescence. Respondents were approximately 16 years old on average. Most respondents in adolescence were not willing to have a non-marital birth, while 24% of respondents would consider having a child as an unmarried person in the future. Almost 1 in 5 women in this sample had a non-marital birth by age 34.

Table 1. Summary statistics for the analytic sample.

	Mean	SE	Range	α
Maternal warmth and communication at Wave I ^a	4.16	0.02	1 to 5	0.85
Parental control at Wave I ^b	0.15	0.01	0 to 1	0.70
Perceived maternal permissiveness on sexual activity at Wave I ^c	2.01	0.04	1 to 5	0.78
Educational aspirations at Wave I	4.52	0.02	1 to 5	
Race/ethnicity			1 to 4	
NH white	0.70	0.03		
NH Black	0.16	0.02		
Hispanic	0.11	0.02		
NH Asian	0.03	0.01		
Immigrant generation status			1 to 3	
1st generation	2.04	0.02		
2nd generation	0.36	0.02		
3rd generation	0.60	0.01		
Age at interview at Wave I	15.76	0.12	12 to 21	
Non-marital birth attitudes at Wave I	0.24	0.01	0 to 1	
Family structure at Wave I			1 to 4	
Two biological parents	0.57	0.01		
Two parents (step or bio)	0.17	0.01		
Single parent	0.22	0.01		
Other family arrangement	0.04	0.00		
Maternal education at Wave I			1 to 5	
Less than HS	0.16	0.01		
HS grad or GED	0.35	0.01		
Some college	0.20	0.01		
Completed college+	0.24	0.01		
Do not know	0.04	0.00		

Table 1. Cont.

	Mean	SE	Range	α
Ever had sex at Wave I	0.35	0.02	0 to 1	
Time-varying covariates				
Completed high school	0.74	0.01	0 to 1	
Completed some college	0.16	0.01	0 to 1	
Completed college or more	0.33	0.01	0 to 1	
Ever cohabited	0.35	0.01	0 to 1	
% who experienced a non-marital birth by Wave IV	0.19	0.01		
n	7171			

^a—Includes items such as you feel close to your mother; most of the time, your mother is warm and loving towards you; your mother encourages you to be independent; when you do something that is important, your mother talks about it with you and helps you understand why it is wrong; you are satisfied with the way you and your mother communicate with each other; and overall, you are satisfied with your relationship with your mother.

^b—Includes items such as whether the respondent was allowed to choose who to hang out with, how much TV to watch, which TV programs to watch, which clothes to wear, and what to eat. ^c—Includes items such as how your mother would feel about you having sex at this time in your life; how would she feel about you having sexual intercourse with someone special to you like a boyfriend or girlfriend; and how would she feel about her using birth control at this time in her life.

2.2. Descriptive Statistics by Race and Ethnicity

Table 2 shows measured dimensions of parent–child relationships and non-marital fertility outcomes by race and ethnicity. Maternal warmth and communication were highest among non-Hispanic Black adolescent girls and lowest among non-Hispanic Asian adolescent girls. Parental control was highest among Hispanic and non-Hispanic Asian adolescent girls. Perceived maternal permissive attitudes about sexual activity at Wave I was highest among non-Hispanic Black adolescent girls, followed by non-Hispanic White, Hispanic, and non-Hispanic Asian adolescent girls. The percentage of those who experienced a first non-marital birth by the age of 34 was 36% of non-Hispanic Black women, 21% of Hispanic women, 15% of non-Hispanic White women, and 12% of non-Hispanic Asian women.

Table 2. Descriptive statistics of means for main predictors by race and ethnicity.

	NH White	NH Black	Hispanic	NH Asian
Maternal warmth and communication at Wave I ^a	4.22	4.26	4.14 ^e	4.06 ^f
Parental control at Wave I ^b	0.14	0.17	0.20 ^e	0.20 ^f
Perceived maternal permissive attitudes about sexual activity at Wave I ^c	2.00	2.23 ^d	1.85 ^e	1.64 ^f
Proportion experiencing a non-marital birth	0.15	0.36 ^d	0.21 ^e	0.12
n	7171			

^a—Includes items such as you feel close to your mother; most of the time, your mother is warm and loving towards you; your mother encourages you to be independent; when you do something that is important, your mother talks about it with you and helps you understand why it is wrong; you are satisfied with the way you and your mother communicate with each other; and overall, you are satisfied with your relationship with your mother.

^b—Includes items such as whether the respondent was allowed to choose who to hang out with, how much TV to watch, which TV programs to watch, which clothes to wear, and what to eat. ^c—Includes items such as how your mother would feel about you having sex at this time in your life; how would she feel about you having sexual intercourse with someone special to you like a boyfriend or girlfriend; and how would she feel about her using birth control at this time in her life. ^d—Black–White difference at $p < 0.05$ -level; ^e—Hispanic–White difference at $p < 0.05$ -level; ^f—Asian–White difference at $p < 0.05$ -level.

2.3. Analytic Results by Race and Ethnicity

Given that the purpose of this study was to assess differences in factors contributing to increased odds of having a non-marital birth for different racial and ethnic groups, separate analyses were run by race and ethnicity to examine differences in parent–child relationships as contributing factors to non-marital fertility. Analyses were conducted in a stepwise manner (full results available upon request). Model 1 included parent–child relationship factors, Model 2 included control variables, and Model 3 included interaction terms of maternal warmth and communication, parental control, and maternal permissive attitudes on sexual activity. The results for Model 4 are shown in Table 3.

Table 3. Coefficients of logistic regressions predicting the likelihood of having a first non-marital birth by race and ethnicity.

	NH White	OR	NH Black	OR	Hispanic	OR	NH Asian	OR
Maternal warmth and communication at Wave I ^a	−0.05 (0.20)	0.95	−0.51 (0.23)	* 0.60	−0.05 (0.51)	0.95	0.45 (0.67)	1.57
Parental control at Wave I ^b	0.22 (0.95)	1.25	−1.21 (0.98)	0.30	−1.11 (1.31)	0.33	−5.72 (2.67)	* 0.00
Perceived maternal permissive attitudes towards sexual activity at Wave I ^c	0.19 (0.29)	1.21	−0.76 (0.35)	* 0.47	0.09 (0.73)	1.09	3.39 (1.50)	* 29.67
Maternal warmth × maternal permissive attitudes	0.01 (0.07)	1.01	0.17 (0.09)	* 1.19	0.03 (0.18)	1.03	−0.76 (0.37)	* 0.47
Parental control × maternal permissive attitudes	0.22 (0.95)	1.25	0.57 (0.42)	1.77	0.13 (0.79)	1.14	1.83 (1.36)	6.23
Constant	1109.82 (757.87)	-	−641.20 (946.45)	0.00	16.73 (831.46)	-	−39.71 (50.62)	0.00
n	169,943		56,446		39,441		15,534	
F-adjusted statistic	26.48		21.07		18.82		246,325.57	
Prob > F	0.00		0.00		0.00		0.00	

Standard errors in parentheses. * $p < 0.05$. Controlling for expectations on non-marital births, educational aspirations, generation status, family structure, ever had sex at Wave I, completed high school, completed some college, completed college or more, ever cohabited, age, age squared, period, and timing to censoring from age of sexual debut. Maternal education not shown due to insignificance. ^a—Includes items such as most of the time, your mother is warm and loving towards you; your mother encourages you to be independent; when you do something that is important, your mother talks about it with you and helps you understand why it is wrong; you are satisfied with the way you and your mother communicate with each other; and overall, you are satisfied with your relationship with your mother. ^b—Includes items such as whether the respondent was allowed to choose who to hang out with, how much TV to watch, which TV programs to watch, which clothes to wear, and what to eat. ^c—Includes items such as how your mother would feel about you having sex at this time in your life; how would she feel about you having sexual intercourse with someone special to you like a boyfriend or girlfriend; and how would she feel about her using birth control at this time in her life.

Among non-Hispanic White women, none of the primary explanatory variables or interaction terms were significantly associated with increased odds of having a non-marital birth. Though not central to the study, significant control variables included the desire to attend college in adolescence, growing up in a family structure that did not include two biological parents, two parents, or a single parent, ever having sex in adolescence, and having higher educational attainment.

What factors predicted non-marital fertility among non-Hispanic Black women? Supporting Hypothesis 1, non-Hispanic Black adolescents who perceived greater maternal warmth and communication had significantly decreased odds of having a non-marital birth in young adulthood. However, those who perceived more permissive attitudes towards sex had lower odds of have a non-marital birth in young adulthood, which does not go in the direction as anticipated. Upon examining how parent–child relationship factors may moderate the association of maternal permissiveness on sexual activity, maternal warmth and communication moderated the association. That is, non-Hispanic Black adolescent girls who reported higher levels of maternal warmth and communication, as well as higher levels of permissive attitudes towards sex, had greater odds of having a non-marital birth in young adulthood, consistent with Hypothesis 2. Although not central to the study, other significant variables associated with decreased odds of having a non-marital birth included never having had sex in adolescence, completing high school, some college, college and more, and having ever cohabited.

Among Hispanic women, there was no evidence to support Hypotheses 1, 2, or 3—that parent–child relationships in adolescence are associated with the odds of having

a non-marital birth in adulthood, and that interactions of parent–child relationships are associated with the odds of having a non-marital birth. Although not central to the study, adolescents who were willing to have a non-marital birth in adolescence had 2.32 times greater odds to have a non-marital birth in young adulthood. In addition, an additional significant control variable that emerged was educational attainment—Hispanic women who completed high school had lower odds of having a non-marital birth relative to women who did not complete high school.

Among non-Hispanic Asian women, maternal permissive attitudes about sexual activity were associated with increased odds of having a non-marital birth—that is, adolescents who perceived that their mothers were more permissive of their sexual activities were more likely to have a non-marital birth in young adulthood, confirming Hypothesis 1. Higher levels of parental control, on the other hand, were associated with decreased odds of having a non-marital birth among non-Hispanic Asian women, also confirming Hypothesis 1. Opposite to Hypothesis 3, the interaction of maternal warmth and communication and perceived maternal approval on sexual activity was associated with decreased odds of having a non-marital birth. That is, non-Hispanic Asian adolescent girls who reported higher levels of maternal warmth and communication, and perceived greater maternal permissive attitudes on sexual activity, had lower odds of having a non-marital birth in young adulthood. Other important control variables that were significantly associated with the odds of having a non-marital birth included being a second-generation American, prior sexual experiences at Wave I, and completing college. Overall, there was evidence to support Hypothesis 4—that parent–child relationships were more salient in predicting non-marital fertility outcomes among women of color than for non-Hispanic White women.

3. Materials and Methods

3.1. Data

Data is used from Waves I, III, and IV of the National Longitudinal Study of Adolescent to Adult Health (Add Health). Add Health is a nationally representative sample of adolescents who were in the 7th–12th grades from 1994–1995 at Wave I. At Wave IV, respondents were re-interviewed in 2008–2009 and were 24–34 years old. The sample framework is as follows: 20,745 adolescents completed Wave I from 1994–1995. The sample was restricted to those who completed Wave IV and had valid sampling weights, dropping the sample to 14,800 (Chen and Harris 2020). Because this analysis was focused on women, the sample size dropped to 7866. Women who were married at Wave I ($n = 50$) and had children at Wave I ($n = 8$) were removed from the sample. Women who identified as multiracial were dropped from the sample due to a small sample size ($n = 97$). Respondents missing on these characteristics were more likely to be non-White, foreign-born, and have lower socioeconomic status (Brownstein et al. 2010). This led to an analytic sample of 7171 respondents, that included 3949 non-Hispanic White women, 1669 non-Hispanic Black women, 1146 Hispanic women, and 407 non-Hispanic Asian women.

3.2. Measures

3.2.1. Dependent Variable

The main dependent variable of interest was whether the respondent had a non-marital first birth, from the retrospective marriage and birth information from Add Health. The specific question used at Wave IV was “Were you and {fill initials} married to each other at the time of birth?” Responses ranged from no (0) to yes (1) and were restricted to respondents who had reported a live birth. Respondents who had a non-marital first birth were coded as 1, while respondents who did not have a non-marital first birth were coded as 0.

3.2.2. Independent Variables

Parent–Child Relationships

Parent–child relationship measures included maternal warmth and communication, parental control, and perceived maternal permissiveness on sexual activity, all measured at

Wave I. The mother referred to the respondent's primary mother figure, whether it was a biological mother, adoptive mother, stepmother, or foster mother.

Maternal warmth and communication (Zhang 2019) was a scaled measure (Cronbach's $\alpha = 0.85$) of the following items: how close do you feel to your mother; most of the time, your mother is warm and loving towards you; your mother encourages you to be independent; when you do something wrong that is important, your mother talks about it with you and helps you understand why it is wrong; you are satisfied with the way you and your mother communicate with each other, and overall, you are satisfied with your relationship with your mother. Responses ranged from strongly agree (1), agree (2), neither agree nor disagree (3), disagree (4), to strongly disagree (5) and were reverse-coded, with the exception of maternal closeness, which ranged from not at all (1), very little (2), somewhat (3), quite a bit (4), to very much (5).

Parental control (Jaccard and Dittus 2000; Zhang and Sassler 2019) was a scaled measure (Cronbach's $\alpha = 0.70$) of the following five items, including whether the respondent was allowed to choose who to hang out with, how much television to watch, which television programs to watch, which clothes to wear, and what to eat. Responses ranged from no (0) to yes (1).

Perceived maternal permissiveness on sexual activity (Dittus and Jaccard 2000) was a scaled measure (Cronbach's $\alpha = 0.78$) of three items asked at Wave I: how she perceived her mother would feel about her having sex at this time in her life, how she feels about her having sexual intercourse with someone special to her like a boyfriend or girlfriend, and how she feels about her using birth control at this time in her life. Answers ranged from strongly disapprove (1), disapprove (2), neither disapprove nor approve (3), approve (4), to strongly approve (5).

Interaction terms were also included for dimensions of maternal relationship quality, including parental control, and perceived maternal permissive attitudes about sexual activity. Interactions of maternal warmth and communication and parental control with maternal permissive attitudes about sexual activity were included to assess whether adolescents who perceived higher relationship quality and greater parental control to be more affected by perceived maternal attitudes towards sex.

3.3. Race and Ethnicity

Racial and ethnic categories were used as a proxy for experiences of structural racism (Bonilla-Silva 1997) and racial socialization (Harris-Britt et al. 2007). The race and ethnicity of the respondent was created from the constructed race variable in Add Health (Udry et al. 2003), and from the following questions asked at Wave I: "What is your race?" and "Are you of Hispanic or Latino origin?" Responses included non-Hispanic White, non-Hispanic Black, Hispanic, and non-Hispanic Asian.

3.4. Control Variables

3.4.1. Wave I Control Variables

Background control variables for the analyses conducted for the full sample included immigrant generation status at Wave I, whether the respondent had sex at the time of interview at Wave I, family structure at Wave I, the respondent's educational aspirations at Wave I, and the respondent's mother's highest level of education at Wave I, which was used as a proxy for family socioeconomic status. Family structure at Wave I was from the constructed family structure variable (Harris 1999) included those with two biological parents, two parents, a single parent, and other. Immigrant generation status included those who were first-generation, second-generation, and third-generation immigrants. The respondent's expectation of non-marital fertility was asked at Wave I: "regardless of whether you have ever had a child, would you consider having a child in the future as an unmarried person?" Responses were reverse-coded and ranged from no (0) to yes (1). Maternal education at Wave I included those with less than a high school degree, those who completed high school, some college, college and more, and do not know. Educational

aspirations at Wave I included how much the respondent wanted to go to college and ranged from low (1) to high (5). The sexual status at the Wave I interview was whether the respondent ever had sex at the time of the interview and ranged from no (0) to yes (1).

3.4.2. Time-Varying Control Variables

Time-varying control variables included educational attainment (completed high school, completed some college, and completed college and more) and having ever cohabited at the time of interview at Wave III and Wave IV. If the respondent ever cohabited, she was coded as 1, and 0 otherwise. Time-varying controls were also included for the respondent's age (coded as age in person-years), age squared (age in person-years squared), and period (the respondent's birth year plus her age in person-years). Details on how the specific measures were constructed from the survey questionnaire are in Appendix A Table A1.

3.5. Analytic Approach

This study used discrete-time event history analysis to estimate associations of parent-child relationships and perceived maternal permissive attitudes about sexual activity on the odds of having a non-marital first birth. Discrete-time event history analysis is a method suitable for longitudinal data analysis, as it includes whether or not an event occurs, and the timing to the event, within a given time interval, such as a calendar year (Allison 2014). In this case, the event would be whether the woman experienced a first non-marital birth, and the timing would be the number of years to this event. A person-year file was created to model the timing and risk of having a first non-marital birth. The woman's "risk" of having a non-marital birth began at her age of sexual debut until the age she was censored, or the age at her Wave IV interview. The dependent variable, whether the respondent had a non-marital birth, was coded as 1 if a first non-marital birth occurred during each person year, and 0 otherwise. Observations that occurred after the year of marriage, non-marital birth, marital birth, marriage prior to the birth, or after the age of interview at Wave IV were dropped. Stata 16.1 was used to estimate logistic regression models predicting the timing of having a first non-marital birth. From the 7171 women in the analytic sample, 73,131 person-years were generated. Adding the time-varying control variables created splitted subepisodes, which led to an increase in the sample size to 230,030 person-years. Separate models by race and ethnicity were ran with the following sample sizes: 169,943 for non-Hispanic White women, 56,446 for non-Hispanic Black women, 39,441 for Hispanic women, and 15,534 for non-Hispanic Asian women.

4. Conclusions

Research examining non-marital fertility in the context of the changing transition to adulthood is important given that nearly 41% of births are non-marital. The purpose of this study was to examine whether parent-child relationships have an influence on children's non-marital fertility outcomes. The study examined the associations of parent-child relationships and perceived maternal attitudes about sexual activity on non-marital fertility using the social learning framework (Longmore et al. 2013), racialized social systems theory (Bonilla-Silva 1997), and racial socialization (Harris-Britt et al. 2007). The study also assessed whether parent-child relationships (maternal warmth and communication and parental control) moderated the association between maternal permissive attitudes towards sexual activity and the odds of having a non-marital birth. From this study, two themes emerged: (1) maternal relationship quality is important to consider in understanding the intergenerational transmission of attitudes on sexual activity; and (2) parent-child relationships in adolescence continue to have salience on fertility outcomes into young adulthood among non-Hispanic Black and non-Hispanic Asian women.

The first theme that emerged from the study is the importance of maternal relationship quality in shaping the intergenerational transmission of attitudes towards sexual activity. In the full sample, women who reported higher levels of maternal warmth and communica-

tion, and higher levels of perceived maternal permissiveness on sexual activity, had greater odds of having a non-marital birth in young adulthood. Although it is not clear how the mechanisms for this moderation operate, it may be possible that parents' attitudes are more likely to be passed down to children if their children perceive to have good relationships with their parents.

The second theme that emerged from this study was that parent–child relationships continued to have salience among non-Hispanic Black and non-Hispanic Asian women in the transition to adulthood. Specifically, women who reported warmer and more communicative relationships with their mothers in adolescence had significantly lower odds of having a non-marital birth in young adulthood. These findings have implications for the theoretical frameworks of racialized social systems (Bonilla-Silva 1997) and racial socialization (Harris-Britt et al. 2007). This finding has important implications for understanding processes contributing to differential rates of non-marital fertility by race and ethnicity, as prior research has shown that non-Hispanic Black mothers engage in racial socialization practices to avoid perpetuating stereotypes of non-Hispanic Black women as single mothers (Dow 2019). While previous research (Sweeney and Raley 2014) suggests that socioeconomic status cannot fully explain the differences in rates of non-marital fertility by race and ethnicity, this study illuminates that parent–child relationships shaped non-marital fertility outcomes by race and ethnicity, potentially through the role of racial socialization practices by parents of color.

The study also found evidence to support social learning theory (Longmore et al. 2013)—the theory that children can learn from and model their parents' attitudes. In addition, the study found that social learning (Longmore et al. 2013) could extend across developmental stages—in other words, parents can continue to have a lasting influence beyond adolescence. Non-Hispanic Asians who reported greater perceived maternal permissive attitudes about sexual activity were more likely to have a non-marital birth in young adulthood. The measure of perceived maternal permissive attitudes included items such as whether the respondent thought her mother would allow her to have sex at the time of interview, have sex with someone special such as a boyfriend or girlfriend, or use birth control. Given that perceived maternal permissive attitudes about sexual activity were lowest among non-Hispanic Asians, this finding was unexpected, but is consistent with predictions of social learning theory. Interpersonal relationships in prior periods of the life course have sustained impacts on later periods of the life course, but these findings are more salient among racial and ethnic minority groups. This may be due to the fact that families of color report having closer relationships, as parents of racial and ethnic minority children often engage in racial socialization as a protective factor to combat structural racism and racial discrimination in everyday life (Dow 2019; White-Johnson et al. 2010; Zhang 2019).

This paper was not free from limitations. The first limitation is the uncertainty of how the parent–child relationship measures were operating with regard to the non-marital fertility outcome. Because there are no direct measures of parental attitudes towards non-marital fertility due to no measures asked on non-marital fertility in Add Health, parent–child relationship measures regarding sexual activity in adolescence were used as a proxy. The second limitation is that the measures of parent–child relationships are not the same later in the life course, when respondents are young adults. The third limitation is that it did not include individuals who identified as Native American, multiracial, and multiethnic due to small sample sizes of the Add Health data. The fourth limitation is that race and ethnicity were represented by self-reported racial and ethnic categories only from the Add Health survey, rather than direct measures of structural racism and racial socialization practices by parents. The fifth limitation is that the analysis did not account for the previous union formation history of women, such as previous experiences with marriage, cohabitation, and romantic relationships. The sixth limitation is that I was unable to control for characteristics of the respondent's partner at the birth of the child, such as age, education, and economic status, which are factors that may shape the likelihood of

entering a marital union. Last, I was unable to account for changes in marital status after the birth given data limitations in the timing of the Add Health data between Waves IV (2008–2009) and V (2016–2018).

However, given that this study still finds salience in these parent–child relationship measures in adolescence, future research directions could take this further and assess whether parent–child relationships matter later in the life course. For example, future research should examine the importance of maternal relationship quality in moderating the association between parents’ and children’s attitudes about non-marital fertility. Future research could include identifying the mechanisms through which maternal warmth and communication operate on children’s fertility behaviors. Last, future secondary data surveys should oversample multiracial, multiethnic, and Native American groups to facilitate research for these populations. In a period of a delaying transition to adulthood and rising non-marital fertility, this paper examined the interplay of individuals and parents in contributing to the rise of non-marital fertility, and how this varies across race and ethnicity. Parent–child relationships matter, especially for women of color. Parent–child relationships are dynamic and can have lasting impacts on children’s fertility behaviors across the life course.

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Informed Consent Statement: Add Health participants provided written informed consent for participation in all aspects of Add Health in accordance with the University of North Carolina School of Public Health Institutional Review Board guidelines that are based on the Code of Federal Regulations on the Protection of Human Subjects 45CFR46: <https://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.html>.

Data Availability Statement: The authors used the restricted use Add Health dataset. Information on access to Add Health is here: <https://addhealth.cpc.unc.edu/data/> (accessed on 22 May 2023).

Conflicts of Interest: The author declares no conflict of interest.

Appendix A

Table A1. Variable Construction from Add Health Data for Analysis on Predictors for Analyses.

Variable	Values	Alpha	Variable Construction
Non-marital first birth at Wave IV	0 to 1		“Were you and {fill initials} married to each other at the time of birth?”
Maternal warmth and communication at Wave I (Zhang 2019)	1 to 5	0.85	“How close do you feel to your mother?” “Most of the time, your mother is warm and loving towards you.” “Your mother encourages you to be independent.” “When do you something wrong that is important, your mother talks about it with you and helps you understand why it is wrong.” “You are satisfied with the way you and your mother communicate with each other.”
Parental control at Wave I (Dittus and Jaccard 2000; Zhang and Sassler 2019)	0 to 1	0.70	“You are satisfied with your relationship with your mother.” “Do your parents let you make decisions about the people you hang out with?”

Table A1. Cont.

Variable	Values	Alpha	Variable Construction
			“Do your parents let you make your own decisions about what you wear?”
			“Do your parents let you make your own decisions about how much television you watch?”
			“Do your parents let you make your own decisions about which television programs you watch?”
			“Do your parents let you make your own decisions about what you eat?”
Perceived maternal permissiveness on sexual activity at Wave I (Dittus and Jaccard 2000)	1 to 5	0.78	“Regardless of whether you have done these things or not, how would your mother feel about each of the following things?” “How would she feel about your having sex at this time in your life?” “How would she feel about your having sexual intercourse with someone who was special to you and whom you knew well—like a steady {girlfriend/boyfriend}?” “How would she feel about your using birth control at this time in your life?”
Race and ethnicity			From constructed race variable measured at Wave I (Udry et al. 2003) and question on Hispanic ethnicity. “What is your race? White, Black or African American, American Indian or Native American, Asian or Pacific Islander, or Other.” and “Are you of Hispanic or Latino origin?”
Non-Hispanic White	1		
Non-Hispanic Black	2		
Hispanic	3		
Non-Hispanic Asian	4		
Immigrant generation status			From responses on place of birth, parent’s place of birth: “Were you born in the United States?”; “Was your mother born in the United States?”; “Was your father born in the United States?”
1st generation (Foreign-born)	2		Born outside of the United States to non-US Citizen parents
2nd generation	1		Born in the United States to foreign-born parents
3rd generation	3		Both respondent and parents born in the United States
Respondent ever had sex at Wave I	0 to 1		“Have you ever had sexual intercourse?”
Family structure at Wave I			From constructed family structure variable at Wave I (Harris 1999).
Two biological parents; two parents; single parent; other	1 to 4		
Respondent’s educational aspirations at Wave I	1 to 5		“On a scale of 1 to 5, where 1 is low and 5 is high, how much do you want to go to college?”
Maternal education at Wave I			From variable asking respondent what their mother’s highest level of education was at Wave I: “How far in school did she go?”
Less than HS; HS or GED; Some college; Completed college; Do not know	1 to 5		
Educational attainment at Waves III and IV			What is the highest grade or year of regular school you completed?
Completed high school, completed some college, completed college and more	1 to 3		
Cohabitation status at Waves III and IV			“Have you ever lived with someone in a marriage-like relationship for one month or more?” No (0) and yes (1).
Never cohabited, ever cohabited	0 to 1		“How many romantic or sexual partners have you ever lived with for one month or more?” 0 partners–8 partners.

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