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PREDICTORS AND CONSEQUENCES OF ADOLESCENTS' NORMS AGAINST TEENAGE PREGNANCY

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Abstract

African American and Latino teenagers and communities are frequently assumed to have weaker norms against teenage pregnancy than whites. Despite their importance, adolescents' norms about teenage pregnancy have not been measured or their correlates and consequences documented. This study examines individual-level and contextual variation in adolescents' embarrassment at the prospect of a teenage pregnancy and its relationship with subsequent teenage pregnancy. Descriptive analyses find that norms vary by gender and individual- and neighborhood-level race, ethnicity, and socioeconomic status (SES). In multivariate analyses, neighborhood-level racial/ethnic associations with embarrassment are explained by neighborhood-level SES. Embarrassment is associated with a lower likelihood of subsequent teenage pregnancy but does not mediate racial, ethnic, or socioeconomic influences, underscoring the importance of both norms and structural factors for understanding teenage fertility.

Recent increases in the teenage birth rate (Hamilton, Martin, and Ventura 2009) have sparked renewed interest in understanding why adolescents have babies. Race and ethnicity are particularly salient concerns in this discussion. In the literature on teenage pregnancy, some ethnographic studies have reported that norms about the appropriate timing of pregnancy held by poor urban African Americans and Latinos differ from those espoused by whites. Henly (1997:630) summarized this body of work: "Some research suggests that the sanctions against bearing children as teenagers are less severe in African-American families and communities, and [teenage childbearing] may be normative in some communities." The idea that teenage pregnancy is widespread and acceptable in poor minority communities is also a common public perception.

Social norms about teenage pregnancy may well be a cause of variation in teenagers' fertility behaviors, but these norms are notoriously difficult to measure (Marini 1984; Settersten 2004). In the past, they have usually either been measured indirectly, for example by asking about the ideal age at which a life transition should be made, or assumed to exist (e.g., Brewster 1994a; Sucoff and Upchurch 1998). To incorporate norms into our understanding of the causes of adolescent pregnancy, research needs to measure perceptions of negative social sanctions for pregnant teenagers, which would suggest that they are violating a social norm. It would be useful to examine variation in these perceived norms by race/ethnicity, socioeconomic status (SES), and gender. Research should also investigate whether teenage pregnancy norms actually influence the behavior they are expected to regulate.

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This study makes new contributions to the literature in addressing these complicated and timely issues, pursuing three goals. *First*, because adolescents' norms regarding teenage pregnancy have not been satisfactorily measured, I describe their distribution across subpopulations of adolescents based on gender and individual- and neighborhood-level race/ethnicity and SES.[1] The *second* goal, which is explanatory rather than descriptive, is to investigate individual-level and contextual predictors of norms about teenage pregnancy using multivariate models, with a particular focus on racial, ethnic, and socioeconomic differences. *Third*, I assess the relationship between adolescents' norms about teenage pregnancy and their subsequent pregnancy behaviors. This research is valuable because it deals with the predictors and consequences of teenage pregnancy norms, which are widely presumed to be a cause of a major public health issue in the United States. Working within the life course theoretical framework, the study also advances theory by identifying predictors and consequences of an age norm and by outlining processes that may drive variation and change in norms.

NORMS ABOUT TEENAGE PREGNANCY

Age norms (Neugarten, Moore, and Lowe 1965) are central to life course theory, which is an important theoretical lens for understanding teenage pregnancy and the theoretical framework guiding this study. Neugarten, Moore, and Lowe (1965) wrote that age expectations are "embedded in the cultural fabric of adult life. There exists what might be called a prescriptive timetable for major life events" (p. 711). As social norms, such "age expectations" are group-level evaluations of how people ought to behave or not to behave (Settersten 2004). In this case, the shared expectation may be that teenagers should not get pregnant. If an adolescent violates a norm by going against these expectations, she is negatively sanctioned by institutions or individuals. Examples include reduced opportunities for social interaction or the withholding of needed resources.

For decades, some life course theorists have assumed the presence of informal social norms about the timing of life transitions (Neugarten and Hagestad 1976), but they have rarely been measured satisfactorily (Elder 1975; Settersten 2004). Because norms are group-level evaluations of appropriate behaviors and not individually held attitudes, they are difficult to assess in surveys. Many researchers, when observing regularity in the timing of life transitions, or "statistical norms," have assumed that this regularity is evidence of normative pressure, but it could simply be the result of an "internalization of the predominant behavior patterns of significant others" (Marini 1984:234) that is not linked to any group-level evaluations of the behavior or social sanctions. Others have measured norms by asking about the "best ages" to complete certain transitions (Neugarten et al. 1965). This operationalization of norms ignores a primary aspect of their sociological definition: that negative sanctions should occur when expectations are not met (Marini 1984; Settersten 2004).

Relatively little scholarly work has addressed these important criticisms (excepting, e.g., Settersten 1998; Mollborn 2009). Settersten and Hagestad focused on age deadlines for too-late transitions to adulthood, asking open-ended questions about whether people who violate these deadlines face any consequences (Settersten 2004). Responses that combine a perceived age deadline with a perceived negative sanction for violating it would suggest evidence of an age norm. Life course researchers continue to call for more empirical

[1]This study uses neighborhoods, operationalized as census tracts, as a proxy for teenagers' local contexts. While other contexts such as peers and schools are also important for adolescent sexual behaviors and norms (Teitler and Weiss 2000), the neighborhood contains a variety of relationships and institutions in which adolescents are embedded and which frequently encompass peer relationships and schools.

investigation of age norms (Settersten 2004; Macmillan 2007). A dearth of solid empirical research on transition norms, including evidence of negative sanctions when norms are violated and evidence linking norms to the behaviors they are expected to regulate, led Marini to dismiss age norms as a useful concept in her influential 1984 article. I agree that such evidence is needed but assert that the importance life course theorists have historically placed on age norms is justified. Norms may be difficult to operationalize in surveys, but considerable qualitative evidence on teenage pregnancy and childbearing suggests that they exist and influence young people's lives and decisions. The acknowledged problems with age norms primarily result from a lack of quantitative empirical evidence of group-level norms, processes that drive variation and change in them, and their influence on individual-level behavior. It is worth trying to overcome these obstacles in order to understand a social process that may be influential for many young people's lives. This study takes initial steps to address these hurdles by examining perceptions of negative social sanctions for pregnant teenagers, which would suggest that they are violating a social norm, as well as both factors that drive variation in these perceptions and subsequent behavior.

For the past several decades, adolescent pregnancy has been considered a major problem facing the United States (Furstenberg 2003). Attitudinal measures based on polling data suggest that concern about this issue has been widespread in recent years. In a 1999 survey, 68 percent of adults thought that teenage pregnancy was "a major problem facing our country" (Henry J. Kaiser Family Foundation 1999). Seventy-four percent of respondents in 1995 said that it is "morally wrong" to "conceive a child out of wedlock if the mother is a teenager and is unable to financially support the baby" (Newsweek and Princeton Survey Research Associates 1995). Public support for institutional sanctions against teenage mothers is also apparent. In another poll, 49 percent of respondents thought that the government should not provide welfare payments to single teenage mothers compared with 45 percent who thought it should (Knight Ridder and Princeton Survey Research Associates 1996). These polls measured individual-level attitudes rather than group-level norms, but the two concepts are often closely related. Therefore, this strong public disapproval suggests that the normative dimension of the teenage pregnancy issue is important. Because most academic research has focused on teenagers' fertility *behaviors*, this research on norms will expand the literature.

I measure perceptions of negative social sanctions for teenagers who experience a pregnancy, which by definition implies that they are violating a social norm (Marini 1984; Settersten 2004), through a survey measure of teenagers' levels of *embarrassment* at the prospect of a teenage pregnancy. Although people experience embarrassment internally and personality factors may influence their sensitivity to it, embarrassment is a social emotion that hinges on the presence of real or imagined others (Berthoz et al. 2002). Therefore, it is helpful for capturing individual-level perceptions that they would be violating a group-level norm. Embarrassment has been used to demonstrate the presence of norms in sociology (Goffman 1967), as well as in economics (Elster 1989), psychology (Keltner and Buswell 1997), and applied fields (Staller and Petta 2001; Wooten 2006). Embarrassment is a powerful type of informal social sanction, bringing behavior in line with social norms (Keltner and Buswell 1997; Staller and Petta 2001). People who deviate from norms feel embarrassed, and those who observe a norm violation experience empathic embarrassment, which can help regulate their future behavior (Wooten 2006). Vasalou, Joinson, and Pitt (2006) found that feeling guilt, shame, and embarrassment increased subjects' conformity to a social norm. In the arena of sexual behavior, Herold (1981) linked embarrassment at the prospect of using contraceptives to decreased use of contraception. The groups whose norms are referenced when teenagers feel embarrassed likely vary and may include family, peers, and community members. Asking about the teen's embarrassment without specifying a reference group is a drawback because the measure cannot disentangle various social

influences on perceived norms. At the same time, though, its generality is an advantage because it allows for variation across individuals in the importance of different reference groups' norms.

DO ADOLESCENTS' TEENAGE PREGNANCY NORMS VARY, AND WHY DO THEY VARY?

The first two goals of this study are to describe intrasocietal variation in adolescents' norms against teenage pregnancy and to explain observed variation by race/ethnicity and SES. Only norms discouraging teenage pregnancy, rather than those encouraging it, are investigated in this article because the available measure only captures the former dimension. Past research has suggested but not demonstrated that age norms may differ by community context (Brewster 1994a) or group membership (Stack and Burton 1993). As with other social phenomena, sociologists often expect multiple levels of influence on individuals, including individual-level factors, interpersonal interactions, and social institutions (Risman 1998). Neighborhoods reflect aspects of the latter two levels of influence. The influences of community context and individual-level factors on sexual and fertility *behaviors* have been established (Crane 1991; Brewster, Billy, and Grady 1993; Brewster 1994b). In the case of perceived teenage pregnancy *norms*, there may be individual variation by race/ethnicity, SES, and gender, as well as contextual variation by racial/ethnic and socioeconomic composition.

Gender Variation in Norms

Adolescents' norms against teenage pregnancy may vary by gender. On the one hand, because women bear children and because societal norms prescribe higher levels of involvement in parenting, early childbearing could be perceived as more detrimental to girls' futures than boys'. Girls' violation of teenage pregnancy norms is also visible if they do not terminate the pregnancy, while boys' violation can sometimes be invisible. For these reasons, norms against teenage pregnancy may be stronger for girls. On the other hand, men's income prospects are higher than women's on average, even at low levels of education (Jacobs 2003). If becoming a teenage parent is perceived to reduce future earnings, the expected opportunity costs could therefore be higher for boys than girls, making norms against teenage pregnancy stronger for boys. On balance, however, I hypothesize that adolescent girls are expected to be more likely to perceive norms against teenage pregnancy than boys (Hypothesis 1).

Racial and Ethnic Variation in Norms

Some past research (see below for examples) has found that teenage pregnancy is more acceptable among African Americans and Latinos and in predominantly African American or Latino communities than elsewhere.[2] Using national survey data and a similar measure of embarrassment, Mollborn (2009) found that African American adults reported weaker norms against teenage nonmarital childbearing than other racial/ethnic groups, but Latino adults were not significantly different from others. However, this research did not examine teenagers' perceived norms or document variation in norms at levels beyond the individual.

Public discourse relies heavily on cultural explanations for racial and ethnic differences in norms. While many social scientists' accounts acknowledge both structural and cultural influences on norms, they tend to lean in one or the other direction. More *culturally* oriented

[2]While norms may also differ among other racial and ethnic groups besides African Americans, Latinos, and whites, this study reflects the focus in the literature on racial/ethnic cultures, as well as addressing pragmatic concerns about subsample sizes for other races, by comparing these three groups.

explanations include the prevalence of more positive mother identities among Latina girls (Leadbeater 1996), the welcoming of motherhood as an achievement or a marker of adult status among African Americans (Burton 1990), and the influence of traditional Latino values about the importance of family (Contreras et al. 1999). Explanations for racial/ethnic differences in norms that instead emphasize social *structure* include a shared experience of social isolation (Massey and Denton 1993; Sucoff and Upchurch 1998) and "variations in group access to channels of privilege and influence" (Wilson 1987:75). A common thread across these explanations and in public discourse is that cultural characteristics or social structural circumstances specific to a racial or ethnic group lead to differences in norms. This reasoning leads to Hypothesis 2, which states that white adolescents are expected to be more likely to perceive norms against teenage pregnancy than African Americans and Latino/as.

Many of these arguments rely on the idea of norms developing through African American or Latino cultures or structural circumstances that are prevalent in African American or Latino communities. The precise analytic level of these effects is unclear, but neighborhoods have been associated with individual-level behaviors in the past and seem relevant for these social processes. Therefore, Hypothesis 3 states that as the proportion of African American or Hispanic residents in a neighborhood increases, the likelihood of perceiving norms against teenage pregnancy is expected to decrease regardless of the individual teenager's race/ethnicity.

It seems plausible that people who live in neighborhoods that are predominantly composed of people from their own racial/ethnic group are likely to be more socially isolated from other racial and ethnic groups and more immersed in their own racial/ ethnic cultures. In such cases, these cultures may influence people's teenage pregnancy norms particularly strongly. Therefore, Hypothesis 4 states that a greater proportion of residents from one's own racial or ethnic group in the neighborhood is expected to decrease African American and Latino teens' odds of perceiving norms against teenage pregnancy. However, racial and ethnic cultures or structural circumstances related to race/ethnicity may affect teenage pregnancy norms at the societal rather than the neighborhood level. If so, then immersion in neighborhood-level racial or ethnic cultures may not influence norms and associations of norms with neighborhood-level variables would not be observed. Analyses comparing different societies and measuring their racial and ethnic cultures and structural circumstances attached to race and ethnicity would be needed to understand societal-level influences on racial and ethnic differences in norms about teenage pregnancy. Because societal-level variables could not be incorporated into this study's analyses, their influences cannot be assessed here. Rather, persistent individual-level associations of norms with race/ethnicity after neighborhood-level influences are controlled might indirectly reflect societal influences.

Socioeconomic Variation in Norms

A structurally oriented line of reasoning predicts *socioeconomic* variation in teenage pregnancy norms (e.g., Duncan and Hoffman 1991; Astone and Upchurch 1994; Driscoll et al. 2005). Variation by individual-level educational attainment in American adults' embarrassment at the prospect of a teenage nonmarital pregnancy in their family has been documented (Mollborn 2009), but contextual socioeconomic influences on teenage pregnancy norms have not been examined. The idea of opportunity structures may explain why socioeconomic variation occurs. While this perspective has primarily been used to explain the prevalence of teenage pregnancy and parenthood in the past, I apply its logic to teenage pregnancy norms. The group-level evaluation of how people should behave that is the basis of teenage pregnancy norms may vary depending on perceptions of adolescents' socioeconomic opportunities. Teenagers from high-SES family backgrounds are expected to

achieve similarly high SES, so they are discouraged from early childbearing since it is perceived to severely curtail socioeconomic prospects (although most empirical research finds a much more modest effect of teenage child-bearing; see Hoffman 1998 for a review). This reasoning motivates Hypothesis 5, which states that high-SES adolescents are expected to be more likely to perceive norms against teenage pregnancy than those from lower-SES families.

A similar process may occur at the level of neighborhood socioeconomic context. Community members' shared evaluation of the costs and benefits of different options available to young people are expected to differ across neighborhoods. In areas where opportunities for economic, educational, or social advancement abound, community members may discourage teenagers from getting pregnant (Anderson 1990; Sucoff and Upchurch 1998). Such opportunities are rarer in socioeconomically disadvantaged neighborhoods (Wilson 1987). For example, a lack of well-paying jobs in poor inner-city neighborhoods creates little economic incentive for adolescents to finish school, marry, or build a career. In the absence of these markers of attaining adult status, childbearing may be the earliest signal of adulthood instead (Hogan and Kitagawa 1985) and may not always harm adolescents' futures (Upchurch and McCarthy 1990). Therefore, Hypothesis 6 states that neighborhood-level SES is expected to be positively associated with the likelihood of perceiving norms against teenage pregnancy.

Socioeconomic effects can easily be confounded with those of race and ethnicity. High-poverty neighborhoods are usually racially segregated (Jargowsky 1997), and both individual- and neighborhood-level socioeconomic status are highly correlated with race and ethnicity (Brewster 1994b). Therefore, Hypothesis 7 states that socioeconomic status is expected to partially explain the association between race/ethnicity and teenage pregnancy norms at both the individual and neighborhood levels.

DO TEENAGE PREGNANCY NORMS INFLUENCE ADOLESCENTS' PREGNANCY BEHAVIORS?

Besides identifying and working to explain variation in norms about teenage pregnancy, this study also investigates the relationship between these norms and the behavior they are expected to regulate. When norms are violated, group members are expected to level negative sanctions against the deviant (Marini 1984; Settersten 2004). Since people know that negative sanctions are attached to norm violation, the mere threat of sanctions may be enough to keep them from violating a norm (Herold 1981; Wooten 2006). Therefore, Hypothesis 8 states that stronger norms against teenage pregnancy are expected to decrease the likelihood of reporting a subsequent teenage pregnancy.

In the past, norms have often been inferred from group-level patterns of fertility behaviors. This reasoning assumes that norms are the main driving force behind behaviors. For example, Sucoff and Upchurch (1998) found that neighborhood racial composition influenced premarital teenage pregnancy independently of SES among a sample of African Americans, which they interpreted as indirect evidence of the influence of race-specific cultural norms. I expect that pregnancy norms are just one of many pathways through which race/ethnicity and SES may affect pregnancy behaviors. For example, SES may shape the likelihood of a teenage pregnancy through its influence on norms, but also through increased knowledge about pregnancy prevention and resources for obtaining contraception (Link and Phelan 1995). Measuring perceived teenage pregnancy norms directly allows estimation of the magnitude of the relationship between norms and subsequent behaviors and identification of other influences on behaviors.

METHODS

Data

Analyses used data from the National Longitudinal Study of Adolescent Health ("Add Health"), a nationally representative survey of students begun in the mid-1990s (Bearman, Jones, and Udry 1997). Investigators chose a sample of 80 high schools and 52 middle schools in the United States with an unequal probability of selection. More than two-thirds participated, and those who refused were replaced by schools from the same community. The sample is representative of U.S. schools with respect to region of country, urbanicity, school type, ethnicity, and school size. While some populations of students were oversampled and dropouts were not interviewed, probability weights allow researchers to accurately represent the national population of adolescents in grades 7 to 12.

Data for this analysis came from the first and third waves of the survey. In Wave I, a subsample of students from each school completed an extensive in-home interview. Interviewers only asked the questions measuring teenage pregnancy norms of respondents aged 15 years and older, so analyses are restricted to this group (N = 13,537 Wave I respondents eligible for the norms questions, younger than age 20, and not missing data on the weight, clustering, or stratification variables). After the listwise deletion of missing cases, the final sample size for the analysis of variation in norms was 12,505.[3] Analyses of teenage pregnancy outcomes used retrospective pregnancy data from Wave III, which was conducted six years after Wave I. By including only respondents who also answered pregnancy questions in Wave III and who did not experience a teenage pregnancy before Wave I, the sample was reduced to 9,171 cases.[4] I replicated the first, cross-sectional analyses with this smaller sample, and support for the predictions did not differ substantively. Stata statistical software estimated logistic regression models using complex survey design commands that accounted for stratification by region, the clustering of respondents within census tracts, and probability weights that made the sample representative of grades 7 to 12 nationally.[5]

The tract-level variables used to measure neighborhood SES came from the Wave I contextual database. Researchers identified and geo-coded respondents' home locations then linked them to 1990 Census tract-level information. Research on neighborhoods commonly uses census tracts since they often represent sizable but identifiable neighborhoods (Sampson 1997), but respondents' definitions of their "neighborhoods" are subjective and not available in the survey.

Variables

Dependent Variables—I first analyzed adolescents' perceptions of norms regarding teenage pregnancy. Respondents chose among five levels of agreement with the statement, "If you got [*for males:* someone] pregnant, it would be embarrassing for you."A dichotomous variable received a value of 1 for respondents who perceived negative teenage

[3]Less than 8 percent of eligible cases were missing data on any variable in the analyses of variation in norms. Missing data on any variable was negatively associated with reporting embarrassment at the prospect of a teenage pregnancy ($p < .01$).

[4]Compared with the earlier sample, Wave III included higher proportions of female and nonblack respondents who were in younger grades at Wave I. Wave III weights used in the analysis adjust for such patterns of nonresponse, and analyses have shown that bias from nonresponse is very low for a variety of outcomes (Chantala, Kalsbeek, and Andraca n.d.). My supplemental analyses found that compared with those who did not respond in Wave III, a higher proportion of respondents was embarrassed at the prospect of a teenage pregnancy, a lower proportion was black and a higher proportion was white, a lower proportion was poor and a higher proportion had a high household income, and respondents came from neighborhoods with lower proportions of black residents and higher neighborhood SES.

[5]Because Add Health only includes a mean of seven and a median of two respondents per census tract (Cubbin et al. 2005), accounting for the slight clustering of respondents within tracts using this method is reasonably accurate (see Harris, Duncan, and Boisjoly 2002 for a similar approach).

pregnancy norms ("agree" or "strongly agree") and a value of 0 for those who did not ("strongly disagree," "disagree," or "neither agree nor disagree"). Combining some categories was conceptually cleaner since the three options coded as 0 were vague and difficult to differentiate: It was unclear whether disagreement with the statement that a pregnancy would be embarrassing indicated a norm promoting teenage pregnancy or simply a lack of a norm against teenage pregnancy. In other words, when a respondent disagrees that she would be embarrassed by a teenage pregnancy, does that mean that she anticipates a social *reward* for becoming pregnant, or that she simply does not anticipate social *punishment*? Many groups (such as African Americans, Latinos, and adolescents from low-SES neighborhoods) displayed a bimodal distribution in the original scale, with large groups of respondents agreeing and roughly equally large groups disagreeing that a pregnancy would be embarrassing and with few respondents at the middle of the scale. The dichotomized variable reflected this bimodality: 62 percent of respondents reported perceiving norms against teenage pregnancy, while 38 percent did not perceive negative pregnancy norms (see Table 1). Because adolescents knew that societal norms proscribe teenage pregnancy, there may have been social desirability bias in their responses to interviewers, leading to potential overestimation of norms against teenage pregnancy.

Other analyses focused on adolescents' reports of a teenage pregnancy between Wave I and Wave III. Both women and men reported whether any pregnancies (regardless of the pregnancy's outcome) had occurred in the context of any of their romantic or sexual relationships since Wave I and before they turned 20 years old.[6] The month and year of each pregnancy's end and its duration in weeks were recorded, allowing a close approximation of the start date of the first teenage pregnancy. To establish time order, analyses excluded 255 teenagers who reported a pregnancy before Wave I. One thousand sixty-seven respondents reported a teenage pregnancy between Wave I and Wave III, including 16 percent of women and 6 percent of men (weighted means). Men's lower proportion of reported teenage pregnancies was probably partly due to most teenage mothers being impregnated by men who are no longer adolescents while fewer teenage boys date older women and in part to some pregnancies not being disclosed to the male sexual partner. Because of respondents' staggered ages at Wave I and the embarrassment question's exclusion of respondents under 15, there was little age variation: 12 pregnancies were to 15-year-old respondents, 273 to 16- or 17-year-olds, and 782 to 18- or 19-year-olds.

Independent Variables—All independent variables were measured at Wave I. Gender was included as an explanatory variable in descriptive analyses, and multivariate analyses were split by respondents' gender for reasons described below. Respondents' race/ethnicity was coded as Latino and non-Latino white, African American, Asian/Pacific Islander, Native American/ American Indian, and "other race." Respondents who identified as multiracial were asked to choose a primary racial identity. The tract-level proportion of African American residents and the proportion of Latino residents were drawn from the contextual database. The proportion of white residents was omitted from multivariate analyses because of multicollinearity concerns.

Two variables measured individual-level SES. Parents' education levels were recoded from degrees to approximate years.[7] Parent-reported household income contained large amounts of missing data, both because some respondents' parents were not interviewed and because some parents refused to provide income information. Following Cubbin et al.(2005), a series of dummy variables measured income as a percentage of 1994 federal poverty guidelines

[6]Booth, Rustenbach, and McHale (2008) compared biological children listed in the roster of household members with respondents' reported births and found that births appeared to be somewhat undercounted in Add Health. Therefore, our count of teenage pregnancies is likely an underestimate.

adjusting for the number of people in the household (0–100 percent, 101–200, 201–300, 301–400, greater than 400, and income missing). Neighborhood SES was an index of census tract-level variables from theAdd Health contextual database.[8] The index was an average of four standardized items represented three facets of SES: education (the proportion of residents aged 16–19 not in school or the armed forces and not high school graduates, and the proportion aged 25 or older with at least a college degree), income (the tract's median family income), and occupation (the proportion of residents employed in managerial/professional specialty occupations). A single factor emerged from these measures in factor analysis, and Cronbach's alpha was .85.

Control variables were chosen for substantive reasons and because of past evidence of their relationship with pregnancy attitudes and sexual behavior (e.g., Ramirez-Valles, Zimmerman, and Juarez 2002; Jaccard, Dodge, and Dittus 2003). Respondents' age was reported as a fraction of years. The Add Health survey excluded respondents younger than 15 from answering questions about sex and pregnancy, and respondents aged 20 or older were excluded from analyses because of this study's focus on teenagers. The number of years lived at the current residence served as a rough proxy for the length of time respondents had lived in their neighborhood. Respondents' family structure was coded into a series of dummy variables after Harris (1999): both biological parents, other types of two-parent families, a single mother, a single father, and other family structures. Respondents' status as being born in the United States was reported by the parent if available and the adolescent otherwise. Church attendance approximated respondents' exposure to a religious community's norms. A set of indicator variables (less than once per month, more than once per month but less than once per week, and once per week or more) measured attendance, with never/no religion as the reference category. Two additional variables were included in analyses of variation in teenage pregnancy norms, but not in analyses of their consequences because they are likely mechanisms through which norms may lead to differences in pregnancy behaviors. Teenagers reported whether they had ever had penile–vaginal intercourse and whether they were currently in a romantic relationship.

RESULTS

Do Adolescents' Teenage Pregnancy Norms Vary?

The first goal of this study is to describe variation in perceived norms against teenage pregnancy. Two analyses address this goal: Figure 1 shows the percentage of respondents who reported embarrassment across categories of the main explanatory variables, and Table 1 compares means for each independent variable between respondents who reported embarrassment and those who did not. *Girls were significantly more likely to report embarrassment at the prospect of a teenage pregnancy than boys* ($p < .01$), supporting Hypothesis 1. Supplemental analyses tested interactions between gender and both race/

[7]Responses were coded into approximate years of education: no schooling = 0, eighth grade or less = 8, some high school = 10, trade/vocational/business school instead of high school = 11, high school graduate or GED = 12, trade/vocational/business school after high school = 13, some college = 14, college degree = 16, graduate/professional training = 18. The highest education levels of the mother and her spouse/partner were averaged using parent reports. If the spouse's education was missing, I substituted the teenage respondent's report of his education level, and lacking that, the mother's education stood in for both. If no parent completed the survey, the adolescent respondent's report of both parents' education levels was substituted. Cubbin et al. (2005) found 75 percent agreement between parents' and adolescents' reports of parental education levels when data for both were available.

[8]Finding suitable items was difficult because among whites, African Americans, and Latinos, race/ethnicity and neighborhood SES are so intertwined that there is little overlap in the distributions of neighborhood SES indicators across these three groups. Without overlapping distributions, analysis is not meaningful (Brewster 1994b). Following Brewster, I included only items for which each group's (whites', African Americans', and Latinos') median fell within the 20th and 80th percentiles of each of the other two groups. This criterion led to the exclusion of four measures of neighborhood SES that did not have sufficiently overlapping distributions across racial/ethnic groups: the proportion of respondents receiving welfare income, the unemployment rate, the proportion of residents aged 25 or older without a high school degree, and the proportion of families living below the poverty line.

ethnicity and SES. There were gender differences in the relationship between embarrassment and black race ($p < .01$), Hispanic ethnicity ($p < .01$), parents' education ($p < .05$), and neighborhood SES ($p < .10$). These gender differences in the bivariate relationships between embarrassment and both race and SES suggested that it was appropriate to split multivariate analyses by gender.

White boys and girls and teens living in predominantly white neighborhoods were significantly more likely, and African American and Latino respondents and those living in predominantly African American or Latino neighborhoods were less likely, to report embarrassment than others ($p < .05$, but not significant for Latina girls). Figure 1 shows that at the extremes, 69 percent of white girls reported embarrassment at the prospect of a teenage pregnancy compared with 34 percent of African American boys. Forty-six percent of respondents from low-SES neighborhoods and 48 percent of respondents with household incomes below the poverty line reported embarrassment compared with 74 percent of those living in high-SES neighborhoods and 72 percent of those with incomes at 301 to 400 percent of the poverty line. As expected, *racial/ethnic and socioeconomic privilege at the individual and neighborhood levels was positively associated with embarrassment at the prospect of a teenage pregnancy*.[9]

Why Do Adolescents' Teenage Pregnancy Norms Vary?

The second research goal focuses on identifying useful explanations for individual-level and contextual variation in perceived norms against teenage pregnancy. Multivariate logistic regression models, reported in Table 2 for girls and Table 3 for boys, assessed associations between race/ethnicity and SES (measured at the individual and neighborhood levels) and adolescent girls' and boys' likelihood of reporting embarrassment at the prospect of a teenage pregnancy. The *second hypothesis* expected that African American and Latino adolescents would be less likely to report embarrassment at the prospect of a teenage pregnancy than white teens. For both genders, Model 2 (the full model of main effects) supported this prediction: African American and Latino adolescents were roughly half as likely as whites to report embarrassment at the prospect of a teenage pregnancy ($p < .01$).[10]

The *third hypothesis* expected that higher proportions of African Americans or Latinos in a teen's neighborhood would be associated with a lower likelihood of reporting embarrassment at the prospect of a teenage pregnancy. This prediction was not supported by Model 2 because the coefficients for neighborhood proportion black and Latino were not significant once family- and tract-level SES were controlled. The *fourth hypothesis* expected that African American and Latino teens living in neighborhoods predominantly composed of residents from their own racial/ethnic group would be less likely to report embarrassment than those who live in neighborhoods with lower proportions of residents from their own racial/ethnic group. The lack of significant interactions between individual- and neighborhood-level race/ethnicity in Model 3 (Tables 2 and 3) indicated no support for this prediction. Taken together, these results suggested that *immersion in neighborhood-level African American or Latino cultures was not linked to lower odds of reporting embarrassment at the prospect of a teenage pregnancy*. Rather, *racial and ethnic*

[9]Standardized effect sizes from bivariate logistic regression analyses (not reported in tables) illustrate the relative size of the associations between individual-level racial and socioeconomic factors and embarrassment at the prospect of a teenage pregnancy. Among girls, socioeconomic factors were more important than race/ethnicity. An increase of one standard deviation in parents' education was associated with an approximately 50 percent greater likelihood of reporting embarrassment at the prospect of a teenage pregnancy. Among boys, this socioeconomic relationship was even greater at about 70 percent, but they were joined by a similarly strong negative association between African American racial identity and reported embarrassment.

[10]Here and elsewhere, respondents' odds or likelihoods of reporting embarrassment at the prospect of a teenage pregnancy are based on odds ratios, which exponentiated the coefficients reported in the tables.

associations persisted at the individual level, with lower odds of embarrassment among African American and Latino/a boys and girls than among whites.

Three other hypotheses pertained to socioeconomic variation in embarrassment. The *fifth hypothesis* expected adolescents with higher individual-level SES to be more likely to report embarrassment at the prospect of a teenage pregnancy than those with lower SES. In Model 2 (Tables 2 and 3), this hypothesis was fully supported for parental education and partly supported for income. A one-year increase in parental education was associated with an 11 percent (for girls) or 14 percent (for boys) higher likelihood of reporting embarrassment at the prospect of a teenage pregnancy ($p < .01$). Household income was not significantly related to embarrassment among boys, but among girls an income at 301 to 400 percent of the federal poverty level was linked to a 51 percent greater likelihood of reporting embarrassment than among girls living in poverty ($p < .01$). The *sixth hypothesis* expected that teenagers from higher-SES neighborhoods would be more likely to report embarrassment at the prospect of a teenage pregnancy than those from lower-SES neighborhoods. This hypothesis was at least partially supported: A 1-standard-deviation increase in neighborhood SES was associated with a 12 percent greater likelihood of reporting embarrassment for boys ($p < .05$). This relationship was similar in magnitude for girls but only marginally significant ($p < .10$). Taken together, *these findings partially support socioeconomic explanations for variation in embarrassment at the prospect of a teenage pregnancy*.

The *seventh hypothesis* expected SES to at least partially explain the relationship between race/ethnicity and embarrassment at the individual and neighborhood levels.[11] Model 1 excluded individual- and neighborhood-level SES from the analyses to help determine whether mediation occurred in Model 2 (other criteria for mediation were assessed in supplemental analyses), and findings were largely similar for both genders. Only the individual-level African American indicator was not partially or fully mediated by SES. The individual-level Latino indicator was partially mediated but still significant in Model 2 ($p < .01$). The proportion of Latino neighborhood residents was negatively associated with reporting embarrassment in Model 1, but after the introduction of SES these relationships were not significant in Model 2. The proportion of African Americans in the neighborhood was negatively related to reporting embarrassment at the prospect of a teenage pregnancy in Model 1 for boys ($p < .01$), but not for girls. This relationship was no longer significant once SES was added in Model 2. Supplemental analyses (not shown) found that neighborhood-level SES mediated neighborhood-level race/ethnicity in the absence of individual-level SES. In summary, the seventh hypothesis was mostly supported, implying that *socioeconomic explanations are useful for understanding racial/ethnic differences in adolescents' odds of reporting embarrassment at the prospect of a teenage pregnancy*.[12]

Do Teenage Pregnancy Norms Influence Adolescents' Pregnancy Behaviors?

The third research goal was to explore whether perceived norms against teenage pregnancy are linked to the behavior they are expected to regulate. Table 4 presents logistic regression analyses estimating the relationship between embarrassment at the prospect of a teenage pregnancy and the likelihood of subsequently reporting a teenage pregnancy between Waves

[11]Criteria for mediation followed Baron and Kenny (1986): The addition of the mediating variable must reduce or eliminate the relationship between the independent and dependent variables, the mediating variable must significantly predict the dependent variable, and the independent variable must significantly predict the mediating variable.

[12]Was race/ethnicity or SES a more important predictor of embarrassment at the prospect of a teenage pregnancy, and was the neighborhood or individual level more important? Supplemental analyses based on Model 2 that used standardized variables to compare effect sizes found that for both genders, two predictors had the largest, roughly equally sized effects: individuals' African American race and parental education. The Hispanic and neighborhood SES coefficients were smaller, and neighborhood racial/ethnic composition was not significant.

I and III. Hypothesis 8 expected embarrassment at the prospect of a teenage pregnancy to be associated with a lower likelihood of reporting a pregnancy before age 20. Analyses were split by gender because men might not know whether a sexual partner got pregnant, leading to different processes influencing reports of a pregnancy for men versus women.

Model 1 in Table 4 displays the associations of control variables with the likelihood of reporting a teenage pregnancy, and Model 2 adds the measure of embarrassment at the prospect of a teenage pregnancy. *Reporting embarrassment at the prospect of a teenage pregnancy was strongly associated with adolescents' subsequent likelihood of experiencing a pregnancy*. Embarrassment was associated with a 42 percent (for girls) or 56 percent (for boys) lower likelihood of reporting a subsequent teenage pregnancy ($p < .01$). Supplemental analyses calculated predicted probabilities of reporting a teenage pregnancy based on Table 4, Model 2 for "typical" hypothetical cases whose embarrassment varied but whose other variables were held at their means if continuous and medians/modes if categorical. A "typical" boy who reported feeling embarrassed at the prospect of a teenage pregnancy had just a 2.8 percent predicted probability of getting a girl pregnant compared with a much higher 6.2 percent predicted probability for a boy who was not embarrassed. For girls, the corresponding predicted probabilities were 7.6 and 12.3 percent.

Embarrassment at the prospect of a teenage pregnancy was not the only factor influencing pregnancy behaviors in Model 2 (Table 4). For example, boys and girls from lower-SES neighborhoods were more likely to experience a teenage pregnancy even with embarrassment controlled, as were girls from families with lower educational attainment and lower income. Very few of the control variables changed substantially in terms of sign, significance, or magnitude when embarrassment was introduced. Embarrassment at the prospect of a teenage pregnancy did not help explain racial/ethnic or socioeconomic differences in the likelihood of experiencing teenage pregnancy, as some might have expected. In fact, many anticipated differences in pregnancy odds did not even exist. For example, African American teens were not more likely to get pregnant than whites once family structure, neighborhood SES, and household income were controlled. The proportion of African American residents did not increase pregnancy odds once neighborhood SES was controlled, and the proportion of Latino residents in a teen's neighborhood actually sharply decreased the likelihood of a teenage pregnancy. Latinas were more likely to report a teenage pregnancy than whites as expected, but Latinos were not. As with analyses predicting embarrassment at the prospect of a teenage pregnancy, individual- and neighborhood-level socioeconomic factors appeared to explain many racial/ethnic differences in the likelihood of an actual pregnancy.

DISCUSSION

This study contributes to the ongoing debate about the role of age norms in life course theory. Instead of inferring norms from behaviors as some previous studies have done, these results provided preliminary information about the distribution of teenage pregnancy norms across subgroups of American teenagers, the strength of racial/ethnic and socioeconomic explanations for subgroup differences, and the link between norms and behavior. This study measured perceptions of negative social sanctions for pregnant teenagers, which imply the presence of a norm against teenage pregnancy, through teenagers' reported embarrassment at the prospect of a teenage pregnancy. Embarrassment varied by gender and by race/ethnicity and socioeconomic status at the individual and contextual levels. Multivariate analyses suggested that at least at the neighborhood level, the notion of different racial/ethnic cultures among Latinos, African Americans, and whites did not explain the observed variation in adolescents' perceived norms. However, individual-level racial and ethnic differences in reported embarrassment persisted.

Multivariate analyses documented a positive relationship between SES at the individual and neighborhood levels and embarrassment at the prospect of a teenage pregnancy for girls or boys, and often for both. SES fully mediated the associations of neighborhood racial/ethnic composition with embarrassment and partially mediated the relationship between Latino/a ethnicity and embarrassment. In other words, results suggested that *to the extent that teens from predominantly African American and Hispanic neighborhoods are less likely to report embarrassment at the prospect of a teenage pregnancy, it appears to be because these neighborhoods tend to be poorer*.

Besides doing a reasonably good job of explaining observed differences in adolescents' embarrassment at the prospect of a teenage pregnancy, the socioeconomic perspective also has the advantage of being able to explain *change* in norms. Theoretical conceptions of social norms have been criticized for being static, with no conceptualization of change (Marshall 1998). As Colen, Geronimus, and Phipps (2006:1533) articulated, changing socioeconomic circumstances can alter local norms about teenage childbearing: "During times of economic prosperity, when teens or elders may perceive improved financial returns to education or immediate job opportunities, a greater percentage of African-American teens in high-poverty communities may be both encouraged and personally motivated to delay childbearing." Brewster et al. (1993) emphasized the change that may occur in the opposite situation: "If … labor market conditions suggest to young women that they have little likelihood of attaining their occupational aspirations, it may become increasingly difficult for a community to maintain or enforce norms prescribing the sequencing of school completion and marriage before childbearing" (p. 716). The empirical support received by the socioeconomic perspective in this study, combined with its useful conceptualization of change in norms, make it a promising candidate for understanding other age norms. For example, community-level evaluations of the socioeconomic opportunities available to young people may also explain differences in norms about high school dropout, moving out of the parental home, or labor force participation. Future research could investigate these issues.

Analyses showed that individual-level racial and ethnic differences in teenage pregnancy norms could not be fully explained by socioeconomic influences or by neighborhood-level differences in racial/ethnic cultures. Two alternative explanations may be useful for understanding this finding but were not testable here. First, the primary influences of racial/ethnic cultures on teenage pregnancy norms may be at the family, societal, or other levels besides the level of census tracts. If these other levels are not measured explicitly, residual racial/ethnic differences at the individual level would be observed as they are in this study. Second, group differences in income, employment rates, and educational returns in U.S. society could make socioeconomic success seem like an unlikely prospect for many African Americans and Latinos (Wilson 1987). Washington and Newman (1991) called this societal-level phenomenon "opportunity differentials." Opportunity differentials could lead to racial and ethnic differences in the group-level evaluation process of opportunities that is hypothesized to create teenage pregnancy norms, explaining this study's individual-level findings.

This study also found that embarrassment at the prospect of a teenage pregnancy was strongly associated with adolescent girls' and boys' subsequent likelihoods of reporting a teenage pregnancy. This finding provides support for the assumption in the life course theoretical perspective that age norms encourage conformity to the norm in individuals' behaviors. However, embarrassment was not the only important influence on teenage pregnancy. For example, as neighborhood SES rose, girls' and boys' likelihood of experiencing a teenage pregnancy decreased, independently of embarrassment. It is particularly interesting that embarrassment at the prospect of a teenage pregnancy did not

mediate relationships between race/ethnicity and SES and the likelihood of teenage pregnancy in Table 4. In fact, when comparing African Americans with whites and for the proportion of African American residents in a neighborhood, there was no such relationship to explain once controls were included. Public discourse would suggest that there should be much higher odds of adolescent pregnancy among African Americans and Latinos and in neighborhoods dominated by residents from these groups than among whites and white-dominated neighborhoods, and that weaker norms against teenage pregnancy should explain this difference. Neither of these expectations was met. *Norms mattered a great deal for subsequent teenage pregnancy, but they operated independently of individual- or neighborhood-level race, ethnicity, and SES.* Theoretical links between race, ethnicity, SES, and norms and between norms and teenage pregnancy are warranted, but they may not be as strong as many would expect.

This analysis has a number of limitations. First, I argue that the measure of adolescents' perceived norms regarding teenage pregnancy used in this study is theoretically sound and an improvement on those previously available in survey data, but a more multifaceted conception of norms would be better. For example, specifying different reference groups for the embarrassment question, asking concretely about upper and lower age ranges for the acceptability of childbearing, and capturing specific social sanctions leveled at violators of pregnancy norms beyond the hypothetical sanctions documented by Mollborn (2009) would be useful. Second, with the current measure of norms it was unclear whether respondents who were not embarrassed at the prospect of a teenage pregnancy perceived norms encouraging pregnancy or if they simply perceived a lack of normative control. Asking about potential social rewards for a teenage pregnancy from different reference groups could clarify this issue. Third, the scope of the study was limited regarding age because teenagers younger than age 15 were excluded. Norms against teenage pregnancy may be stronger among younger adolescents because of more severe social and health-related consequences of pregnancy at these ages. Fourth, even though several individual- and family-level variables were controlled in the models, the possibility of selection bias that afflicts most neighborhood studies persisted (see Leventhal and Brooks-Gunn 2000 for a review). For example, families that appear similar based on the variables measured in this analysis may decide to move to more or less affluent neighborhoods based on characteristics that were not measured here. As with many other studies, the use of census tracts to represent neighborhoods may lead to an underestimation of neighborhood effects. Fifth, family, school, and peer contexts are likely to be important beyond neighborhoods and should be included in future research. Sixth, people labeled as African American and Latina/o come from a variety of backgrounds, both among immigrants and among native-born residents because of rural/urban or regional distinctions. Qualitative research would be useful for fleshing out how these differences are reflected in norms. Finally, future analyses should move beyond analyzing pregnancy to explore the relationship between teenage pregnancy norms and related behaviors such as sexual activity, contraception, abortion, adoption, and childbearing.

Assuming that the relationships explored here were causally linked, the finding that teenage pregnancy norms were associated with subsequent pregnancy behaviors has two important implications for social policy. First, these analyses suggested that strengthening norms about teenage pregnancy might reduce teenage pregnancies. However, stronger norms would not "fix" problematic structural correlates of teenage pregnancy such as low neighborhood SES and (for girls) low parental education and income. Normative and structural factors likely need to be addressed in tandem for policies to be most effective. Second, it is important to consider that strengthening norms against teenage pregnancy as a policy measure is a double-edged sword. Stronger norms against teenage pregnancy may lead to fewer adolescents deviating from these norms, but teenage mothers and fathers who have violated

the norm might also be subject to more severe and widespread sanctions. Past research using hypothetical vignettes linked stronger norms against teenage childbearing to reductions in the resources made available to teenage parents by their families (Mollborn 2009), implying that strengthening teenage pregnancy norms can create problems for vulnerable teenage parents and their children. Any norm-based policy solutions to curbing rates of teenage or nonmarital pregnancy and childbearing should be sensitive to this dilemma.

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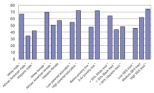

FIGURE 1.
Percentage of Respondents Reporting Embarrassment at the Prospect of a Teenage Pregnancy by Demographic Group.
Source: National Longitudinal Study of Adolescent Health (Bearman, Jones, and Udry 1997). N = 12,505.
Notes: *$p < .05$; design-based F-test for category compared to all others. Frequencies account for weighting and design effects (stratification and clustering). For parental education, “low” is ≤13 years, and “high” is >13 years. For neighborhood socioeconomic context, “Low” is >1 SD below mean, “Middle” is between −1 and 1 SDs around the mean, and “High” is >1 SD above mean. Norm against teenage pregnancy is measured by the statement, “If you got [*for males:* someone] pregnant, it would be embarrassing for you.” SES, socioeconomic status.

TABLE 1

Weighted Means for Variables Used in Analyzing Embarrassment at the Prospect of a Teenage Pregnancy

Variables	All respondents (N = 12,505)	Not embarrassed 38.3%	Embarrassed 61.7%
Respondent's race/ethnicity			
Non-Latino white[a]	.67 (.02)	.56** (.02)	.74** (.02)
Non-Latino black	.16 (.01)	.25** (.02)	.11** (.01)
Latina/o	.12 (.01)	.16** (.01)	.09** (.01)
Asian/Pacific Islander	.04 (.005)	.03** (.004)	.04** (.01)
Native American	.01 (.002)	.01** (.003)	.004** (.001)
Other race	.01 (.001)	.01 (.002)	.01 (.002)
Neighborhood composition			
Proportion African American	.14 (.01)	.18** (.02)	.11** (.01)
Proportion Latina/o	.08 (.01)	.09** (.01)	.07** (.01)
Parents' mean education (years)	13.05 (.09)	12.39** (.07)	13.46** (.11)
Household poverty status (percent federal poverty line)			
0–100[a]	.13 (.01)	.17** (.01)	.10** (.01)
101–200	.17 (.01)	.20** (.01)	.15** (.01)
201–300	.16 (.01)	.15 (.01)	.17 (.01)
301–400	.12 (.01)	.09** (.01)	.14** (.01)
>400	.18 (.01)	.13** (.01)	.22** (.01)
Missing information	.23 (.01)	.25** (.01)	.22** (.01)
Neighborhood socioeconomic index (standardized; min = −2.4, max = 4.4)	.01 (.06)	−.17** (.04)	.12** (.07)
Female (1 = yes)	.49 (.01)	.45** (.01)	.51** (.01)
Respondent's age (years)	16.95 (.01)	17.13** (.02)	16.85** (.02)
Years R lived at current residence	8.03 (.11)	7.41** (.15)	8.42** (.14)
Family structure			
2 biological parents[a]	.54 (.01)	.43** (.01)	.60** (.01)
2 parents (other types)	.17 (.01)	.19** (.01)	.16** (.01)
Single mother	.20 (.01)	.25** (.01)	.17** (.01)
Single father	.03 (.002)	.04* (.004)	.03* (.003)
Other family structures	.06 (.003)	.09** (.01)	.03** (.003)
Born in the United States (1 = yes)	.93 (.01)	.93 (.01)	.93 (.01)
Church attendance			
Never/no religion	.25 (.01)	.32** (.01)	.21** (.01)
Less than once a month	.20 (.01)	.21 (.01)	.20 (.01)
≥Once/month but < once/week	.20 (.01)	.20 (.01)	.20 (.01)
At least once a week[a]	.35 (.01)	.27** (.01)	.39** (.01)

Variables	All respondents (N = 12,505)	Not embarrassed 38.3%	Embarrassed 61.7%
Ever had heterosexual sex (1 = yes)	.50 (.01)	.68** (.01)	.39** (.01)
In a romantic relationship (1 = yes)	.43 (.01)	.50** (.01)	.39** (.01)

* $p < .05$,

** $p < .01$; design-based F-test, within-row comparisons.

Source: National Longitudinal Study of Adolescent Health (Bearman, Jones, and Udry 1997).

Notes:

[a] Reference category. Numbers in parentheses are standard errors for weighted means. Weighted means account for sample design effects (stratification and clustering).

TABLE 2

Logistic Regression Coefficients Predicting Embarrassment at the Prospect of a Teenage Pregnancy, for *Females* (N = 6,254)

Independent variables	Model 1	Model 2	Model 3
Respondent race/ethnicity[a]			
Non-Latino African American	−.69** (.15)	−.68** (.15)	−.71** (.15)
Latina	−.60** (.14)	−.43** (.15)	−.95 (.57)
Asian/Pacific Islander	−.05 (.20)	−.19 (.22)	−.09 (.22)
Native American	−.22 (.35)	−.13 (.35)	−.10 (.35)
Other race	.09 (.46)	.06 (.49)	.12 (.50)
Neighborhood proportion black	−.10 (.21)	.17 (.23)	−.29 (.36)
Neighborhood proportion Latina/o	−.64* (.30)	−.21 (.33)	−.63 (.50)
Respondent's age (years)	−.08* (.04)	−.10* (.04)	−.10** (.04)
Years at current residence	.02* (.01)	.01 (.01)	.01 (.01)
Family structure[c]			
2 parents (other types)	−.05 (.11)	−.02 (.11)	−.01 (.11)
Single mother	−.17 (.11)	−.09 (.12)	−.08 (.11)
Single father	−.22 (.23)	−.14 (.25)	−.14 (.25)
Other family structures	−.51** (.17)	−.35 (.18)	−.34 (.19)
Born in the United States (1 = yes)	−.29 (.17)	−.38* (.17)	−.36* (.17)
Church attendance[d]			
<once a month	.26* (.11)	.22 (.12)	.22 (.12)
≥1/month, <1/week	.42** (.11)	.39** (.12)	.40* (.12)
≥1/week	.67** (.11)	.65** (.11)	.65** (.11)
Had heterosexual intercourse (1 = yes)	−1.03** (.09)	−.98** (.09)	−.98** (.09)
In a romantic relationship (1 = yes)	−.14 (.09)	−.16 (.09)	−.16 (.09)
Parents' education (years)		.10** (.02)	.10** (.02)
Household poverty status (percent FPL)[b]			
101–200		.11 (.14)	.11 (.14)
201–300		.21 (.16)	.21 (.16)
301–400		.41** (.16)	.41** (.16)
>400		.28 (.16)	.28 (.16)
Missing information		.17 (.13)	.18 (.13)
Neighborhood socioeconomic index		.12 (.07)	.12 (.07)
African American respondent × proportion black in neighborhood			.67 (.42)
Latina respondent × proportion Latina/o in neighborhood			.59 (.61)
Constant	3.22** (.69)	1.71* (.76)	2.01* (.80)
Model statistics:			
Design-based F-test (degrees of freedom)	18.34** (19, 1,748)	15.92** (26, 1,741)	14.80** (28, 1,739)

Independent variables	Model 1	Model 2	Model 3
Incremental F-test compared with previous model	—	9.13**	2.04

*$p < .05$,

**$p < .01$; two-tailed tests.

Source: National Longitudinal Study of Adolescent Health (Bearman, Jones, and Udry 1997).

Notes: Reference categories:

[a]White;

[b]Below poverty level;

[c]2 biological parents;

[d]Never/no religion. Norms are measured by the statement, “If you got [*for males:* someone] pregnant, it would be embarrassing for you.” Analyses account for sample design effects (weighting, stratification, and clustering).

TABLE 3

Logistic Regression Coefficients Predicting Embarrassment at the Prospect of a Teenage Pregnancy, for *Males* (N = 6,251)

Independent variables	Model 1	Model 2	Model 3
Respondent race/ethnicity[a]			
Non-Latino African American	−.82** (.14)	−.82** (.14)	−.87** (.15)
Latino	−.75** (.16)	−.60** (.16)	−.82 (.65)
Asian/Pacific Islander	.20 (.21)	.11 (.22)	.16 (.24)
Native American	−1.24** (.39)	−1.27** (.38)	−1.26** (.38)
Other race	0.04 (.48)	−.05 (.47)	−.01 (.49)
Neighborhood proportion black	−.53* (.21)	−.34 (.21)	−.87* (.37)
Neighborhood proportion Latina/o	−.92** (.31)	−.41 (.32)	−.61 (.59)
Respondent's age (years)	−.10** (.04)	−.11** (.04)	−.11** (.04)
Years at current residence	.01 (.01)	.01 (.01)	.01 (.01)
Family structure[c]			
2 parents (other types)	−.36** (.10)	−.35** (.10)	−.34** (.10)
Single mother	−.42** (.11)	−.40** (.11)	−.39** (.11)
Single father	−.37 (.20)	−.42* (.21)	−.41* (.21)
Other family structures	−.80** (.19)	−.66** (.20)	−.67** (.20)
Born in the United States (1 = yes)	−.18 (.16)	−.23 (.17)	−.24 (.17)
Church attendance[d]			
<once a month	.31** (.12)	.28* (.12)	.28* (.12)
≥1/month, <1/week	.43** (.12)	.35** (.12)	.35** (.12)
≥1/week	.62** (.11)	.55** (.10)	.56** (.10)
Had heterosexual intercourse (1 = yes)	−.78** (.08)	−.70** (.08)	−.70** (.08)
In a romantic relationship (1 = yes)	−.14 (.09)	−.19* (.09)	−.18* (.09)
Parents' education (years)		.13** (.02)	.13** (.02)
Household poverty status (percent FPL)[b]			
101–200		−.08 (.15)	−.07 (.15)
201–300		.12 (.17)	.12 (.17)
301–400		.21 (.17)	.21 (.17)
>400		.18 (.17)	.19 (.17)
Missing information		.11 (.15)	.11 (.15)
Neighborhood socioeconomic index		.11* (.05)	.10 (.05)
African American respondent*			
Proportion black in neighborhood			.87 (.45)
Latino respondent × proportion Latina/o in neighborhood			.26 (.69)
Constant	3.54** (.71)	1.50 (.74)	1.58 (.82)

Independent variables	Model 1	Model 2	Model 3
Model statistics:			
Design-based F-test (degrees of freedom)	25.24** (19, 1,748)	23.58** (26, 1,741)	22.04** (28, 1,739)
Incremental F-test compared to previous model	—	15.38**	2.05

*$p < .05$,

**$p < .01$; two-tailed tests.

Source: National Longitudinal Study of Adolescent Health (Bearman, Jones, and Udry 1997).

Notes: Reference categories:

[a]White;

[b]Below poverty level;

[c]2 biological parents;

[d]Never/no religion. Norms are measured by the statement, "If you got [*for males:* someone] pregnant, it would be embarrassing for you." Analyses account for sample design effects (weighting, stratification, and clustering).

TABLE 4

Logistic Regression Coefficients Predicting Teenage Pregnancy (N = 4,619 females; 4,552 males)

Independent variables	Model 1: females	Model 2: females	Model 1: males	Model 2: males
Respondent race/ethnicity[a]				
Non-Latino African American	−.001 (.19)	−.06 (.20)	.29 (.24)	.14 (.24)
Latina/o	.53* (.22)	.50* (.21)	.41 (.33)	.32 (.33)
Asian/Pacific Islander	.14 (.37)	.15 (.36)	.16 (.52)	.22 (.52)
Native American	−.24 (.42)	−.24 (.40)	.74 (.48)	.51 (.50)
Other race	.22 (.54)	.23 (.57)	1.24* (.58)	1.25* (.60)
Neighborhood proportion black	.24 (.32)	.22 (.33)	−.05 (.43)	−.06 (.42)
Neighborhood Proportion Latina/o	−1.47** (.47)	−1.46** (.48)	−1.54* (.72)	−1.68* (.72)
Parents' education (years)	−.07** (.03)	−.06* (.03)	−.06 (.04)	−.04 (.04)
Household poverty (percent FPL)[b]				
101–200	.37* (.18)	.38* (.18)	.32 (.31)	.30 (.31)
201–300	.35 (.21)	.37 (.21)	−.05 (.32)	−.03 (.32)
301–400	.42 (.24)	.46 (.25)	.03 (.34)	.07 (.34)
>400	−.49* (.25)	−.49 (.25)	.45 (.37)	.50 (.36)
Missing information	.25 (.18)	.25 (.19)	.36 (.31)	.37 (.31)
Neighborhood socioeconomic status index	−.30** (.11)	−.28** (.11)	−.36* (.14)	−.34* (.14)
Respondent's age (years)	−.35** (.05)	−.38** (.05)	−.34** (.08)	−.39** (.08)
Years at current residence	−.01 (.01)	−.01 (.01)	−.01 (.02)	−.01 (.02)
Family structure[c]				
2 parents (other types)	.74** (.15)	.72** (.15)	.37 (.24)	.30 (.24)
Single mother	.61** (.16)	.60** (.16)	.48 (.25)	.39 (.24)
Single father	1.32** (.27)	1.31** (.27)	.12 (.47)	.06 (.47)
Other family structures	.92** (.24)	.88** (.24)	1.35** (.32)	1.20** (.31)
Born in the United States (1 = yes)	.18 (.28)	.11 (.27)	.35 (.43)	.25 (.43)
Church attendance[d]				
<once a month	−.06 (.15)	−.03 (.16)	−.46 (.25)	−.38 (.26)
≥1/month, <1/week	.04 (.17)	.09 (.17)	−.45 (.24)	−.39 (.25)
≥1/week	−.43** (.16)	−.35* (.16)	−.17 (.20)	−.05 (.20)
Embarrassed by prospect of a teenage pregnancy (1 = yes)		−.54** (.14)		−.82** (.18)
Constant	4.69** (.93)	5.32** (.94)	3.21* (1.51)	4.23** (1.50)
Model statistics:				
Design-based F-test (df)	8.89** (24, 1,769)	9.38** (25, 1,466)	4.08** (24, 1,769)	5.29** (25, 1,466)
Incremental F-test compared with previous model	—	15.77**	—	20.74**

* $p < .05$,

** $p < .01$; two-tailed tests. Standard errors in parentheses.

Source: National Longitudinal Study of Adolescent Health (Bearman, Jones, and Udry 1997).

Notes: Reference categories:

[a] White;

[b] Below poverty level;

[c] 2 biological parents;

[d] Never/no religion. Norms are measured by the statement, "If you got [*for males:* someone] pregnant, it would be embarrassing for you." Analyses account for sample design effects (weighting, stratification, and clustering).