Religiosity and the Transition to Nonmarital Fertility

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Abstract

Nonmarital fertility is associated with several negative outcomes, including health problems, educational problems, and poverty. Understanding the risk and protective factors associated with nonmarital fertility can inform policy and interventions, reducing both the incidence and associated consequences. The current study focuses on how intrinsic and extrinsic religiosity are related to the timing of nonmarital fertility using discrete time hazard modeling of a nationally representative sample of adolescent females (N = 7,125) from the National Longitudinal Survey of Adolescent Health. Results indicate that intrinsic religiosity asserts protective effects for some populations while extrinsic religiosity increases risk. Recommendations for policy, intervention, and future research are offered.

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Nonmarital fertility is associated with several negative outcomes, including health problems, educational problems, and poverty. There is a need to understand the risk and protective factors related to nonmarital fertility to better inform policy and interventions, thereby reducing the negative consequences associated with nonmarital fertility.

Background and Significance

Transition to Fertility - Adolescence

Sexual maturation is a defining element of adolescence (Peterson & Leffert, 1995) and frequently involves experimentation and exploration (Brown & Brown, 2006). As evidence, approximately 46% of teens ages 15 through 18 report they have sexually debuted, and by age 19 this number climbs to 70% (Abma, Martinez, Musher, & Dawson, 2004). However, normative sexual behavior alone cannot explain why the US, compared to other developed nations, has the highest teen pregnancy rate (McKay et al., 2010), with adolescent accounting for roughly 10% of the births every year (Martin et al., 2010) at an annual cost to taxpayers of over $9 billion (Hoffman, 2006). The data also demonstrates a striking disparity between White and non-White adolescents: Black and Hispanic females are more than twice as likely to become pregnant as their White peers (Guttmacher Institute, 2010).

The overarching concern with transitioning to fertility during adolescence is that doing so ultimately changes life trajectory and alters other life transitions (Elder, 1998). There are also many negative consequences arising from teen pregnancy for both mother and child. Adolescent mothers are at increased risk for dropping out of school (Perper, Peterson, & Manlove, 2010), living in poverty (Hoffman, 2006), receiving public assistance (Hoffman, 2006), being a single-

parent (Martin et al., 2010), having a substance abuse problem (Gillmore, Gilchrist, Lee, & Oxford, 2006), and engaging in multiple health-risk behaviors (Cavazos-Rehg et al., 2010).

Children born to teenage mothers have a higher likelihood of health & developmental problems due to increased incidence of low birth weight & premature birth (Chen et al., 2007). Furthermore, they experience significant social consequences; they are more likely to be abused (Gueorguieva et al., 2001), live in poverty (Hoffman, 2006), reside in a single-parent home (Martin et al., 2010), engage in delinquent behavior (Hofferth, Reid, & Mott, 2001), and become teenage parents themselves (Meade, Kershaw, & Ickovics, 2008).

Transition to Fertility – Young Adults

The late adolescent/early adult period of development is an increasingly complex life stage with multiple life events and transition, among which is the transition to fertility (Rindfuss, 1991). Due in part to the complexity of the transitions in this stage the transition to fertility in the US is occurring at a later age overall that it was during the mid-1900's (Martin et al., 2010).

One of the influences on the timing of transition to fertility is culture, both in creating a desire for progeny but also in determines family size (Fernandez & Fogli, 2005; Fernandez & Fogli, 2006). Level of education influences timing of fertility as well, with a correlation between later fertility and higher level of education (Caldwell, 1980). Also significant is the role of SES, especially in unintended pregnancies: Although the rate of unintended pregnancies in the US has held steady since the early 1980's, the numbers have increased dramatically among women living in poverty (Finer & Zolna, 2011). This statistic is influenced by a number of factors including access to health care (Montgomery, Kiely, & Pappas, 1996), exposure to intimate partner violence (Miller et al., 2010; Pallitto, Campbell, & O'Campo, 2005; Silverman, Raj,

Mucci, & Hathaway, 2001), and the inability to negotiate sexual decision making (Gillmore et al., 1997; Pulerwitz, Amaro, De Jong, Gortmaker, & Rudd, 2002).

For both adolescents and young adults, there are clear racial and ethnic disparities influencing the transition to nonmarital fertility. Additionally, there are known risk and protective factors that influence the transition to nonmarital fertility.

Risks & Protections Related to Transitioning to Nonmarital Fertility

One approach to understanding health disparities is utilizing the risk/protection framework that emphasizes identification of factors that either increase protection against a specific problem or increases risk (Coie et al., 1993). These risk factors fall into two categories: behavioral risk factors and environmental risk factors. The behavioral risk factors are well understood, and include earlier age of sexual debut (Kourtis et al., 2006; Talashek, Alba, & Patel, 2006), use of alcohol or other drugs immediately before or during sexual activity (Ayoola, Brewer, & Nettleman, 2006; Nettleman, Chung, Brewer, Ayoola, & Reed, 2007; Nettleman, Brewer, & Ayoola, 2009), and improper or non-use of contraceptives (Anderson, Santelli, and Morrow, 2006; Kirby, 2002).

What is less known though is how environmental factors influence the transition to nonmarital fertility. Based on ecological theory (Bronfenbrenner, 1979), behavior is determined by the interaction between person and environment. The environment includes both a structural context (i.e., social institutions such as the economy) and a cultural context (e.g., family and friends).

Structural forces such as SES and gender are well established antecedents of risk for myriad social problems (Link & Phelan, 1995; Parker, Easton, & Klein, 2000). Link and Phelan (1995) argue that poverty is the "fundamental cause of disease" (p. 80), because it limits viable

alternatives to a behavior. Financial barriers also create barriers to health care access, which is related to knowledge of sexual health and is known to reduce the likelihood an adolescent will transition to fertility (Ku & Matani, 2001).

Farmer (Farmer, 2001) asserts being female is, in and of itself, a risk for poor health outcomes because social inequality limits women's opportunities (e.g., occupational and educational opportunities), causing them to rely on men. Gilbert and Walker (2002) observe that women generally have a lower status in society and this disempowerment translates into reduced ability to negotiate or refuse sex, possibly resulting in a transition to fertility. Gomez & Marin (1996) argue that racial inequalities only serve to magnify the gender inequality women experience, as well as increase the likelihood that women will have a lower SES. When gender, race, and SES combine, Farmer (2001) argues women have fewer choices and may be exposed to greater risk for nonmarital fertility because they lack options (e.g., survival sex – a sexual relationships with an identified exchange of resources for sex). These inequalities may also limit a woman's ability to negotiate condom use, again due to dependence on men for basic needs (Marin, 2003; Wojcicki, 2005).

Additional structural factors include family structure, notably that living in a single-parent household increases the likelihood of transitioning to non-marital fertility (Blum et al., 2000). Family structure also influences SES, as single-parent homes generally have lower SES (Montgomery et al., 1996). There is also evidence that geography, specifically residing in a rural versus urban location, can augment the risk of transitioning to nonmarital fertility (Ball, Armistead, & Austin, 2003; Hodge, Cardenas, & Montoya, 2001; O'Sullivan, Meyer-Bahlburg, & Watkins, 2001).

Cultural factors related to nonmarital transition to fertility include the effects of peer and parent interaction in shaping norms and attitudes (Ajzen, 1991). There is research suggesting parents are more influential in sexual decisions (Fasula & Miller, 2006), as well as research asserting that real or perceived peer behavior is more influential than parental messages (Garnier & Stein, 2002; Prinstein, Meade, & Cohen, 2003). Petersen & Leffert (1995) suggest the influence of peers is stronger during adolescence than other developmental stages due to an adolescent's need to separate from their parents, and Moore and Rosenthal (1991) contend the perception that peers provide greater acceptance increases peer influence. Parental closeness has been found to relate to decreased rates of teen pregnancy (Miller, Benson, & Galbraith, 2001) and regular communication with parents about sex appears to increase condom use among adolescents, possibly reducing the likelihood of nonmarital fertility (Holtzman & Rubinson, 1995; Whitaker & Miller, 2000).

Another, less explored, cultural influence on the transition to fertility is religiosity - The degree to which individuals or groups employ religious ideology in forming values and making decisions (Nonnemaker, McNeely, & Blum, 2003). For both adolescents and adults the studies are divided in their results, with some finding protective benefits from religion and others noting increased risk. There is, however, substantial evidence that religion plays both a direct (e.g., religious values that promote/prescribe large families) and indirect (e.g., lack of knowledge about family planning) role in fertility.

Religiosity and Transition to Fertility

Religion is considered to be both a component and determinant of culture (Nonnemaker et al., 2003) and potentially sends complex messages to adherents regarding sex and fertility. Many religions forbid behaviors that lead to increased risk for an unplanned pregnancy (Wallace

& Forman, 1998) which may be protective against nonmarital fertility. However, many religions also encourage women to be subservient to men (Brasher, 1998) and discourage contraceptive use (Agadjanian, 2001), which may increase an individual's risk for nonmarital fertility.

Abbott-Chapman & Denholm (2001) demonstrated self-professed religious beliefs were weakly associated with risk inhibition. However, Cohen and Tate (2006) note similar religious prohibitions may increase parental avoidance of conversations about sexuality. Further, some religious traditions (e.g., Catholicism) forbid the use of family planning, which may increase the likelihood of unprotected sex (Fuller, 1996).

Religion may be protective against early age of sexual debut according to Manlove, Terry-Humen, Ikramullah, & Moore (2006), specifically that increased parental attendance at religious services, along with family religious activities, delayed sexual initiation. Manlove et al. (2006) also found a potential risk in the same study; higher levels of family religiosity did not lead to better contraceptive use. Elifson, Klein, and Sterk (2003) found higher levels of attendance at religious services among women translated into reduced participation in sexually risky behavior. However, Beck, Cole, and Hammond (1991) observed that Black females with high levels of religiosity were found to be more likely to sexually debut than Black females with low levels of religiosity. Miller and Gur (2002) offer that high levels of religiosity in females may result in decreased avoidance and refusal ability due to religious prescription of subservience to males.

Another complexity observed in the literature on religiosity's role as a risk or protection is the "dosage effect." In studies where religiosity is measured on a scale, there have been findings where a specific amount or "dose" of religion provides more risk or protection. Rostosky et al. (2003) observed that Black adolescents with high levels of religiosity experienced

increased risk for early debut while non-Black youth did not. In contrast, Elifson et al. (2003) noted that lower religiosity among their sample of primarily Black females predicted increased sexual activity.

Conflicting results associated with religiosity has led many researchers to call for alternative measurement of religiosity. The recommendations vary, but generally encourage multiple measures as well as measuring two distinct manifestations of religiosity – Intrinsic religiosity and extrinsic religiosity (Donahue, 1985).

Intrinsic and Extrinsic Religiosity

The current operationalization of intrinsic religiosity[1] is the internalized structure of religious belief that provides meaning to an individual and is independent of institutional affiliation or doctrinal allegiance, while extrinsic religiosity is the outward or external use of religion to serve social needs (Donahue, 1985). In a meta-analysis of research on intrinsic and extrinsic religiosity, Donahue (1985) found intrinsic religiosity was most often associated with positive benefits and extrinsic religiosity correlated with negative qualities (e.g., low levels of altruism and increased prejudice). The analysis assumed individuals possess only one form of religiosity, but individuals with high levels of intrinsic religiosity often have high levels of extrinsic religiosity as well (e.g., George, Ellison, & Larson, 2002; Lee & Newberg, 2005).

The current study focuses on how intrinsic and extrinsic religiosity relate to the transition to nonmarital fertility. The researchers seek to determine if, after controlling for demographic factors, intrinsic or extrinsic religiosity significantly explain the variance in transition to nonmarital fertility. We hypothesize that:

[1] Religion and spirituality are often used interchangeably, but within the health literature the focus is primarily related to religiosity rather than spirituality. This study's use of the term "religiosity" is for consistency between the constructs.

1. Intrinsic religiosity will provide protective benefits to respondents and extrinsic religiosity will increase risk.
2. We believe the effects will be visible for all subpopulations, but the strongest effects will be visible among the Black and Hispanic subpopulation due to the cultural significance religion has for these groups (Ahrold & Meston, 2008; Geertz, 2002; Tarakeshwar, Stanton, & Pargament, 2003).

Methods

Data

The National Longitudinal Study of Adolescent Health. This study utilizes waves I and IV of the National Longitudinal Study of Adolescent Health (Add Health). The in-home wave I data was collected in 1995 using a school base sampling frame. The Add Health can be used to make national estimates of 7 - 12 graders in the US during that time. Wave IV was collected in 2008, when the respondents are young adults between the ages of 24 - 32. Wave I is comprised of 20,745 students and 76% (n = 15,701) are retained in wave IV. We limit our sample in several ways. First, n = 995 are missing on religiosity variables and n = 399 are missing on religious affiliation so they were excluded from analysis. We also eliminate n = 1, 674 respondents because they are missing on the wave I grand weight. One hundred and ninety-five respondents had a birth before wave I and 3,867 cases are missing information about timing to first birth and thus are not included in the sample. Six cases are missing on the race question and 112 are missing on urban context resulting in exclusions. Finally, we eliminate n = 6,372 of males from the sample, focusing on females to eliminate the potential bias related to the fact some males have limited knowledge about the timing and occurrence of nonmarital fertility. Our final sample is comprised of N = 7,125 women.

Measures

Dependent variables. *Timing to a nonmarital first birth* – To determine the time to first nonmarital birth we use the wave IV pregnancy file. Respondents were asked "How did the pregnancy end." We only include live births in the analysis. Next, respondents were asked "Were you and your partner married to each other at the time of birth?" Respondents who responded no are considered to have a nonmarital birth. Finally, century months are calculated from the time of wave I interview. Respondents are censored at wave IV interview if they did not have a nonmarital birth.

Independent variables. *Race* – Race is a wave I measure where respondents are classified at white (comparison group), Hispanic, Black, or Other Race.

Religious Affiliation – Religious Affiliation is determined on a wave I measure that asks, "What is your religion?" Based on previous research (Steensland et al., 2000), religious affiliation is coded as "No Religion" (comparison group), "Mainline Protestant", "Evangelical Protestant", "Catholic", and "Other Religion."

Religious Importance – religious importance is a wave I measure using the question, "How important is religion to you?" Responses range from 0 = "No Religion or Not Important" to 3 = "More Important than Anything Else" with higher scores reflecting religion is more important.

Intrinsic Religiosity – Two wave I variables are scaled to measure intrinsic religiosity, "How important is religion to you?" and "How often do you pray? (α = .79; range 0 - 9). Responses range from 0 = "No Religion or Not Important" to 3 = "More Important than Anything Else" and 0 = "No Religion or Never" to 4 = "Once a Day." The two variables are summed so higher scores reflect higher intrinsic religiosity.

Extrinsic Religiosity – Two wave I variables, "Many churches, synagogues, and other places of worship have special activities for teenagers—such as youth group, Bible classes, or choir. In the past 12 months, how often did you attend such youth activities?" and "In the past 12 months, how often did you attend religious services?" (α = .82; range 0 - 6) are used in a summation scale. The responses for both extrinsic measures range from 0 = "No Religion or Never" to 3 = Once a Week or More" with higher scores indicating higher extrinsic religiosity.

Family Structure – The wave I household roster is use to construct if the respondent is living with two married biological parents at wave I. In the current study, 1 = "Biological Married Parents" and 0 = "Other Family Forms" (comparison group).

Socioeconomic Status – Wave I SES is measured using parent's education status and occupation. We classify SES similar to Bearman, Moody, and Stovel (2004). Responses range from 0 - 10 with higher scores indicating higher SES.

Urban – We measure urban context of the respondent at wave I where 1= "Urban" and 0= "Partly Rural" (comparison group).

Analytic Strategy

To test our research question we implement discrete time hazard modeling. We estimate a descriptive table which uses a person level dataset. Next, we change the data to a person period file. More specifically, there is a record for each month a respondent contributes to the data. Table 2 is an illustration of ten models: Zero-order models and full models for the total sample and then for Whites, Hispanics, Blacks, and Other Race.

Results

All analysis were completed using Stata version 12 (StataCorp, 2011), chosen largely because of the program's ability to handle the complex sampling design of Add Health. Table 1

provides the mean, mean percentage, and standard errors for the analysis sample. Thirty-two percent of the total analysis sample (N = 7,125) had experienced nonmarital fertility, with significant differences among racial subpopulations. Consistent with the literature, Black and Hispanic females were the most likely to have experienced nonmarital fertility (50% and 33% respectively) with 23% of the White and Other race subpopulations having a nonmarital fertility. Hispanics transitioned to fertility the earliest of any group (mean age = 25) followed by Blacks (mean age = 26) and both Whites and Other race were the oldest when transitioning to fertility (mean age = 27).

The majority of the sample (88%) identified with some type of religious affiliation, with the majority identifying as Protestant Christian (57%), most of whom were Evangelical Protestants (31%). Twelve percent of the sample identified as having no religion, with the remaining 7% falling into the Other Religion category. Whites were most likely to identify as Mainline Protestants (31%), with Catholic being the largest category for the Hispanic (57%) and Other race (26%) subpopulations. Blacks had the highest percentage of shared affiliation, with nearly two-thirds (62%) identifying as Evangelical Protestants.

The average scale score for Extrinsic Religiosity was 2.93 (range 0 – 6) and the average scale score for Intrinsic Religiosity was 5.83 (range 0 – 9). The Black subsample had the highest mean score for both Intrinsic and Extrinsic Religiosity (6.38 & 3.32 respectively) and the White subsample had the lowest mean scores (5.25 & 2.69 respectively).

Additionally, the sample was primarily rural (51%) although the majority of non-Whites resided in an Urban environment. Respondents were more likely to live with both biological parents (66%) except for the Black subpopulation of whom only 37% lived with both biological parents. The mean SES score of the sample was 5.89 (range 0 – 10), with the Hispanic

subpopulation having the lowest mean score (4.58), followed by Black (5.37), Other (5.95), and with a mean score of 6.28, the White subpopulation had the highest SES.

Model Results

Table 2 presents the results for the zero-order and full models examining the risks and protections associated with transitioning to non-marital fertility. When looking at the total population, the hypotheses of Intrinsic Religiosity offering protective benefits was confirmed in both models (zero-order model $OR = .96$, $p < .001$; full model $OR = .95$, $p < .05$). However, while Extrinsic Religiosity was significant in both models, the direction of its effect was in the opposite direction than hypothesized: Extrinsic Religiosity reduced the odds of transitioning to first fertility in the zero-order model ($OR = .94$, $p < .001$) and the full model ($OR = .95$, $p < .05$).

However, the results varied among the subpopulations. Intrinsic Religiosity was only significant in the zero-order model for the White subpopulation ($OR = .95$, $p < .001$). In the full model, Intrinsic Religiosity was significant among the Black subpopulation ($OR = .93$, $p < .05$). Extrinsic Religiosity was significant for the White subpopulation in both the zero-order model ($OR = .91$, $p < .001$) and the full model ($OR = .95$, $p < .05$). Among the subpopulation in the Other Race category, Extrinsic Religiosity was only significant in the zero-order model ($OR = .87$, $p < .05$). For the Black subpopulation Extrinsic Religiosity was only significant in the full model ($OR = 1.06$, $p < .05$); however, it was in the hypothesized direction, increasing the likelihood of nonmarital fertility. The Hispanic subpopulation did not experience significant effects from Religiosity in either model.

Religious affiliation was significant for the total population in the zero-order model for all categories except Evangelical Protestants, but reversed in the full model where only Evangelical Protestants were significantly related to transitioning to fertility ($OR = 1.64$, $p <$

.01). All subpopulations except Other Race had at least one category of religious affiliation that was significant (Table 2), but only the Hispanic subpopulation had any affiliation significant in the full model and the $p < .05$ level (Catholic & Other Religion, *OR's* .47 & .33 respectively).

Race functioned consistent with the findings of most studies, with higher risk for the Black (*OR* = 2.6, $p < .001$) and Hispanic (*OR* = 1.5, $p < .01$) populations compared to Whites in the zero-order model. However, in the full model only the Black category was significant (*OR* = 2.01, $p < .001$). Family structure and SES were significant in the zero-order models for the total population and all subpopulations (Table 2) though only SES remained significant for all groups in the full model. Residing in an urban environment was significant in the zero-order model for the entire population (*OR* = 1.14, $p < .05$) but was not significant in the full model for the total population or any subpopulation.

Discussion

Hypothesis 1

We hypothesized that intrinsic religiosity will provide protective benefits to respondents and extrinsic religiosity will increase risk. Our hypothesis was only supported in the Black subpopulation. Intrinsic religiosity did reduce the likelihood of nonmarital fertility in the full sample as well as in the zero-order model for the White subpopulation, but there were no other significant findings. Surprisingly, although intrinsic religiosity was not significant in the full model among the White subpopulation, the direction changed from protection to risk.

Extrinsic religiosity did not behave as expected for any group except the Black subpopulation. While it was significant in both models for the total population and the White subpopulation, it exerted protective benefits instead of risk. For the Other Race subpopulation,

extrinsic religiosity was decidedly in the protective direction, and was significant in the zero-order model and approached significance (p = .075) in the full model.

Hypothesis 2

We hypothesized that intrinsic and extrinsic religiosity would significantly affect all subpopulations, but would have the strongest effect on the Black and Hispanic subpopulation. Our hypothesis was supported in the results from the Black subpopulation, but not any other population. It is unclear why religiosity was not significant for the Hispanic subpopulation in either model, though a partial explanation could be attributed to the lack of homogeneity among individual's identifying as Hispanic (Palloni & Arias, 2004). Future research using Hispanic identity (e.g., Mexican-American) is necessary to understand the inconsistent findings related to religiosity's risk and protective benefits among individuals identifying as Hispanic.

We based our hypothesis, in part, on the literature's assertion that religion is a significant component of Black and Hispanic culture. In our study, the Hispanic subpopulation had the smallest percentage of respondents reporting that they were not religious (10%) followed by the Black subpopulation where 12% identified as being not religious. Among the Hispanic subpopulation, Catholic and Other Religion were significantly related to nonmarital fertility in the protective direction, and approached significance among Mainline Protestants ($p < .098$) and Evangelical Protestants ($p < .054$), also in the protective direction. For the Black subpopulation, the majority identified as Evangelical but only the Catholic category was significantly related to nonmarital fertility, and only in the zero-order model. This finding may actually relate to Hispanics. The literature notes that Hispanics from Caribbean nations often racially identify as Black because they have darker skin and reside in close proximity to Blacks (Denton & Massey,

1989) while retaining their cultural identity, including their Catholic faith (Campesino & Schwartz, 2006).

While the relationship between Catholic affiliation and nonmarital fertility among the Black subpopulation is protective, the same is not true for the Evangelical category, which while not significant was in the direction of increased risk. This is consistent with the findings for the Total Population, where the only significant religious affiliation in the full model was in the Evangelical Protestant category, and the effect was in the direction of increased risk for nonmarital fertility.

One possible explanation for the observation is that religiosity exerted the strongest effect on the Black subpopulation and this subpopulation was the least likely to live with both biological parents, suggesting that lower levels of parental monitoring may be occurring. Having only one parent combined with the assumption that a religious organization is acting as a monitor (when it may not be) of an adolescent's behavior may result in more opportunity for an adolescent to experiment, increasing the risk for nonmarital fertility (Dishion & McMahon, 1998; French & Dishion, 2003).

SES and the Transition to Non-Marital Fertility

The only variable consistently in our study that was consistently significant was SES. This suggests that while many other factors, including religiosity, may be important in reducing the transition to nonmarital fertility, interventions must address socio-economic inequalities if they hope to reduce the transition to nonmarital fertility. The literature is clear that there is an intergenerational cycle of nonmarital fertility among adolescents (Meade et al., 2008), and that this cycle perpetuates poverty (Hoffman, 2006).

Measurement

The results of the current study, while not completely confirming the hypothesis, produced some expected results. While the Add Health data has good measures of religiosity, we were limited in our measurement to the variables available. Utilizing other measurement approaches, such as latent variable modeling, may capture some of the effects that seem to be absorbed by other variables in the linear model. Future research that used additional measures of religiosity along and/or alternative but complex measurement could help explain the inconsistencies in this study as well as in the rest of the literature.

Limitations

The current study has several limitations. First, as mentioned earlier, are the limits of secondary data to measure constructs not originally intended. We also used broad measurements of race, which are not without empirical support but may make too many assumptions of homogeneity. Despite these limitations, the current research fills a gap in the understanding of the effects of religiosity on the transition to nonmarital fertility.

Implications

The results suggest that Black adolescent females may benefit from interventions that utilize community partnerships with religious organizations. While there is stigma associated with sex within many religious organizations (American Social Health Association, 2005), there are indirect ways to address some of the risks for nonmarital fertility. For example, Chatters (1998) suggests that since many religious organizations are involved in anti-substance abuse activities, and given that substance abuse is a known risk for nonmarital fertility, strengthening an organizations anti-substance abuse efforts could help reduce nonmarital fertility.

On a policy level, there has been significant influence of religiosity on public policy over the past two decades, notably the emphasis placed on abstinence only education. Our findings

reflect the rest of the literature that is divided over the effect of religiosity on the transition to nonmarital fertility. There has been significant research on the problems associated with the abstinence only education movement (Cohen & Tate, 2006; Irwin, 2006; Ott & Santelli, 2007; Santelli et al., 2006) and our study reinforces that religiosity is not a panacea and may actually increase the problem.

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Table 1.

Mean, Mean Percentage, and Standard Error of Independent and Dependent Variables Modeling the Transition to Nonmarital Fertility, Religiosity, and Control Variables (N = 7,125).

	Total		**White**		**Hispanic**		**Black**		**Other Race**	
Variable	*M%*	*SE*	*M%*	*SE*	*M%*	*SE*	*M%*	*SE*	*M%*	*SE*
Nonmarital First Birth	32%	–	23%	–	33%	–	50%	–	23%	–
Race										
White	67%	–	–	–	–	–	–	–	–	–
Hispanic	11%	–	–	–	–	–	–	–	–	–
Black	16%	–	–	–	–	–	–	–	–	–
Other Race	6%	–	–	–	–	–	–	–	–	–
Age at Transition to Non-Marital Fertility[a]	26.22	–	27.17	–	25.36	–	26.41	–	27.33	–
Religion										
Religious Affiliation										
Not Religious	12%	–	14%	–	10%	–	12%	–	17%	–
Mainline Protestant	26%	–	31%	–	13%	–	16%	–	23%	–
Evangelical Protestant	31%	–	26%	–	13%	–	62%	–	15%	–
Catholic	24%	–	23%	–	57%	–	4%	–	26%	–
Other Religion	7%	–	6%	–	7%	–	7%	–	19%	–
Intrinsic Religiosity	5.83	0.10	5.25	0.11	5.87	0.11	6.38	0.15	5.29	0.24
Extrinsic Religiosity	2.93	0.07	2.69	0.08	2.74	0.11	3.32	0.12	2.71	0.16
Family Structure										
Biological Married Parents	66%	–	66%	0.01	66%	–	37%	–	71%	–
SES	5.89	0.11	6.28	0.12	4.58	0.16	5.37	0.18	5.95	0.2
Urban	49%	–	41%	–	83%	–	55%	–	66%	–

Note. *M*% = Mean or mean percentage; *SE* = Standard Error.

[a]Based on total sample (*N* = 15,701).

Table 2.
Odds Ratios and Standard Errors of Independent Variables in the Zero Order Model and Full Model Used to Predict Transition to Nonmarital Fertility by Subpopulation.

	Total Population				**White**				**Hispanic**				**Black**				**Other Race**			
	Zero Order		Full Model		Zero Order		Full Model		Zero Order		Full Model		Zero Order		Full Model		Zero Order		Full Model	
Variable	*OR*	*SE*	*OR*	*SE*	*OR*	*SE*	*OR*	*SE*	*OR*	*SE*	*OR*	*SE*	*OR*	*SE*	*OR*	*SE*	*OR*	*SE*	*OR*	*SE*
Intercept			0.00***	.00			0.00***	.00			0.00***				0.00***	.00			0.00***	.00
Month			1.01***	.00			1.01***	.00			1.01***				1.01***	.00			1.01***	.00
Race																				
Hispanic	1.50**	.13	1.23	.20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Black	2.60***	.27	2.01***	.23	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Other Race	1.06	.11	1.12	.17	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Religion																				
Religious Affiliation																				
Mainline Protestant	.59***	.29	1.16	.20	.66***	.07	1.002	.18	.67	.15	.55[b]	.20	.80	.12	1.12	.29	.53*	.15	.58	.27
Evangelical Protestant	1.07	.40	1.64**	.29	.90	.11	1.14	.21	.71	.18	.48[c]	.18	1.07	.15	1.48	.40	1.27	.41	1.33	.72
Catholic	.59***	.27	1.08	.20	.56***	.08	.84	.14	.56**	.10	.47*	.15	.49**	.12	.83	.27	.84	.24	.97	.47
Other Religion	.51***	.31	.91	.18	.47***	.09	.72	.15	.48*	.15	.33*	.17	.74	.15	.98	.31	.53	.19	.55	.31
Intrinsic Religiosity	.96***	.09	.95*	.02	.95***	.01	1.01	.02	.97	.02	1.001	.04	.98	.01	.93*	.03	.95	.04	1.04	.06
Extrinsic Religiosity	.94***	.01	.96*	.02	.91***	.01	.95*	.02	.98	.02	1.04	.04	1.002	.02	1.06*	.03	.87*	.05	.88[d]	.06
Family Structure																				
Biological Married Parents	.79**	.06	.80*	.07	.59***	.04	.89	.09	.71*	.10	.81	.13	.78**	.07	.85	.08	.54*	.14	.69	.21
SES	.86***	.01	.87***	.01	.82***	.01	.83***	.02	.93*	.03	.93*	.03	.95***	.02	.91***	.02	.84***	.03	.87**	.04
Urban	1.14*	.08	1.19[a]	.12	1.12	.14	1.16	.13	.91	.15	.90	.16	1.06	.14	1.07	.13	.76	.17	.86	.21

Note. *OR* = odds ratio; *SE* = standard error.
[a]$p = .085$. [b]$p = .098$. [c]$p = .054$. [d]$p = .075$.
*$p < .05$. **$p < .01$. ***$p < .001$