

Religiosity and the Transition to Nonmarital Parity

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Women who experience nonmarital parity (the transition to having a live birth for an unmarried mother [Schoen & Tufis, 2003; Wildsmith & Raley, 2006]) during the periods of adolescence through early young adulthood (puberty – mid/late 20's) often experience negative outcomes, including health problems (Chen et al., 2007), educational problems (Perper, Peterson, & Manlove, 2010), and poverty (Montgomery, Kiely, & Pappas, 1996). Furthermore, nonmarital parity during this stage is known to substantially alter life course trajectory by limiting educational and occupational opportunities (Elder, 1998). Furthermore, fertility research often focuses on women because men do not often know their paternity status (Greene & Biddlecom, 2000). As researchers have sought to understand the risk and protective factors related to nonmarital parity, one factor that has emerged as a significant predictor is religiosity - the degree to which individuals or groups employ religious ideology in forming values and making decisions (Nonnemaker, McNeely, & Blum, 2003). However, a gap exists in the current literature due to inconsistency in the findings related to religiosity's effect, with some researchers identifying risk from religiosity and others noting protection. One explanation for the discrepancy in the findings is inconsistency measurement and conceptualization of religiosity, notably that religiosity is frequently measured using single-item indicators. This is problematic, as religiosity is generally agreed to contain two components that affect behavior differently – the intrinsic (internal, personal) and extrinsic (external, public) components (Donahue, 1985). The goal of this research is to address this gap by ascertaining whether intrinsic and extrinsic religiosity differ in their prediction of the likelihood of women experiencing nonmarital parity in order to better inform policy and interventions designed to address the negative consequences

associated with nonmarital parity.

Background and Significance

Transition to Nonmarital Parity

Adolescent transition to nonmarital parity has received considerable attention because of the consequences related to transitioning to parity at this stage, including lower educational attainment (Perper et al., 2010), reliance on public assistance (Hoffman, 2006), and increased participation in health-risk behaviors (Cavazos-Rehg et al., 2010) including substance abuse (Gillmore, Gilchrist, Lee, & Oxford, 2006). Moreover, their children are more likely to be born premature and underweight (Chen et al., 2007), be physically abused (Brown, Cohen, Johnson, & Salzinger, 1998), live in poverty (Hoffman, 2006), and reside in a single-parent home (Martin et al., 2011).

Less attention has been given to individuals in the late adolescent/early adult period of development. However, over the past several decades the transition from adolescence into adulthood has lengthened, with many of the historical adult responsibilities such as leaving home, getting married, and starting a career not occurring until individuals are in their mid to late 20's. This extension of adolescence has been dubbed "emerging adulthood" (Arnett, 2000), and there has been an increase in the number of nonmarital births among this group (Edin & Tach, 2012). It is estimated that 59% of these births are unintended (Arnett & Tanner, 2005), potentially leaving these mothers facing many similar outcomes as their adolescent counterparts.

Taken together, adolescents and emerging adults have the highest percentage of births to unmarried women (Ventura, 2009). Ninety-three percent of births to 15-17-year-olds were nonmarital (Ventura, 2009); similarly, 82% and 60% were born to unmarried mothers aged 18-19 and 20-24 respectively (Ventura, 2009). Nonmarital parity varies by race, with the Hispanic

subpopulation experiencing the highest nonmarital birth rate (106 per 1,000), followed by the Black (72 per 1,000) and White (32 per 1,000) subpopulations (Ventura, 2009). The combination of high rates of nonmarital parity and the racial/ethnic disparity require a better understanding the risk and protective factors related to transitioning to nonmarital parity.

Risk/Protective Factors Related to Nonmarital Parity

An effective approach to understanding health problems when the goal is to inform policy and intervention creation is the risk/protection framework (Coie et al., 1993) which emphasizes identification of factors that either increase protection against a specific problem or increases risk, helping to explain differences in outcomes amid a population. Risk/protective factors fall into two categories: environmental (external) and individual (internal) risk factors. Environmental risk factors include low socioeconomic status [SES] (Kirby, 2001; Montgomery, Kiely, & Pappas, 1996; Talashek, Alba, & Patel, 2006; Young, Turner, Denny, & Young, 2004), living in a single-parent home (Dutra, Miller, & Forehand, 1999; Ellis et al., 2003; Montgomery et al., 1996), and residing in an urban location (Ball, Armistead, & Austin, 2003; Hodge, Cardenas, & Montoya, 2001; O'Sullivan, Meyer-Bahlburg, & Watkins, 2001); thus, protective factors include higher SES, living with both parents, and residing in a rural location.

One factor that researchers have identified offering both risk and protective effects is religiosity. However, the inconsistency in the direction of influence (risk or protection) of religiosity on the transition to nonmarital parity creates a significant gap in our understanding of the ways religiosity operates, limiting our ability to effectively inform policies and interventions targeting nonmarital parity. Over the past two decades, religious influence on reproductive health policies and interventions, such as abstinence only education (AOE), have been challenged by researchers as lacking efficacy (Advocates for Youth, 2007; Fields & Tolman,

2006; Fortenberry, 2005; Hwang & Stewart, 2004; Santelli et al., 2006; Santelli, 2006; Schaalma, Abraham, Gillmore, & Kok, 2004), making it imperative this gap is addressed.

In an attempt to address these gaps, researchers have suggested looking at religiosity as having both an external (environmental) and internal (personal) dimension (Donahue, 1985). This approach is more consistent with the current understanding of risk and protective factors, but is not often found in research measuring religiosity.

Religiosity and Transition to Nonmarital Parity

There is sparse research that directly examines religiosity and the transition to nonmarital parity, creating a gap that this study addresses. Hayford and Morgan (2008) found higher levels of religiosity were associated with increased rates of unintended fertility, consistent with research indicating higher fertility desires by religious adherents in general (Lehrer, 2004; McQuillan, 2004; Pearce, 2002). Since there is a lack of research directly examining this study's question, it is necessary to consider research that speaks to religiosity's influence on sexual behaviors that are related to nonmarital parity. There may be difference by race/ethnicity due to the cultural significance of religion among racial/ethnic minority populations (Ahrold & Meston, 2010; Geertz, 2002; Tarakeshwar, Stanton, & Pargament, 2003). While there are differences in contraceptive attitudes between the dominant religious affiliations of racial/ethnic minority populations (e.g., Catholicism for the Hispanic community, Evangelical Christianity for the Black community), the prohibition on sex before marriage is strong for all (Ahrold & Meston, 2010; Fuller, 1996; Woodberry & Smith, 1998).

The most relevant literature to the current study addresses religiosity's relationship to contraceptive use because of its direct relationship to transitioning to nonmarital parity (Anderson, Santelli, & Morrow, 2006; Kirby, 2002). However, the findings are inconsistent in

terms of religiosity acting as a risk factor (e.g., Miller and Gur, 2002), a protective factor (e.g., Villarruel, Jemmott III, Jemmott, & Ronis, 2007), or having no significant effect (e.g., Manlove, Terry-Humen, Ikramullah, & Moore, 2006).

Studies with conflicting findings have led researchers to call for alternative conceptualization and measurement of religiosity (Hill & Pargament, 2003; Steensland et al., 2000). The recommendations vary, but generally encourage multiple measures as well as a measuring two distinct manifestations of religiosity – Intrinsic religiosity and extrinsic religiosity (Donahue, 1985).

Intrinsic and Extrinsic Religiosity

The current operationalized definition of intrinsic religiosity¹ 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). Accordingly, the behavioral influence of religiosity will differ based on whether the individual internalizes the message or merely conforms to community expectations of behavior. Thus, intrinsic religiosity is associated with more positive outcomes because behaviors that arise from internal motivations operate independent of social expectations (Bandura, 1977). However, individuals with high levels of intrinsic religiosity often have high levels of extrinsic religiosity as well (George, Ellison, & Larson, 2002; Lee & Newberg, 2005). As such, studies that only measure one dimension (intrinsic or extrinsic) may not completely

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.

capture the influence of religiosity. Despite this fact, there is a lack of research utilizing measures of both dimensions of religiosity; this paper seeks to address this gap.

Ecological Theory & Nonmarital Parity

Ecological Systems Theory (Bronfenbrenner, 1979) is ideally suited to understanding the complexity surround the transition to nonmarital parity because it accounts for the reciprocal influences on behavior found at various levels on the individual's environment. Moreover, the theory posits that individuals help create their immediate environment (the microsystem), but they do so in the construct of progressively larger systems (the mesosystem, exosystem, and macrosystem). All of these systems are strongly influenced by the chronosystem. The chronosystem refers to life transitions and societal events that occur over one's life. In relation to nonmarital parity these transitions and events may be internal (e.g., the individual's developmental stage) or external (e.g., current reproductive health policies). Ellison and Levin (Ellison & Levin, 1998) note that ecological theory is ideally suited to studying religiosity's effect on health behaviors because religiosity likely exerts influence on an individual on multiple levels *vis a vis* complex interactions arising from competing expectations relative to normative behavior. Specific to the current study's investigation of intrinsic and extrinsic religiosity's effect on transitioning to nonmarital parity on a population level, the theory's ability to account for both internal and external forces can help to identify why religiosity functions differently among women who differ in religious affiliation, race, ethnicity, geographic location, family structure, and SES.

Hypothesis

The current study focuses on how intrinsic and extrinsic religiosity relate to the transition to nonmarital parity. The researchers seek to determine if, after controlling for demographic

factors, intrinsic or extrinsic religiosity significantly explain the variance in transition to nonmarital parity. We hypothesize that:

1. Intrinsic religiosity measures (self-rated importance of religion, frequency of prayer, and belief that their religion's scriptures are the word of God) will reduce the likelihood of experiencing nonmarital parity, providing protective benefits to respondents.
2. Extrinsic religiosity measures (frequency of attendance at religious services and youth group activities) will operate as a risk factor, increasing the likelihood of a nonmarital parity.
3. We believe the effects will be visible for all subpopulations, but the strongest effects will be visible among the Black and Hispanic subpopulation compared to White respondents.

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 were 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 were young adults and between the ages of 24 - 32. Wave I was comprised of 20,745 students and 76% ($N = 15,701$) were retained in wave IV. We limited our sample in several ways. First, $N = 901$ were missing on the wave I weight and thus were not included. Next, we eliminated $N = 6,932$ males from the sample, focusing on females to reduce the potential bias related to the fact some males had limited knowledge about the timing and occurrence of nonmarital parity. One hundred and fifty-nine respondents had a birth before wave I and 39 cases were missing information about timing to first birth and were not

included in the sample. Two hundred and ninety-five were missing on religiosity variables. Finally, nine respondents were missing on race so they were excluded from analysis. Our final sample was comprised of $N = 7,367$ women.²

Dependent Variable

Timing to nonmarital parity. To determine the time to first nonmarital birth we use the wave IV pregnancy file. If respondents indicated that they had a pregnancy in the past they were then asked, “How did the pregnancy end?” We only included live births in the analysis. Next, respondents were asked, “Were you and *partner* [*sic*] married to each other at the time of birth?” Respondents who responded “no” were considered to have had a nonmarital birth. Finally, century months were calculated from the time of wave I interview. Respondents were censored at the wave IV interview if they did not have a nonmarital birth.

Independent Variables

Race. Race was a wave I measure. Respondents were classified as White (comparison group), Hispanic, Black, or Other Race.

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

Intrinsic religiosity. Three wave I variables were included to measure intrinsic religiosity, and have been used in research on religiosity using the Add Health data (Nonnemaker, McNeely, & Blum, 2003; Smith, 2014). Similar to Pearce & Haynie (2004), individuals who stated they were not religious were coded “0.” (1) “How important is religion to

² Though we understand that multiple imputation is currently the best method for handling missing data, the creation of ten datasets when the data are in the person period format the file is just too large to converge.

you?” has responses range from 0 = “Not Important at All or No Religion” to 3 = “Very Important.” (2) “How often do you pray?” with responses of 0 = “Never or No Religion” to 4 = “At Least Once a Day.” (3) “Do you agree or disagree that the sacred scriptures of your religion are the work of God and are completely without any mistakes?” and responses were dummy coded and as follows, “Agree” (comparison category); “Disagree,” and “No Religion or Religion doesn’t have sacred scriptures.” The items measuring intrinsic religiosity and extrinsic religiosity were not scaled in order to determine their individual contribution to our dependent variable, similar to Regnerus & Elder (2003).

Extrinsic religiosity. Two wave I variables were used to measure extrinsic religiosity: (1) “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 (2) “In the past 12 months, how often did you attend religious services?” The responses for both extrinsic measures ranged from 0 = “No Religion or Never” to 3 = “Once a Week or More” with higher scores indicating higher extrinsic religiosity. These two items have been used by other researchers investigating this construct using the Add Health data (Nonnemaker, McNeely, & Blum, 2003; Smith, 2014).

Family structure. The wave I household roster was used to determine if the respondent was 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 was measured using parent’s education status and occupation. We classify SES similar to Bearman, Moody, & Stovel (2004). Responses ranged from 0 - 10 with higher scores indicating higher SES.

Urban. We measured urban context of the respondent at wave I where 1 = “Urban” and

0 = “Partly Rural” (comparison group). This measure was derived from the contextual file of the Add Health dataset, which attached census information of the respondent’s community. To be classified as “completely urban” a respondent lived in a census block group that only had people who lived in what was classified as an urban area. To be classified as an urban area the place had to contain 50,000 or more people. If the respondent lived in a census block group that had some people in it that were not classified as living in an urban area then they were coded as “partly rural.”

Analytic Strategy

All analyses were completed using Stata version 12 (StataCorp, 2011), chosen largely because of the program’s ability to handle the complex sampling design of the Add Health data. To test our research question of timing to first nonmarital birth, we used event history analysis. Specifically, we implemented discrete time hazard modeling. Discrete hazard modeling was an appropriate method to investigate the current research question for several reasons. First, discrete hazard models allowed for the assessment of the whether or not a specific event occurred; in this case the event was a nonmarital birth (Singer & Willett, 2003). Allison (2010) noted that a strength to hazard modeling over more common models such as logistic regression was that hazard models allowed for censoring that happened in the data. Censored cases in our sample were respondents who did not experience a nonmarital birth during the duration of the study. Further, hazard modeling allowed for the inclusion of timing to the event. This was important because respondents who had nonmarital parity earlier during their adolescent years were probably differ compared to respondents who have nonmarital parity during early young adulthood. Finally, we use discrete hazard models because we measured time in terms of months since first interview and month were a discrete measure of time (DeMaris, 2004).

Preparation of the data began with the estimation of a descriptive table that used a person level dataset. Next, we changed the data to a person period file that contained a record for each month a respondent contributed to the data until they transitioned to nonmarital parity or until the date of last interview. Using Stata, we estimated logistic regression models predicting experiencing nonmarital parity or not experiencing nonmarital parity. Survey weights were applied to the analysis so that national estimates could be determined. Table 2 presents the bivariate models and Table 3 the full models. Both Table 2 and Table 3 display results for the Total Population and then for White, Hispanic, Black, and Other racial subpopulations.

Results

Descriptive Results

Thirty-two percent of the Total Population had experienced nonmarital parity, with differences among racial subpopulations (Table 1). Black and Hispanic females were the most likely to have nonmarital parity (52% and 34% respectively) with 24% of the White and 23% Other Race subpopulations having nonmarital parity.

Table 1 about here

The majority of the sample (86%) identified with some type of religious affiliation. Of this percentage, Christianity was the dominant religion with 34% identifying as Evangelical Protestant, 22% as Mainline Protestant, and 23% as Catholic. Whites were most likely to identify as Evangelical Protestants (32%), with Catholic being the largest category for the Hispanic (59%) and Other Race (28%) subpopulations. Among Blacks, the majority (63%) identified as Evangelical Protestants.

For the entire sample, the average score for religious importance was 2.07 suggesting religion was fairly important to the sample. The adolescents in the sample prayed about once a

week as reflected in the mean score of 2.68. The majority of the sample (66%) believed that scriptures were the word of God and completely without mistakes. Finally, the two extrinsic measures of religious service ($M = 1.76$) and youth group ($M = 1.13$) suggested that the sample attended these events less than once a month.

Specific to the sample who claimed a religious affiliation, the average score for religious importance was 2.37, suggesting religion was fairly important to this portion of the sample. These respondents prayed more than once a week, as reflected in the mean score of 3.01, and 77% of them believed that scriptures were the word of God and completely without mistakes. Finally, religious respondents attended religious services approximately more than once a month and ($M = 2.02$) and youth group ($M = 1.26$) less than once a month.

Respondents were more likely to live with both biological parents (70%) except for the Black subpopulation of whom only 43% lived with both biological parents. The mean SES score of the sample was 5.39 (range 0 – 10), with the Hispanic subpopulation having the lowest mean score (4.15) followed by the Black (4.54) and Other (5.12) subpopulations. The White subpopulation had the highest SES with a mean score of 5.82. Additionally, the sample was primarily rural (51%) although the majority of non-White respondents resided in an urban environment.

Bivariate Results

Table 2 presented the results for the bivariate analysis. For the Total Population, identifying as Mainline Protestant ($OR = .64, p < .001$), Catholic ($OR = .62, p < .001$) or “Other Religion” ($OR = .54, p < .001$) was negatively associated with transitioning to nonmarital parity compared to respondents who did not have a religious affiliation. Evangelical Protestants were not significantly different from youth who did not identify with a religious denomination. The

full sample results were similar for Whites. Religious affiliation was not significantly related to transitioning to nonmarital parity for Hispanic or Black respondents, compared to not transitioning. For youth who identified as “Other Race” and listed their religious affiliation as Mainline Protestant ($OR = .48, p < .05$) or “Other Religion” ($OR = .27, p < .05$) were less likely to transition to nonmarital parity compared to respondents who did not claim a religious affiliation.

When examining the Total Population, religious importance ($OR = .91, p < .05$) and prayer ($OR = .92, p < .001$) were negatively related to transitioning to first nonmarital parity. Further, individuals who did not have scripture or were not religious were significantly more likely to transition to nonmarital parity ($OR = 1.28, p < .01$). While the Intrinsic Religiosity measures operated in the same way for the White subpopulation as it did for the entire sample, there was not a significant relationship between the Intrinsic Religiosity measures and transitioning to nonmarital parity for the Hispanic or Black populations. Finally, only religious importance was negatively related ($OR = .80, p < .01$) to the dependent variable for the respondents classified as “Other Race.”

Table 2 about Here

Extrinsic Religiosity was measured by religious service attendance ($OR = .88, p < .001$) and youth group participation ($OR = .94, p < .05$), and reduced the odds of transitioning to nonmarital parity. As with the previous measures of religiosity, White respondents were similar to the Total Population and extrinsic religiosity was not associated with transitioning to nonmarital parity for Hispanic or Black respondents in the bivariate model. Attending religious services ($OR = .77, p < .01$) was negatively related to transition to nonmarital parity for “Other Race” youth. Race was related to transitioning to nonmarital parity with a higher risk for both

Black ($OR = 2.56, p < .001$) and Hispanic ($OR = 1.50, p < .01$) populations compared to White respondents in the bivariate model.

Table 3 about Here

Multivariate Results

Table 3 showcases the results of the full model. For the Total Population, the only intrinsic religiosity measure that was significantly related to transitioning to nonmarital parity was prayer ($OR = .90; p < .01$). This finding was similar for White, Black, and Other Race respondents. Intrinsic religiosity was not significantly related to transitioning to nonmarital parity for Hispanic respondents. It was expected that the extrinsic religiosity measures would be positively related to transitioning to nonmarital parity. For the Total Population, religious service was marginally significant ($OR = .94; p < .10$) and not in the expected direction. No other extrinsic variables were significant in the full model for the Total Population. For White respondents, the more often they attended religious service the less likely there were to transitioning to a nonmarital birth ($OR = .88; p < .05$). Among respondents who identified as “Other Race” disagreeing with the idea that “Scriptures are the word of God...” was negatively related to transitioning to nonmarital parity compared to not transitioning.

Religious affiliation was significant in the full model. Specifically, identifying as Mainline ($OR = 1.71; p < .05$) or Evangelical ($OR = 2.33; p < .001$) Protestant was positively associated with transitioning to nonmarital parity. Among the White subpopulation, being Evangelical Protestant ($OR = 2.14; p < .05$) was positively associated with transitioning to nonmarital parity. Religious affiliation was not a significant predictor of nonmarital parity among Hispanic respondents; however, religious affiliation appeared to be salient for Black respondents. Black youth who identified as Mainline Protestant ($OR = 2.72; p < .01$),

Evangelical Protestant ($OR = 4.16; p < .001$), or Other Religion ($OR = 2.88; p < .05$) were more likely to transition to nonmarital parity compared to Black respondents who did not identify with a religion. Lastly, respondents who identified as Other Race who affiliated with Other Religions ($OR = .05; p < .05$) were less likely to transition to nonmarital parity.

Discussion

Hypothesis 1

We hypothesized that intrinsic religiosity measures would provide protective benefits to respondents and our hypothesis was partially supported. In the full model, one of the three indicators was significant and in the expected direction for the Total Population, as well as the White, Black, and Other race categories. Interestingly though, the other dimensions of intrinsic religiosity were inconsistent with the hypothesis.

Religious importance. In the bivariate model, religious importance was negatively related to transitioning to nonmarital parity for the Total Population, and for the White and Other subpopulations. In the full model, religious importance was no longer significant, though the direction of influence did not change. Given that many studies utilizing religiosity as a variable rely exclusively on religious importance, our findings suggest that conclusions derived from these studies may be premature and support prior researcher's call for more complex measures of religiosity (Hill & Pargament, 2003). Our findings also suggest that the importance an individual places on religion may capture their cultural norms and attitudes toward religion, but fails to capture how these norms and attitudes translate into the other required components for behavioral modification such as self-efficacy (Bandura, 1977) and behavioral intentions (Fishbein & Ajzen, 1975).

Prayer. Frequency of prayer proved to be the more influential measure of intrinsic

religiosity in the full model for every group except Hispanics. This is an important finding for two reasons. First, prayer may actually be working to reinforce the protective religious values while functioning as self-directed intervention that improves mental well-being (Ellison & Levin, 1998; Knabb, 2010; Powell, Shahabi, & Thoresen, 2003). Second, our finding that prayer varied by race/ethnicity indicates that prayer must interact with other cultural factors in order to exert protective benefits, reinforcing the notion that religiosity is too complex to be measured by a single-item. Future research should unpack the interaction between prayer and other cultural influences of sexual behavior.

Scripture. In the full model scripture was not statistically significant except for the Other Race category. Though the bivariate results do not speak to our hypothesis, there was an interesting finding; for the Total Population and the White subpopulation, respondents whose religious tradition does not include scripture were significantly more likely to transition to nonmarital parity. The use of “agree” as the reference category suggests that there is some protective benefit received in having scriptures at all, which is consistent with other research noting the benefits of a codified belief system (Lee & Newberg, 2005; Pargament et al., 2004).

Hypothesis 2

Our second hypothesis, that extrinsic religiosity measures would increase the risk for nonmarital parity was not supported. More specifically, we expected that the more one attended religious services and youth group gatherings, the more likely she would transition to nonmarital parity. Rather, one extrinsic religiosity variable offered protection to the White subpopulation.

Religious service attendance. In the full model, only the White subpopulation experienced a statistically significant effect from more frequent religious service participation, but not in the hypothesized direction that it would increase risk. One possible explanation for the

lack of significant findings among the Black and Hispanic subpopulations is that the higher rates of nonmarital parity in these two groups combined with the more singular religious affiliations each group had (59% of Hispanic respondents were Catholic, 63% of Black respondents were Evangelical) accounted for the majority of the model variance.

Youth group attendance. Youth group attendance was non-significant in the full model. It is possible the lack of effect is due to the low rate of attendance at youth group activities overall, or because the effect is attenuated by other model variables.

Hypothesis 3

We hypothesized intrinsic and extrinsic religiosity would significantly affect all subpopulations, but would have the strongest effect on the Black and Hispanic subpopulations given the literature's assertion that religion is a significant component of Black and Hispanic culture. It is unclear why religiosity was not significant for the Hispanic subpopulation, 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.

Though unrelated to our hypotheses, we did note an interesting shift in the influence of the religious affiliation variable from the bivariate to the full model. This effect was strongest for the Black subpopulation, though the Total Population and White subpopulation also experienced significant change in terms of the strength and direction of influence. Evangelical affiliation was not a significant predictor of nonmarital parity in the bivariate model for any group, but was significant for the Total Population as well as the White and Black subpopulations. For these groups, Evangelical affiliation increased their likelihood of

experiencing nonmarital parity. The effect for the Black subpopulation compared to the White or Total Population was double, which could be explained by the Black subpopulation having twice as many respondents with an Evangelical affiliation, but this does not explain how the addition of the other model variables affected religious affiliation.

SES and the Transition to Nonmarital Parity

SES was consistently negatively related to nonmarital parity, net of other measures. This suggests that while many other factors, including religiosity, may be important in reducing the transition to nonmarital parity, interventions must address socio-economic inequalities if they hope to reduce the transition to nonmarital parity. The literature is clear that there is an intergenerational cycle of nonmarital births among adolescents (Meade et al., 2008), and that this cycle perpetuates poverty (Hoffman, 2006). Further, the change in significance from the bivariate model to the full model for the Black subpopulation may be explainable by the benefits religious participation provides for those with lower SES (Ellison & George, 1994), implying that income inequality increases the need for religious participation, thereby increasing the influence of religion.

Measurement

The results of the current study, while not completely confirming the hypothesis, produced some expected results. While the Add Health data have 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, such as intrinsic and extrinsic religiosity. While this should not impact the findings, it is possible that the limited questions measuring extrinsic religiosity inhibited our exploration of the way extrinsic religiosity affects nonmarital parity. Second, given that our findings varied by race (notably the effect of prayer was significant for all subpopulations except those identifying as Hispanic), it is possible that our use of broad measurements of race, though not without empirical support, may make too many assumptions of homogeneity with groups and prevented us from identifying a significant effect. For example, according to Ennis (2011) the Hispanic population differs dramatically in SES (Cuban-Americans have a much higher SES than other Hispanic subpopulations and religiosity may have operated similarly to the White subpopulation), and racial identification (dark skinned individuals who identify as Caribbean Hispanic often racially identify as Black and reside in primarily Black neighborhoods, creating the possibility that religiosity would have operated as it did for the Black subpopulation). Third, we only considered one type of family structure among our controls. Based on the performance of the family structure variable, future research on the intersectionality of race and family structure is needed to evaluate the effects of nonmarital but stable family structures. Despite these limitations, the current research fills a gap in the understanding of the effects of religiosity on the transition to a nonmarital parity.

Implications

Our study fills in a gap in the literature on the effect religiosity has on transitioning to nonmarital parity for individuals in late adolescence and emerging adulthood. Our findings suggest that some of the inconsistency in previous research may be owed to the utilization of

single item measures of religiosity, which as our research demonstrates, may not capture the influence religiosity has on nonmarital parity. Further research is necessary to explore why Evangelicals have elevated risk, especially among the Black subpopulation.

Our findings suggest that, on a practice level, Black females may benefit from interventions that utilize community partnerships with religious organizations. There are many existing models of partnerships between health promoting organizations and religious institutions for a variety of health education screening programs (Davis et al., 1994; DeHaven, Hunter, Wilder, Walton, & Berry, 2004) that could be adapted to address some of the potential risk factors for transitioning to nonmarital parity. One obvious barrier to such partnerships is the stigma associated with sex that many religious organizations possess (American Social Health Association, 2005); however, there are indirect ways to address some of the risks for nonmarital parity. For example, Chatters, Levin, and Ellison (1998) suggest that many religious organizations are involved in anti-substance abuse activities, which could be strengthened by partnerships with community health organizations. Since substance misuse is known to decrease contraceptive use (Ayoola, Brewer, & Nettleman, 2006), this partnership could have a substantial (albeit indirect) effect on reducing nonmarital parity.

On a policy level, there has been significant influence of religiosity on public policy over the past two decades, notably the emphasis placed on AOE. Our findings reflect the rest of the literature that is divided over the effect of religiosity on the transition to nonmarital parity. However, we do find that religious affiliation is a significant predictor of nonmarital parity, notably for Black respondents who identify as Evangelical or Mainline Protestant. Given that Evangelical Christian groups have been the driving force behind reproductive health policies that promote abstinence only (Perrin & DeJoy, 2003; Santelli, 2006), our finding that respondents

identifying as Evangelic Protestants are at the highest risk for transitioning to nonmarital parity echoes the recommendations of Kantor, Santelli, Teitler, and Balmer (2008) who call for policy makers to move past AOE toward comprehensive sex education. Moreover, the content of sexual education must include information on contraceptive use, safer sex practices, and this information must be medically valid (Lin & Santelli, 2008). Further, Lin and Santelli (2008) suggest that there needs to be careful evaluation of reproductive health policies influenced by Evangelical groups, especially on a state level (Dworkin & Santelli, 2007; Irwin, 2006; Jemmott III, Jemmott, & Fong, 2010), where the curriculum decisions are made.

Additionally, policy makers may need to consider their strategy for protecting and expanding publically funded family planning programs, notably the Title X Family Planning Program. The program receives substantial criticism from conservative religious groups who argue that since 25% of Title X monies go to Planned Parenthood, the program is being used to indirectly fund abortions (Charo, 2012). While there have been efforts to clarify the fact that Title X funds cannot be used to fund abortions, little success has been made, evidenced by numerous attempts to eliminate Title X, especially on the state level (White, Grossman, Hopkins, & Potter, 2012). One approach policy makers may find successful is to target religious women with a policy message that focuses on the policy's benefits, notably the number of reduced abortions. Given that in 2010, Title X funding reduced the number of abortions that would have likely arisen from unintended pregnancy by 400,000 (Cohen, 2011), little effort is required to tailor the message to this audience. Similar strategies have been successfully utilized to advance reproductive health policy (Klugman, 2011), likely because they address the same ideological concerns used to challenge Title X and similar programs.

Finally, the Affordable Care Act's (ACA) requirement that contraception be free to

insured women is a huge step toward improving contraceptive availability, which can protect against transitioning to nonmarital parity (Gold & Sonfield, 2011). However, given the numerous challenges made by faith-based organizations to this specific provision, there remains much concern that this portion of the law will not be uniformly enacted. It is imperative that policy makers and reproductive rights groups continue to pursue the full implementation of this portion of law, given Burlone et al.'s (2012) estimate that this provision of the ACA will prevent 72 out of every 1,000 pregnancies over a 5 year period.

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Table 1.

Descriptive Statistics of Nonmarital Parity, Religiosity, and Control Variables (N = 7,367).

Variable	Total		White		Hispanic		Black		Other Race	
	M / %	SE	M / %	SE	M / %	SE	M / %	SE	M / %	SE
Nonmarital First Birth	32%	.01	24%	.01	34%	.02	52%	.02	23%	.02
Race										
White	67%		—	—	—	—	—	—	—	—
Hispanic	11%		—	—	—	—	—	—	—	—
Black	16%		—	—	—	—	—	—	—	—
Other Race	6%		—	—	—	—	—	—	—	—
Religious Affiliation										
Not Religious	14%		15%		9%		12%		17%	
Mainline Protestant	22%		26%		11%		15%		21%	
Evangelical Protestant	34%		32%		14%		63%		19%	
Catholic	23%		21%		59%		3%		28%	
Other Religion	7%		6%		7%		7%		15%	
Religiosity										
Importance	2.07	.03	1.99	.04	2.09	.04	2.39	.06	1.95	.08
Pray	2.68	.05	2.56	.06	2.99	.07	3.01	.08	2.57	.12
Scripture Agree	66%		63%		68%		75%		63%	
Disagree	18%		20%		21%		11%		18%	
No Scripture	16%		17%		11%		14%		19%	
Religious Service	1.76	.04	1.69	.04	1.89	.06	2.02	.07	1.70	.10
Youth Group	1.13	.03	1.09	.04	.97	.06	1.41	.07	1.07	.09
Biological Married Parents	70%		75%		71%		43%		75%	
SES ^a	5.39	.11	5.82	.12	4.15	.18	4.54	.19	5.12	.28
Urban	49%		41%		.83		57%		62%	

Notes. ^a Range = 0 – 10, with higher numbers meaning higher SES level.

Table 2.

Odds Ratios and Standard Errors of Independent Variables in the Bivariate Model Predicting Transition to Nonmarital Parity by Subpopulation (N = 7,367).

Variable	Total Population		White		Hispanic		Black		Other Race	
	OR	SE	OR	SE	OR	SE	OR	SE	OR	SE
Race										
Hispanic	1.50**	.19	–	–	–	–	–	–	–	–
Black	2.56***	.27	–	–	–	–	–	–	–	–
Other Race	1.07	.16	–	–	–	–	–	–	–	–
Religious Affiliation										
Mainline Protestants	.64***	.06	.62***	.07	.87	.29	.83	.17	.48*	.17
Evangelical Protestants	1.06	.09	.81	.11	1.23	.33	1.25	.23	1.08	.47
Catholic	.62***	.08	.55***	.09	.83	.20	.66	.24	.75	.25
Other Religion	.54***	.08	.45***	.10	.74	.29	.94	.26	.27*	.16
Religiosity										
Importance	.91*	.03	.84***	.03	.95	.07	1.00	.06	.80**	.07
Pray	.92***	.02	.85***	.02	1.00	.05	.94	.04	.93	.06
Scripture (Agree Compare)										
Disagree	.84 ⁺	.08	.88	.10	1.36	.29	.83	.14	.92	.37
No Scripture	1.28**	.10	1.54***	.17	1.24	.25	.95	.15	1.31	.40
Religious Service	.88***	.02	.78***	.03	.98	.06	1.00	.05	.77**	.07
Youth Group	.94*	.02	.82***	.03	1.04	.07	1.02	.04	.88	.09
Biological Married Parents	.50***	.03	.54***	.05	.66**	.09	.69**	.08	.48**	.12
SES	.85***	.01	.83***	.01	.93*	.03	.92**	.02	.86***	.03
Urban	1.26*	.13	1.24	.17	.93	.19	1.09	.16	.66 ⁺	.16

Note. OR = odds ratio; SE = standard error

⁺ $p < .10$ * $p < .05$. ** $p < .01$. *** $p < .001$

Table 3.

Odds Ratios and Standard Errors of Independent Variables in the Full Model Predicting Transition to Nonmarital Parity by

Subpopulation (N = 7,367).

Variable	Total Population		White		Hispanic		Black		Other Race	
	OR	SE	OR	SE	OR	SE	OR	SE	OR	SE
Race										
Hispanic	1.26	.19								
Black	1.90***	.20								
Other Race	1.00	.19								
Religious Affiliation										
Mainline Protestants	1.71*	.35	1.73 ⁺	.56	1.01	.57	2.72**	1.00	.78	.13
Evangelical Protestants	2.33***	.46	2.14*	.66	1.34	.62	4.16***	1.51	.20	.22
Catholic	1.59 ⁺	.38	1.53	.54	.87	.41	2.22 ⁺	.93	.17	.18
Other Religion	1.25	.29	1.19	.43	.83	.52	2.88*	1.24	.05*	.06
Religiosity										
Importance	.94	.05	1.00	.07	.91	.12	.90	.09	.78	.13
Pray	.90**	.03	.89*	.04	1.08	.07	.80***	.03	.26*	.13
Scripture (Agree Compare)										
Disagree	.88	.07	.80 ⁺	.10	1.40	.32	.83	.15	.74	.25
No Scripture	1.24	.24	1.30	.39	1.28	.57	1.21	.32	.11*	.11
Religious Service	.94 ⁺	.03	.88*	.05	1.05	.09	1.08	.06	.74 ⁺	.11
Youth Group	1.02	.03	1.01	.05	1.03	.09	1.06	.05	.97	.12
Biological Married Parents	.77**	.06	.82 ⁺	.10	.65*	.11	.80 ⁺	.09	.72	.23
SES	.89***	.01	.86***	.02	.93*	.03	.92**	.02	.88*	.04
Urban	1.23*	.11	1.37**	.16	1.07	.22	1.29	.20	.64 ⁺	.17

Note. OR = odds ratio; SE = standard error

⁺ $p < .10$ * $p < .05$. ** $p < .01$. *** $p < .001$

