Influences of Nonparental Adults on the Psychosocial Outcomes of At-Risk African American Adolescents

by

Noelle M. Hurd

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Doctoral Committee:

      Professor Marc A. Zimmerman, Chair
      Associate Professor Cleopatra Howard Caldwell
      Associate Professor Rosario E. Ceballo
      Associate Professor Laura P. Kohn-Wood

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Chapter I

Introduction

Researchers have documented the pivotal role that adults play in the lives of adolescents. Relationships with adults are a key component of adolescents' social ecologies and these relationships directly influence adolescents' psychosocial outcomes (Coleman, 1974). While research findings have highlighted the influence of parental relationships on adolescent adjustment, scholars suggest that relationships with nonparental adults also contribute significantly to adolescent development (Erikson, 1968; Sherif & Sherif, 1964). For example, Blyth, Hill, and Thiel (1982) suggest that relationships with nonparental adults make up a critical component of adolescents' social worlds. They found that adolescents tend to maintain a highly integrated social network consisting of parents, peers, siblings, extended family, and unrelated adults. Specifically, Blyth and colleagues found that over three-fourths of the adolescents (7th through 10th graders) in their study identified extended family members as significant others and well over half of the adolescents identified unrelated adults as significant others. Galbo (1986) suggests that after parents, relatives are the most important adults in adolescents' lives. Furthermore, Hendry, Roberts, Glendinning, and Coleman (1992) found that nonparental adult relatives served many of the same functions as parental adults, such as believing in, teaching, and supporting adolescents, and were more likely than parents to serve as teachers, believers, and role models.

African American adolescents

Among African American adolescents, close relationships with extended family members are common. Historically, the extended kin network has been a central component of the African American family system (Billingsley, 1968; Hill, 1972; Stack, 1974). Within the African American community, extended family members often live in close proximity and tend to be actively involved in the lives of family members' children (Hill, 1972; Stack, 1974). In fact, when asked to identify important adults in their lives, such as role models and mentors, African American adolescents often identify adult extended family members (Bryant & Zimmerman, 2003; Klaw, Rhodes, & Fitzgerald, 2003; Rhodes, Ebert, & Fischer, 1992; Zimmerman et al., 2002). In addition, fictive kin relationships (a common phenomenon within the African American family system) may be responsible for linking adolescents with adults who are not related to the adolescent by blood or marriage but who share a close familial relationship with the adolescent and his/her family (Chatters, Taylor & Jayakody, 1994; Stack, 1974). These relationships with extended and fictive kin may be critical resources for African American youth transitioning through adolescence and into adulthood.

Adolescent development

Although there are substantial individual differences among adolescents, adolescence can be a tumultuous time marked by an increase in negative emotions (Arnett, 1999; Brooks-Gunn & Reiter, 1990). Most adolescents are able to survive this developmental period unscathed, however, for some this developmental period encompasses changes that result in long-term negative outcomes. Researchers suggest that stress levels may increase throughout adolescence and risks for developing

psychopathologies are heightened during this period (Adams & Gullotta, 1989).

Additionally, adolescence is a period characterized by increased conflict with parents,

risk behavior, and school disconnect (Arnett, 1999; Dryfoos, 1990; Jessor, 1991; Scales,

1991). Although adolescence has been characterized as a time of increased *storm and*

stress, it has also been described as a time of *exuberant growth* (Arnett, 1999). Thus,

while adolescents may be experiencing increased personal and interpersonal difficulties,

adolescents are also achieving increased levels of autonomy and developing the social

skills needed to form significant relationships with nonparental adults (Gottlieb &

Sylvestre, 1996). As adolescents become less dependent on their parents, they may

actively seek out other adults who they can look up to or who they can go to for support

and guidance. Given potential increases in adolescents' capacity and desire to form

relationships with nonparental adults, it is critical to consider some important types of

adult-adolescent relationships that may be formed and how these relationships may

influence adolescent development. These relationships may have particular relevance for

adolescents at increased risk for negative outcomes.

<u>Role models and natural mentors</u>

One influential role that nonparental adults can play in adolescents' lives is that of

role model. Pleiss and Feldhusen (1995) suggest a role model is a person who is

perceived by others as worthy of imitation. The role model relationship does not actually

necessitate contact between the role model and the adolescent, however previous research

with African American adolescents indicates that African American adolescents tend to

nominate family members and other adults from within their social networks as their role

models (Bryant & Zimmerman, 2003). The most important function of the role model is

to model attitudes, values, and behavior that the adolescent may incorporate into his/her own attitudes, values, and behavior. Because role models are selected by adolescents, it is likely that their morals and actions are particularly influential on adolescent outcomes.

Another way that nonparental adults can be involved in adolescents' lives is through mentoring relationships. A mentor is someone who guides, encourages, and supports his/her mentee (Levinson, Darrow, Klein, Levinson, & McKee, 1978; Rhodes, et al., 1992; Zimmerman et al., 2002). By definition, mentors are older and more experienced than their mentees. Unlike role model relationships, mentoring relationships require contact between the adolescent and the adult. Natural mentors are adults who informally mentor adolescents (as opposed to mentoring through a formal program). Natural mentors originate from adolescents' pre-existing social networks (e.g., family members, neighbors) and natural mentoring relationships tend to last for long periods of time (Rhodes et al., 1992; Rhodes, Contreras, & Mangelsdorf, 1994). While natural mentoring relationships may serve many different functions, researchers suspect that the most important function of these relationships is the provision of social support (Rhodes, 2005). Social support is a critical resource for adolescents, particularly adolescents experiencing adversity.

Resilience and nonparental adults

Resilience theory emerged as researchers became increasingly interested in understanding why some youth who experience adversity are able to overcome this adversity and avoid negative outcomes associated with risk (Fergus & Zimmerman, 2005). Resilience theory differs from deficit-focused theories such as problem behavior theory (Jessor, 1987) in that its purpose is to explain the absence of negative

developmental outcomes and/or the presence of positive outcomes, whereas the primary intent of problem behavior theory is to understand factors that contribute to the presence of negative adolescent outcomes. Yet, resilience theory builds on problem behavior theory in that it focuses on factors in adolescents' lives that help adolescents lower the effects of risk for negative outcomes (Fergus & Zimmerman, 2005). In studies of resilience, researchers consider factors that may predict healthy development among at-risk youth (Fergus & Zimmerman, 2005; Luthar & Cicchetti, 2000; Zimmerman & Arunkumar, 1994). Thus, resilience theory stresses positive adaption among adolescents exposed to risk.

Resilience theory also relates to positive youth development theory (Damon, 2004) in that both of these approaches place emphasis on youth's strengths and offer alternative models for youth intervention. The positive youth development approach promotes youth engagement in productive activities (e.g., extracurricular activities) and in this way provides a context for healthy development for all youth (Damon, 2004). This idea of creating contexts where youth can flourish relates to efforts to develop and enhance adolescents' assets (internal factors) and resources (external factors) to promote healthier adolescent outcomes underscored by resilience theory. According to both approaches, interventions that build on youth's strengths (as opposed to focusing on remediating their weaknesses) hold promise for helping youth to realize their full potential and develop into capable and contributing members of society.

Findings from resilience studies point to a number of potential promotive factors that contribute to positive adolescent outcomes, such as supportive family environments and advantageous personality dispositions (Garmezy, 1983). One promotive factor that

has more recently emerged from these studies is relationships with nonparental adults. Specifically, researchers have found that having an important nonparental adult to look up to (role model) or go to for support, guidance, and encouragement (mentor) may mitigate risk and contribute to positive adolescent outcomes (Bryant & Zimmerman, 2003; DuBois & Silverthorn, 2005; Klaw et al., 2003; Oman et al., 2004; Rhodes et al., 1992; Rhodes et al., 1994; Werner, 1995; Yancey, Siegel, & McDaniel, 2002; Zimmerman et al., 2002). Researchers have found that these types of relationships with nonparental adults have been predictive of fewer internalizing and externalizing behavior problems (Bryant & Zimmerman, 2003; DuBois & Silverthorn, 2005; Oman et al., 2004; Rhodes et al., 1992; Rhodes et al., 1994) and more positive school attitudes and achievement (Klaw et al., 2003; Yancey et al., 2002; Zimmerman et al., 2002) among at-risk adolescents. While researchers have increasingly documented the potential of nonparental adults to contribute to adolescent resilience, researchers have yet to elucidate the underlying processes through which nonparental adults influence adolescent outcomes.

Limitations of previous research

Within the past two decades, researchers have increasingly become interested in the influences of nonparental adults on adolescent outcomes. While many scholars identify role models and natural mentors as positive factors in adolescents' lives, few researchers have explored the relationship between possessing role models or natural mentors and youth outcomes. Researchers are increasingly engaging in this area of research, however, the studies that have been conducted on this topic have been primarily cross-sectional studies. Additionally, the majority of these studies have included fairly

small samples (for exception see DuBois & Silverthorn, 2005). For the most part, these studies have failed to collect data on attributes of nonparental adults beyond the adult's role in adolescents' lives, thus, limiting our understanding of the ways in which adolescent may be positively or negatively influenced by nonparental adults.

Description of studies

This dissertation includes three studies that focus on nonparental adult influences on African American adolescent outcomes. All of these studies applied a resiliency framework to investigate how relationships with nonparental adults influence adolescent outcomes. These studies focused on African American adolescents who resided in urban, low-income neighborhoods and thus, were at increased risk for negative psychosocial outcomes. The first two studies explored potential effects of natural mentoring relationships on adolescent outcomes over time, while the last study focused on role models in adolescents' lives. The first two studies relied on data collected across five time points. These studies aimed to determine potential mentor effects on psychosocial outcomes among a group of older adolescents as they transitioned into adulthood. The second study focused specifically on the potential benefits of natural mentoring relationships among a group of African American adolescent mothers. These studies are among the first to use a longitudinal design to study the effects of natural mentoring relationships on the psychosocial outcomes of at-risk, African American adolescents.

The third study focused on role model effects on attitudes toward violence and violent behavior among a group of African American middle-school students. Unlike previous role model studies, this study used data on specific role model behavior. This study aimed to identify relationships between role model behavior and adolescent

outcomes. Rather than assuming that role models always exert a positive influence on adolescents, this study assessed for potential positive and negative influences on adolescent outcomes. This study is one of the first studies to examine role model behavior and to link this factor to adolescent outcomes. Additionally, this study included a large sample (n = 331) of African American adolescents from economically disadvantaged neighborhoods.

These three studies substantially contribute to the body of literature on nonparental adult influences on adolescent development and adolescent resilience. Abstracts for each of the three studies are included below.

Study #1: Natural mentors and adolescent health: A longitudinal analysis of African American youth transitioning into adulthood

This study tested whether having a natural mentor in an adolescent's senior year of high school affected the growth trajectory of adolescent health outcomes as they transitioned into adulthood (5 years post-high school). Participants in this study included 615 African American adolescents from low-income neighborhoods. Health outcomes assessed in this study included depressive symptoms, sexual risk behaviors, and substance use. I hypothesized that adolescents who possessed natural mentors in their senior year of high school would demonstrate greater declines across all outcome variables in comparison to their counterparts who did not possess a natural mentor in their senior year of high school. Hierarchical Linear Modeling was used to examine patterns of individual growth over time. My findings indicate that having a natural mentor at a critical time in adolescents' lives can influence adolescents' health trajectories as they transition into adulthood. Specifically, I found that having a natural mentor positively influenced both depressive symptoms and sexual risk behaviors, however, did not significantly influence drug use. The results from this study suggest that natural mentors can affect two critical health outcomes among at-risk African American adolescents and efforts to facilitate these types of adult-adolescent relationships may be warranted.

Study #2: Natural mentoring relationships among African American adolescent mothers: A study of resilience

This study focused on natural mentoring relationships between nonparental adults and African American adolescent mothers. Data were collected from 93 adolescent mothers over five time points, starting in adolescent mothers' senior year of high school and ending five years post-high school. I hypothesized that adolescent mothers who possessed natural mentors during their senior year of high school would demonstrate more positive mental health trajectories as they transitioned into adulthood in comparison to adolescent mothers who did not have natural mentors. I found that adolescent mothers who possessed natural mentors demonstrated greater decreases in both depressive and anxiety symptoms over time in comparison to adolescent mothers without mentors. Findings from this study are consistent with previous findings that have indicated positive influences of natural mentoring relationships on the psychological well-being of adolescent mothers (Rhodes, Ebert, & Fischer, 1992; Rhodes, Contreras, & Mangelsdorf, 1994). Facilitating these natural mentoring relationships between adolescent mothers and nonparental adults may be a positive strategy for promoting mental health among this population.

Study #3: Role model behavior and youth violence: A study of positive and negative effects

This study investigated how role models' behavior may positively or negatively influence adolescents' attitudes toward violence and violent behavior. Participants in this study included 331 African American seventh and eighth graders from low-income neighborhoods in an urban, Midwestern city. I developed and tested a model of the relationships between role model prosocial behavior, role model antisocial behavior, adolescents' attitudes toward violence, and adolescents' violent behavior. I used Structural Equation Modeling to test my model. Results of this study indicated that role model prosocial behavior was indirectly related to less violent behavior through adolescents' attitudes toward violence. Role model antisocial behavior was directly linked to increased violent behavior and indirectly linked to increased violent behavior through adolescents' attitudes toward violence. Role model antisocial behavior had a stronger effect on adolescent outcomes than role model prosocial behavior. Possible explanations for my findings and implications are discussed.

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Chapter II

**Natural mentors, mental health, and risk behaviors: A longitudinal analysis of
African American adolescents transitioning into adulthood**

Introduction

When adolescents graduate from high school, they are faced with a number of
major life changes. Parental influences tend to decrease and access to resources may
shift. During this emerging adulthood period, individuals may experience frequent
changes in residence, roles, responsibilities, relationships, employment, and education
(Osgood, Ruth, Eccles, Jacobs, & Barber, 2005). Arnett (2000) suggests that the period
of emerging adulthood is a time characterized by high levels of personal freedom, low
levels of social responsibility, and heightened participation in several risk behaviors.
Arnett notes, for example, that substance use and sexual risk behavior occur at higher
rates during emerging adulthood than during adolescence. In their study of a large
nationally representative sample, Cullen and colleagues (1999) found that adolescents
transitioning out of high school increased their alcohol consumption, tobacco use, and
participation in unprotected sexual intercourse. The Centers for Disease Control and
Prevention (2002) report that older teens and young adults experience higher rates of
sexually transmitted infections (STIs) in comparison to older adults and are at heightened
risk of contracting the human immunodeficiency virus (HIV) due to their increased

involvement in high-risk sexual behaviors (e.g., multiple sex partners, unprotected sexual intercourse, having high-risk sexual partners).

Approximately one-third of high school graduates will begin college immediately following high school completion, whereas approximately 40% will move into independent living and enter into positions of full-time employment (Arnett, 2000). Researchers have documented differences in cigarette smoking between college-enrolled and non-college-enrolled emerging adults, with the latter group being more likely than the former group to smoke a half-pack of cigarettes or more daily (Johnston, O'Malley, Bachman, & Schulenberg, 2008). Yet, Johnston and colleagues (2008) found that college students tend to display rates of marijuana and alcohol use that are comparable to the rates of their same-age counterparts who are not enrolled in higher education. Despite lower rates of substance use among college-bound 12th graders in comparison to non-college bound 12th graders, once in college, these emerging adults display levels of substance use that equal or exceed those of their non-college peers. Bachman and colleagues (2002) suggest that this phenomenon can be explained by differences in residential and marital status between these two groups, with college students being more likely to have left the parental home and less likely to have entered marriage and thus free from either of these constraining influences. These findings suggest that both college-enrolled and non-college emerging adults are at risk of using/abusing substances.

Limited research has been conducted to assess the potential effect of college enrollment on emerging adults' sexual risk behavior. As with patterns of substance use, freedom from the constraining influences of the parental home and marriage may contribute to increased sexual risk behavior among college students. On the other hand,

the responsibilities associated with college attendance may curb emerging adults' involvement in sexual risk behavior. Bailey and colleagues (2008) documented a higher prevalence of sexual risk behavior among non-college emerging adults in comparison to their college-enrolled peers, however, this finding was primarily explained by prior risk behavior and academic performance in high school. Thus, high school behavior may be more predictive of emerging adults' sexual risk behavior than their educational status.

Researchers suggest that adolescent females are at significant risk of developing depression as they transition into adulthood. Rao, Hammen, and Daley (1999) conducted a 5-year longitudinal study assessing the risk of new onset and re-occurring depression in adolescent females transitioning to adulthood. During the 5 years of the study, 37% of the females experienced their first episode of major depression suggesting that rates of new onset depression may be particularly elevated during this transitional period. Females are twice as likely as males to experience depression during the periods of late adolescence and emerging adulthood (Nolen-Hoeksma, 2001), however, the role of depression in suicide makes depression in males a critical concern, as well.

Researchers have found that depression may be a major determinant of suicide risk among male youth (Cavanagh, Carson, Sharpe, & Lawrie, 2003; Gould & Kramer, 2001). Furthermore, researchers report increased suicide rates among males as they progress through adolescence into early adulthood (Conner & Goldston, 2006). Thus, although males may not demonstrate an increase in depression as they transition into adulthood, those males who do experience depression may be at increased risk of suicide because the transitional stress may exacerbate the effects of depression on suicide risk. Despite increased risk of negative outcomes during the period of emerging adulthood, it

is important to note that not all emerging adults succumb to the negative outcomes associated with the risks they face. Resilience theory is useful for conceptualizing why some youth are able to display healthy adjustment in the face of risk.

Resilience theory

Resilience theory emerged as researchers became increasingly interested in understanding why some youth who experience adversity are able to overcome this adversity and display positive developmental outcomes. In studies of resilience, researchers consider factors that may predict healthy development among at-risk youth (Fergus & Zimmerman, 2005; Luthar & Cicchetti, 2000). Resilience models consist of risk factors and promotive factors (i.e., compensatory or protective factors) that interact to reduce negative outcomes or promote more positive outcomes (Fergus & Zimmerman, 2005). As opposed to deficit-focused models, resilience models focus on how individuals' assets (internal factors) and resources (external factors) can be developed or enhanced to promote healthier outcomes. Notably, these promotive factors may not have identical effects on all youth outcomes and are defined by their ability to counter or protect youth from negative outcomes associated with risk. Findings from resilience studies point to a number of potential promotive factors that contribute to positive youth outcomes such as parental monitoring (Fergus & Zimmerman, 2005). One promotive factor that has emerged from these studies is social support.

Social support theory

The results of numerous studies indicate a positive relationship between social support and psychological and physical well-being (Rhodes & Lakey, 1999). One way in which social support has been hypothesized to affect well-being is by reducing the

negative effects of stress on health outcomes (i.e., stress-buffering) (Cohen, Underwood, & Gottlieb, 2000; Lin & Peek, 1999; Turner, 1999). Researchers have found that social support resources may be protective for youth, especially during times of stress, and may contribute to more positive mental health outcomes (Hussong, 2000; Newman, Newman, Griffen, O'Connor, & Spas, 2007). In particular, researchers who have studied the relationship between social support and depression have consistently identified an inverse association between these two variables (Newman et al., 2007; Pierce, Frone, Russell, Cooper, & Mudar, 2000).

After reviewing the social support literature, Lin and Peek (1999) concluded that the "simplest and most powerful indicator of social support appears to be the presence of an intimate and confiding relationship" (p. 243). This relationship could be with a peer, a parent, or a nonparental adult. In fact, Munsch and Blyth (1993) found that adolescents in their study reported receiving similar levels of support from nonparental adults as they received from mothers and often reported receiving higher levels of support from nonparental adults than from fathers. These findings suggest that a relationship with a nonparental adult may be a key source of social support for youth and thus, may provide youth with additional resources that help protect them from negative outcomes associated with risks they face. Specifically, researchers have found that having an important nonparental adult to go to for support, guidance, and encouragement may mitigate risk and contribute to positive adolescent outcomes (DuBois & Silverthorn, 2005b; Zimmerman, Bingenheimer, & Notaro, 2002). Researchers have found that these types of relationships with nonparental adults have been predictive of fewer internalizing and externalizing behavior problems (DuBois & Silverthorn, 2005b; Rhodes, Ebert, &

Fischer, 1992; Rhodes, Contreras, & Mangelsdorf, 1994) and more positive school attitudes and achievement (Klaw, Rhodes, & Fitzgerald, 2003; Zimmerman et al., 2002) among at-risk youth.

<u>Natural Mentors</u>

Supportive relationships with nonparental adults are often referred to as mentoring relationships. A mentoring relationship is a social connection between a more experienced (and typically older) mentor and a less experienced mentee. Although researchers have not come to a clear consensus regarding the definition of a mentor, most researchers agree that support, guidance, and encouragement are central components of a mentoring relationship (Levinson, Darrow, Klein, Levinson, & McKee, 1978; Rhodes et al., 1992; Zimmerman et al., 2002). Though the term *mentor* typically elicits thoughts of formal mentoring programs such as Big Brothers Big Sisters, it is vital to note that mentoring relationships can emerge in a variety of contexts. In fact, findings from a descriptive study on mentoring revealed that most adults (83%) who reported involvement in mentoring relationships were involved in informal as opposed to formal mentoring relationships (McLearn, Colasanto, & Schoen, 1998).

Informal (natural) mentoring relationships are often developed between youth and nonparental family or community from a youth's pre-existing social network and are not introduced through any type of formal program. Given that these relationships are formed naturally, Zimmerman, Bingenheimer, and Behrendt (2005) posit that natural mentoring relationships may be longer lasting than formal mentoring relationships. This may be a significant advantage of natural mentoring relationships in light of findings that

longer-lasting mentoring relationships have been linked to more positive youth outcomes (Grossman & Rhodes, 2002; Klaw et al., 2003; McLearn et al., 1998).

Additionally, it is useful to note the significance, both currently and historically, of natural mentoring relationships within the African American community. Mentoring programs such as Big Brothers Big Sisters began to emerge in the early 1900's (Baker & Maguire, 2005), however, as many other social institutions of the time, these mentoring programs were only intended to serve White youth. Despite their exclusion from formal mentoring programs, Edelman (1999) suggests that African American youth were afforded opportunities to form natural mentoring relationships within their extended families and communities. Historically, African American extended kin and community members have played large roles in the upbringing of African American youth (Stewart, 2007), thus providing increased opportunities for the formation of natural mentoring relationships. These findings indicate that natural mentoring relationships may have played, and may continue to play, a critical role in the development of African American youth. Yet, few researchers have studied the effects of natural mentoring longitudinally and over the adult transition period.

Findings of the natural mentor studies conducted to date suggest that relationships with natural mentors can contribute to more positive youth outcomes. Rhodes and colleagues found that African American and Latina adolescent mothers who possessed natural mentors reported more positive mental health outcomes than those without natural mentors (Rhodes et al., 1994; Rhodes et al., 1992). Zimmerman and colleagues (2002) found that natural mentors offset negative peer influences on adolescent problem behaviors and school attitudes among urban, African American youth. Klaw et al. (2003)

found that adolescent mothers who maintained a relationship with a natural mentor during their transition to motherhood were 3.5 times more likely to graduate high school than adolescent mothers who did not have a natural mentor. Limitations of these studies include the use of small, nonrepresentative samples, and cross-sectional study designs which did not allow researchers to assess for the long-term effects of mentoring on youth outcomes. Though Klaw and colleagues (2003) incorporated a longitudinal design, it only included two time points. DuBois and Silverthorn (2005b) found that participants who reported a natural mentoring relationship were more likely than their counterparts without mentors to have more positive psychosocial outcomes. Although they made use of a large nationally representative sample, the wide age range (18-26) of participants in the study and the retrospective nature of the mentoring question (participants were asked if they had possessed a natural mentor at anytime since the age of 14) are notable limitations of their study.

Current study

    The current study tested whether having a natural mentor in participants' senior year of high school affected the growth trajectory of health outcomes during the transition to adulthood (5 years post-high school). Considering the risks associated with this transitional period, I hypothesized that adolescents entering into adulthood may benefit especially from the support and guidance that a natural mentor can provide. Health outcomes assessed in this study included depressive symptoms, sexual risk behavior, and substance use. I hypothesized that participants who possessed natural mentors in their senior year of high school would demonstrate greater declines in these outcome variables in comparison to their counterparts who did not possess a natural

mentor in their senior year of high school. Additionally, I hypothesized that natural mentor presence would moderate the relationship between stress and depression among study participants.

Socioeconomic status (SES) was entered as a control variable in my analyses given its potential association with study outcome variables. Gender, age, and maternal and paternal support were controlled for in an effort to isolate the potential effects of mentoring relationships on health trajectories. Lastly, age at first sexual intercourse was controlled for in the growth model for sexual risk behavior because younger age at first sexual intercourse has been found to be predictive of later sexual risk behavior (Coker et al., 1994).

Methods

<u>Participants</u>

Participants in this study included 615 African American emerging adults taken from the fourth wave (the participants' senior year of high school) of an 8-wave longitudinal study of school dropout in a large, high-poverty, Midwestern city. Participants were not interviewed for one year post-high school and then were interviewed annually for four years. This study was conducted using data collected during the participants' senior year of high school and 4 waves of data collected over the following 5 years.

Participants of the first wave of study data (freshman year of high school) included 850 youth from four public high schools. These 850 youth who agreed to participate in the study represented 92% of all eligible participants. Study inclusion criteria included an eighth-grade GPA of 3.0 or lower, and not diagnosed with an

emotional or developmental disability based on school records. Participants in the fourth

wave of data (senior year of high school) included 770 youth (90% response rate from

original wave-1 sample). The sample was approximately 80% African American, 17%

White, and 3% Biracial. The attrition rate from the first wave to the fourth wave did not

differ between African American and White youth. Given my interest in the role of

natural mentors in the lives of African American youth, and the comparatively smaller

percentages of White and Biracial participants, I elected to conduct my analyses only

using data collected from the African American participants in this study.

The study sample included 615 African American emerging adults. Throughout

the 5 years following participants' senior year of high school, less than 18% of

participants were enrolled in a community college and less than 9% were enrolled in a 4-

year college/university at any time point. During the final year of data collection (5 years

post-high school) 5% of participants had obtained an associate's degree and less than 2%

of participants had obtained a bachelor's degree. According to data from the U.S. Census

(2000), the neighborhoods in which the participants resided had an average median

neighborhood yearly income of \$24,775 (SD= \$13,239). Slightly over half of the sample

was female (n=323), and the average age of participants at wave 4 (12th grade) was 17.51

(SD = .63). Comparative analyses between the 615 African American participants

included in this study and the 66 African American participants from wave 1 who did not

participate in data collection at wave 4 indicated no significant gender, age, or SES

differences.

<u>Procedure</u>

This study received approval from both the Institutional Review Board at the University of Michigan and the staff at the schools where data were collected. Participant consent and parental (passive) consent for minors were obtained prior to study participation. Participants completed 50-60 minute, face-to-face, structured interviews. Interviews were conducted by six male and female, African American and White interviewers. When possible, participants and interviewers were matched by race and gender. Questions pertaining to substance use and sexual behavior were asked using paper-and-pencil self-report questionnaires that were administered following the interview. During the fourth wave of data collection, participants were interviewed at their school; participants who had dropped out of school were contacted and interviewed at home or at another location. In all subsequent years of data collection, participants were interviewed either in their homes or community settings.

<u>Measures</u>

The measures are presented in accordance with the manner in which the data were entered in my data analytic plan to study change over time where I included intra-individual measures (time variant) and inter-individual measures. Intra-individual measures, presented first, include all outcome variables, as well as time-varying control variables (i.e., stress, maternal support, and paternal support). Inter-individual measures include my main predictor variable (presence of a natural mentor), and other variables entered as control variables at Level-2 (i.e., gender, age, SES, age at first sexual intercourse). Table 2.1 includes means, standard deviations, and Cronbach alphas for all study outcomes for each wave of the study.

<u>Intra-individual measures- Level 1</u>

Depressive symptoms- Six items from the Brief Symptom Inventory were used to assess for participants' depressive symptoms (Derogatis & Spencer, 1982). These items asked about the frequency with which participants have felt uncomfortable during the past week due to symptoms of depression (e.g., feelings of worthlessness, feeling no interest in things, feeling hopeless about the future). Response options on a Likert scale ranged from 1 (not at all uncomfortable) to 5 (extremely uncomfortable). This scale has demonstrated high internal consistency and test-retest reliability (Derogatis, 1977).

Sexual risk behavior- Three items were used to create a composite sexual risk behavior measure: frequency of sexual intercourse within the last year, number of sexual partners within the last year, and frequency of condom use within the last year (Fergus, Zimmerman, & Caldwell, 2007). The frequency of condom use variable was reverse coded so that higher scores on any of these three variables reflected higher risk behavior. Participants who reported not having sexual intercourse in the previous year were assigned the lowest risk score for the frequency of condom use variable. These measures had different response categories, so they were standardized before being added together.

Substance use- Cigarette, alcohol, and marijuana use were assessed by the frequency of use within the past 30 days. Response choices ranged from 1 (0 times) to 7 (40 or more times) for alcohol and marijuana use and from 1 (not at all) to 7 (two packs or more per day) for cigarette use. Participants completed responses to these items at the end of the interviews in a pencil-and-paper format. These items were previously used to assess substance use in the Monitoring the Future Study (Johnston, O'Malley, & Bachman, 1988).

Stress- The 14-item Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983) was used to measure participants' experiences with stress. Respondents were asked to indicate how frequently they have experienced different feelings or exhibited certain behaviors within the previous month. Items included "In the last month, how often have you felt that you had so many problems that you could not deal with them?" and "In the last month, how often have you found that you could not deal with all the things that you had to do?" Response options ranged from 1 (never) to 5 (very often). This measure has demonstrated adequate test-retest and internal reliability (Cohen et al., 1983). Participant responses to these 14 items were summed and averaged to yield an average stress score.

Parental support- Participants were asked about both maternal and paternal support. The same five items were used to asses support from each parent (Procidano & Heller, 1983). Items included "I have a deep sharing relationship with my mother/father," and "I rely on my mother/father for emotional support." Response options ranged from 1 (not true) to 5 (very true). Answers on the five items were summed and averaged to yield a maternal and a paternal support variable. Participants who indicated they did not have contact with the parental figure in question were assigned a score of 0 for this variable.

Inter-individual measures- Level 2

Natural mentor- To assess whether or not participants had a natural mentor, they were asked, "Is there an adult 25 years or older who you consider to be your mentor? That is, someone you can go to for support and guidance, or if you need to make an important decision, or who inspires you to do your best?" If participants said yes, they

were asked, "What is his/her relationship to you?" Participants who identified an immediate family member as their mentor were asked the first question again, but specifically asked about someone other than an immediate family member or person who raised them. Participants who identified a mentor who was not a parent, step-parent, or person who raised them qualified as having a natural mentor. This data was used to create a dichotomous natural mentor variable (0 = no mentor, 1 = mentor).

Age at first sexual intercourse- Participants were asked how old they were the first time they had sexual intercourse (I did not specify if the intercourse was consensual or nonconsensual). Responses were grouped into five age categories: 11 and younger (n = 85), 12 (n = 67), 13 (n = 118), 14 (n = 78), and 15 and older (n = 21). These five response categories (coded 1-5) were reverse coded so that higher scores indicated lower ages at first intercourse. Participants who reported never having had sexual intercourse were assigned a score of 0 for this variable.

Demographics- Demographic variables collected in this study included age, gender, and SES. Participant age was calculated based on the birth date (month/year) provided by participants in wave 1. Gender was coded to detect potential interaction terms (female = 1, male = -1). Participants were asked about their parents' occupation; prestige scores were assigned based on 20 occupational classifications (Nakao & Treas, 1990a, 1990b). When participants indicated that both parents had occupations, the higher of the two prestige scores was used. Scores ranged from 29.28 (private household work) to 64.38 (professional). The mean occupational prestige score was 39.9 (SD = 9.8), which represented blue-collar employment. The distribution of prestige scores was positively skewed ($D (615) = 7.01$, $p < .001$).

Data Analytic Strategy

I used hierarchical linear modeling (HLM) to create growth curves for all of the psychosocial outcomes in this study (Raudenbush & Bryk, 2002). HLM conceptualizes two levels of analysis: Level 1 consists of individuals' observed development over time determined by a set of individual parameters, and Level 2 consists of measurable characteristics of individuals (e.g., presence of a natural mentor in individual's life) that may predict variance in individual growth over time (Bryk & Raudenbush, 1987). After entering the data into the HLM program, I proceeded to complete two sets of analyses for each outcome variable (depression, sexual risk behavior, cigarette use, alcohol use, and marijuana use).

First, I estimated fully unconditional models for all outcome variables. These analyses partitioned the total variance in each outcome variable into intra-individual variance and inter-individual variance and allowed us to calculate the intraclass correlation coefficient (ICC) associated with each outcome variable. The ICC indicates whether participants differ in growth trajectories for an outcome and the proportion of variance that lies across participants (Raudenbush & Bryk, 2002). By including time-varying covariates (e.g., linear, quadratic, cubic terms), I was able to determine which shape of change best fit the data for each outcome (fixed effects) and whether or not individuals varied in these growth patterns (random effects).

The second set of analyses involved adding my main Level-2 predictor (the presence of a natural mentor) to all slopes that varied randomly to determine how much this variable helped to explain differences in growth across individuals. In the model with depressive symptoms as the outcome variable, I included stress as a time-varying

predictor variable and modeled mentor presence on the stress slope to determine if the relationship between stress and depressive symptoms varied depending on mentor presence. An array of control variables that may have helped to explain the variance across individuals were also added to these slopes. These variables included age, gender, and SES. Age at first intercourse was included as a control variable in the model for sexual risk behavior. Additionally, I included both maternal and paternal support as time-varying control variables in all models.

Results

Natural Mentors

Sixty-three percent of participants reported having a natural mentor (n = 386). Slightly over half (n = 206) of those who reported having a natural mentor identified a family member as their natural mentor. Familial mentors consisted of aunts, uncles, grandparents, cousins, and older siblings. Non-familial mentors (n = 180) consisted primarily of god-parents, god-siblings, parents' boyfriends or girlfriends, and friends' parents. A small number of participants identified (n = 27) natural mentors who may have formed mentoring relationships with participants in more formal contexts (e.g., ministers, teachers, counselors).

HLM Analyses

Unconditional model for depressive symptoms

Results of this analysis indicated that the linear term best represented the average change in depressive symptoms between 12th grade (initial status for this study) and five years post-high school ($t = -2.17$, df = 614, $p < .01$). Additionally, this linear term reflected a general decrease in depressive symptoms over time (coefficient = -.021).

Participants varied in both initial status ($\chi^2 = 1317.29$, df = 614, $p < .01$) and their pattern of change ($\chi^2 = 1009.29$, df = 614, $p < .01$). The reliability estimates for both initial status (.56) and the linear growth term (.42) were acceptable. The ICC denoted that 50% of the variance in changes in depressive symptoms over time was across individuals.

Final model for depressive symptoms

Table 2.2 contains the final results for the depressive symptoms model. Higher levels of maternal ($t = -6.02$, df = 2070, $p < .01$) and paternal ($t = -3.08$, df = 2070, $p < .05$) support predicted fewer depressive symptoms. Whereas, higher levels of stress predicted more depressive symptoms ($t = 4.95$, df = 521, $p < .01$). Using a one-tailed test, I found a weaker relationship between stress and depressive symptoms over time among participants with mentors ($t = -1.77$, df = 521, $p < .05$). Females demonstrated a stronger relationship between stress and depressive symptoms over time ($t = 2.06$, df = 521, $p < .05$).

Concerning the linear growth term, I found that participants who had a natural mentor presented greater decreases in depressive symptoms over time ($t = -2.15$, df = 521, $p < .05$). I also found that females demonstrated greater increases in depressive symptoms over time ($t = 3.02$, df = 521, $p < .01$). Additionally, I found a gender by mentor interaction ($t = -1.95$, df = 521, $p = .05$). Figure 2.1 illustrates the gender by mentor interaction for depressive symptoms, showing that natural mentor presence positively affected both male and female participants, however, these effects were manifested in different ways. Females with natural mentors had less steep increases in depressive symptoms over time in comparison to females without natural mentors, whereas males with natural mentors had steeper decreases in depressive symptoms over

time in comparison to males without a natural mentor. Random effect results indicated that the variance for initial levels of depressive symptoms (χ^2 = 840.76, df = 521, $p < .01$) and the linear growth term (χ^2 = 738.90, df = 521, $p < .01$) were not completely explained by this model.

Unconditional model for sexual risk behavior

Results of this analysis indicated that the quadratic model best represented the mean change in sexual risk behavior. The coefficients associated with the linear (t = -1.07, df = 602, ns) and quadratic (t = .97, df = 602, ns) growth terms were not statistically significant, however, the results indicated that participants varied across initial status (χ^2 = 1159.86, df = 602, $p < .01$), their linear pattern of change (χ^2 = 677.06, df = 602, $p < .01$), and their quadratic pattern of change (χ^2 = 628.09, df = 602, $p < .01$). These findings were indicative of growth terms operating in opposite directions (cross-effects) for study participants (i.e., there was not a uniform pattern of growth among participants, rather one or multiple groups of participants may have been demonstrating an increase in sexual risk behavior over time while one or multiple groups of participants were demonstrating a decrease in sexual risk behavior over time). All of the reliability estimates were acceptable (initial status = .55; linear growth term = .20; quadratic growth term = .16). The ICC indicated that 57% of the variance in changes in sexual risk behavior over time was across individuals.

Final model for sexual risk behavior

The final fixed effect results for the sexual risk behavior model are displayed in Table 2.3. Higher levels of maternal support (t = -2.68, df = 1908, $p < .01$) predicted less sexual risk behavior. Younger age at first sexual intercourse predicted more sexual risk

behavior in 12th grade ($t = 5.35$, df $= 491$, $p < .01$). The presence of a natural mentor was associated with less sexual risk behavior in 12th grade ($t = -1.96$, df $= 491$, $p = .05$).

Participants who had a natural mentor demonstrated greater linear decreases in sexual risk behavior ($t = -2.11$, df $= 491$, $p < .05$), however, the quadratic term indicated that participants with a natural mentor demonstrated a change in growth over time ($t = 2.36$, df $= 491$, $p < .05$). Figure 2.2 displays the differences in sexual risk behavior growth for participants depending on whether or not they had a natural mentor. This model did not completely explain the variance for initial status ($\chi^2 = 709.90$, df $= 491$, $p < .01$), the linear parameter ($\chi^2 = 485.91$, df $= 491$, $p < .05$), or the quadratic parameter ($\chi^2 = 471.08$, df $= 491$, $p < .05$) indicating that other variables may help explain individual differences in growth patterns of sexual risk behavior over time.

Unconditional model for substance use

Cigarette use- The linear model best represented the average growth in cigarette use ($t = 1.92$, df $= 611$, $p < .05$). This linear term reflected an average increase in cigarette use over time (coefficient $= .032$). Participants varied in initial status ($\chi^2 = 1924.04$, df $= 611$, $p < .01$) and their pattern of change ($\chi^2 = 907.45$, df $= 611$, $p < .01$). The reliability estimates for both initial status (.70) and the linear growth term (.36) were satisfactory. According to the ICC, 66% of the variance in changes in cigarette use over time was across individuals.

Alcohol and marijuana use- The quadratic model best represented average growth in both alcohol and marijuana use. Both alcohol and marijuana use increased linearly (linear coefficient $= .05$ and $.018$, respectively), however, demonstrated a deceleration in growth over time (quadratic coefficient $= -.011$ and $-.013$, respectively). Variance across

participants in initial status and growth parameters existed in both models: alcohol use, initial status ($\chi^2 = 1323.07$, df = 610, $p < .01$), linear growth ($\chi^2 = 743.89$, df = 610, $p < .01$), quadratic growth ($\chi^2 = 628.95$, df = 610, $p < .01$); marijuana use, initial status ($\chi^2 = 1582.48$, df = 610, $p < .01$), linear growth ($\chi^2 = 767.19$, df = 610, $p < .01$), quadratic growth ($\chi^2 = 676.97$, df = 610, $p < .01$). Reliability estimates for alcohol use (initial status = .61, linear growth = .35, quadratic growth = .24) and marijuana use (initial status = .66, linear growth = .31, quadratic growth = .21) were adequate. Sixty-two percent of the variance in changes in alcohol use and 67% of the variance in changes in marijuana use was across individuals.

Final model for substance use

None of the Level-2 predictors explained variance in initial status or growth in cigarette or alcohol use. Increased levels of maternal support predicted less marijuana use ($t = -2.87$, df = 2018, $p < .01$, coefficient = -.084). In addition, females reported less marijuana use in 12th grade ($t = -2.11$, df = 519, $p < .05$, coefficient = -.167). Having a natural mentor did not predict changes in initial status or growth in any of the substance use models. The variances for initial levels and growth term parameters for cigarette, alcohol, and marijuana use were not completely explained by their respective models.

Additional Analyses

I conducted all of the abovementioned analyses including both genders and then separately for males and females. The results of the analyses completed separately by gender did not yield any new findings.

Discussion

My findings support the hypothesis that natural mentoring relationships contribute to resilience in a sample of African American adolescents transitioning into adulthood. Although I did not find an association between mentor presence and substance use, my findings regarding the potential long-term promotive effects of natural mentors on depressive symptoms and sexual risk behavior suggest that supportive nonparental adults in youth's lives are a vital resource to help them overcome the risks they face as they transition into adulthood. These findings are congruent with previous research regarding the potential of natural mentoring relationships to influence several outcomes, but fail to serve as a global protective factor for all youth outcomes (DuBois & Silverthorn, 2005b; Zimmerman et al., 2002).

Depressive symptoms

I found support for my hypothesis that natural mentors moderate the relationship between stress and depression. Supportive relationships with nonparental adults may provide youth with additional social resources to help them cope more effectively with stress associated with life changes that occur as adolescents graduate from high school and enter the adult world (Carbonell, Reinherz, & Beardslee, 2005). Furthermore, natural mentoring relationships may contribute to youth's sense of worth and foster a more positive self-appraisal, which may in turn make them less vulnerable to the effects of stress, resulting in fewer depressive symptoms (Rhodes, 2005).

Consistent with the literature on gender differences in depression (Nolen-Hoeksma, 2001), I found growth trends of depressive symptoms varied between males and females. Females reported an increase in depressive symptoms while males reported

a decrease during the transition to adulthood. Although growth trends differed between males and females, I found potential promotive effects of natural mentors for both sexes. Among males, those with natural mentors had steeper linear decreases in depressive symptoms over time in comparison to males without mentors. Females with natural mentors increased in depressive symptoms at a slower rate over time in comparison to females who did not have a natural mentor. Notably, mentor presence was not associated with differences in depressive symptoms at participants' initial status (12th grade), but was associated with more positive growth trajectories. Given that perceived stress increased over time, particularly among female participants, this finding provides further support for my hypothesis that natural mentoring relationships moderate the relationship between stress and depression. Thus, the insulating effects of natural mentoring relationships on emerging adults' psychological health are more pronounced when adolescents graduate from high school and begin to experience increased levels of transitional stress.

In this analysis, I controlled for a number of other factors that may have predicted depressive symptoms (i.e., age, gender, SES, parental support). The fact that having a natural mentor explained additional variance in the linear growth term after controlling for potentially spurious variables strengthens the finding that having a natural mentor may contribute to a more positive mental health trajectory for at-risk African American adolescents transitioning into adulthood.

Sexual risk behavior

In support of my hypothesis, I found that natural mentors may have helped at-risk youth avoid risky sexual behavior. The advice of a more experienced adult may help

youth to navigate intimate relationships and make healthy decisions. Additionally, natural mentors may model effective decision-making processes more generally, helping youth to develop their own problem-solving and sexual decision-making skills (Rhodes, 2005). These mentoring processes may contribute to positive behavioral outcomes among youth experiencing additional risks associated with the transition to adulthood.

I found that participants who reported having a natural mentor demonstrated less sexual risk behavior during their senior year of high school and had steeper linear decreases in sexual risk behavior over time. Although these linear decreases tapered off over time and increased back to 12th grade levels, sexual risk behavior remained higher among the group of participants who did not have a natural mentor. In fact, participants who did not have a natural mentor demonstrated a temporary increase in sexual risk behavior immediately after high school before they began a gradual decrease in sexual risk behavior over time.

These findings indicate that in addition to potentially contributing to lower overall levels of sexual risk behavior, relationships with natural mentors may be particularly beneficial in preventing sexual risk behavior in the two years immediately following high school. These two years may be a critical time considering changes that typically occur during these years. Emerging adults, for example, often gain a great deal of independence and experience a coinciding decrease in adult supervision following high school completion (Arnett, 2000). Without the constant monitoring of parents, emerging adults may have increased opportunities to engage in sexual behavior, which may also increase their risk of contracting an STI. The results of the current study suggest that the guidance of a supportive nonparental adult may help emerging adults navigate their

intimate relationships and increase their chances of engaging in health protective behavior.

Substance use

Presence of a natural mentor did not explain any individual variation in substance use (i.e., cigarette, alcohol, marijuana use). This finding did not support my hypothesis. Past research on the effects of mentors on substance use are however, somewhat mixed. Zimmerman et al. (2002), for example, found that adolescents with natural mentors were less likely to smoke marijuana, but they did not find an association between the possession of a natural mentor and alcohol use. DuBois and Silverthorn (2005b) failed to find any potential mentor effects on mentees' substance use. They suggest that natural mentors may not reduce mentees' substance use because natural mentors may unintentionally model substance use, particularly alcohol and cigarette use which are not unlawful for adults. Another explanation for my null finding is that some forms of substance use are highly normative among emerging adults, and thus may be extremely difficult to influence through natural mentoring relationships (DuBois & Silverthorn, 2005b). Notably, I found cigarette, alcohol, and marijuana use all increased as adolescents transitioned into adulthood, possibly reflecting an increased acceptance of these behaviors during this developmental period.

Study limitations and strengths

Several study limitations and strengths of my study should be noted. Detailed information about natural mentors and natural mentoring relationships were not studied. Researchers have documented the role of relationship characteristics such as relationship closeness in predicting youth outcomes (DuBois & Silverthorn, 2005a). In my study,

participants were only asked about the presence of a natural mentor and the mentor's role in the participant's life (e.g., aunt, teacher). More detailed information about the quality of the relationship, the duration of the relationship, the types of interactions between the mentor and the mentee, and the frequency of contact would have allowed for the identification of characteristics beyond mentor presence that may have predicted more positive psychosocial trajectories among the participants in this study. In addition, more in-depth assessment of the mentor relationship would allow a more detailed evaluation of the intermediate processes (e.g., increased social-emotional or cognitive development) that may have explained the pathways in which mentors influenced youth outcomes. Nevertheless, my findings suggest that the simple assessment of mentor presence is influential for healthy development. Thus, the findings from this study (i.e., natural mentors may promote resilience among at-risk adolescents) justify the need for continued research aimed at better understanding natural mentoring relationships.

Similarly, this study did not assess natural mentor behavior. Although findings from this study suggest that natural mentors exerted a mainly positive influence on their mentees, it is quite possible that through negative behavior modeling, natural mentors may have also negatively influenced their mentees (Zimmerman et al., 2005). Natural mentors who used substances, for example, may have been unintentionally modeling this negative behavior and thus, increasing the likelihood of this behavior in their mentees. Analyses including natural mentor behavior may have helped to explain this study's null findings regarding substance use.

Additionally, I did not collect data on participant characteristics that may have been related to mentor presence and mentee outcomes (Zimmerman et al., 2005). It is

possible that more socially skilled and resourceful youth may have been more likely to both have a mentor and have more positive psychosocial trajectories. Controlling for participant characteristics would have helped to isolate potential mentoring effects on youth outcomes. Furthermore, understanding why, how, and when mentees seek out and utilize natural mentoring relationships may have helped to explain my findings. In the current study, for example, I may have found that mentees were more likely to seek the advice and guidance of mentors regarding emotional and sexual issues, but mentees may have been less likely to turn to mentors for help with substance-related matters. Nevertheless, the results of this study suggest that assessing for mentor presence may be one way to assess for adolescent resourcefulness. Given that there is limited research on adolescent resourcefulness, the findings from this study suggest that this is an area of resilience research that deserves more attention. Yet, the current study is indicative of long-term mentoring effects and thus is a necessary first step to continued research to better understand why and how these relationships contribute to adolescent resilience. Furthermore, it is useful to note that successful mentoring relationships depend on the participation of both mentees and mentors, thus, it would be imprudent to completely explain mentor effects as an individual youth's resourcefulness.

Although this study was innovative in its longitudinal approach to studying the potential effects of natural mentoring relationships, it is useful to note that participants were only asked about the presence of a natural mentor during their senior year of high school. Thus, I cannot be certain whether natural mentors were present in participants' lives prior to this time or in the years following high school. Yet, I found that over half of the natural mentors identified in this study were youth's family members, and a large

percentage of non-familial mentors were either god-family or family members' friends. Given the roles of these mentors in participants' lives, it is not unreasonable to speculate that the majority of natural mentoring relationships identified in this study were enduring relationships with adults who had a long history of involvement in youth's lives. In addition, whether or not these mentoring relationships existed prior to or following participants' senior year of high school, the findings of this study indicate that having a natural mentor during this critical time period was likely a vital resource in helping youth to successfully navigate their transition to adulthood. If natural mentors are able to help instill improved perceptions of self-worth, coping strategies, problem-solving and decision-making skills in their mentees, then these are benefits that mentees can take with them and incorporate into their adult lives after their relationships with their natural mentors terminate (if they do, in fact, terminate). The findings of the current study support the possibility of long-lasting positive effects associated with natural mentoring relationships among African American emerging adults that may persist even if these relationships are discontinued. Although it is possible that some participants in this study may have just formed mentoring relationships, this would have most likely lessened the effects I found. Given the magnitude of my findings, it is reasonable to assume that most, if not all, of the participants were reporting long-term relationships.

In addition, my measure of sexual risk behavior may be somewhat limited. Although I included variables (e.g., frequency of intercourse, frequency of unprotected intercourse) that have been widely used to assess sexual behavior in adolescents and young adults (Capaldi, Stoolmiller, Clark, & Owen, 2002; Fergus et al., 2007), these variables may not necessarily reflect risk behavior for individuals involved in committed,

monogamous relationships. While few study participants (less than 7%) got married during the five years following high school, study participants increasingly reported being in serious relationships throughout these five years. Assuming these relationships were monogamous and they were not with high-risk sexual partners, frequency of intercourse and frequency of unprotected intercourse may not have increased participants' risk of contracting HIV or other STIs. Nevertheless, participants were not asked about their own or their partner's level of commitment to these relationships (e.g., whether or not these relationships were monogamous) and relationships among adolescents and young adults tend to be unstable (Fergus et al., 2007). Also, I do not know if participants were in relationships with high-risk sexual partners (e.g., intravenous drug users, men who had unprotected sex with other men), wherein more frequent unprotected intercourse would increase participants' risk of contracting HIV or other STIs.

Other study limitations include a reliance on self-reported data and the use of a nonrepresentative sample. Although there is a risk of respondent bias when using self-report measures, this risk was reduced in two ways. First, a paper-and-pencil format was used to collect sensitive information about sexual behavior and substance use. This format may have lessened the occurrence of socially desirable responses. Second, the longitudinal study design made consistent bias across time points less likely, especially considering that there may have been a regression to the mean over time. This study's sample also consisted of urban, African American adolescents from low-income neighborhoods with eighth grade GPAs at or below 3.0. Although the uniqueness of this sample limits the generalizability of study findings, this is a group of adolescents who are

often the focus of social policies and preventive interventions. Thus, insights into how natural mentoring relationships may influence this population may be particularly relevant.

Despite these shortcomings, this study contributes to the literature on natural mentoring in several ways. First, this is one of the only studies to examine the potential influence of natural mentoring relationships on adolescent outcomes longitudinally and during the transition to adulthood. Most previous natural mentor studies have been based on a cross-sectional research design. The collection of study data at a single point in time cannot detect more subtle effects over time or delayed effects of mentors. Whereas the findings from the current longitudinal study are indicative of potential long-term effects of natural mentoring relationships and are suggestive of a causal relationship between having a natural mentor and health outcomes. Second, I controlled for several possible alternate explanations for my results. The fact that my findings stood up to gender, age, SES, and parental support effects, for example, helped us reduce several possible alternate explanations for my findings. Third, my sample focused on urban, African-American youth from low-income neighborhoods who are often underrepresented in the literature.

Implications

The results of this study highlight the potential of natural mentors to contribute to youth resilience and suggest the role of natural mentors may be particularly promising to help prevent mental distress and risky sexual behavior. My results are particularly meaningful considering that interventions focused on preventing and reducing depression among adolescents and young adults have not demonstrated long-term effects (Andrews,

Szabo, & Burns, 2002; Spence, Sheffield, & Donovan, 2005). Furthermore, African American adolescents and young adults are disproportionately affected by STIs such as HIV (Rangel, Gavin, Reed, Fowler, & Lee, 2006), thus, the significance of my findings regarding the potential promotive effects of natural mentors on African American emerging adults' sexual risk behavior may be a particularly vital component for HIV prevention efforts. My findings suggest that incorporating strategies to increase natural mentoring relationships within interventions designed to prevent depression or sexual risk behavior may result in more effective interventions.

My findings suggest that initiatives to increase informal mentoring may be warranted. These initiatives may be directed at providing mentor-rich environments that would increase adolescents' opportunities to form long-lasting natural mentoring relationships (Freedman, 1993). Creating settings for intergenerational interactions may be especially helpful so that relationships between youth and adults can develop naturally. Youth Empowerment Solutions for Peaceful Communities (YES), for example, is a violence-prevention program that enlists local youth and neighborhood adults to work together on community improvement projects (Franzen, Morrel-Samuels, Reischl, & Zimmerman, in press).

Efforts to educate parents about the potential promotive effects of having natural mentors in youth's lives may also be a useful prevention strategy. If parents were more aware of how these relationships can improve their children's health outcomes, they may become useful partners in programs designed to create opportunities for natural mentoring to occur. Furthermore, encouraging extended family members and fictive kin to participate in positive youth development programs may help to create or strengthen

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natural mentoring bonds.   Intergenerational interactions are not uncommon. My results

suggest that increased efforts to capitalize on these interactions by encouraging the

formation of natural mentoring relationships may result in healthier youth outcomes.

Table 2.1. Means, standard deviations (SD) and Cronbach alpha (depressive symptoms) for all outcome measures

Time point	Depressive Symptoms Mean (SD)	Alpha	Sexual Risk Behavior Mean (SD)	Cigarette Use Mean (SD)	Alcohol Use Mean (SD)	Marijuana Use Mean (SD)
Time 1 (12th grade)	1.81 (.93)	.86	-.04 (2.37)	1.66 (1.24)	1.62 (1.12)	1.97 (1.75)
Time 2*	1.75 (.71)	.83	-.11 (2.19)	1.76 (1.23)	1.90 (1.31)	2.01 (1.88)
Time 3	1.67 (.69)	.83	-.17 (2.19)	1.82 (1.40)	2.04 (1.45)	1.98 (1.87)
Time 4	1.73 (.70)	.83	-.13 (2.22)	1.87 (1.33)	2.20 (1.54)	2.13 (1.93)
Time 5	1.72 (.72)	.84	-.14 (2.19)	1.97 (1.51)	2.20 (1.57)	2.12 (2.02)

_*Data was not collected for one year post high school and then was collected for 4 consecutive years (Times 2-5)

Table 2.2. Fixed effects model for depressive symptoms

Fixed Effect	Coefficient	t(521)	p-value
Mean Initial Status			
Intercept	0.053	0.546	0.585
Mentor	0.054	0.633	0.527
Gender	-0.148	-0.714	0.475
Age	-0.006	-0.162	0.872
SES	-0.054	-1.257	0.209
Gender x Mentor	0.112	1.300	0.194
Mean Linear Growth			
Intercept	0.022	1.134	0.258
Mentor	-0.053	-2.150	0.032
Gender	0.057	3.016	0.003
Age	0.014	1.240	0.216
SES	-0.003	-0.259	0.796
Gender x Mentor	-0.048	-1.953	0.051
Stress			
Intercept	0.270	4.951	0.000
Mentor	-0.036	-1.777	0.076
Gender	0.058	2.060	0.040
Age	0.056	1.780	0.075
SES	0.033	1.225	0.222
Gender x Mentor	-0.021	-1.051	0.294
Maternal Support			
Intercept	-0.183	-6.019	0.000
Paternal Support			
Intercept	-0.080	-3.081	0.003

Table 2.3. Fixed effects model for sexual risk behavior

Fixed Effect	Coefficient	t(491)	p-value
Mean Initial Status			
Intercept	0.120	1.563	0.118
Mentor	-0.176	-1.959	0.051
Gender	-0.070	-1.472	0.142
Age	0.013	0.268	0.789
SES	0.011	0.267	0.789
Age at 1st Intercourse	0.247	5.354	0.000
Mean Linear Growth			
Intercept	0.035	0.625	0.532
Mentor	-0.152	-2.112	0.035
Gender	0.042	1.159	0.247
Age	-0.068	-1.794	0.073
SES	-0.008	-0.233	0.816
Age at 1st Intercourse	-0.058	-1.657	0.098
Mean Quadratic Growth			
Intercept	-0.009	-0.826	0.409
Mentor	0.034	2.361	0.019
Gender	-0.011	-1.481	0.139
Age	0.008	1.002	0.317
SES	-0.003	-0.478	0.632
Age at 1st Intercourse	0.009	1.312	0.190
Maternal Support			
Intercept	-0.072	-2.684	0.008
Paternal Support			
Intercept	-0.030	-1.099	0.272

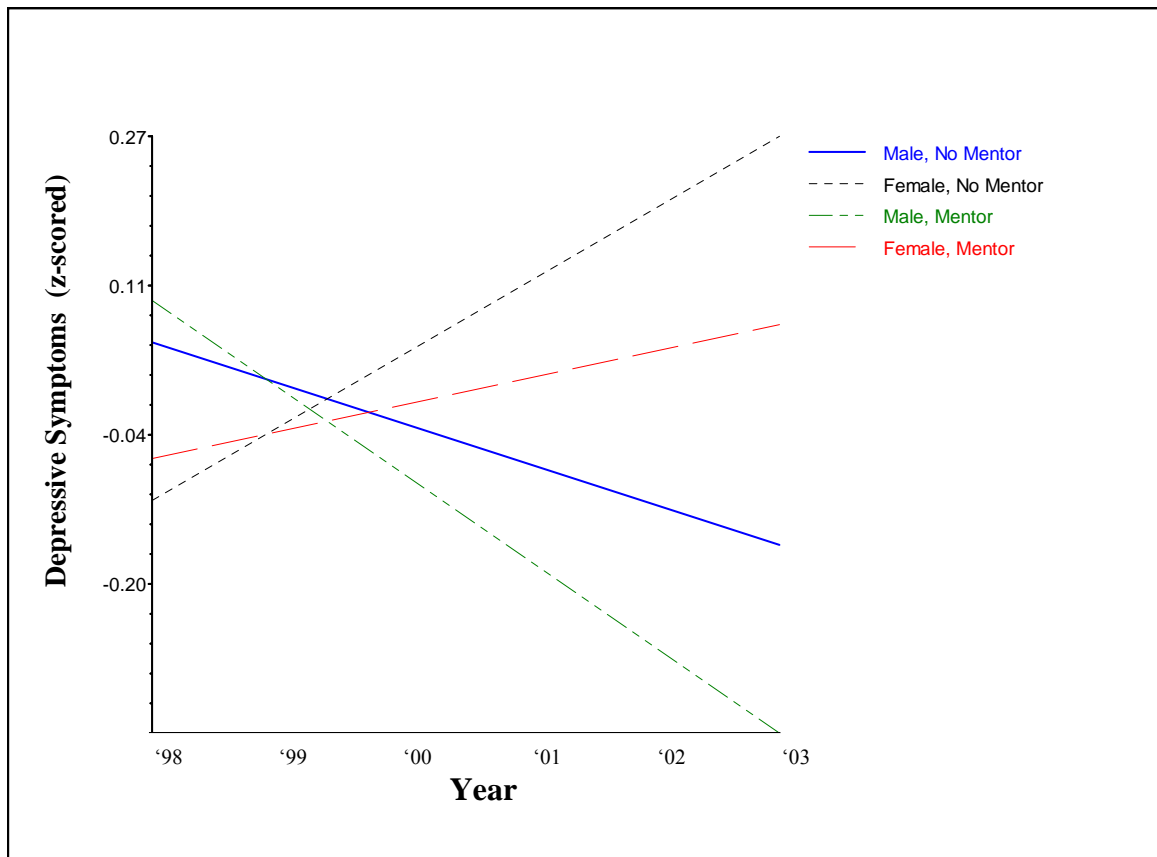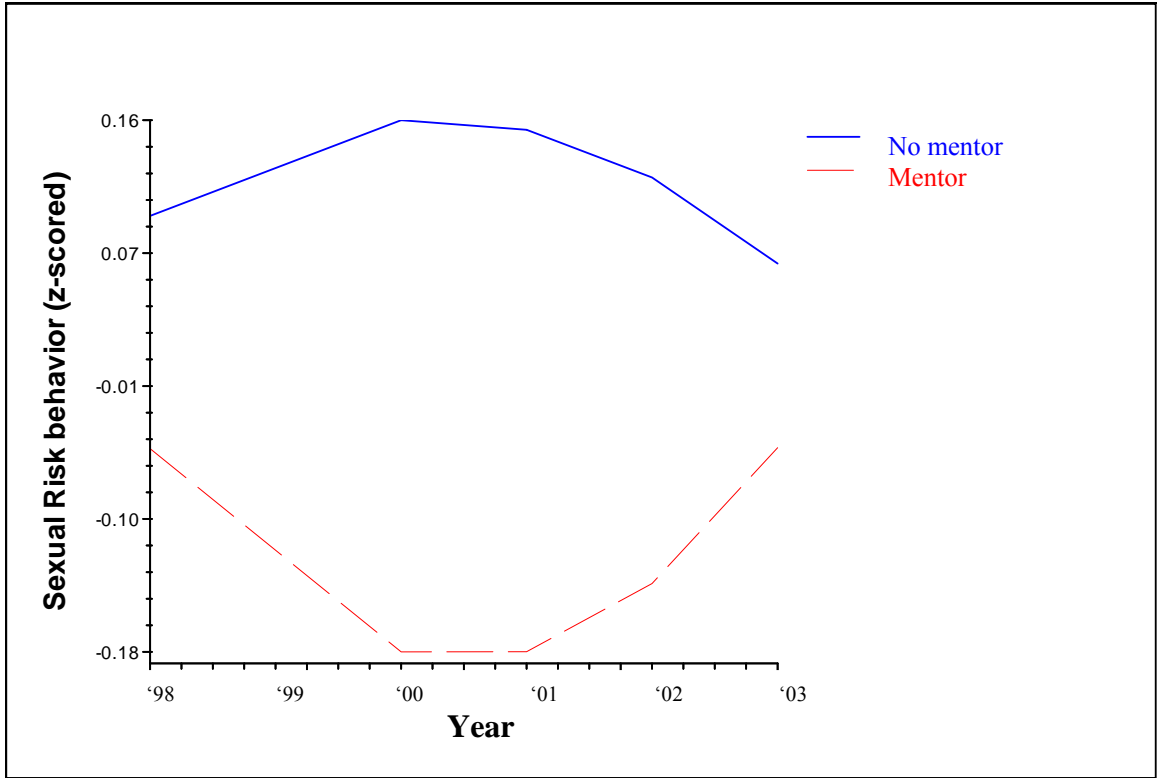Figure 2.1. Growth in depressive symptoms for males and females as a function of possessing a natural mentor

Figure 2.2. Growth in sexual risk behavior as a function of possessing a natural mentor

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Chapter III

Natural mentoring relationships among African American adolescent mothers:
A study of resilience

Introduction

Adolescent childbearing is a phenomenon that has received substantial research attention over the last few decades. The results of many early studies indicated that teenage childbearing was predictive of negative outcomes for both young mothers and their offspring (Furstenberg, Brooks-Gunn, & Chas-Lansdale, 1989; Hoffman, Foster, & Furstenberg, 1993; Maynard, 1996). More recently, however, researchers have identified alternate explanations for the negative outcomes found in previous studies (e.g., unequal access to resources such as education, employment, and safe housing) and have suggested that by ignoring pre-existing disadvantage, researchers and policy-makers have overstated the negative effects of teenage childbearing (Geronimus, 1997; Hotz, McElroy, & Sanders, 1997; SmithBattle, 2007). Furthermore, as researchers have begun to study more diverse groups of adolescent mothers over time, they have found considerable variability in long term outcomes (Oxford et al., 2005; SmithBattle, 2007), suggesting that many adolescent mothers have been able to overcome the challenges associated with teenage childbearing. These recent findings suggest that resilience theory may provide a useful approach for studying long term outcomes among adolescent

mothers because a resilience model focuses on factors that promote successful adjustment despite adversity.

<u>Resilience theory</u>

In addition to being more likely than their counterparts to come from disadvantaged backgrounds (Coley & Chase-Lansdale, 1998; Jaffee, 2002; Maynard, 1995), adolescents who become pregnant are also more likely to have performed poorly in school (Coley & Chase-Lansdale, 1998; Maynard, 1995), received low levels of social support, and been the victims of sexual abuse (Boyner & Fine, 1992). Additionally, adolescent mothers are more likely than their non-childbearing peers to originate from communities with high poverty rates and limited educational and employment opportunities (Wilson, 1987). These findings indicate that adolescent mothers already differ from other adolescents in their experiences and opportunities prior to their pregnancy. The addition of an early pregnancy may increase economic hardship and create additional obstacles to obtaining an education for young mothers (Edin, 2000; Jaffee, 2002; Musick, 1993).

Due to intersections between race/ethnicity and poverty, low-income African American adolescent mothers face a unique set of risks. Experiences with race-related social, economic, and political marginalization may cause African American adolescent mothers to be at increased risk for negative outcomes (Geronimus, 2003). In addition to marginalization or exclusion from societal resources, personal experiences with racial discrimination may result in poorer physical and mental health outcomes, as well (Williams, Neighbors, & Jackson, 2003). Furthermore, Geronimus (2003) suggests that the moral condemnation our society casts on urban, low-income, African American

adolescent mothers may directly affect their psychological well-being and the willingness of others to offer them support and encouragement.

Limited resources, competing demands, and increased responsibilities may result in increased psychological distress among adolescent mothers (Bebbington, Hurry, & Tennant, 1990; Wasserman, Brunelli, & Rauh, 1990). This psychological distress may be manifested in a variety of ways, including symptoms of depression and anxiety. In fact, researchers have documented heightened symptoms of depression (Deal & Holt, 1998) and anxiety (Jaffee, 2002) among adolescent mothers. Nevertheless, researchers have identified some adolescent mothers who have been able to successfully adapt to adolescent motherhood (Garcia Coll & Vazquez Garcia, 1996; Oxford et al., 2005).

Resilience theory helps explain why some youth who experience adversity are able to thrive in the face of risk (Luthar & Cicchetti, 2000; Zimmerman & Arunkumar, 1994). The resilience process refers to positive adjustment among youth who have been exposed to one or more risk factor(s) (Fergus & Zimmerman, 2005). Risk factors increase the likelihood of developing negative outcomes. Promotive factors, on the other hand, contribute positively to youth outcomes (i.e., compensatory factors) and/or buffer youth from negative outcomes associated with risks (i.e., protective factors). Promotive factors may be individual assets (e.g., self-efficacy) or resources from an individual's environment (e.g., mentors). Resilience theory is a useful approach for estimating outcomes among at-risk populations because it allows researchers to focus on factors that may predict positive development within these populations. Thus, a resilience approach is unique because it focuses on strengths within the individual and the individual's

environment as opposed to solely focusing on deficits and blaming at-risk populations for their own problems.

Few researchers have used a resilience approach to discover specific factors that may counter or protect adolescent mothers from the negative outcomes associated with the risks they face. Of the few researchers who have investigated promotive factors for this population, some have found that the presence of a strong supportive relationship may contribute significantly to resilience among African American adolescent mothers (Carey, Ratliff, & Lyle, 1998; Klaw, Rhodes, & Fitzgerald, 2003; Rhodes, Ebert, & Fischer, 1992).

<u>Social support and adolescent mothers</u>

Several researchers have identified social support as a predictor of psychological outcomes among adolescent mothers. Specifically, researchers have found that adolescents who report low levels of social support during pregnancy experience poorer health during pregnancy and greater symptoms of depression in comparison to pregnant teens with higher levels of support (Stevenson, Maton, & Teti, 1999). Additionally, researchers have found more depressive symptoms among adolescent mothers with low social support post-pregnancy (Burchinal, Follmer, & Bryant, 1996). Consistent with these findings, researchers have found beneficial effects of higher levels of social support for adolescent mothers' well-being (Cutrona, 1989; Davis, Rhodes, & Hamilton-Leaks, 1997; Turner, Grindstaff, & Phillips, 1990; Unger & Wandersman, 1988). Although most of these studies of social support and maternal well-being have focused on support provided by adolescent mothers' parents and/or romantic partners, some studies have examined the potential positive effects of relationships with nonparental supportive adults

on the adolescent mothers' psychological well-being (Rhodes et al., 1992; Rhodes et al., 1994).

<u>Natural mentors</u>

Natural mentors are nonparental supportive adults who are a part of adolescents' social networks (e.g., extended family members, neighbors, family members' friends). Although operational definitions of natural mentors have varied, most researchers agree that natural mentoring relationships occur between an older and more experienced adult mentor and a younger, less experienced mentee and that these relationships serve to provide mentees with support, guidance, and encouragement (Levinson, Darrow, Klein, Levinson, & McKee, 1978; Rhodes et al., 1992; Zimmerman, Bingenheimer, & Notaro, 2002). Researchers suggest that natural mentoring relationships may be more prevalent in the African American community due to a heightened emphasis on intergenerational relationships both within and outside of the family system (Stack, 1974). In particular, older African American women often take on the role of *other mothers* or *play mothers* (surrogate parents) and contribute substantially to the development of African American youth (Collins, 1987). These relationships with surrogate mothers may be particularly valuable for adolescent mothers as they take on new roles and responsibilities associated with parenthood.

In a study of 129 African American adolescent mothers, Rhodes and colleagues (1992) found that participants who reported having a natural mentor demonstrated lower levels of depression than those who did not have a natural mentor. They also found that participants with a mentor and participants without did not differ in reported stress or in levels of social support received (not including mentor support). Rhodes et al. (1992)

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concluded that natural mentoring relationships may positively influence mental health outcomes by contributing to adolescents' ability to cope with stressful relationships and benefit from their available social networks. Rhodes' study was one of the first to identify the potential effects of natural mentors on adolescent mothers' psychological well-being, however, the use of a cross sectional study design was a significant study limitation.

In a similar study, Rhodes, Contreras and Mangelsdorf (1994) analyzed the potential effects of natural mentoring relationships on mental health outcomes among a group of 54 urban Latina adolescent mothers. They found that adolescent mothers who reported having a natural mentor demonstrated fewer symptoms of depression and anxiety than their counterparts. As in the previous study, Rhodes and colleagues found no differences in stress exposure or social support resources between the group of participants with natural mentors and the group without mentors. Adolescents with natural mentors also reported receiving more intangible support (e.g., emotional support, guidance) from their mentors than they received from their mothers. Again, the results of this study support the hypothesis that natural mentoring relationships help adolescent mothers cope more effectively with stress, and thus promote more positive psychological outcomes. These results also suggest that adolescent mothers may benefit from mentor support above and beyond the benefits associated with maternal support. Yet, this study was also limited by the use of a cross sectional design.

Present study

Although researchers have documented a host of risk factors and negative outcomes associated with adolescent childbearing, few researchers have investigated

potential promotive factors for adolescent mothers. Findings from previous studies reflect a positive association between the presence of a natural mentor and adolescent mothers' well-being. These results are noteworthy, however, researchers have failed to assess for potential long-term mentoring effects on psychosocial outcomes among adolescent mothers. Whereas data collected at one time point helps identify potential relationships between variables, data collected at multiple time points allows researchers to further investigate the nature of these relationships. By examining longitudinal data, researchers can determine if the identified relationship is potentially sequential. Additionally, researchers can study effects over time and assess for long- vs. short-term outcomes. Longitudinal research can provide for a developmental analysis and contribute to our understanding of identified relationships. Thus, a number of key insights can be gained from conducting longitudinal research on natural mentoring relationships among adolescent mothers.

This study assessed natural mentoring effects on adolescent mothers' well-being as they transitioned from adolescence into adulthood. Researchers have found that adolescent mothers may be at increased risk for depression and anxiety. Furthermore, stress associated with the transition from adolescence into adulthood may exacerbate pre-existing stressors and increase adolescent mothers' risk status. I tested whether having a natural mentor during the senior year of high school (a key transitionary period) affected mental health trajectories among a sample of African American adolescent mothers. Participants' age, socioeconomic status (SES), and parental support were controlled for in an effort to isolate the relationship between natural mentor presence and participants' psychological well-being. I also tested whether the presence of a natural mentor

modified the relationship between stress and mental health problems over time. This study included five time points of data collected over six years. I hypothesized that adolescent mothers who reported having natural mentors during their 12th grade year (or what would have been their 12th grade year for those who dropped out of school) would demonstrate greater decreases in symptoms of depression and anxiety over time. I also hypothesized a weaker relationship between stress and mental health problems over time among participants with natural mentors.

Methods

Participants

This study's sample consisted of 93 African American adolescent mothers who were pregnant and/or parenting during their senior year of high school (or what would have been their senior year for those who dropped out of school). All of the mothers in this sample were the primary care providers for their children. Twenty-seven of the participants were pregnant during their senior year of high school and went on to deliver and be the primary care providers for their children. Three of these pregnant adolescents already had one child and one pregnant mother already had two children. Overall, 23 participants were pregnant with their first child, 57 participants had one child and 13 participants had two children by their senior year of high school. Participants who were pregnant with their first child did not differ from parenting mothers on SES ($t_{[90]}$ = -.25; ns), age ($t_{[91]}$ = -.60; ns), or natural mentor presence ($\chi^2_{[1]}$ = .46; ns).

This study included participant data taken from the fourth wave (the participants' senior year of high school) of an 8-wave longitudinal study of high school dropout in a large, high-poverty, Midwestern city. Study inclusion criteria included an eighth-grade

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GPA of 3.0 or lower, and the absence of an emotional or developmental disability. Participants were interviewed each year of high school and four times across the five years following high school. The current study included data taken from the senior year of high school and data collected over the following 5 years. Participants in the fourth wave of data (senior year of high school) included 770 youth (90% response rate from wave-1 sample). Ninety-nine female participants reported that they were either pregnant or parenting during their senior year of high school. Ninety-three of the 99 pregnant or parenting mothers identified as African American, and given my interest in the unique experience of African American adolescent mothers, I only included these 93 African American adolescent mothers in the current study.

Procedure

This study received approval from both the Institutional Review Board at the University of Michigan and the staff at the schools where data were collected. Participants completed structured interviews conducted by six male and female, African American and white interviewers. Interviews lasted approximately 50 to 60 minutes. Attempts were made to match participants and interviewers by race and gender. Self-report questionnaires (paper-and-pencil format) were administered following the interview to collect information about participants' drug and alcohol use. Participants who were enrolled in school in the 9th through 12th grade years were called from their classrooms and interviewed at school. Participants who were not enrolled in school were contacted and interviewed at home or at a location specified by the participant. Data collection in the years following high school completion involved contacting participants and interviewing them at home or at a specified location in the community.

Measures

        Measures in this study included both intraindividual measures and interindividual measures. Intraindividual measures included variables that were expected to vary across time (e.g., depressive symptoms). Interindividual measures included participant characteristics (i.e., age, SES) and my main predictor variable (presence of a natural mentor in adolescent mothers' 12th grade year). Means, standard deviations, and Cronbach alphas for the study outcome variables are reported in Table 3.1.

Intraindividual measures- Level 1

        Depressive symptoms- Depressive symptoms were assessed using six items from the Brief Symptom Inventory (Derogatis & Spencer, 1982). Participants were asked about the frequency with which they have felt uncomfortable during the past week due to various problematic symptoms (e.g., feelings of worthlessness, feeling no interest in things). Response options ranged from 1 (not at all uncomfortable) to 5 (extremely uncomfortable).

        Anxiety symptoms- Six items from the Brief Symptom Inventory (Derogatis & Spencer, 1982) were used to measure symptoms of anxiety. Participants were asked how frequently (within the past week) they had felt uncomfortable because of various problems (e.g., feeling fearful, suddenly scared for no reason). Response options were the same as the ones previously described for depressive symptoms.

        Stress- The Perceived Stress Scale was used to measure participants' experiences with stress (Cohen, Kamarck, & Mermelstein, 1983). This 14-item measure asked participants to indicate how frequently they have experienced stress-related feelings and thoughts within the past month. Items included "In the last month, how often have you

felt that you had so many problems that you could not deal with them?" and "In the last month, how often have you found that you could not deal with all the things that you had to do?" Response options ranged from never to very often on a scale of 1 to 5. These items were summed and averaged to yield an average stress score.

Parental support- Participants were asked about support received from their mothers and fathers (Procidano & Heller, 1983). Five items were used to assess maternal support, and then the same 5 items were reworded to assess for paternal support. Items included "I have a deep sharing relationship with my mother/father," and "I rely on my mother/father for emotional support." Respondents rated how true the statements were for them: response options ranged from 1 (not true) to 5 (very true). The five maternal support items were summed and averaged to yield a maternal support variable; the same was done with the paternal support items. Participants who reported no contact with the parental figure in question were assigned a score of 0 for this variable.

Interindividual measures- Level 2

Natural mentor- Participants were asked, "Is there an adult 25 years or older who you consider to be your mentor? That is, someone you can go to for support and guidance, or if you need to make an important decision, or who inspires you to do your best?" If participants responded in the affirmative, they were asked, "What is his/her relationship to you?" If participants identified a parent or step-parent as their mentor, they were asked the first question again, but asked to identify someone other than a parent or person who raised them. Participants who identified a mentor who was not a parent, step-parent, or person who raised them qualified as having a natural mentor. This

item was used to create a dichotomous natural mentor variable (0 = no mentor, 1 = mentor).

Demographics- Information was collected regarding participant age, SES, and the number of children participants had. Participants were asked to provide their date of birth, which was used to calculate their age. Average participant age during the 12th grade year was 17.66 (SD = .65). As an indicator of SES, participants were asked about their parents' occupations. These occupations were assigned prestige scores (Nakao & Treas, 1990a, 1990b) which ranged from 29.28 (private household work) to 64.38 (professional). If both parents had occupations, the higher of the two prestige scores was used. The mean for the sample was 35.73 (SD = 7.54). Participants were also asked to report the total number of children they had.

Data Analytic Strategy

I used hierarchical linear modeling (HLM) to create growth curves for all of the outcomes in this study (Raudenbush & Bryk, 2002). HLM conceptualizes two levels of analysis. The first level (Level 1) consists of each individual's observed development (e.g., development of depressive symptoms) over time determined by a set of individual parameters. The second level (Level 2) consists of individual characteristics that may predict variance in individual growth over time (e.g., possession of a natural mentor) (Bryk & Raudenbush, 1987). I used HLM to estimate 1) how the psychological outcomes in this study changed over time, 2) whether individuals demonstrated different trajectories over time and, if they did, 3) whether having a natural mentor predicted these differences in trajectories.

I completed two sets of analyses for each outcome variable. First, I estimated

fully unconditional models for each outcome variable. Then, if appropriate, I entered my

mixed model for each outcome variable to estimate how much my Level-2 predictors

explained differences in growth across individuals. The fully unconditional models

partitioned the total variance in each outcome variable into intraindividual variance and

interindividual variance. This partitioning allowed me to calculate the intraclass

correlation coefficient (ICC) associated with each outcome variable. The ICC allowed

me to determine whether participants differed in growth trajectories for each outcome.

The ICC also reflected the proportion of variance that lay across participants

(Raudenbush & Bryk, 2002). The results of the fully unconditional models also allowed

me to establish the pattern of average growth (fixed effects) that best represented the data

for each outcome variable. I included time-varying covariates (e.g., linear, quadratic,

cubic terms) to determine which shape of change best fit the data for each outcome (fixed

effects) and to assess for variations in these growth patterns across individuals (random

effects).

In the mixed models, I included stress as a time-varying predictor variable and

maternal and paternal support as time-varying control variables. I added my main Level-

2 predictor (the presence of a natural mentor) to all slopes that varied randomly to

determine how much this variable helped to explain differences in growth across

individuals. I also added the mentor variable to the stress slope to determine if the

relationship between stress and my outcome variables varied as a function of mentor

presence. I included age and SES as Level-2 control variables in all models. Preliminary

analyses indicated that the number of children participants had was not correlated with

study outcome variables so I did not include this variable as a Level-2 control variable in my mixed models.

Results

Natural Mentors

Fifty-seven of the 93 participants (61%) reported having a natural mentor. The natural mentors identified were primarily female extended family members (i.e., grandmothers, aunts, and cousins) and older siblings. Other roles included god-parent, parent's friend, neighbor, and minister.

HLM Analyses

Unconditional model for depressive symptoms

The linear model best represented the average change in depressive symptoms between 12$^{\text{th}}$ grade (initial status for this study) and five years post-high school ($t = -1.17$, 92 df, *ns*). The growth term was not statistically significant, however, the results indicated that participants varied across initial status ($\chi^2 = 214.44$, 92 df, $p < .01$) and their linear pattern of change ($\chi^2 = 169.29$, 92 df, $p < .01$). These findings reflect growth terms operating in opposite directions (cross effects) for study participants. The reliability estimates for both initial status (.54) and the linear growth term (.38) were acceptable. According to the ICC, 48% of the variance in changes in depressive symptoms over time was across individuals.

Final model for depressive symptoms

All of the results from the mixed model for depressive symptoms can be found in Table 3.2. Higher levels of maternal ($t = -2.83$, 326 df, $p < .01$) and paternal ($t = -4.11$, 326 df, $p < .01$) support predicted fewer depressive symptoms over time. Higher reported

stress was associated with more depressive symptoms over time ($t = 2.24$, 88 df, $p < .05$). The relationship between stress and depressive symptoms was weaker among participants with natural mentors ($t = -1.97$, 88 df, $p = .05$). The presence of a natural mentor was not predictive of depressive symptoms at initial status, however, I found that participants who had a natural mentor presented greater decreases in depressive symptoms over time ($t = -3.23$, 88 df, $p < .01$). Figure 3.1 illustrates differences in growth in depressive symptoms for participants depending on whether or not they had a natural mentor. Random effect results indicated that the variance for initial levels of depressive symptoms ($\chi^2 = 135.99$, 88 df, $p < .01$) and the linear growth term ($\chi^2 = 115.71$, 88 df, $p < .05$) were not completely explained by this model. This indicates that other variables may account for individual differences in the growth of depressive symptoms among this group of adolescent mothers.

Unconditional model for anxiety symptoms

The linear model best represented the mean change in anxiety symptoms over time. Again the coefficient associated with the linear growth term ($t = -1.26$, 92 df, *ns*) was not statistically significant, however, participants varied across initial status ($\chi^2 = 194.30$, 92 df, $p < .01$) and their linear pattern of change ($\chi^2 = 164.87$, 92 df, $p < .01$). All of the reliability estimates were acceptable (initial status = .51; linear growth term = .40). Forty-five percent of the variance in changes in anxiety symptoms over time was across individuals.

Final model for anxiety symptoms

The final fixed effect results for this model are displayed in Table 3.3. Higher levels of paternal support predicted less symptoms of anxiety over time ($t = -2.52$, 87 df,

$p < .05$). Higher levels of perceived stress predicted more anxiety symptoms over time (t = 2.36, 87 df, $p < .05$); however, this relationship was weaker for participants with a natural mentor ($t = -2.43$, 87 df, $p < .05$). Participants who had a natural mentor demonstrated less steep increases in anxiety symptoms over time ($t = -2.43$, 87 df, $p < .05$). Figure 3.2 shows differences in anxiety symptom growth among participants depending on whether or not they had a natural mentor. This model did not completely explain the variance for initial status ($\chi^2 = 134.81$, 87 df, $p < .01$) or the linear parameter ($\chi^2 = 115.97$, 87 df, $p < .05$) indicating that other variables may explain individual differences in growth patterns of anxiety symptoms over time.

Discussion

The results of this study indicate that natural mentors may be a powerful promotive factor for African American adolescent mothers. As researchers have recently noted, long-term outcomes among adolescent mothers vary and a number of young mothers have been able to avoid the negative outcomes associated with the risks they face (Oxford et al., 2005; SmithBattle, 2007). My findings suggest that a relationship with a natural mentor may promote resilience within this population.

Natural mentors and mental health

I found that having a natural mentor moderated the relationship between stress and depressive symptoms as well as the relationship between stress and anxiety symptoms among African American adolescent mothers. Thus, natural mentors helped youth be resilient in the face of stress. This finding was consistent with my hypothesis and may have a number of possible explanations. By modeling effective coping strategies, natural mentors may help adolescent mothers cope more effectively with stress

and experience fewer symptoms of depression and anxiety. Also, natural mentors may provide emotional support to adolescent mothers and thus, provide adolescent mothers with a safe outlet for expressing their emotions and requesting guidance (Rhodes, 2005). In addition, natural mentors may provide material aid or physical assistance (e.g., assist with childcare) that may help to buffer against the negative outcomes associated with stress. Regardless of the type of support (e.g., emotional, material, informational) natural mentors provide to adolescent mothers, just feeling supported may be the most influential factor affecting adolescent mothers' psychological well-being. Garcia Coll & Vazquez Garcia (1996) suggest that it is the experience of being ostracized and isolated that leads to negative psychological outcomes among adolescent mothers. Alternatively, feeling supported may bring some level of normalcy to an adolescent mother's experiences and promote healthier long-term outcomes (Oxford et al., 2005).

I also found that participants with natural mentors demonstrated less symptoms of depression and anxiety over time. In addition to moderating the relationship between stress and mental health outcomes, natural mentors may be contributing independently to healthier psychological outcomes among adolescent mothers. Through their interest in and commitment to adolescent mothers, natural mentors may cultivate a more positive self-appraisal among adolescent mothers and add to young mothers' perceptions of self-worth (Rhodes, 2005). By promoting healthier self images among adolescent mothers, natural mentors may be reducing adolescent mothers' vulnerabilities to mental health problems. These findings are consistent with previous results regarding the potential promotive effects of natural mentors on adolescent mothers' psychological well-being (Rhodes et al., 1992; Rhodes et al., 1994). Findings from the current study suggest that

natural mentors may have long-term promotive effects on adolescent mothers' mental health. The fact that these findings remained after controlling for a variety of potentially spurious variables further supports this conclusion.

Limitations

Several limitations of this study, however, should be noted. Participants were only asked about the presence of a natural mentor during their senior year of high school. Thus, I do not know when these relationships began or if they persisted beyond participants' senior year of high school. Klaw and colleagues (2003) found that African America adolescent mothers with natural mentoring relationships that endured over two years postpartum were more likely than their counterparts without mentors to stay in school or graduate. This finding indicates that relationship length may be an important variable for predicting youth outcomes. Considering that the natural mentors identified in my study were primarily family members and friends of family members, it is reasonable to speculate that most of the natural mentoring relationships in my study were long-term relationships. Nevertheless, my findings may indicate that having a natural mentor during a key transitionary time in adolescent mothers' lives may significantly influence adolescent mothers' long-term outcomes even when these relationships are not long-lasting.

A second limitation of this study is that I did not collect data on support received from the father of adolescent mothers' children or from adolescent mothers' partners. Researchers have found that receiving support from children's fathers or romantic partners may be associated with adolescent mothers' psychological well-being (Roye & Balk, 1996). Controlling for partner support may have allowed me to better isolate the

relationship between having a natural mentor and adolescent mothers' psychosocial outcomes. Nevertheless, I did control for both maternal and paternal support which may have been more influential on adolescent outcomes given that an overwhelming majority of participants in this study resided with a parent throughout the five years of this study and only 15% of participants reported being married or living with a partner at any time during the study. Future studies that assess for support received from a variety of different relationships and, in addition, explore aspects of the relationships beyond the provision of support will be helpful in furthering our understanding of how significant relationships may influence the psychological well-being of adolescent mothers.

A third limitation of this study is the unique character of the sample. The sample comprised 93 African American, female, pregnant/parenting adolescents with 8th grade GPAs at or below 3.0. African American adolescent mothers tend to face a distinct set of risks. In addition, restricting the sample to adolescent mothers with 8th grade GPAs at or below 3.0 may have limited the sample to lower-achieving adolescent mothers who may have been at increased risk for negative outcomes. Although findings from this study may not generalize to other populations, the findings from this study are of significance to researchers, practitioners, and policymakers interested in promoting resilience within this at-risk population.

Finally, the sample size is relatively small.   This limitation is frequently faced by researchers interested in studying at-risk adolescent populations (Rhodes et al., 1992; Rhodes et al., 1994), and is particularly an issue for researchers interested in studying these populations over multiple time points (Klaw et al., 2003). My small sample size may have resulted in limited statistical power to detect small effects in the relationships

studied. Yet, I found several theoretically consistent findings, suggesting that the effects of natural mentors may be robust even after controlling for several other variables.

Implications and conclusion

Natural mentors may be a particularly valuable source of support for adolescent mothers. Although support received from adolescent mothers' parents and partners has been found to be related to adolescent mothers' well-being, researchers have found that relationships with parents and partners can also be significant sources of stress, unwanted interference, and conflict (Caldwell, Antonucci, & Jackson, 1998; Roye & Balk, 1996). In contrast, relationships with natural mentors have been found to be highly supportive and minimally conflictual (Rhodes et al., 1992). In fact, Rhodes and colleagues (1992) suggest that relationships with natural mentors may help adolescent mothers cope more effectively with the conflict they experience in their relationships with their parents and partners.

Furthermore, given the relationship between maternal and child well-being, the positive effects of natural mentors on adolescent mothers' well-being may be multiplicative. Researchers have documented the detrimental effects of parental internalizing disorders (Beardslee, Versage, Van de Velde, Swatling, & Hoke, 2002; Dadds, 2002) on child well-being. By protecting adolescent mothers from negative psychosocial outcomes, natural mentors are not only affecting the lives of these young women, but they are also helping to promote a healthier and safer environment for young mothers' children.

The results of this study suggest that encouraging the formation of natural mentoring relationships may be an effective strategy for promoting mental health

resilience among African American adolescent mothers. Adolescent mothers could benefit from learning how to identify supportive nonparental adults in their lives and how to cultivate relationships with these adults. Likewise, informing extended family members and adults that work with adolescent mothers of the positive effects associated with natural mentoring relationships may help motivate these adults to take advantage of mentoring opportunities.

Programs that provide opportunities for at-risk adolescents to interact and naturally develop relationships with nonparental adults may be particularly beneficial. Programs geared toward helping and supporting adolescent mothers could invite nonparental adults in adolescent mothers' lives to program meetings and activities. Alternatively, these programs could involve adult community members who may be especially able to connect with and support young mothers (e.g., former adolescent mothers). Creating environments where adolescent mothers and familiar adults can form mentoring relationships naturally may lead to more influential and enduring mentoring relationships, particularly in comparison to mentoring relationships wherein adults and youth are paired through formal programs. Formal mentoring relationships may be more vulnerable to early termination due to mismatches between mentees and mentors (a lack of chemistry), poor relationship quality, and a lack of commitment and follow-through by mentors and mentees (Grossman & Rhodes, 2002; Styles & Morrow, 1992; Rhodes, 2002). Whereas, allowing mentoring relationships to form naturally in a supportive environment may protect these relationships from some of the early-termination risks faced by formal mentoring relationships.

Findings from this study indicate that natural mentors may have long-term promotive effects on adolescent mothers' psychological well-being. Although researchers have studied previously the relationship between natural mentors and adolescent mothers' psychosocial outcomes (Klaw et al., 2003; Rhodes et al., 1992; Rhodes et al., 1994), this is one of the first studies to examine this relationship longitudinally among a group of African American adolescent mothers transitioning into adulthood. In addition, the findings from this study indicate that relationships with natural mentors can moderate the relationship between stress and psychological outcomes over time. Future studies that collect more in-depth information about natural mentoring relationships (e.g., duration, types of support provided) among larger and more diverse samples of adolescent mothers will be helpful for identifying the underlying mechanisms of these relationships and better understanding the true potential of these relationships to promote resiliency among at-risk populations.

Table 3.1. Means, standard deviations (SD) and Cronbach alpha for outcome measures

Time point	Depressive Symptoms Mean (SD)	Alpha	Anxiety Symptoms Mean (SD)	Alpha
Time 1 (12th grade)	1.94 (.93)	.84	1.77 (.93)	.90
Time 2*	1.86 (.89)	.87	1.66 (.74)	.85
Time 3	1.84 (.77)	.83	1.66 (.69)	.82
Time 4	2.00 (.76)	.80	1.88 (.75)	.83
Time 5	1.75 (.73)	.86	1.73 (.73)	.83

*Data was not collected for one year post high school and then was collected for 4 consecutive years (Times 2-5)

Table 3.2. Fixed effects model for depressive symptoms

Fixed Effect	Coefficient	t-ratio (88)
Mean Initial Status		
Intercept	-0.028	-1.301
Mentor	0.208	1.323
Age	-0.045	-0.564
SES	-0.220	-1.845
Mean Linear Growth		
Intercept	0.149	3.440**
Mentor	-0.179	-3.232**
Age	0.025	0.825
SES	0.087	1.661
Stress		
Intercept	0.187	2.244*
Mentor	-0.132	-1.972*
Age	0.105	1.487
SES	0.028	0.370
Maternal Support		
Intercept	-0.158	-2.833**
Paternal Support		
Intercept	-0.206	-4.111**

$* \ p \leq .05, ** \ p < .01$

Table 3.3. Fixed effects model for anxiety symptoms

Fixed Effect	Coefficient	t-ratio (87)
Mean Initial Status		
Intercept	-0.199	-0.896
Mentor	0.223	1.095
Age	0.037	0.309
SES	-0.262	-1.682
Mean Linear Growth		
Intercept	0.158	3.090**
Mentor	-0.142	-2.428*
Age	0.023	0.670
SES	0.109	1.541
Stress		
Intercept	0.144	2.360*
Mentor	-0.126	-2.010*
Age	0.187	0.923
SES	0.033	0.411
Maternal Support		
Intercept	-0.070	-0.992
Paternal Support		
Intercept	-0.124	-2.524*

$* p \leq .05, ** p < .01$

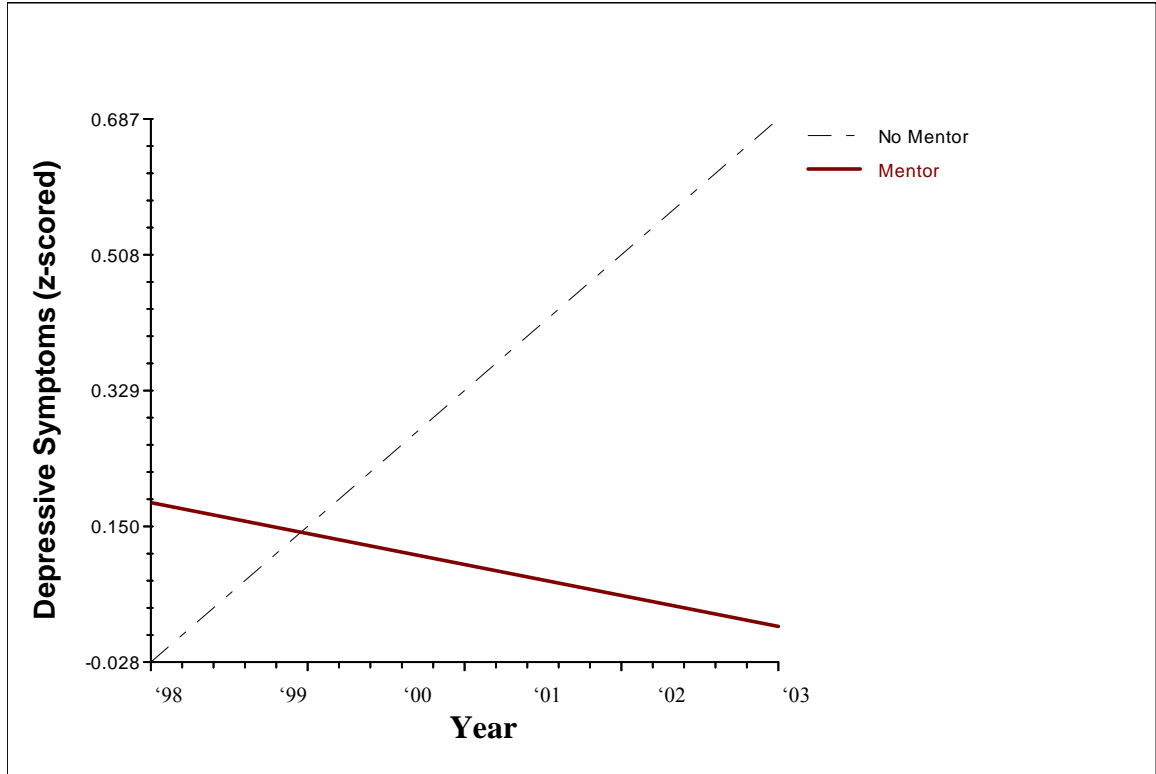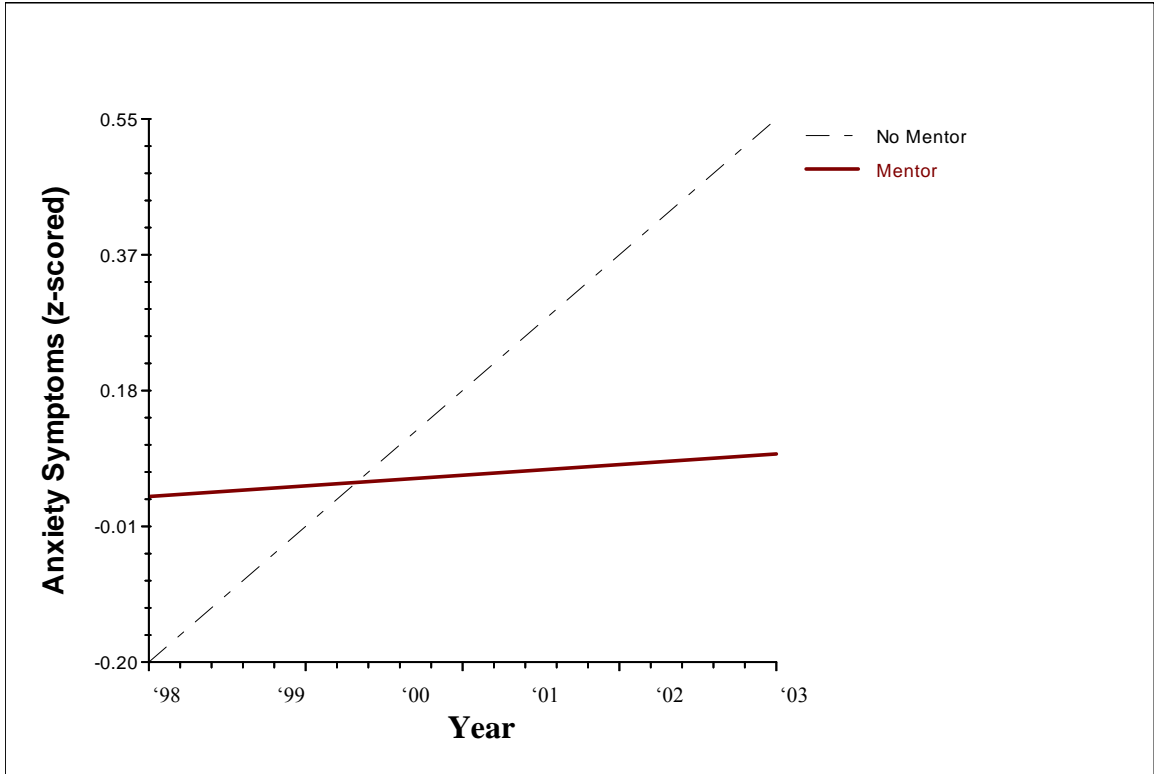Figure 3.1. Growth in depressive symptoms as a function of possessing a natural mentor

Figure 3.2. Growth in anxiety symptoms as a function of possessing a natural mentor

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Chapter IV

Role model behavior and youth violence: A study of positive and negative effects

Introduction

In 2007, physical assault was the number one cause of non-fatal violence related injury among adolescents between the ages of 10 and 14 (CDC, 2008). Although rates of youth gun use and lethal violence have declined over the past two decades, rates of self-reported participation in nonfatal violence have not (USDHHS, 2001). Furthermore, arrest rates for aggravated assault have remained about 70% higher than they were in 1983 (USDHHS, 2001). While studies have reported higher rates of violence among African American adolescents, researchers have found that being African American has no causal relationship to violence (USDHHS, 2001). Rather, researchers have found that growing up in poor, urban neighborhoods with limited resources does increase adolescents' risk of participating in violent behavior, and African American youth are disproportionately represented in these types of environments (Sampson, Morenoff, & Raudenbush, 2005). Given the detrimental effects of youth violence on victims, perpetrators, and witnesses, it is clear that research that further elucidates factors that contribute to and prevent youth violence is needed (Slovak, Carlson, & Helm, 2007). One potentially influential factor on youth violence is adult role models. In an effort to

better understand how adult role models may influence youth violence, a discussion of social learning and social cognitive theories is necessary.

Social learning & social cognitive theories

Social learning theory suggests that individuals tend to display attitudes and behaviors that are learned (deliberately or inadvertently) through the influence of example (Bandura, 1971). Whether youth learn positive and/or negative attitudes and behaviors depends on available models in their environment. Beyond simple exposure, youth are likely to identify role models who they deem to be more worthy of imitation than others (Bandura, 1971). A role model is an individual who is perceived by others as worthy of emulation (Pleiss & Feldhusen, 1995). The behavior of these role models may be more influential on youth outcomes than the behavior of other people in youth's lives. Thus, role model behaviors may be a crucial determinant of youth attitudes and behaviors, particularly among early adolescents.

A central focus during adolescence is identity formation (Erikson, 1968). Children between the ages of 5 and 8 collect information about their identity and how they differ from others. Between the ages of 8 and 12, children begin to internalize their identity and act on society's expectations. As their cognitive abilities continue to develop, early adolescence becomes a crucial time for identity exploration (Comer, 1989). During this process of identity exploration, early adolescents often look to adults in their environment to determine appropriate and acceptable attitudes and behaviors, as well as to identify models of who they want to be like (Erikson, 1968). As children begin to move into early adolescence, they increasingly focus their attention on nonparental adults both within and outside of their family system (Scales & Gibbons, 1996).

Script theory, a tenet of social cognitive theory, stipulates that behavior is a product of learned scripts (Huesmann, 1988). These scripts are activated from memory when environmental cues present that are similar to the environmental cues that were present when the script was first learned. According to Huesmann (1988), youth may learn scripts from observing related and unrelated adults in their environment. In many cases, adults may contribute to youth's development of healthy and adaptive scripts, however, in some cases, by modeling aggressive and violent behavior, nonparental adults may contribute to youth's acquisition of aggressive scripts. Through their modeling of violent behavior, adults (particularly adults whom adolescents look up to and aspire to be like) may be fostering the development of new aggressive scripts and/or contributing to the maintenance of previously acquired violent scripts among adolescents (Zimmerman, Steinman, & Rowe, 1998). Thus, observing adult role models engaging in violent behavior may lead adolescents to adopt attitudes in support of violence. This is particularly problematic in light of research findings linking attitudes toward violence to early adolescents' participation in aggressive and violent behavior (Vernberg, Jacobs, & Hershberger, 1999).

Depending on where adolescents reside, they may have differential opportunities for role model selection. According to social disorganization theory, neighborhoods with higher levels of unemployment and concentrated poverty may have fewer social control mechanisms and less collective efficacy (Bursik, 1988). In socially disorganized neighborhoods, crime and social disorder may be more prevalent (Boyle & Hassett-Walker, 2008) and adolescents in these neighborhoods may have higher rates of exposure to negative adult behavior (Anderson, 1990).

As adolescents in disorganized neighborhoods identify role models, they may be more likely to identify adults who model violent or deviant behavior. These adults may be selected as role models due to limited alternatives. Conversely, these adults may be selected because they are seen by adolescents as some of the most powerful and prestigious adults in their neighborhood (Bandura, 1971). According to Anderson (1999), the *code of the street* that prevails in some economically disadvantaged, predominantly African American communities upholds violence as a means of gaining power, status, and the respect of others. Thus, adolescents in these communities may select role models who engage in violent behavior. Nevertheless, it is important to note that an adult role model may model both negative and positive behavior. In addition, economically disadvantaged urban communities are not completely devoid of adult role models who model predominantly positive behaviors (Anderson, 1999). To further consider how adolescents may be affected positively or negatively by their role models, I now turn to a review of the literature on resilience.

<u>Resilience theory</u>

Resilience theory is a useful framework for conceptualizing the ways in which adult role models may influence the propensity of youth to engage in violence. According to resilience theory, factors that increase the likelihood of negative outcomes are considered to be risk factors. Promotive factors (e.g., compensatory or protective factors), on the other hand, contribute to positive (or, at least, less negative) youth outcomes and/or buffer youth from the negative outcomes associated with risk factors (Fergus & Zimmerman, 2005). Researchers have used a resilience approach to study risk and promotive factors for youth violence, however, these studies have primarily focused

on parental and peer influences (Griffin, Scheier, Botvin, Diaz, & Miller, 1999; Zimmerman et al., 1998). Yet, nonparental adults may also influence adolescents' attitudes toward violence and violent behavior, particularly when nonparental adults are identified by youth as people they look up to and want to be like. When youth identify adults as role models, they likely increase the potential of these nonparental adults to contribute to resilience.

Several different models of resilience have been proposed (Garmezy, Masten, & Tellegen, 1984); the model most relevant for the current study is the compensatory model. In the compensatory model, risk and compensatory factors both contribute to outcomes in an additive fashion (Masten et al., 1988). Thus, risk and compensatory factors each have independent and direct (yet, opposite) effects on outcomes. Researchers have suggested that multiple regression and structural equation modeling are the most appropriate methods for testing compensatory models of resilience (Fergus & Zimmerman, 2005).

Notably, both risk and compensatory factors may stem from within the individual or the individual's environment, and these factors can be idiosyncratic. Whether or not something is a compensatory factor depends on the risk and the context (Fergus & Zimmerman, 2005; Luthar & Cicchetti, 2000). Although researchers have found that role models may serve as compensatory factors for at-risk youth, some researchers have also found that youth may be negatively influenced when they witness important adults (potentially role models) modeling negative behavior. The results from these studies are discussed below.

<u>Role models as positive influences</u>

Researchers have increasingly become interested in the potential positive (compensatory) effects of role models on youth outcomes. Based on results from the Kauai Longitudinal Study, Werner (1995) found that role models contributed to resilience in high-risk children. In her study, Werner found that individuals who were able to overcome adversity often reported that adult role models had positively influenced their development. Yancey, Siegel, and McDaniel (2002) found that adolescents with an identifiable role model earned higher grades and had higher self esteem than adolescents who lacked role models. Bryant and Zimmerman (2003) found that the possession of a role model protected youth from negative psychosocial consequences associated with risk. Oman and colleagues also found that having role models protected youth against several negative behaviors, including participation in violence (Aspy et al., 2004), involvement in sexual intercourse (Oman, Vesely, Kegler, McLeroy, & Aspy, 2003; Vesely et al., 2004), and substance use (Oman, Vesely, Aspy, et al., 2004). Role model possession has also been linked to fewer internalizing and externalizing behavior problems (Hurd, Zimmerman, & Xue, in press; McMahon, Singh, Garner, & Benhorn, 2004) and more positive school outcomes (Hurd et al., in press).

Overall, the results from these studies suggest that having a role model can influence positively a number of psychosocial outcomes among adolescents. Unfortunately, these researchers only collected data regarding role model presence, and did not collect more detailed information about role models that may have helped to illuminate the ways in which role models influence adolescent outcomes (e.g., through role model behavior). Thus, it is not clear how role models may have exerted a positive

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influence on participants in the previously reviewed studies. Research that assesses role model attributes to see what qualities and behavior youth may emulate is limited.

<u>Role models as negative influences</u>

Just as modeling can play a vital role in the acquisition of positive behavior, it can also lead to the acquisition of negative behavior (Bandura, 1963). Few researchers have published studies that focus specifically on role models and their potential negative influences on youth outcomes, but some have documented potential negative influences of adult behavior on youth outcomes. Specifically, Greenberger, Chen, and Beam (1998) found that adolescents' perceptions of the negative behavior of *very important* nonparental adults predicted adolescent misconduct. Epstein, Botvin, Diaz, Toth, and Schinke (1995) found that if an adolescent's most admired person used marijuana, the adolescent was more likely to intend to use marijuana, as well. Rivara, Sweeney, and Henderson (1987) analyzed the relationship between role modeling within the family and teenage fatherhood and found that repeat teenage fathers came from homes where role models for teenage parenthood existed.

Research has not been conducted to analyze specifically the relationship between role model behavior and youth's psychosocial outcomes, however, these findings suggest that youth may be modeling the negative behavior of influential adults. The results from previous studies suggest that adults can exert both positive and negative influences on youth outcomes, however, these studies failed to identify *how* role models may either contribute to risk or promote more positive youth outcomes. A more concrete understanding of the relationship between role modeling and youth outcomes is needed.

<u>Current study</u>

The dynamics of the role model relationship are often oversimplified in research studies and researchers often assume that role models are inherently positive. Researchers often suggest that youth are in need of more positive role models, however, researchers have failed to operationally define the behavior of a positive role model. Furthermore, few researchers have investigated the implications of having negative role models (e.g., role models who model violent behavior), or considered the possibility that role models may model both positive and negative behaviors and thus, exert both positive and negative influences on youth. Thus, although researchers have investigated the potential effects of role models on adolescents' outcomes, researchers have not explored the relationship between the behavior of adolescents' self-selected role models and adolescents' outcomes. Researchers have primarily focused on role model presence, but have not fully explored role model qualities and behavior. Research that analyzes role model attributes may help identify modeled behaviors and how these behaviors are influencing the adolescent who looks up to the role model.

Specifically, this study was conducted to test empirically a structural model of the relationship between role model behavior, attitudes toward violence, and violent behavior among a sample of African American seventh and eighth graders residing in an urban city with elevated rates of crime, unemployment, and concentrated poverty. Figure 4.1 depicts my theoretical model. I hypothesized that role model behavior would affect directly and indirectly adolescents' violent behavior. I expected role models' prosocial behavior to have a direct negative effect on adolescents' violent behavior and an indirect negative effect on adolescents' violent behavior through adolescents' attitudes in support

of violence. I expected role models' antisocial behaviors, on the other hand, to contribute positively to adolescents' pro-violence attitudes and participation in violent behavior. I also used my structural model to compare the relative influence of prosocial and antisocial behavior modeling on adolescents' attitudes toward violence and violent behavior. Given that the participants in this study resided in economically disadvantaged neighborhoods where antisocial and violent behaviors may reap greater rewards than prosocial behavior (via street codes), I hypothesized that exposure to role model antisocial and violent behavior would have a stronger influence on adolescents' violent behavior in comparison to role model prosocial behavior.

Considering the homogeneity of the sample in regards to race/ethnicity, age, and socioeconomic status, I did not include any of these variables in my model. I did, however, include gender as a predictor of both attitudes toward violence and violent behavior in light of extensive research evidence supporting gender differences in adolescents' pro-violence attitudes (Huesmann & Guerra, 1997) and prevalence of youth violence (Loeber & Stouthamer-Loeber, 1998). I hypothesized that males would endorse more attitudes in support of violence and report more violent behavior in comparison to females.

Methods

Participants

Participants in this study included 331 African American seventh and eighth graders from Flint, MI. Participants were recruited from two area middle schools with similar school composition and neighborhood characteristics. Both schools had over 85% African American enrollment, and slightly over 70% of students at each school were

eligible for free or reduced price lunch. According to census tract data (U.S. Census, 2000), the average median annual income for the neighborhoods in which study participants resided was approximately $26,000. Unemployment rates in participants' neighborhoods ranged from 12 to 20% and the percentage of neighborhood residents living below the poverty level ranged from 23 to 36%.

This study was part of a larger study assessing the effectiveness of a violence prevention intervention. There was one day of data collection at each school and questionnaires were completed by all students present at school that day who assented and had parental consent to participate. The final class lists for seventh and eighth graders at both schools included 959 students. Of these students, 56 were ineligible to complete a survey due to an inability to contact their parents, 12 students were ineligible because their parents actively refused to consent, and 286 students (whose parents received the passive consent letter) were absent from school on the survey day(s). The 39 students who were directly involved in the violence prevention intervention were excluded from the current study. Of the 566 eligible students present at school on the two data collection days, 64 refused to sign the assent form and one student assented, but did not complete the survey. The total number of completed surveys was 501.

Of the 501 participants who completed the questionnaires, 405 (81%) identified as African American. Due to my specific interest in role model effects among African American youth and the small number of participants of other racial/ethnic groups, I elected to include only participants who identified as African American in the current study. Of these 405 African American participants, 331 (82%) reported possession of a role model, and thus, those 331 participants were included in the current study. Average

age of study participants was 13 (SD = .82) and over 95% of study participants were 12 to 14 years of age. Approximately half (n = 161) of participants were female.

Procedure

Permission from the University of Michigan Institutional review Board and permission from the Flint community schools was received prior to data collection. Participant assent and parental consent (passive) were required for participation in this study. Participants were asked to complete self-report questionnaires at school. These questionnaires took approximately 40-50 minutes to complete. Participation in this study was voluntary. As mentioned above, there was one day of data collection at each school. The questionnaires were proctored by research assistants and adult community members.

Measures

Table 4.1 includes means, standard deviations, and Cronbach alphas for all study variables.

Role models

In this study, role models were defined as non-parental adults who adolescents look up to and want to be like. This definition encompasses the traditional role model definition (a person worthy of emulation) and excludes parents and step-parents because parental relationships are categorically different from nonparental relationships and including parental role models would likely have complicated study comparisons. Additionally, separating parental role modeling effects from other parental effects may have proved unfeasible.

Participants were asked "Is there an adult in your life who is not your parent or step-parent who you really look up to and want to be like?" If participants responded in

the affirmative, they were asked to complete additional questions about this person.

Participants were asked "How do you know this adult?" Response choices included aunt

or uncle, cousin, brother or sister, grandparent, family friend, parent's boyfriend or

girlfriend, teacher or coach, church pastor or church member, famous person, and other

(with a space for participants to write down an exact response). Participants who

indicated that they did have a role model were also asked to report this adult's gender,

age, race/ethnicity, and highest level of schooling completed.

Role model behavior

Six items were used to assess role model behavior; three items pertained to

prosocial behavior and three items referred to *antisocial* behavior. Participants were

asked to rate the frequency with which their role models engaged in specific behaviors.

Response options ranged from 1 to 4 (1 = never, 2 = rarely, 3 = sometimes, and 4 =

often). *Prosocial* behavior items included "How often does this person help other

people?", "How often does this person treat other people with respect?" and "How often

does this person be friendly with neighbors?" *Antisocial* behavior items included "How

often does this person get into fights with other people?", "How often does this person

get in trouble with the police?" and "How often does this person carry a weapon (gun,

knife, razor)?"

Attitudes toward violence

Participants' attitudes toward violence were assessed through four items.

Participants were asked to describe how much they agreed with four statements

pertaining to violent behavior. Response choices included agree a lot, agree a little,

disagree a little, and disagree a lot. These response options were given values ranging

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from 1 to 4; higher values reflect more agreement. The four statements were: "If I walk

away from a fight I would be a coward," "It's okay to hit someone who hits you first," "If

someone picks on me, the only way I can get him/her to stop is if I hit him/her," and "I

don't need to fight because there are other ways to deal with being mad." The last item

was reverse coded so that for all four items, more agreement indicated more pro-violence

attitudes.

Violent behavior

Three items were used to assess violent behavior. Participants were asked to

report the frequency of specific behavior within the previous month. These items

included: "How many times in the past month have you been in a physical fight?", "How

many times in the past month have you taken part in a fight where a group of your friends

were against another group?" and "How many times in the past month have you hurt

someone badly enough to need bandages or a doctor?" Responses ranged from "never"

to "5 times or more" (1 = never, 2 = 1 time, 3 = 2 times, 4 = 3 times, 5 = 4 times, 6 = 5

times or more).

Data Analysis

I used structural equation modeling (SEM) to test my proposed model. SEM is

based on an analysis of covariance structure computed from a set of empirically

measured variables (Vinokur, 2005). Using a series of regression equations to create an

estimated covariance matrix, this approach analyzes the relationship between unobserved

constructs and their observed indicators, as well as the relationships among unobserved

constructs (latent factors). This approach has a number of key advantages for data

analysis. First, SEM allows for the simultaneous analysis of relationships among

multiple independent and dependent variables. Second, unlike general linear models, SEM provides disattenuated estimates (i.e., estimates that are adjusted to be what they would without any measurement error), which is particularly advantageous for self-report data. Third, SEM allows for analyses to determine how model fit changes when modifications are made to model parameters (Vinokur, 2005).

I first assessed the measurement model for my latent variables using confirmatory factor analysis. Then, I tested the full structural model with all of the indicators, latent factors, and structural paths. Next, I tested for potential mediational relationships. Lastly, I evaluated my model and assessed the need for model re-specifications. When evaluating my models for goodness of fit, I relied on the following indices: chi-square value, the Bentler-Bonett Normed Fit Index (NFI), the Bentler-Bonett Non-Normed Fit Index (NNFI), the Comparative Fit Index (CFI), and the Root Mean-Square Error of Approximation (RMSEA) (Klem, 2000). NFI, NNFI, and CFI values range from 0 to 1, and values above .9 suggest that the model fits the data well. RMSEA values also range from 0 to 1, however, since this value represents model misfit, a lower score is preferable (under .06 is ideal) (Hu & Bentler, 1999). I also evaluated my models based on the significance of the factor loadings and path coefficients and the percent of factor variance explained by independent factors. In addition, I reviewed results from both Wald tests and Lagrange Multiplier Tests to evaluate the deletion of hypothesized paths and the inclusion of non-hypothesized paths, respectively. I used EQS software to conduct all of my model analyses and completed estimation maximization in EQS to impute values for missing data.

Results

<u>Role model descriptives</u>

Extended family members (i.e., aunts, uncles, grandparents, and cousins) and siblings were the most commonly identified role model categories, comprising 58% of participants' role models (n = 192). Approximately 11% of participants (n = 36) reported that their role model was a famous person. Other identified role models included family friends, romantic partners of family members, pastors, church members, teachers, and coaches. Regarding role model gender, approximately half (n = 169) of the role models identified were female. Participants were more likely to select role models who shared their gender than to select role models of the opposite gender, $\chi^2(1) = 91.7$, p < .001. Eighty-two percent of female participants identified female role models and 73% of male participants identified male role models. Participants reported role models who ranged in age from 18 to 79 years. Eighteen percent of the identified role models were reported to be 18 or 19 years old, 33% were 20-29, 24% were 30-39, and the remaining 25% were 40 or older. Over 90% of participants' role models were African American. Although over one-third (36%) of participants reported that they did not know the highest level of schooling their role model had completed, 6% reported that their role model had not completed high school, 20% reported that their role model had completed high school or received a GED, 10% reported that their role model had received some college or vocational training, 20% reported that their role model had completed college, and 8% reported that their role model had attended graduate or professional school after college.

<u>Correlation analyses</u>

Correlations among study variables are presented in Table 4.2. All of the role model prosocial behavior items were correlated positively with each other and correlated negatively with all of the role model antisocial behavior items. Likewise, all of the role model antisocial behavior items were correlated positively with each other, as were the attitudes toward violence items and the violent behavior items. Although not all of the correlations between the items reflecting role model behavior and participants' attitudes toward violence and participants' violent behavior were significant, all of these correlations were in the expected direction. Gender was only correlated with one variable from the model. Males reported more frequent physical fights in the past month in comparison to females. Given the lack of correlation between gender and all but one of my study variables, I decided to drop gender from my hypothesized structural model.

<u>Measurement model</u>

The results of the measurement model are displayed in Table 4.3 and Figure 4.2. Results of the measurement model indicated that all of the indicator variables loaded significantly on their respective construct and all of the loadings were in the expected direction. As can be seen in Figure 4.2, all of the factor loadings exceeded .40, and most of the loadings exceeded .60. Table 4.3 reports the correlations among the latent factors in my model. As expected, role model prosocial behavior was correlated negatively with role model antisocial behavior, participants' attitudes toward violence, and participants' violent behavior. Role model antisocial behavior was correlated positively with participants' attitudes toward violence and participants' violent behavior. In addition, participants' attitudes toward violence and participants' violent behavior were correlated

positively with each other. All of the fit indices for the measurement model exceeded .90

and the RMSEA was below .04. This measurement model indicated that my proposed

constructs were psychometrically sound and that my proposed latent factors accurately

reflected the unmeasured relationships among my individual indicators.

Structural model

After removing gender from my model, I tested my hypothesized structural model

using EQS software. This model represented the data well. The chi-square statistic for

the model was 82.62 (df = 59; n = 331; p < .05). Notably, the chi-square/degrees of

freedom ratio was less than 2 to 1. Furthermore, all of the fit indices were above .9 (NFI

= .91, NNFI = .96, CFI = .97), and the RMSEA was .04. Figure 4.2 depicts my structural

model with all of the standardized factor loadings and path coefficients. As can be seen

in Figure 4.2, role model prosocial behavior was correlated negatively with role model

antisocial behavior (r = -.50). As predicted, participants' attitudes toward violence

predicted participants' violent behavior (β = .36; p < .05). In addition, role model

prosocial behavior decreased participants' attitudes in support of violence (β = -.22; p <

.05), but was not directly related to participants' violent behavior (β = -.03; ns).

I conducted additional analyses to determine if participants' attitudes toward

violence mediated the relationship between role model prosocial behavior and

participants' violent behavior. This included determining if there was a relationship

between role model prosocial behavior and participants' violent behavior when the

attitudes toward violence factor was excluded from the model. Results indicated a

significant relationship between role model prosocial behavior and participants' violent

behavior when the mediator was excluded from the model (β = -.21; p < .05). To verify

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the presence of a mediational relationship, I conducted the Sobel test using the unstandardized regression coefficients and standard errors associated with the paths between the independent variable and the mediator and between the mediator and the dependent variable (Mackinnon & Dwyer, 1993; Sobel, 1982). Results of the Sobel test (z-score) indicated that the indirect effect of role model prosocial behavior on adolescents' violent behavior via adolescents' attitudes toward violence was significantly different from 0 ($z = -1.99$, $p < .05$). The lack of a significant direct effect of role model prosocial behavior on violent behavior in the final model suggests that participants' attitudes toward violence fully mediated the relationship between these two variables. The total effect (indirect and direct) of role model prosocial behavior on adolescents' violent behavior was -.11.

Role model antisocial behavior increased participants' attitudes in support of violence ($\beta = .34$; $p < .05$) and participants' violent behavior ($\beta = .41$; $p < .05$). Although both types of role model behavior influenced participants' attitudes toward violence, role model antisocial behavior appeared to have a larger effect on this outcome. To verify that this difference in effect sizes was statistically significant, I analyzed a nested model in which I constrained the path between role model prosocial behavior and attitudes toward violence to be equal to the path between role model antisocial behavior and attitudes toward violence and then compared the chi-square value of this model to the chi-square value of the model where these paths were freed. The chi-square value associated with the constrained model was significantly larger, $\chi^2(60) = 119.2$, $p < .01$, than the chi-square value associated with the freed model, $\chi^2(59) = 82.6$, $p < .05$, (a difference above 3.8 is significant at the .05 level).

I then tested whether attitudes toward violence mediated the relationship between role model antisocial behavior and participants' violent behavior. Results indicated a significant relationship between role model antisocial behavior and participants' violent behavior when the mediator was excluded from the model ($\beta = .54$; $p < .05$). Furthermore, results of the Sobel test supported the presence of an indirect effect of role model antisocial behavior on participants' violent behavior ($z = 2.44$; $p = .01$). These results are indicative of a partially mediated relationship between role model antisocial behavior and participants' violent behavior via participants' attitudes toward violence, given that a direct effect of role model antisocial behavior on participants' violent behavior remained present in the final model. The total effect of role model antisocial behavior on adolescents' violent behavior was .53.

Notably, the full model accounted for a total of 45% of the violent behavior variance. Results from the Wald test for dropping parameters indicated that removing the path from role model prosocial behavior to adolescents' violent behavior would result in a 0.11 drop in the chi-square value associated with the model. The Lagrange multiplier test for adding parameters included several recommendations for added paths, however, none of the added paths would have substantially improved model fit. Given that making changes to my model based on the recommendations from the Wald and Lagrange tests would not have contributed to substantial improvements in model specification, I did not make any data-driven adjustments to my final model.

In order to confirm that my findings were not affected by nonlinearity in the variables, I re-ran my final model using maximum likelihood robustness estimators. This analysis was intended to account for the fact that some of the study variables were not

normally distributed (Bentler, 1995). Results from this model were entirely consistent with the previously reported findings. The Satorra-Bentler chi-square value was 73.3 (df = 59, ns). The NFI was .90, the NNFI was .97, the CFI was .98, and the RMSEA was .03. In addition, all of the previously reported paths and effects remained significant. Thus, the results of this model confirm the validity of the previously reported findings.

Discussion

Surprisingly, gender was not predictive of adolescents' attitudes toward violence or violent behavior among this sample. This finding is not congruent with previous study findings that have consistently documented gender differences in adolescents' attitudes toward violence and violent behavior (Huesmann & Guerra, 1997; Loeber & Stouthamer-Loeber, 1998) and suggests that the females in this sample were displaying heightened levels of pro-violence attitudes and violent behavior. In fact, violent behavior in this sample as a whole was fairly elevated with over half of study participants reporting that they had been in at least one physical fight in the last month and over a third of participants reporting that they had hurt one or multiple persons badly enough to need bandages or a doctor in the last month.

Overall, most African American adolescents from the original sample reported having a role model. This finding is contrary to previous research findings (Taylor, 1989) and conventional wisdom that African American youth residing in urban, low-income neighborhoods are lacking role models. In addition, I found that adolescents' role models were primarily family members and family members' friends (i.e., fictive kin). This finding is consistent with findings from more recent studies regarding role model identification among urban, African American adolescents, suggesting that these

adolescents may be more inclined to look up to adults who they know and frequently encounter in their everyday lives (Bryant & Zimmerman, 2003; Hurd et al., in press). Yet, almost 11% of participants in this study listed a famous person as their role model, indicating that some youth either may not have adults in their everyday lives to look up to or may prefer to look up to adults who have achieved a certain level of status. Adolescents were more likely to identify gender-matched and racially/ethnically-matched role models. This finding is consistent with Bandura's (1986) similarity hypothesis and previous research (Zirkel, 2002). Role model ages and levels of education varied substantially, suggesting that these factors may have not been important components of adolescents' role model selection criteria.

Beyond exploring role model possession as an influence on youth outcomes, this study set out to explore the ramifications of certain types of role model behavior (among participants who reported that they had a role model). Specifically, this study was conducted to determine if role model behavior was predictive of adolescent's attitudes toward violence and violent behavior. Consistent with social learning and social cognitive theories (Bandura, 1971; Huesmann, 1988), results of my structural model suggest that role model prosocial and antisocial behaviors exert an influence on adolescents' attitudes toward violence and violent behavior.

Consistent with resilience theory (Fergus & Zimmerman, 2005), I found that role model prosocial behavior was directly related to fewer attitudes in support of violence and indirectly related to less violent behavior through adolescents' attitudes toward violence. This finding fits with the compensatory model of resilience (Masten et al., 1988) and indicates that positive role model behavior can contribute to fewer attitudes

toward violence and less violent behavior. Thus, by modeling prosocial behavior, role

models may be teaching adolescents how to interact with others non-violently. When

adolescents witness their role models being rewarded or honored in their community for

their positive behavior, adolescents may vicariously learn about the benefits associated

with positive, non-violent behavior. Exposure to role models' prosocial behavior may

help adolescents develop healthy, non-aggressive scripts and attitudes in support of

peaceful strategies for conflict resolution. These positive non-violent attitudes may then

translate into fewer violent behaviors.

Conversely, role model antisocial behavior was directly related to more violent

behavior and indirectly related to more violent behavior through attitudes in support of

violence. Thus, role model antisocial behavior fit the definition of risk in that it increased

the likelihood of a negative outcome among study participants. Witnessing their role

models engage in violent behaviors may have primed adolescents' aggressive scripts and

strengthened their attitudes in support of violence. If adolescents saw rewards resulting

from their role models' violent behavior (e.g., attained power and respect via street

codes), adolescents may have received vicarious reinforcement for engaging in violent

behavior, which may have increased their own likelihood of engaging in violent behavior.

Thus, the results of this study suggest that role models (i.e., nonparental adults to whom

adolescents look up and aspire to be like) are capable of negatively influencing youth

outcomes. Furthermore, these findings indicate that role model antisocial behavior had a

direct effect on youth violence, whereas role model prosocial behavior did not. This

finding suggests that in addition to influencing the way adolescents think about violence,

there may be a strong behavioral imitation component associated with adolescents'

exposure to role model antisocial behavior. This direct effect on adolescents' violent behavior may be likened to the potential of media violence to trigger an automatic tendency to imitate observed behaviors among youth (Anderson et al., 2003). Research on media violence suggests that this effect is strengthened when viewers identify strongly with an aggressive character and when depictions of violence are realistic (Anderson et al., 2003). Thus, it is not surprising that my findings indicate that exposure to real-life role models' antisocial behavior may directly influence adolescents' violent behavior.

On average, participants reported more role model prosocial behavior than role model antisocial behavior, however, role model antisocial behavior had a larger effect on adolescents' attitudes toward violence and the total effect of role model antisocial behavior on adolescents' violent behavior was larger than the total effect of role model prosocial behavior on adolescents' violent behavior. This finding suggests that role model antisocial behavior may have been more salient than role model prosocial behavior for the adolescents in this study. One possible explanation for this finding may be that adolescents perceived more rewards associated with role model antisocial behavior in comparison to role model prosocial behavior. As Anderson (1999) noted, it is not uncommon for street codes to emerge in low-income, African American communities with limited access to resources. Without other means to earn status and respect, adults in this context may use violence to attain these desired outcomes. In addition, criminal behavior and violence may be used in this context to ensure an individual's personal safety, particularly when law enforcement personnel cannot be relied on to do so. In these cases, community members may hope that the threat of *payback* will be enough to stop them from being victimized by others (Anderson, 1999). Given that respect, status,

and safety may all be direct outcomes of violent and antisocial behavior and the possibility that prosocial behavior does not translate into these same desired outcomes, adolescents in economically disadvantaged communities may be vicariously learning that antisocial behavior is more beneficial than prosocial behavior. Thus, role model antisocial behavior may be more reinforcing than role model prosocial behavior.

A second potential explanation is that some of the role models identified in this study were modeling both prosocial and antisocial behaviors. Although researchers often dichotomize positive and negative behaviors and prefer to think of role models as entirely positive (or entirely negative), it is more probable that adolescents look up to adults who model a range of both positive and negative behaviors. In these instances, role model prosocial behavior alone may not deter youth from violence and, in fact, may be overshadowed by role model antisocial behavior. Thus, role model prosocial behavior may only prevent youth violence when paired with an absence of role model violent behavior. Yet, when role models display both positive and negative behaviors, adolescents may be more influenced by the negative behaviors because these are the behaviors that the context demands for maintaining status and prestige. In turn, the less violent behavior adolescents witness from their role models, the less likely they are to engage in violent behavior. In fact, more important than witnessing role model prosocial behavior may be not witnessing role model antisocial behavior.

Limitations

Several study limitations should be noted. First, data on parental or peer behavior were not collected. Researchers have documented the significant influences of parents and peers on youth's attitudes toward violence and violent behavior (Hart, O'Toole,

Price-Sharps, & Shaffer, 2007; Slovak et al., 2007). Thus, including these variables in my study to compare the relative effects of parental and peer behavior in comparison to role model behavior and to determine if role model effects persisted after including parental and peer behavior in my model would have been useful. In addition, I did not assess for other community-level factors that may have influenced participants' attitudes toward violence and violent behavior. Although this study focused specifically on the potential of one influential nonparental adult to affect adolescents' attitudes toward violence and violent behavior, it is possible that my role model behavior constructs may have just been indicators of broader, community-level variables such as collective efficacy or social disorganization. Thus, studies that include assessments of both individual-level and community-level variables that may affect youth violence are needed. Nevertheless, in this study, role model was defined as the nonparental adult that youth most looked up to and wanted to be like. Considering this definition, it is reasonable to expect that role model behavior would exert at least some influence on adolescent behavior. In addition, researchers have found that when included in a model with friends' behavior and family members' behavior, the behavior of very important nonparental adults contributed uniquely to the explained variance in adolescents' problem behavior (Greenberger et al., 1998).

A second limitation is that I did not collect data on any aspects of the role model-adolescent relationship. It is possible, for example, that relationship quality and intensity may amplify the effects of role model behavior on adolescent outcomes. Thus, whether or not adolescents actually have a relationship with their role models, how frequently they encounter each other, what kind of activities they do together, and how long an

adolescent has looked up to his or her role model may all moderate the relationship between role model behavior and adolescents' attitudes toward violence and violent behavior. The findings from this study suggest that more research on how relationship factors affect role models' abilities to influence youth outcomes may be worthwhile. The current study, however, focused on the potential of role models to have both positive and negative influences on adolescent behavior and can be seen as a first step toward a better understanding of how role models may shape youth outcomes.

A third limitation is my assessment of role models' behavior. It is possible that the items used to assess for role models' antisocial behavior (e.g., frequency of fights) were more behavioral than the prosocial behavior items and that the items used to assess for role models' prosocial behavior (e.g., frequency of treating others with respect) were more attitudinal than the antisocial behavior items. Thus, the antisocial items may have been more directly linked to participants' behavior and the prosocial items may have been more directly linked to participants' attitudes. Future studies that include more explicit behavioral measures of role model prosocial behavior may help to address this concern, however, it is important to note that in this study, the antisocial behavior items were linked more strongly than the prosocial behavior items to participants' attitudes toward violence and violent behavior. This suggests that our findings are more likely due to a difference in the salience of these types of behaviors among adolescents (i.e., role model antisocial behavior has a stronger effect on adolescents' outcomes) as opposed to a difference in how the role model behavioral constructs were measured.

This study was also limited by its cross-sectional design. This study design limits my ability to make inferences about causality as I have no way of determining whether

role model behavior preceded adolescents' attitudes toward violence and violent behavior or vice versa. It is entirely possible that youth who have already developed pro-violence attitudes and aggressive patterns of behavior are more likely to select role models who engage in antisocial and violent behavior. Yet, researchers suggest that looking up to adults who model violent behavior may help maintain pro-violence attitudes and aggressive behavioral patterns throughout adolescence (Eron & Huesmann, 1990). Therefore, even if role model behavior does not precipitate youths' attitudes toward violence and violent behavior, it may be a factor for youth maintaining them over time.

Another limitation of this study is that the findings are all based on self-report data from adolescents. Thus, participants may have underreported their attitudes in support of violence and their involvement in violent behavior in an attempt to provide more socially desirable responses. In addition, participants may have experienced cognitive dissonance when asked to report on the negative behaviors of their role models and consequently may have underreported role models' antisocial behavior. Notably a pencil-and-paper format was used for data collection which may have been less likely than an interview format to elicit social desirability. Furthermore, if participants did underreport their own or their role models' violent attitudes and behaviors, this would have only served to reduce the variance in my study variables, making it more difficult to detect the effects of role model behavior on participants' outcomes.

Finally, the sample was somewhat limited. Participants in this study were African American adolescents from low-income communities who attended schools with predominantly African American enrollment. In addition, on average, these participants reported elevated levels of violent behavior. As discussed previously, contextual factors

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may determine how role model behaviors influence adolescent outcomes and thus, the findings from this study may not generalize to African American adolescents in differing contexts. Nonetheless, the results of this study are pertinent for practitioners and policymakers interested in preventing youth violence in urban, economically disadvantaged African American communities with elevated rates of youth violence. There is a critical need for continued research on predictors of youth violence and preventative factors. Thus, replicating this study's findings with other at-risk samples across contexts would be a valuable next step.

Conclusion

Youth violence is a serious problem with a number of costs to individuals and society (CDC, 2008). Therefore, determining factors that increase or reduce adolescents' likelihood of participating in violent behavior must be a top priority. Notably, this is one of the first studies to investigate how role models may influence adolescent outcomes and to assess for the potential of role model behavior to have both positive and negative effects on early adolescents' attitudes toward violence and violent behavior. The results of this study indicate that role model behavior has the potential to positively and negatively affect adolescent outcomes. Thus, moving beyond whether or not adolescents have a role model and moving into the study of role model qualities and characteristics appears to be the most fruitful line of research to continue to pursue.

The current study findings suggest that adults must be careful and thoughtful about the example they are setting for the youth in their lives. As Greenberger and colleagues (1998) found, youth are more likely to do what they see adults doing rather than what adults say to do. In addition to promoting more responsible adult behavior, the

results of the current study suggest that interventions that help youth to connect with positive adults in their families and communities who model prosocial behavior and inspire youth to use non-violent methods to advance themselves and their communities may be beneficial. The Youth Empowerment Solutions for Peaceful Communities (YES) Project, for example, creates opportunities for neighborhood adults and youth to work together on community improvement projects (Franzen, Morrel-Samuels, Reischl, & Zimmerman, in press). Thus, youth are exposed to adults modeling prosocial behavior.

Some environments (e.g., economically disadvantaged, urban, minority communities where police cannot be relied on to maintain residents' safety) have become settings where there are a number of rewards associated with violent behavior (Anderson, 1999). If adolescents in these environments continue to learn from their adult role models that violence pays, adolescents will likely continue to endorse pro-violence attitudes and engage in violent behavior. Thus, the results of this study suggest that youth violence prevention may require strategies that both promote an increased sense of social responsibility among adults and address contextual factors that reward adults' antisocial and violent behaviors.

Table 4.1. Means, standard deviations and Cronbach alpha for study variables

	Mean	Standard Deviation	Cronbach Alpha
Role Model Positive Behavior	3.40	0.71	0.75
Treat People with Respect	3.54	0.84	
Help Others	3.35	0.86	
Friendly with Neighbors	3.31	0.90	
Role Model Negative Behavior	1.45	0.66	0.68
Get into Fights	1.62	0.93	
Carry Weapon	1.40	0.84	
Trouble with Police	1.33	0.74	
Attitudes Toward Violence	2.78	0.70	0.65
Walk Away Fight = Coward	2.64	1.17	
Hit Someone Who Hits You First	3.69	0.63	
Hit Someone Who Picks on You	2.59	1.05	
Don't Need to Fight (reverse coded)	2.22	1.05	
Violent Behavior	2.24	1.37	0.75
Physical Fight	2.77	1.98	
Group Fight	2.03	1.53	
Hurt Someone Badly	1.94	1.48	

Table 4.2. Role model category

Role Model Category	N	%
Aunt or Uncle	66	19.9
Sibling	51	15.4
Cousin	38	11.5
Grandparent	37	11.2
Famous Person	36	10.9
Family Friend	24	7.3
Parent's Significant Other	14	4.2
Pastor or Church Member	12	3.6
Teacher or Coach	9	2.7
Other	34	10.3
Missing	10	3

Table 4.3. Correlations among study variables (gender: male = 0, female = 1)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 RM + bhv 1	1													
2 RM + bhv 2	.52*	1												
3 RM + bhv 3	.47*	.51*	1											
4 RM - bhv 1	-.26*	-.16*	-.30*	1										
5 RM - bhv 2	-.16*	-.17*	-.26*	.42*	1									
6 RM - bhv 3	-.23*	-.20*	-.23*	.43*	.38*	1								
7 Viol att 1	-.16*	-.11	-.13*	.17*	.09	.13*	1							
8 Viol att 2	-.18*	-.08	-.11	.16*	.09	.08	.31*	1						
9 Viol att 3	-.22*	-.16*	-.18*	.21*	.18*	.23*	.44*	.35*	1					
10 Viol att 4	-.18*	-.17*	-.21*	.20*	.13*	.26*	.30*	.18*	.35*	1				
11 Viol bhv 1	-.15*	-.20*	-.10	.28*	.21*	.33*	.20*	.13*	.30*	.23*	1			
12 Viol bhv 2	-.18*	-.16*	-.11	.18*	.22*	.31*	.23*	.14*	.25*	.31*	.48*	1		
13 Viol bhv 3	-.24*	-.25*	-.22*	.28*	.38*	.29*	.23*	.16*	.36*	.20*	.50*	.57*	1	
14 Gender	.01	.06	.03	.02	-.01	-.08	-.01	.06	-.09	.03	-.12*	-.09	-.09	1

* $p < .05$

Table 4.4. Measurement model estimates based on standardized solutions

Variables	Factor Loading	Measurement Error
Role Model Positive Behavior		
Treat People with Respect	.72	.69
Help Others	.71	.70
Friendly with Neighbors	.67	.74
Role Model Negative Behavior		
Get into Fights	.67	.74
Carry Weapon	.61	.79
Trouble with Police	.66	.75
Attitudes Toward Violence		
Walk Away From Fight = Coward	.58	.82
Hit Someone Who Hits You First	.41	.91
Hit Someone Who Picks on You	.72	.69
Don't Need to Fight (reverse coded)	.53	.85
Violent Behavior		
Physical Fight	.65	.76
Group Fight	.72	70
Hurt Somebody Badly	.82	.57

All values in the model were statistically significant at p < .05.

Table 4.5. Correlations among latent factors

Latent Factors	1	2	3
1 Role Model Prosocial Behavior			
2 Role Model Antisocial Behavior	-.5*		
3 Attitudes Toward Violence	-.39*	.45*	
4 Violent Behavior	-.37*	.59*	.56*

* p < .05

Figure 4.1. Theoretical model for role model behavior influences on adolescents' attitudes toward violence and violent behavior
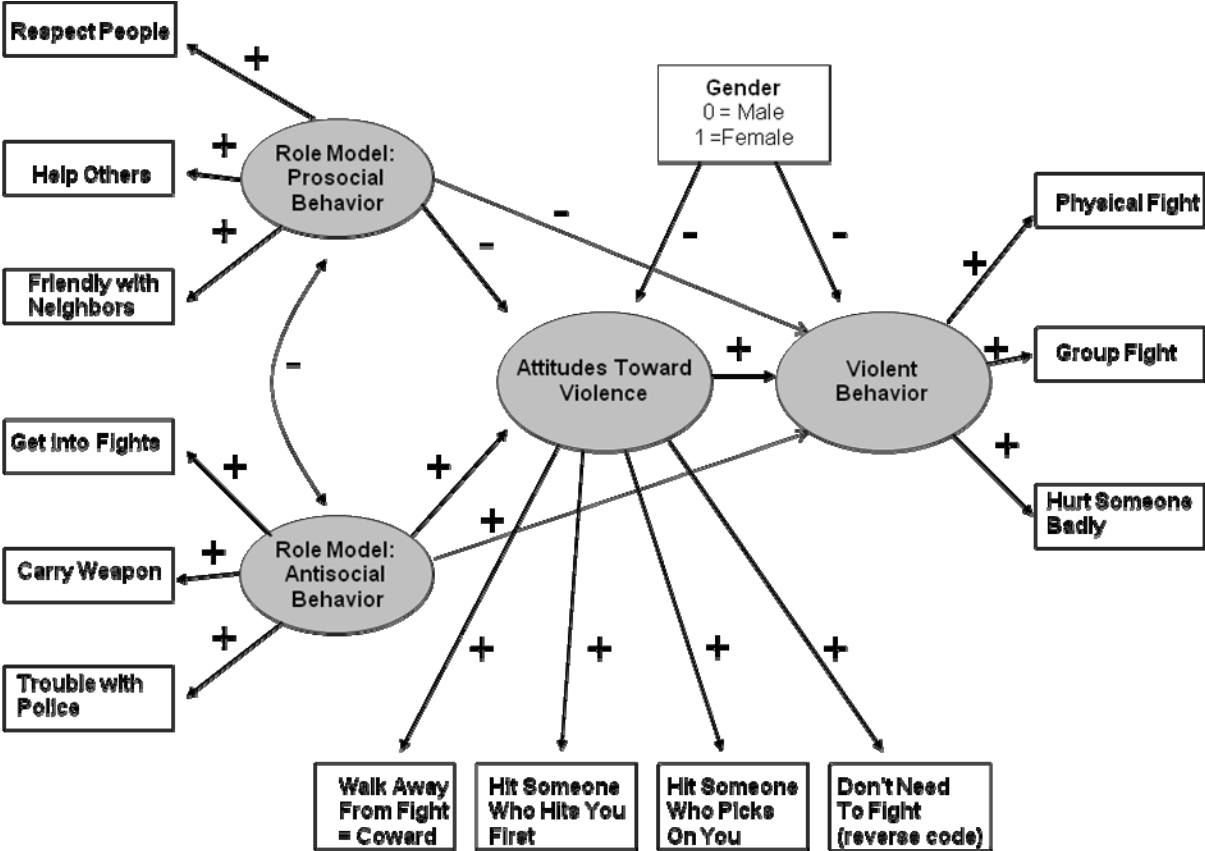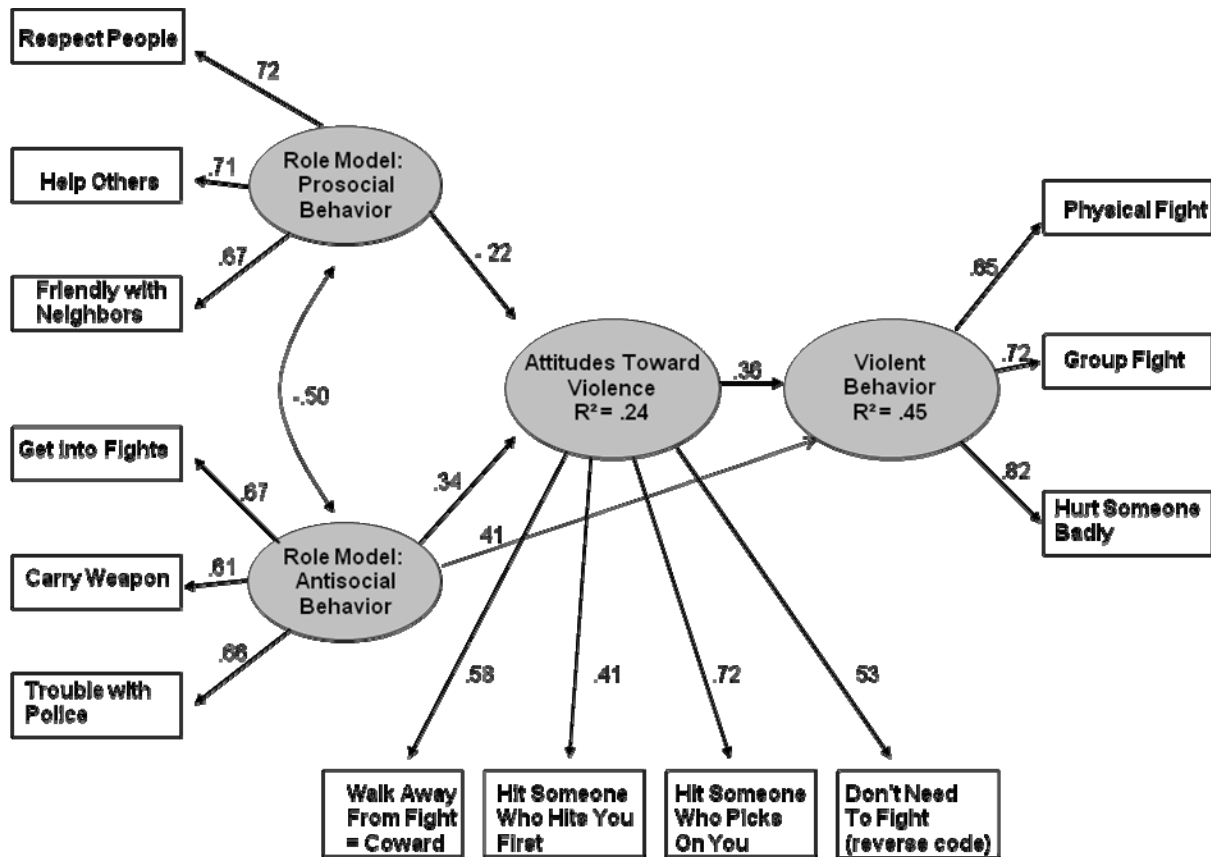
Figure 4.2. Final model for role model behavior influences on adolescents' attitudes toward violence and violent behavior (includes standardized coefficients)

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Chapter V

Conclusion

Taken collectively, the results of my three studies speak to the influence of nonparental adults on adolescent outcomes. Although researchers have thoroughly explored parental and peer influences on youth outcomes, a much smaller body of research focuses on the influences of nonparental adults. Yet, many would agree with the familiar adage *it takes a village to raise a child*, and attest to the important role of nonparental adults in youth development (Snyder, 2006). Thus, my dissertation was undertaken with the goal of contributing to a more in-depth understanding of how nonparental adults may shape adolescent outcomes. Specifically, my dissertation focused on the potential effects of natural mentors and role models on adolescents' mental health, sexual risk behavior, substance use, and violent behavior. This study employed a resilience framework to investigate how nonparental adults may have promoted positive development in the face of risk or (in the case of role model antisocial behavior) contributed to risk.

Resilience theory was the underlying perspective of my research because it focuses attention on the study of assets and resources that may help youth overcome adversity and risk. It also provides a strengths-based approach to building on promotive factors rather than simply focusing on deficits and the need to *fix* broken communities (Fergus & Zimmerman, 2005). A better understanding of what these promotive factors

are and how they work is necessary for program development and policies that are designed to enhance adolescents' strengths as a way to prevent negative adolescent outcomes. This line of thinking inspired me to explore if and how naturally occurring relationships with nonparental adults may predict healthier adolescent outcomes. Thus, this dissertation set out to identify a pre-existing resource among at-risk adolescents (nonparental adults) with the hope that the findings from my studies could be directly translated into program development and policy recommendations.

Summary of findings

In my first study, I found that at-risk, African American adolescents who had relationships with supportive nonparental adults (natural mentors) had less symptoms of depression and engaged in fewer sexual risk behaviors over time. In addition, I found that the relationship between stress and depressive symptoms was moderated by natural mentor presence. These findings were consistent with what I had hypothesized, however, I failed to find any relationship between natural mentor presence and adolescents' substance use over time. These findings are mostly consistent with resilience theory, but it is not surprising that natural mentoring relationships did not have identical effects on all of my study outcomes. Researchers have suggested that promotive factors may not be universally applicable to all outcomes (Luthar & Cicchecti, 2000). Furthermore, it is unreasonable to expect that a single promotive factor would be potent enough to help youth overcome all of the risks they face.

Nevertheless, these findings are noteworthy as they demonstrate the potential of natural mentoring relationships to promote some healthier outcomes among a group of at-risk African American adolescents transitioning into adulthood. This first dissertation

study is one of the first to employ a longitudinal approach to study how natural mentoring relationships contribute to adolescent resilience. In addition to finding potential long-term promotive effects of natural mentoring relationships on adolescents' mental and sexual health outcomes, this study demonstrated that natural mentoring relationships may help reduce the effects of stress on depressive symptoms. This study represents an important step toward improving our understanding how natural mentors influence adolescent outcomes.

My second dissertation study set out to study natural mentoring relationships among a group of African American adolescent mothers transitioning into adulthood. Although there are numerous challenges facing young mothers, many young mothers are able to overcome these challenges and display healthy development (Oxford et al., 2005; SmithBattle, 2007). In an effort to determine what factors may contribute to resilience among adolescent mothers, I explored natural mentor influences on the psychological well-being of adolescent mothers transitioning into adulthood.

In this study, I found that adolescent mothers with natural mentors demonstrated less depressive symptoms and less anxiety symptoms over time than their counterparts without a natural mentor. In addition, I found that natural mentor presence moderated the relationship between stress and mental health outcomes over time. Although researchers have documented previously the potential of natural mentors to positively affect adolescent mothers' psychological well-being (Klaw et al., 2003; Rhodes et al., 1992; Rhodes et al., 1994), this innovative study assessed long-term effects of natural mentoring relationships during the transition to adulthood and tested out a stress-

buffering hypothesis. The findings from this study suggest that natural mentors may be a critical resource for African American adolescent mothers transitioning into adulthood.

In my third dissertation study, I focused on role model influences on African American adolescents' outcomes. As opposed to solely looking at role model presence as my predictor variable (as researchers have typically done), I asked participants about their role models' behavior. Then, I created and tested a structural model to determine if role model behavior predicted adolescents' attitudes toward violence and violent behavior. In this study, I tested the assumption that role models are inherently positive and specifically looked for both positive and negative influences on adolescents' violent attitudes and behavior. Thus, I tested the compensatory model of resilience by assessing how role model prosocial behavior contributed to more positive adolescent outcomes (compensatory factor) and how role model antisocial behavior contributed to more negative adolescent outcomes (risk factor).

I found that role model prosocial behavior was indirectly related to less violent behavior through adolescents' attitudes toward violence, but did not have a direct effect on violent behavior.   Role model antisocial behavior, however, was both indirectly associated with increased violent behavior through adolescents' attitudes toward violence and directly related to increased violent behavior. In addition, my findings indicated that role model antisocial behavior had a stronger effect on adolescents' violent behavior than role model prosocial behavior. This finding indicates that if role models are modeling both prosocial and antisocial behavior, the overall influence may be negative. These results suggest that it may be important for role models to both model prosocial behavior

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and avoid modeling antisocial behavior.   The findings from this study suggest that role model influences are more complex than researchers may have considered.

Adolescent development and resilience theory

Overall, these three dissertation studies suggest that nonparental adults can be powerful influences on African American adolescents' development. Notably, the role of nonparental adults in adolescent development has not received nearly as much research attention as the roles of parents and peers (Scales & Gibbons, 1996). Yet, the findings of my dissertation suggest that by ignoring nonparental adult influences, researchers may be neglecting a key factor associated with adolescent developmental outcomes. This may be particularly true for researchers interested in African American adolescents' development due to the more central role of nonparental adults in the African American family system (Hill, 1972; Martin & Martin, 1978; Stack, 1974).

Researchers suggest that conflict with parents increases during adolescence as adolescents strive for autonomy and independence (Arnett, 1999; Cobb, 1999). Additionally, as adolescents are forming their identity, they increasingly look to adults within and outside of their family systems to identify models of who they want to be like (Erikson, 1968; Scales & Gibbons, 1996). Thus, the period of adolescence may provide a unique opportunity for nonparental adults to affect youth's developmental trajectories. The results of my dissertation studies suggest that the potential of these adults to provide support and model responsible behavior may determine the extent to which these adults can positively contribute to adolescent development.

From a resilience perspective, nonparental adults have the potential to be valuable resources who may help at-risk African American adolescents overcome the risks and

challenges they face. This finding is consistent with an ecological conceptualization of resilience wherein external resources are emphasized as promotive factors that can be enhanced to promote adolescents' well-being (Fergus & Zimmerman, 2005). In addition, the results of my dissertation indicate that nonparental adults may affect a variety of adolescent outcomes ranging from mental health to risk behaviors. Thus, nonparental adults may be a particularly effective resource for at-risk adolescents in that they may serve to prevent several negative outcomes and contribute more broadly to positive youth development. The findings from these three studies suggest that by providing support and encouragement or modeling prosocial behavior, nonparental adults may help youth be resilient against risky environments. At the same time, my findings also suggest that nonparental adults have the potential to compound adolescents' risk for negative outcomes by modeling antisocial behaviors.

Limitations and future directions

My dissertation had a number of limitations. First, all of my studies relied entirely on adolescents' self report. Therefore, it is important to acknowledge the potential for biased responses. Yet, a paper-and-pencil format was used to collect sensitive information (e.g., sex behavior, alcohol and drug use) and this format may have limited socially desirable responses because it removed the potential for interviewer effects. Also, the use of a longitudinal study design in two of my studies made consistent bias across time points less likely, especially considering that there may have been a regression to the mean over time. Furthermore, if participants did underreport their mental distress and risk behaviors, this would have only served to reduce the variance in

my study variables, making it more difficult to detect the effects of nonparental adults on participants' outcomes.

Nevertheless, future studies that incorporate data from both adolescents and the nonparental adults in their lives may allow for a better understanding of nonparental adult influences and may help to eliminate or at least allow for the evaluation of potential bias in participants' responses. To conduct these types of studies, researchers would need to make connections with parents and adults in participants' communities, include brief measures that are not overly burdensome for adults to complete, and provide incentives for their participation.

Second, because participants in these studies were African American adolescents residing in economically disadvantaged communities, caution must be used when attempting to generalize these findings to other African American adolescents or other groups of adolescents. Even so, this is a group of adolescents who are often the focus of social policies and preventive interventions. Thus, insights into how nonparental adults influence this population may be particularly relevant. Yet, future studies that replicate my study findings with similar and diverse adolescent samples will be of value.

Third, these studies were limited in their exploration of the complex nature of adult-adolescent relationships. I did not explore how relationship intensity or duration of the relationship, for example, may have moderated nonparental adult influences. Despite this shortcoming, it is important to note that by demonstrating long-term natural mentoring effects and revealing the positive and negative effects of role model behavior my dissertation studies add to our understanding of intergenerational relationships and provide a basis upon which to build future research. Future studies that explore how

aspects of adult-adolescent relationships (e.g., types of interactions, frequency of contact, quality of the relationship, duration of the relationship) affect the capability of nonparental adults to influence adolescent outcomes will be useful in furthering our understanding of nonparental adult effects.

Lastly, my studies only focused on the presence or absence of negative adolescent outcomes (i.e., symptoms of psychopathology, sexual risk behavior, substance use, and violent behavior). Although it is important to determine the potential of nonparental adults to protect at-risk youth from negative outcomes, it is also important to determine if nonparental adults may foster the development of positive youth outcomes such as leadership, self-confidence, achievement motivation, and school engagement (Scales, 2003). Thus, studies that include an assessment of both positive and negative youth outcomes are needed (Lerner, Alberts, Jelicic, & Smith, 2006). In this way, researchers can determine if nonparental adults are helping youth to avoid negative outcomes, fostering the development of positive outcomes, or both. While a resilience approach is useful because it focuses on overcoming risk, so much of the resilience research that has been conducted to date has focused solely on the absence of negative outcomes. Although the findings from resilience studies have been valuable, merging ideas from resilience theory and positive youth development theory may be an important next step in studying natural mentoring relationships. The positive youth development approach draws a distinction between youth who are not displaying any problems or deficits and youth who are developing skills that will allow them to make valuable contributions to society (Damon, 2004). Continued research on natural mentoring relationships should focus on how natural mentors can help youth to develop their skills, achieve in school

and extracurricular activities, and work actively to achieve their goals. Findings from this dissertation indicate that many youth do have positive influences in their lives. Thus, efforts to enhance these pre-existing strengths are needed to promote optimal youth development.

<u>Implications</u>

Researchers have suggested that having a relationship with at least one caring adult, not necessarily a parent, may be the single most protective factor against negative psychosocial outcomes among at-risk adolescents (Scales and Gibbons, 1996). The findings from my dissertation studies support this assertion and are indicative of long-term positive effects stemming from these relationships. Sadly, researchers have suggested that relationships with caring nonparental adults are not as prevalent as we would hope, with less than half of adolescents in large aggregate samples reporting these types of relationships (Scales, 2006). Yet, over 60% of adolescents in my dissertation studies reported having natural mentoring relationships. Although this number is higher than other researchers have found, it still leaves over a third of the study participants reporting an absence of caring and supportive relationships with nonparental adults. My findings regarding the potential long-term benefits associated with natural mentoring relationships suggest that improved efforts to cultivate these relationships may be warranted.

Improved efforts may appear in the form of public service announcements encouraging adults to take advantage of opportunities to form relationships with youth in their pre-existing social networks, policies that provide incentives to youth and adults to work together on common issues, and programs aimed at facilitating adolescent

relationships with nonparental adult family members or community members (see Franzen et al., in press). Creating environments where at-risk adolescents and familiar adults can form bonds that may develop into mentoring relationships may lead to more influential and enduring relationships. This is in contrast to formal mentoring relationships wherein adults and youth are assigned their roles through programs that do not provide opportunities for these kinds of relationships to form naturally. Researchers have noted that formal mentoring relationships may be more vulnerable to early termination due to mismatches between mentees and mentors, poor relationship quality, and a lack of commitment and follow-through by mentors and mentees (Grossman & Rhodes, 2002; Rhodes, 2002). Whereas, allowing mentoring relationships to form naturally in a supportive environment by creating opportunities for interaction across generations may help form the bonds necessary for long-term, close relationships.

In addition to being more involved in youth's lives, nonparental adults must also set positive examples of responsible behavior. The results of my third dissertation study indicate that role model behavior may be a critical influence on youth's attitudes toward violence and violent behavior. This finding implies that nonparental adults in youth's lives have a responsibility to demonstrate the type of behavior they want youth to emulate. Beyond holding adults accountable for their own behavior, however, we must also consider how specific contexts may make antisocial and violent behavior a much more appealing option for adults (Anderson, 1999). Of course broad policies that address economic, geographical, and other root causes of antisocial and violent behavior in economically disadvantaged communities are needed. More specifically, however, there is a need for community-driven programs and policies that create incentives for prosocial

behavior and disincentives for antisocial and violent behavior. In order to be most effective, however, these policies may need to emanate from community leaders and organizations so they are tailored to the specific needs of individual communities. In this way, these programs and policies will take advantage of the unique characteristics and strengths of individual communities and have a greater likelihood of being accepted and implemented by community members (Mercy et al., 1998). Ideally, these programs and policies will motivate adults to model socially responsible behavior and, therefore, help deter the youth who look up to them from perpetrating violence.

Nonparental adults are an important component of adolescents' social networks. Among African American adolescents, relationships with adult extended family members and fictive kin are an important part of their cultural legacy. Researchers have only begun to explore the potential of nonparental adults to affect adolescents' development and contribute to adolescents' resilience. Initial findings suggest that supportive relationships with nonparental adults may help distinguish resilient adolescents from adolescents who succumb to the risks associated with negative outcomes. Furthermore, by modeling prosocial behaviors, nonparental adults may contribute positively to adolescent development. Yet, nonparental adults also have the potential to contribute to adolescents' risk for negative outcomes by modeling antisocial behavior. Researchers have suggested that levels of nonparental adult involvement and sense of responsibility for promoting and encouraging the health and well-being of other people's kids have decreased over the past three decades (Scales, 2003). Programs and policies that encourage adults' involvement in adolescents' lives may help both motivate them to set

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positive examples of responsible behavior and create opportunities for youth to model their behavior.

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