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MECHANISMS THORUGH WHICH SUPPORTIVE ADULT RELATIONSHIPS AND FUTURE ORIENTATION CONTRIBUTE TO POSTIVIE OUTCOMES IN LOW-INCOME AFRICAN-AMERICAN ADOLESCENTS

by

KIMBERLEY ANNE BROOMFIELD

Under the Direction of Gabriel Kuperminc, Ph.D.

ABSTRACT

Adolescents raised in impoverished environments are at substantial risk of making poor life decisions because they are often exposed to high levels of neighborhood violence and substance use, and attend under-resourced schools. Despite facing these risks, many youth experience adaptive developmental outcomes in the face of these challenges. Resilience literature identifies the presence of a supportive adult relationship and a positive future orientation (i.e., an optimistic conceptualization of the future) as factors related to decreases in negative outcomes and increases in positive outcomes among youth exposed to conditions of risk This study examined both mediation and moderation as possible mechanisms explaining the interplay of future orientation and supportive adult relationships as contributors to resilient outcomes in African-American youth raised in areas of risk. Specifically, this study assessed (1) whether youth develop a positive future orientation through their contact with supportive adults which results in decreased engagement in problem behaviors and increased grades (i.e., a mediated effect), and (2) whether the associations of supportive adult relationships with problem

behavior and academic achievement differ as a function of variation in future orientation (i.e., a moderated effect).

Data from an evaluation conducted in a low-income, high risk area in Atlanta were used to tests these mechanisms. This study found that these processes are complex and depend on the outcome variable being assessed. Specifically, future orientation mediated the association between supportive adult relationships and problem behaviors, but moderated the association between supportive adult relationships and academic achievement. In the mediation model, supportive adult relationships were associated with decreases in problem behaviors through its association with future orientation. In the moderation model, among youth with a low future orientation, supportive adult relationships were associated with increases in school grades. This study also found that future orientation interacted with gender associations, such that among youth with high future orientation, girls had higher school grades and among youth with low future orientation, girls engaged in more problem behaviors. This study has implications for future research on future orientation, youth development prevention and intervention programming, and policy around low-income youth.

INDEX WORDS: Supportive Adults, Future Orientation, Academic Achievement, Problem Behaviors, African-American Adolescents

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by

KIMBERLEY ANNE BROOMFIELD

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

In the College of Arts and Sciences

Georgia State University

2007

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Kimberley Anne Broomfield
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Electronic Version Approved

Office of Graduate Studies
College of Arts and Sciencs
Georgia State University
August 2007

DEDICATION

God – Thank you for being so faithful
Matthew 7:7-9

Mommy & Daddy – The two people who have sacrificed for me, poured into me and loved me unconditionally. Words cannot express the gratitude I feel in my heart. None of this would have been possible without your support.

Jerry, my future husband, my one true love. Everything I have prayed for. Thank you for standing by me and loving me in good times and bad and letting me know will always love me, anyway.

To Auntie Debbie and Nana…the supportive adults that inspired this work. I hope I have made you proud.

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LIST OF ABBREVIATIONS

SES	Socio-Economic Status
SAR	Supportive Adult Relationships
FO	Future Orientation
AA	Academic Achievement
PB	Problem Behaviors

INTRODUCTION

Adolescence is a time of transition when youth actively work to define themselves and their future roles in preparation for adulthood. During this stage, youth begin to make critical decisions that shape the course of their adult lives (e.g., education, career, and life-style). Adolescents raised in impoverished environments are at substantial risk of making poor life decisions because they are often exposed to high levels of neighborhood violence and substance use, and attend under-resourced schools. Despite facing these risks, many youth experience adaptive developmental outcomes in the face of these challenges.

Resilience literature identifies the presence of a supportive adult relationship and a positive future orientation (i.e., an optimistic conceptualization of the future) as factors related to decreases in negative outcomes and increases in positive outcomes among youth exposed to conditions of risk (Catalano et al., 1998; Becker & Luthar, 2002; Masten & Coatsworth, 1998). Having a supportive relationship with an adult has been linked to more positive future orientation, increased educational success and decreased delinquency and substance use (Furstenburg et al., 1999; Luthar & Zigler, 1991; Nurmi, 1987; Steinberg, 2001; Wentzel & Asher, 1995). Similarly, future orientation is positively associated with academic achievement, delaying or abstaining from sex, and later upward mobility (Agnew & Loving, 1998; Bandura, 1986; Clausen, 1991; Harter, 1981; Wyman, Cowen, Work, & Kerley, 1993). Future orientation is also associated negatively with sensation seeking, substance use, and aggression (Somers & Gizzi, 2001;

Wyman, Cowen, Work, & Kerley, 1993; Keough, Zimbardo, & Boyd, 1999; Zimbardo, Keough, & Boyd, 1997).

Although the effects of supportive adult relationships and future orientation on youth outcomes have been examined individually, research has not addressed the interplay of these variables for explaining positive or negative behavioral outcomes among youth exposed to conditions of risk. This study investigates the role of future orientation as a possible mechanism through which supportive adult relationships are related to academic and behavioral adjustment in African American youth living in an urban low-income neighborhood.

LITERATURE REVIEW

During adolescence, youth work to develop independence from caretakers while defining their own identities and their future adult roles (Allen et al., 1994; Collins, 1990; Grotevant & Cooper, 1986; Steinberg, 1990, 2001). Adolescents' relationships with caretakers can positively or negatively affect their psychological development. According to developmental theorists, disruption of secure attachment to adults, particularly parents, affects the ways individuals approach future developmental tasks and relationships (Ainsworth, 1989; Bowlby, 1969) and is related to problem behaviors in adolescence, such as depression, aggression, and delinquent behavior (Allen, Moore, Kuperminc, & Bell, 1998; Booth et al., 1994; Catalano et al., 1998; Erickson, 1968; Vivona, 2000; Wekerle & Wolfe, 1998). Research also indicates that youth who are able to achieve a balance between autonomy and relatedness by both developing psychological autonomy and maintaining an attachment to close supportive adults are more likely to exhibit normative development (Allen et al., 2003; Kenny, 1987; Steinberg, 2001; Vivona, 2000).

Relationships with adults who promote autonomy but remain accepting have been shown to have positive effects on adolescents' self esteem, psychosocial development, and identity exploration (Allen et al., 1994; Gray and Steinberg, 1999; Grovetant & Cooper, 1986; Seginer et al., 2004). Developing one's future orientation is part of developing psychological autonomy and researchers have found that future orientation is affected by attachments to significant adults. Researchers found that youth who perceived parental acceptance tended to have a more positive future orientation (Nurmi, 1991; Pulkkinen, 1990; Trommsdorff, 1983), while youth from low autonomy settings tended to

have a more limited future orientation (Seginer & Halabi-Kheir, 1998). These findings suggest that the presence of supportive adult relationships and a positive future orientation during adolescence can interact in a manner that will reduce youth's engagement in risk behaviors.

Although self-definition and relatedness to significant adults influence positive youth development, it is also important to consider the social context in which youth develop. Living in areas of concentrated poverty may impede youth's ability to develop autonomy in the context of secure adult relationships. Research shows that the stress associated with poverty negatively affects parenting behavior, which may lead to negative parent-child attachments and problem behavior in adolescence (Cauce et al., 2003; Felner et al., 1995; Gorman-Smith, Tolan, & Henry, 1999; McLoyd, 1990, 1998; Patterson et al., 1992; Tolan, Gorman-Smith, & Henry, 2003). For example, economic stress is related to a more punitive and inconsistent parenting style (Garbarino, Kostelny, & Dubrow, 1991; McLoyd, 1990; 1998). This harsh parenting behavior has been linked to insecure attachment and subsequently increased delinquent and violent behaviors in youth (Cauce et al., 2003; Coie & Dodge, 1998; Gorman-Smith, Tolan, & Henry, 1999; McLoyd, 1990, 1998; Patterson, et al., 1992). In addition to caretaking relationships, youth growing up in poverty often have few models of success to help them develop a vision of their future that is outside their current realities. Researchers suggest that high rates of single-parent households, negative school environments, and lack of neighborhood safety have created a shortage of positive adult influences for children and adolescents (Grossman & Tierney, 1998). Studies have also found that young people raised in impoverished conditions are more likely to develop a narrow or negative view

of the future that includes few opportunities for success (Becker & Luthar, 2002; Nurmi, 1991; Voydenoff, & Donnelly, 1990). For example, among African-Americans, students living below the poverty level and students in single-parent households were more likely to be negative in their future orientation than students living above the poverty level and students living in two-parent households (Sanders, 1998).

Youth from families with low socioeconomic status (SES) are more likely than others to be raised in low-income environments and are more likely to be exposed to such adverse conditions as illegal drug use, street violence, inadequate schools, negative role models, and substandard housing conditions (Cauce et al., 2003; McLoyd, 1998; Sampson, Morenoff, & Earls, 1999). Exposure to these risk conditions has been linked to high rates of substance use, delinquency, and school failure (Becker & Luthar, 2002; Brooks-Gunn & Duncan, 1997; Gorman-Smith & Tolan, 2003; Martin & Pritchard, 1991; Reininger, et al., 2005). These problem behaviors tend to co-occur and have been found to share common risk factors (Chung & Elias, 1996; Jessor, 1993; Jessor & Jessor, 1978; Masten, 2001; Rutter, 1990). Specifically, research suggests that youth who engage in problem behavior s (i.e., delinquency and substance use) also tend to experience academic failure (Maguin & Loeber, 1996; Masten & Coatsworth, 1995, 1998). Therefore, youth from low SES families are at greater risk for engagement in multiple problem behaviors, particularly African-American youth.

Based on national statistics, three times as many African-American children live in families below the U.S. poverty line as White children (Brooks-Gunn, Klebanov, & Duncan, 1996). African-American children are also more likely than White children to experience chronic poverty and live in live in areas of concentrated poverty (Houston et

al., 1994; McLoyd, 1998). Therefore, examining the effects of supportive adult relationships and positive future orientation on academic and behavioral adjustment of low SES African-American youth is of particular importance.

The focus of this study is to explore the roles of supportive adult relationships and future orientation in explaining positive and negative outcomes among youth from families of low SES. Rather than being separate processes, it is likely that they operate concurrently. However, because they have not been studied together, it is not known how supportive adult relationships and positive future orientation might contribute jointly to increase the possibility for positive outcomes. The goal of this study is to test possible mechanisms by which supportive adult relationships and future orientation operate to mitigate the effect of the adversities associated with poverty.

The existing literature suggests two mechanisms through which supportive adult relationships and positive future orientation might contribute to positive outcomes. Previous research suggests that supportive adults help young people develop a vision of their future, and in turn, this positive orientation to the future contributes to decreased engagement in risk activity and increased academic outcomes. Research also suggests that while positive future orientation operates as a protective factor, negative future orientation may operate as a risk factor. Therefore, the associations of the presence of supportive adult with the outcome variables may differ as a result of level of future orientation, increasing the likelihood of positive outcomes among youth with a negative future orientation. This study examines two plausible models - mediation and moderation - to gain a greater understanding of the protective mechanisms by which supportive adult relationships and future orientation operate (Luthar, Cicchetti, & Becker, 2000; Masten,

2001). The mediation model tests the possibility that supportive adult relationships contribute to increases in future orientation, which is then related to decreases in engagement in risk activity and increases in academic achievement. The moderation model tests the possibility that the associations of supportive adult relationships with problem behavior and academic achievement will differ as a function of variation in future orientation.

Supportive Adult Relationships

The presence of supportive adult relationships is one of the most consistently identified protective factors in the resilience literature (Becker & Luthar, 2002; Luthar, Cicchetti, & Becker, 2000; Luthar & Zigler, 1991; Masten, Best, & Garmezy, 1990; Masten & Coatsworth, 1998; Werner & Smith, 1982, 1992). Such relationships have been associated with increased academic success and decreased delinquent behavior and substance use (Brody et al., 2002; Masten, 1986; Masten et al., 1999; Steinberg et al., 1995; Wentzel & Asher, 1995). Supportive adult relationships are characterized by open communication, acceptance, connectedness, and guidance (Aronowitz, 2005; Eccles & Gootman, 2002; Smokowski et al., 1999; Werner & Smith, 1982). Essential to the development of a supportive adult relationship is the youth's perception of his or her interactions with the adult. Research on the positive effects of supportive relationships emphasizes the importance of the development of a relationship the youth perceives as trusting and secure (Eccles & Gootman, 2002).

From supportive adult relationships the youth typically receives both emotional and instrumental support (Eccles & Gootman, 2002; Smokowski et al., 1999). Supportive adults provide emotional support in the form of warmth, encouragement, and stability.

Werner and Smith's (1982) landmark studies of resilience on the island of Kauai describe supportive relationships as having a "certain *steadiness* in the availability of caring (p. 102)." These supportive adults provided instrumental support by communicating explicit instruction and guidance to youth concerning challenging life circumstances. Similarly qualitative research on low-income urban African-American youth found that significant adults provided youth with candid information and instruction about difficult, sometimes threatening, situations youth would face in the future (Smokowski, et al., 1999). Researchers suggest that these adults provide a model for future behavior and through continued contact youth begin to adopt and internalize prosocial norms (Eccles & Gootman, 2002; Smokowski et al., 1999).

An important finding throughout the resilience and youth mentoring literature is that it is not necessary for supportive adults to be in a caretaking role to influence youth's development. Whereas the majority of research on supportive adult relationships has focused on the influence of parents on positive youth outcomes, the impact of non-immediate family members (i.e., aunts, uncles, grandparents) and non-familial/non-peer persons (i.e., teachers, assigned mentors, coaches, and caring others) has also been examined. The following sections will present the literature on the influence of parental and non-parental adults on the lives of adolescents.

Parental Influences. The influence of parents has been central in the research on supportive adult relationships because the parent-child relationship is the first and most salient relationship in an individual's life. Parents provide youth with their initial models of acceptable norms and behaviors (Dryfoos, 1996). Overall, supportive parental relationships have been related to increases in career and educational planning, clarity of

future plans, optimism towards the future, and academic achievement (Furstenberg et al., 1999; Nurmi, 1987; Pulkkinen, 1990; Trommsdorff et al., 1979). Supportive parental relationships have also been related to decreases in drinking, smoking, drug use, and involvement in delinquent behavior (Catalano & Hawkins, 1996; Eccles & Gootman, 2002; Furstenberg et al., 1999; Gray & Steinberg, 1999; Reininger et al., 2005; Steinberg, 2001).

The quality of parent-child relationships has been a key factor differentiating resilient and non-resilient children. Werner and Smith (1982) found that resilient youth were more likely to report that their mothers and fathers treated them with respect while youth who had poorer relationships with parents were more likely to develop serious emotional problems. Similarly, it was found that youth who reported receiving warmth, firmness, and psychological autonomy from their parents (authoritative parenting) had greater academic competence, and decreased internalizing (e.g., anxiety, depression) and externalizing (e.g., drug and alcohol use, delinquency) problem behaviors than those who did not (Gray & Steinberg,1999). Using a primarily African-American sample, Rhodes and Jason (1990) found that weak parental relationships were related to higher levels of substance use. In a study on successful parenting practices among low-income African American families, children did best in situations where they received both instrumental and emotional support in the form of frequent dialogue with their parents, clear and consistent limits for their behavior, encouragement of academic pursuits, and warm and nurturing interactions with their parents (Clark, 1983).

Non-parental/Non-peer adults (Natural and Assigned Mentors). When asked to identify contributions to their resilient outcomes, youth mention the influence of non-

parental adults in addition to parents (Anderson, 1991; Smokowski et al., 1999). Researchers have also noted the importance of support provided by significant, non-parental adults, such as extended family members, teachers, coaches, and assigned mentors on positive youth outcomes (Cowen & Work, 1988; Dryfoos, 1996; Luthar & Zigler, 1991; Rhodes & Jason, 1990; Steinberg, 2001; Werner & Smith, 1982). In a ninth grade, academically low-performing, primarily African-American sample, Zimmerman and colleagues (2002) found that youth with natural mentors reported more positive attitudes toward school, lower levels of marijuana use, and fewer delinquent behaviors. Informal sources of social support within the extended family and schools buffered the risk associated with poverty and negative family situations by increasing youth's coping skills (Werner and Smith, 1982). Specifically, non-parental care giving adults in the household, such as grandparents, were predictive of more positive youth outcomes.

After the influence of family, teachers are most frequently mentioned by youth as positive role models (Werner, 1990). A qualitative study on the attributes of resilient African-American youth found that in addition to parents, youth attributed positive outcomes to the influence of their teachers (Smokowski et al., 1999). The 86 youth interviewed felt that teachers were caring, expressed belief in the youth's ability to produce excellent work, and provided youth with guidance in creating and attaining future goals. In essence, the teachers became surrogate parents. Moreover, researchers have found that teacher support and expectations of youth performance predicts not only greater academic outcomes but also more positive social outcomes (Eccles & Gootman, 2002; Eccles & Midgley, 1998). Specifically, Reininger and collegues (2005) found that

youth's perceptions of teacher caring and expectations negatively predicted engagement in risky behaviors such as alcohol use, tobacco use, and engagement in sexual activity.

Recognizing the importance of supportive adult relationships, many youth programs have begun to provide youth with assigned mentors. The mentoring relationship is usually characterized by an emotional bond, mutual commitment, and trust (Barrera, & Prelow, 2000; Flaxman, Ascher, & Harrington, 1988; Hamilton, 1990). Effective mentoring relationships are established by regular contact over a significant period of time (DuBois, Holloway, Valentine, & Cooper, 2002; Rhodes, Bogat, Roffman, Edelman, & Galasso, 2002). Research has demonstrated that a positive and intense mentoring relationship can also buffer risks for antisocial behavior (LoSciuto, Rajala, Townsend, & Taylor, 1996; McPartland, & Nettles, 1991; Taylor, LoSciuto, Fox, Hilbert, & Sonkowsky, 1999). Evaluations of mentoring programs have found that compared to youth who did not have mentors, youth with mentors had higher perceived scholastic competence (McPartland, & Nettles, 1991), higher global self worth (Rhodes et al., 2000), increased valuing of school (Rhodes et al., 2000), and decreased substance abuse (Catalano & Hawkins, 1996; LoSciuto et al., 1996). Evaluators of the Big Brothers/Big Sisters (BB/BS) program found that program participants were significantly less likely than comparisons to report initiating illegal drug and alcohol use, hitting someone, skipping school, or lying to their parents and significantly more likely to report increased school competence and increased communication with their parents (Grossman, & Tierney, 1998).

Although the resilience literature has established that a bond with a supportive adult is associated with buffering the effects of negative environments and promoting

positive youth development, implying a moderation association, little is known about the mechanisms through which this relationship operates. Future orientation may be one of the mechanisms through which caring adults contribute to resilient outcomes. The following section will present future orientation as a construct, and explore the possibility that it could also mediate the association between supportive adult relationships and positive outcomes in youth.

Future Orientation

The conceptualization individuals develop regarding their future (e.g., their hopes, expectations, and aspirations) is an important factor for adolescents because it strongly influences their identity formation, goal setting, decision-making process, and ultimately their behavior (Kerpelman & Mosher, 2004; Lewin, 1948; Nurmi, 1991; Nuttin, 1985; Pulkkinen & Ronka, 1994; Seginer, Vermulst, & Shoyer, 2004; Trommsdorff, 1983; Trommsdorff, & Lamm, 1975). Future orientation has been defined as one's mental representation of future life situations, shaped by personal and contextual influences (Nurmi, 1991; Trommsdorff, 1983; Trommsdorff, Lamm, & Schmidt, 1979). Future orientation is an ongoing multi-stage process in which an individual creates expectations for the future and sets goals and aspirations based on their values, experiences and environmental influences (Nurmi, 1991; Trommsdorff, 1983). In turn, these expectations then provide motivation for youth to engage in achievement behaviors, and delaying gratification (Trommsdorff, Lamm, & Schmidt, 1979).

According to Nurmi (1991), future orientation is comprised of three ongoing processes: motivation, planning, and evaluation. The process of *motivation* is based on the youth's comparison of their expectations, personal values, interests, and their

knowledge about the future and results in a mental picture of the future. Once this representation has been constructed, youth are thought to begin a *planning* process that involves developing and implementing a strategy. Lastly, youth conduct an *evaluation* process that assesses the reality or likelihood of achieving their goals and plans given their current context. Locus of control (or causal attributions) and affect greatly influence this stage and the resulting evaluation will augment the orientation toward the future held by the individual. Therefore, youth who have a more negative affect or external locus of control may not believe they have the ability to achieve their goals during the evaluation stage, contributing to a more negative future orientation. Although Nurmi uses the term evaluation, this process refers to the development of expectations based the results of implementing future-oriented strategies and therefore will be referred to as Expectation in the remainder of the study.

Although future orientation seems similar to the concept of self-efficacy in its potential to influence individuals' outlook and behavior, these concepts differ in their temporal perspectives. Whereas future orientation is a person's conceptualization of his or her future self, self-efficacy is focused on a conceptualization of a person's current abilities. Therefore, researchers suggest that self-efficacy influences future orientation, but that it is not involved in the three-stage process (Bandura et al., 2001; Kerpelman & Mosher, 2004; McCabe & Barnett, 2000a; Trommsdorff, 1983). According to Bandura and colleagues (2001), efficacy beliefs "influence aspirations and strength of commitments to them, the quality of analytic and strategic thinking, level of motivation and perseverance in the face of difficulties and setbacks, resilience to adversity, causal attributions for success and failures, and vulnerability to stress and depression (pp. 187-

188).” One’s appraisal of their individual capabilities determine their aspirations, thus the stronger one’s belief in their abilities, the higher and more positive their future orientation. For example, Bandura and collegues found that youth’s academic self-efficacy positively predicted their future orientation in the domain of education. Kerpelman and Mosher (2004) also found self-efficacy to positively predict future orientation in the domains of education and career, after controlling for gender, grade level, and parents’ level of education.

Outcomes of a Positive Future Orientation. Future orientation has been positively associated with academic and behavioral adjustment (Catalano et al., 1998; Nurmi, 1991; Werner & Smith, 1992; Wyman et al., 1993; Zimbardo, Keough, & Boyd, 1997). In studies of youth exposed to conditions of risk, positive future orientation has been identified as a protective factor (Werner & Smith, 1992; Wyman, et al., 1993; Wyman et al., 1992). Research findings indicate that a positive future orientation is an essential characteristic of resilient children while a negative future orientation is related to problem behavior in adolescence (Nurmi, 1991; Werner & Smith, 1992; Wyman et al., 1993). A strong and positive association has been found between future orientation and academic achievement and persistence (Bandura, 1986; Harter, 1981; Wyman et al., 1993) and social competencies (Wyman et al., 1993; Zimbardo, Keough, & Boyd, 1997). Positive future orientation has also been related to decreases in negative behaviors such as substance use (Wyman et al., 1993; Zimbardo, Keough, & Boyd, 1997).

In a national study of eighth grade students, higher educational aspirations were positively related to greater proficiency in math, reading, and science on a battery of cognitive tests (Mau, 1995). Additionally, among high school students, future orientation

was positively associated with school attachment and school involvement and, for boys, was negatively related to substance use, aggression, and school suspensions (Somers & Gizzi, 2001). Future orientation also significantly predicted decreased substance use and aggression even after controlling for the effects of school attachment and school involvement. Keough, Zimbardo, & Boyd (1999) found that a more positive future orientation was related to decreased alcohol, drug, and tobacco use.

Future orientation has also been associated with long-term life outcomes assessed in adulthood. In his 60 year longitudinal study, Clausen (1991) found that individuals who reported positive expectations for the future and future planning as adolescents reported fewer difficulties in marriage and career when they were in their 30's and 50's. Positive expectations for the future and future planning were also stronger predictors of upward mobility for working class adolescents than for their middle class peers.

Toward a Model of Future Orientation and Supportive Adults

Evidence for a Mediated Model. Most prior research has not simultaneously considered the roles of future orientation and supportive adults in contributing to positive outcomes in youth. Thus, much of the existing research has been limited to examining the direct effects of these variables on academic and behavioral outcomes. However, some research has found the presence of a supportive adult to contribute to a more positive future orientation, implying the possibility of a mediated model in which relationships with supportive adults contribute to the development of a positive future orientation that in turn contributes to decreases in problem behaviors and increases in positive behaviors.

Parents and other positive adults are thought to influence future orientation in a variety of ways: by setting norms for achievement, serving as models of possible

achievement, influencing attributional beliefs, and openly communicating expectations (McCabe & Barnett, 2000b; Nurmi, 1987; Nurmi, 1991; Trommsdorff, 1983). Research among adolescents has found a positive association between parental expectations and level of support for future educational aspirations. Specifically, a higher level of maternal involvement in a youth's life is predictive of positive future orientation, particularly among African Americans (Kerpelman, Shoffner, and Ross-Griffin, 2002; McCabe & Barnett, 2000b). African-American children whose parents encouraged them to think about and plan for the future reported that they thought about the future more often, and described more detailed future narratives (McCabe and Barnett, 2000b). Additionally, in his national longitudinal study, Trusty (2002) found that parental educational expectations for their eighth grade children were positively related to the youth's educational expectations for themselves 6 years later. Similarly, in her research with youth ages 11, 13, and 15, Trommsdorff (1983) found that children who felt their parents provided little support were less optimistic about their future, believed less in their ability to influence future events, and had less detailed and extended future orientations in the career domain than those who reported having highly supportive parents.

Moderation – An Alternative Model. Although longitudinal research has found the presence of supportive adults to contribute to later positive behaviors, there is some evidence that this relation is stronger among youth with a negative future orientation (Broomfield, 2004). This model implies that negative future orientation presents an additional risk to youth living in low SES families who already face a myriad of adversities, and the presence of a supportive adult mitigates this risk. In her research with an African-American female adolescent sample, Broomfield (2004) found an interaction

between the presence of a mentoring relationship and future orientation such that among girls with a negative future orientation, the presence of a mentor was associated with more positive school grades. However, among girls with a positive future orientation, the presence of a mentor did not influence school grades. This finding suggests that the presence of a supportive adult relationship is particularly salient in the lives of youth exposed to high levels of risk (Luthar, Cicchetti, & Becker, 2000). This finding is supported by DuBois and colleagues (1992, 1994). In their prospective study on a predominantly African-American rural middle school sample in the southeastern United States, higher levels of family and teacher support buffered the influence of multiple risk factors on internalizing and externalizing behaviors.

The Present Study

The question remains: in what ways do future orientation and supportive adult relationships contribute to positive outcomes? This study assesses two alternatives: (1) whether youth develop a positive future orientation through their contact with supportive adults which results in more positive outcomes (i.e., a mediated effect), and (2) whether the associations of supportive adult relationships with problem behavior and academic achievement differ as a function of variation in future orientation (i.e., a moderated effect)? It is hypothesized that in African American youth exposed to multiple risk factors the association between supportive adult relationships and the outcome variables of academic achievement and engagement in problem behaviors will be mediated by future orientation. It is also hypothesized that the associations between supportive adult relationships and the outcome variables would be moderated by future orientation, such that for youth with a low future orientation the presence of a supportive adult will be

related to positive outcomes (increased grades and decreased engagement in problem behaviors) and these associations will be non-significant for youth with a high future orientation.

METHOD

Study Design and Recruitment

This study was part of a larger, cross-sectional investigation entitled the *Feelings and Behavior Study* conducted by the Center for Black Women's Wellness ('the Center'), located in Atlanta, GA. The purpose of the project was to evaluate the effectiveness of the Center's Summer Youth Leadership Training Program (SYLTP) and to serve as a needs assessment to identify issues facing community youth to guide the development of future programming and models for service delivery. Each year through the SYLTP, the Center provides 35 youth with an 8-week developmentally appropriate curriculum focusing on leadership development, sexuality, human growth and development, and life skills training. This program is provided to youth 10 – 15 years old, residing in the Center's service area, the community of Neighborhood Planning Unit V (NPU-V). The goal of the program is to help youth reach their full potential through interactions with positive adult influences and the development of positive life skills.

Employing a quasi-experimental post-test only design, youth residing in NPU-V were recruited for this study with former SYLTP participants serving as the intervention group and non-participating neighborhood youth serving as the comparison group. A total of 67 former SYLTP participants were recruited using program records and 34 agreed to participate, resulting in an intervention group response rate of 51%. There were no additional data to compare former SYLTP participants who took part in the study to those who refused. Comparison group participants were recruited from area schools, community programs, and neighborhood organizations using flyers, verbal announcements, and word of mouth. A response rate cannot be accurately calculated for

the comparison group because there was no way to estimate the number of youth that came in contact with recruitment materials. Although this study is not part of the evaluation, program participation was included as a covariate in the analyses.

It is important to note that the NPU-V area is one of particular risk. This predominantly African-American area has one of the highest rates of poverty, unemployment, and teen pregnancy in the state. According to 2000 Census data, the population of NPU-V is 15,825, of which 92.3% are Black and 14% are between the ages of 10-17 years. The median household income in NPU-V is $19,185 in comparison to $42,433 in the State of Georgia. Census data report that 59.3% of children in NPU-V live below the federal poverty level, compared to 38.3% of children in the City of Atlanta and to 17.1% in the State of Georgia. Moreover, the unemployment rate in NPU-V is 12.8%, compared to 6.7% for the City of Atlanta and 4.9% for the State of Georgia. Additionally, in 2002, the percent of all babies born to teen mothers in NPU-V was 8.7%, compared to 5.9% for the City of Atlanta, and 4.0% for Fulton County.

Procedures. The evaluation was funded through the Georgia Department of Human Resources and approved by its Institutional Review Board (DHR IRB Project #050802)[1]. The Center's Community Organizer coordinated the recruitment process. Intervention participants were recruited using contact information from program records. Specifically, a member of the Center's staff contacted potential participants by phone, briefly explained the study and followed up with participants by mailing a copy of the consent form to their parent(s). To recruit comparison participants, consent forms and recruitment flyers were left with contact persons at area schools, youth programs and

[1] The analyses for the present study were also approved by the Georgia State University IRB (Protocol # H07218).

community organizations. Recruitment flyers were also posted at neighborhood venues known for high youth traffic (e.g. neighborhood convenience stores, game rooms, community centers) and distributed to neighborhood families by the Center's community outreach workers. Recruitment flyers instructed comparison youth that parental consent forms were available at the Center. All youth were instructed to bring a completed consent form and a copy of their most recent report card.

To minimize the risk of releasing sensitive information, all survey data were collected anonymously. After submitting a completed consent form and their most recent report card, youth received a document explaining voluntary consent. Participants were also verbally informed that their participation in the study was both anonymous and voluntary and that by completing the survey they were giving consent. Finally, youth were informed that they could stop at any time without penalty. The principal investigator was available during survey administration to answer any questions about the anonymity of the survey and the confidentiality of the data.

Prior to administering the survey, the principal investigator removed all identifying information from the report card. A code, generated prior to administration, was written on the de-identified report card and the respondent's questionnaire to link the respondent's actual school grades to his/her responses. Once the principal investigator checked that the code on the questionnaire and report card matched, participants were instructed to begin the survey.

Efforts were made to provide age-specific group administration, testing younger respondents (10-13) separately from older participants (14-17). Although both age groups were instructed to circle or write in the appropriate responses on the questionnaire, the

principal investigator read the instructions and questions aloud during every administration conducted with younger respondents for ease of comprehension. Additionally, during survey administration, members of the research team were available to answer any questions or to address any concerns. After completing the survey, all participants received a Wal-Mart gift card in the amount of $10.

Measures

The questionnaire for this study included measures of demographics, future orientation, presence of a supportive adult relationship, substance use, delinquent behavior, and academic achievement (See Appendix A).

Demographics. Five items assessed the following demographic variables: age, gender, grade level, race/ethnicity, and participation in SYLTP. Participants were asked to indicate their current age, which ranged from 10 years old to 17 years old. Students were also asked to indicate their gender. Grade level was assessed on a scale ranging from 4th to 12th grade. Grade level also included the responses "Graduated from high school" and "I'm not in school." Participants tested during the summer months were asked to indicate the grade level they had just completed. Participants were asked to describe their race/ethnicity from the following list of 7 racial and ethnic categories: White, Black/African-American, Asian, American Indian/Alaska Native, Native Hawaiian/Pacific Islander, Hispanic/Latino, and Multiracial. In addition, participants were asked to indicate whether they had previously participated in the SYLTP provided by the Center and the years they participated.

Supportive Adult Relationships. The Presence of a Caring Adult scale (Phillips & Springer, 1998a) was used to assess the perceived presence of supportive relationships

with adults. This nine item instrument assessed the availability of adult support during times of stress, in an emergency, or if something went wrong. Examples of scale items included: “There are adults I can depend on to help me if I really need it” and “There is a trustworthy adult I could turn to for advice if I were having problems.” Participants responded on a 4-point Likert-type scale ranging from 1 (strongly disagree) to 4 (strongly agree). Items were averaged to create a scale score with a higher number indicating greater perceived adult support. This scale had adequate internal consistency as evidenced by a Cronbach’s alpha of .84. To create the latent variable of supportive adult relationships, the scale was divided into 3 indicators using item parceling. Item parceling was conducted because the data set had only one scale to measure this construct and the use of single indicator latent variables is discouraged in SEM literature (Bollen, 1989). Item parceling involves creating subsets of a scale allowing for multiple indicators of a latent construct. Item parcels for supportive adult relationships were created using the item-to-construct balance technique so that the parcels would have similar factor loadings (Little et al., 2002). The item parcels had adequate reliabilities with Cronbach alpha’s of .59, .60 and .60.

Future Orientation. Dimensions of future orientation (motivation, planning, and expectation) were assessed using various scales. ***Motivation*** was measured using 2 scales assessing participants’ educational goals and values. The first scale measured academic motivation and was taken from the Reason for Achievement Scale (Kuperminc, Darnell, Jurkovic, 2004). It included 14 items assessing the degree to which youth value school and their level of academic commitment. Examples of these items included “I want to be a good student because it is important to me” and “I want to be a good student because I

want to get ahead in life." Items were rated on a 4-point Likert-type scale ranging from 1 (strongly disagree) to 4 (strongly agree). This scale had strong internal consistency (α = .92). The second scale assessed the importance placed on future goals. This scale was adapted from a value of academic success scale developed by Fuligni (1997). These three items measured the perceived importance of getting good grades, finishing high school and going to college. This scale also had adequate reliability (α = .80). The items from both scales were averaged to create the indicator variable of academic motivation that measured importance of goals, value placed on goals and commitment to acting on these goals. In this scale, higher numbers indicates greater motivation. The 17-item motivation indicator had strong internal consistency (α = .92). In the structural equation models, when testing the associations of the separate future orientation processes, the two motivation scales were indicators for the motivation latent variable. When testing for the associations of overall future orientation, the 17-item motivation scale was the motivation indicator for the future orientation latent variable. ***Planning*** was measured using two items developed by Nurmi, Seginer, & Poole (1990) to assess future academic and career planning. The first item asked "How often do you think about or plan for your future education?" The second item asked "How often do you think about or plan for your future career?" These items have been used reliably in the past as part of a larger scale to measure dimensions of future orientation in an African-American sample (Kerpelman & Mosher, 2004) and are significantly correlated, r = .64. The response set for both questions was a Likert-type scale where 1 was "never' and 5 was "daily." These items were averaged with higher number indicating greater degree of planning. In the structural equation models, when testing the associations of the separate future orientation

processes, the two planning items were the indicators for the planning latent variable. When testing for the associations of overall future orientation, the 2-item planning scale was the planning indicator for the future orientation latent variable. ***Expectation*** was measured using two scales that assessed participant's expectancies towards the future. The first scale was Phillips & Springer's (1998b) Positive Outlook scale. This 6 item scale assessed youth's expectation towards the future. Items included "I will probably die before I am thirty" and "I think I will have a nice family when I get older." Participants responded on a 4-item Likert-type scale ranging from 1 (strongly disagree) to 4 (strongly agree). This scale had adequate internal consistency as evidenced by a Cronbach's alpha of .79. The second scale had nine items that assessed youth's expectancies regarding school, career and personal life. Items included "Later in life I will have a job that pays well" and 'Later in life I will go to college." Participants responded on a 4-item Likert-type scale ranging from 1 (strongly disagree) to 4 (strongly agree). This scale was adapted from a scale developed by the Center for Urban Affairs and Policy Research (1998) and was internally consistent ($\alpha = .91$). The items from both scales were averaged to create the indicator variable for expectation with higher numbers indicating a more positive expectation of future events. The 15-item expectation indicator had strong internal consistency as evidenced by a Cronbach's alpha of .89. In the structural equation models, when testing the associations of the separate future orientation processes, the two expectation scales were the indicators for the expectation latent variable. When testing for the associations of overall future orientation, the 15-item expectation scale was the expectation indicator for the future orientation latent variable.

Problem Behavior. Two scales were used to measure problem behavior: substance use and delinquency. ***Substance Use*** was measured using three items from the widely used Youth Risk Behavior Survey (YRBS; CDC, 2004a) assessing the frequency of alcohol, cigarette and marijuana use. The YRBS was developed in 1990 to monitor the prevalence of risk factors among youth nationwide and data has been collected every two years since. These items are considered to be valid and reliable measures of alcohol, cigarette and marijuana use (CDC, 2004b). The three items were strongly negatively skewed with a large number of individuals (73% to 87%) reporting no use of each substance. Thus each item was dichotomized such that 0 indicated the participant had never used the substance and 1 indicated the participant had used the substance. The dichotomized items were then summed to form a substance use index with scores ranging from 0 – 3. ***Delinquency*** was assessed using items developed for the Adolescent Pathways Project (Seidman, 1991). The scale consists of three items assessing youth's involvement in delinquent activities with friends, such as breaking the law, fighting, and destroying peoples' property. The three items were measured on frequency scales and were strongly negatively skewed with a large number of individuals (57% to 90%) reporting no engagement in delinquent behavior. Thus each item was dichotomized such that 0 indicated never engaging in the activity and 1 indicated having engaged in the activity. The dichotomized items were then summed to form a delinquent behavior index, with scores ranging from 0 – 3.

Academic Achievement. Current report cards were used as an indicator of academic achievement. For participants who received letter grades, the numerical value associated with each letter grade was used: 4.0 = A; 3.0 = B; 2.0 = C; 1.0 = D; 0 = F.

Participants

The final sample included 183 youth residing in the NPU-V area of Atlanta, GA. A total of 194 youth completed, three surveys were dropped from analyses because they did not meet eligibility requirements for the present study (two were 18 years old and one reported her ethnicity as Caucasian). Eight others were dropped because they did not provide their report card, the indicator of the academic achievement outcome variable. In the final sample, all participants were African American ranging in age from 10-17, with an average age of 13.3 (*SD* = 2.0). The average grade level of these participants was 7.5 (*SD* = 2.1), ranging from 3rd – 12th grade. The majority of the sample was female (60%). Participants' families were primarily headed by single mothers (75%), 15% were headed by two parents (either biological or step), and the remaining 10% were headed by extended family members (e.g., grandparent, aunt, or cousin). Eighteen percent (*n* = 33) of the sample participated in the Summer Youth Leadership Training Program. As evidenced in Table 1, there were no significant demographic differences between program participants and non-program participants.

Table 1: Demographic Characteristics of Study Participants and by Intervention Status

Demographic	Total (N=183) % (n)	Intervention (N=33) % (n)	Control (N=150) % (n)	T	*P*
Age					
Mean	*13.32*	*13.70*	*13.23*	*-1.20*	*Ns*
10-12	35% (64)	33% (11)	35% (53)		
13-15	48% (88)	43% (14)	50% (74)		
16-17	17% (31)	24% (9)	15% (23)		
Grade					
Mean	*7.51*	*7.85*	*7.44*	*-1.00*	*Ns*
3-6	33% (61)	30% (10)	34% (51)		
7-9	49% (89)	46% (15)	49% (74)		
10-12	18% (33)	24% (8)	17% (25)		
				χ^2	***P***
Gender				*2.27*	*Ns*
Female	60% (110)	49% (16)	63% (94)		
Male	40% (73)	51% (17)	37% (56)		

Plan of Analysis

Preliminary analyses were conducted using frequencies and other descriptive statistics to check for errors in the data set, such as incorrect minimum and maximum values, excessive number of missing cases, and outliers (Pallant, 2001). Errors in the data set were corrected and outliers were replaced with a value equaling the mean plus three times the standard deviation (Field, 2005). Less than 1% of the data had outlier values. Data were also checked for multicollinearity, univariate normality and multivariate normality. Although some variables violated the assumption of normality, maximum likelihood estimation was used because it has been shown to provide adequate estimates even when moderate violations of the assumption of normality are present in the data (Anderson & Gerbing, 1988). Correlations and t-tests were conducted to examine general relationships between the study variables and to detect differences in the indicators of

supportive adult relationships, future orientation, academic achievement and problem behaviors by gender, program and age.

For the major analyses, maximum likelihood structural equation modeling (SEM) was used to examine mediating and moderating effects of future orientation on the associations of supportive adult relationships with problem behaviors and academic achievement. Specifically, six models were tested, two mediating and four moderating. Each analysis began with the establishment of a measurement model using confirmatory factor analysis (CFA). The measurement model examined how well the observed variables combined to measure the latent construct(s) they were hypothesized to measure (e.g. future orientation, supportive adult relation ships, GPA) (Weston & Gore, 2006). Once the measurement model was established, the structural model was tested. The first mediation model (Composite) tested whether the presence of a supportive adult relationship indirectly affected academic achievement and engagement in problem behaviors through its association with overall future orientation. The second mediation model (Process) disaggregated the three components of future orientation and tested whether any or all of those components mediated the associations of supportive adult relationships with problem behaviors and academic achievement. For both mediation models, indirect effects were measured as the product of the direct effects (a x b). Evidence for a mediation effect was implied by a statistically significant Sobel's test of the indirect effect (Kline, 2005).

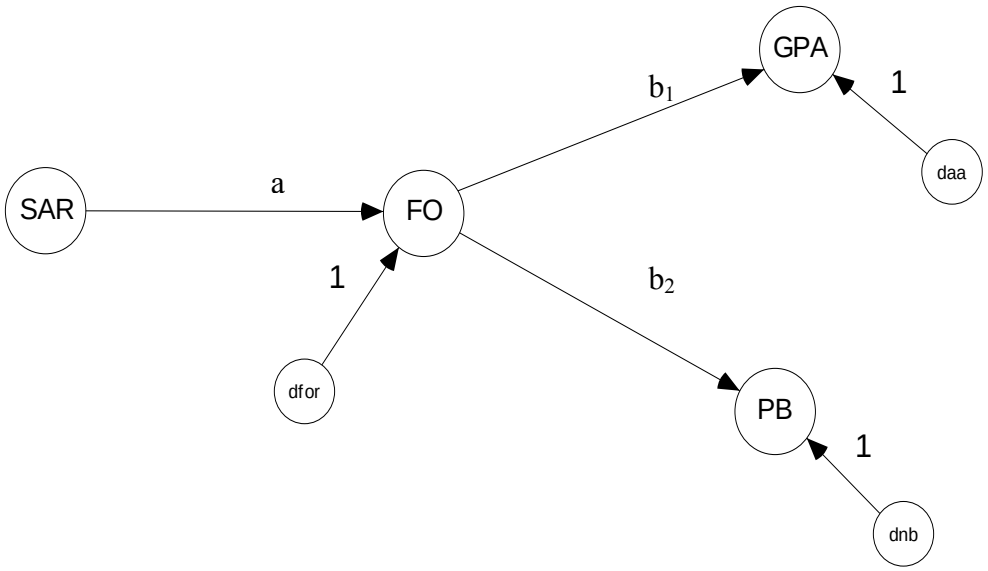

Figure 1: Proposed Mediation Model

Multi-group modeling was used to test the four moderation models. Each of the models tested whether levels of future orientation or its individual processes, moderated the associations of supportive adult relationships with academic achievement and problem behavior. When testing overall future orientation as a moderator, high and low future orientation groups were determined by dividing the sample at the median, such that participants below the median comprised the low future orientation group and those youth at or above the median comprised the high future orientation group. A similar median split was also done for each of the process models of motivation, planning and expectation. Cross-group equality constraints were placed on the parameters forcing equal parameter estimates for each group. This constrained model was then compared to a model in which all parameters were free to vary. If the fit of the constrained model had a significantly worse fit, as evidenced by a significant χ^2 difference test, this indicated that the parameters were not equal among the groups and constraints on model paths

should be released. Constraints are then released, based on theoretical rationale. If a path is moderated, once this path is released, the model will have a significantly better fit, as evidenced by a statistically significant χ^2 difference test and a ΔCFI of .01 or greater (Cheung & Rensvold, 2002; Kline, 2005). The first moderation model (Future Orientation), assessed whether level of overall future orientation moderated the association of supportive adult relationships with academic achievement and engagement in problem behavior (see Figure 2). The other 3 models (Motivation, Planning, and Expectation) individually tested the future orientation processes of motivation, planning, and expectation as potential moderators of the same associations.

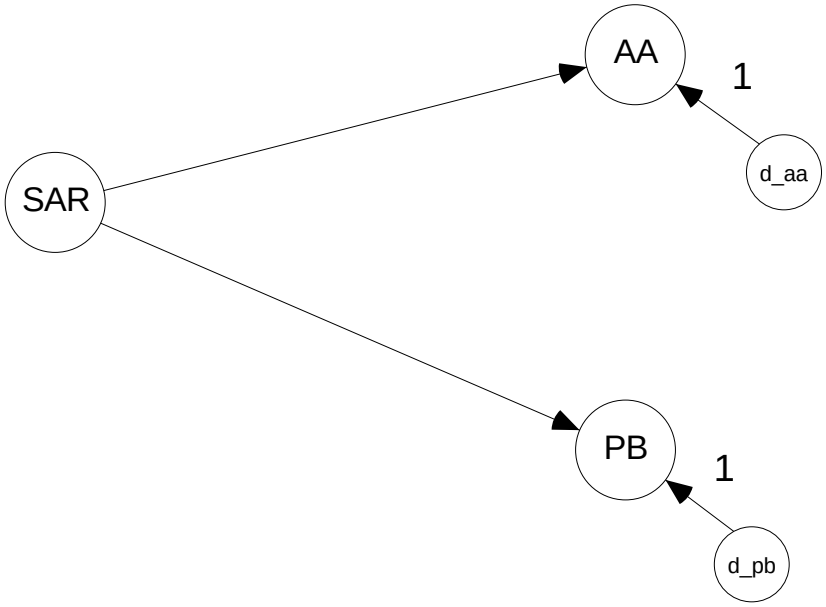

Figure 2: Proposed Moderation Model

RESULTS

The results are organized in two major sections: preliminary analyses and model testing. Reported in the preliminary analyses section are the means of the study variables, the identification of demographic covariates and the correlations among study variables. The model testing section reports the results of the SEM analyses conducted to test the possibility that future orientation mediates and moderates the associations of supportive adult relationships wiith GPA and problem behaviors.

Preliminary Analyses

Means for study variables. Means and standard deviations of all study variables are presented in Table 2. The mean of the supportive adult scale (3.43) indicates a high level of perceived adult support among study participants. Additionally, the five future orientation scale means (i.e., motivation, planning, and expectation) were also high, ranging from 3.42 to 4.20. The majority of participants did not report substance use: specifically, 35% of participants reported ever drinking alcohol, smoking cigarettes, or smoking marijuana. Participants reporting substance use reported using an average of 1.73 substances. Similarly, a large number of participants did not report engaging in delinquent acts. The average reported delinquency was .67, as fifty-two percent of participants reported ever engaging in delinquent behavior such as illegal acts, fighting, and destroying other people's property. Participants reporting engagement in delinquent acts reported engaging in an average of 1.28 behaviors. Participants had a mean GPA of 2.65 indicating moderate school grades (B- average).

Table 2: Study Variables Means for Sample (*N* = 183)

Study Variable	**Mean *(SD)***	**Range**
Supportive Adult Relationships	3.43 (.54)	1 – 4
Motivation 1	3.42 (.47)	1 – 4
Motivation 2	3.79 (.38)	1 – 4
Planning	4.20 (.82)	1 – 5
Expectation 1	3.48 (.52)	1 – 4
Expectation 2	3.67 (.40)	1 – 4
Drug Use	0.61 (.97)	0 – 3
Delinquency	0.67 (.77)	0 – 3
GPA	2.65 (.80)	0 – 4

Identifying Covariates. Analyses were conducted to detect age, gender, and program participation differences in the indicator for supportive adult relationships, the five indicators of future orientation, the two indicators of problem behavior, and GPA. Mean differences for program participation, assessed via t-tests, were not significant. T-tests for gender differences indicated that girls ($M = 2.77$; $SD = .76$) had significantly higher school grades than boys ($M = 2.47$, $SD = .83$), $t(181) = 2.57$, $p = .01$. Girls ($M = 3.50$; $SD = .46$) also reported a significantly higher level of motivation on the Motivation 1 scale than boys ($M = 3.31$, $SD = .48$), $t(181) = 2.66$, $p < .01$. Bivariate correlations were conducted to test for differences based on age and several significant differences were found. Age correlated negatively with the Motivation 1 scale ($r = -.19$; $p = .01$) indicating that motivation was lower among older youth. Age also negatively correlated with school grades ($r = -.42$; $p = .00$), indicating that grades were higher among the younger participants. Age was positively correlated with substance use ($r = .45$; $p = .00$) and engagement in delinquent acts ($r = .22$; $p = .00$) indicating that older youth were more likely to engage in these problem behaviors. Based on these results, gender, and age

were included as covariates in subsequent analyses. Program participation was also included as a covariate because these data were collected as part of a program evaluation.

Correlation Analysis. All correlations among the observed variables are presented in Table 3. As hypothesized, there were positive correlations between supportive adult relationships and the three processes of future orientation. The motivation measures were positively associated with the measures of planning and expectation. Motivation measures were also negatively associated with substance use and delinquency and positively associated with grades. Planning was positively associated with the measures of expectation and negatively associated with substance use and delinquency. The Expectation 1 measure was negatively associated with delinquency. Substance use was positively associated with delinquency and negatively associated with GPA. However, presence of a supportive adult relationship was not significantly associated with any of the outcome variables. According to Baron and Kenny (1986), a direct association must exist between the predictor variable (supportive adult relationship) and the criterion variables (academic achievement and problem behavior) in order to test for mediation. However, recent research has documented that indirect effects of an independent variable on dependent variables can occur even in the absence of a significant direct effect (Collins, Graham, & Flaherty, 1998; McKinnon, Krull, & Lockwood, 2000; Shrout and Bolger, 2002). Therefore, tests of mediation were conducted despite the lack of direct associations between supportive adult relationships and the outcome variables.

Table 3: Correlations, Means, and Standard Deviations of Study Variables Included

	1	2	3	4	5	6	7	8	9	10	11
1. Program Participation	--										
2. Gender	.11	--									
3. Age	.09	-.02	--								
4. SAR	-.01	-.13	-.03	--							
5. Motivation 1	-.06	-.19**	-.19**	.28**	--						
6. Motivation 2	-.07	-.12	-.14	.43**	.66**	--					
7. Planning	-.06	-.02	-.04	.32**	.35**	.40**	--				
8. Expectation 1	-.05	-.03	.03	.54**	.25**	.40**	.27**	--			
9. Expectation 2	-.02	-.03	-.04	.57**	.42**	.57**	.32**	.56**	--		
10. Substance Use	.02	-.03	.45**	-.03	-.32**	-.22**	-.16*	-.06	-.06	--	
11. Delinquency	-.04	-.13	.22**	-.12	-.21**	-.20**	-.15*	-.26**	-.09	.28**	--
12. GPA	-.12	-.19*	-.42**	.14	.26**	.18*	-.01	.10	.13	-.21**	-.11

* $p = .05$; ** $p = .01$

Structural Equation Models

To test the hypotheses that future orientation may mediate and moderate the associations between supportive adult relationships and youth outcomes, structural equation modeling (SEM) was conducted using Amos 7.0 (Arbuckle, 2006). SEM is the most appropriate analytic tool to test the proposed study models because it allows for the testing of both a measurement model and path model simultaneously, also known as a hybrid model. The use of latent variables in SEM allows the researcher to examine theoretical models in such a way that shared variance is isolated from measurement error. Latent variables of supportive adult relationships, future orientation, academic achievement, and problem behaviors were constructed. The supportive adult relationships variable was indicated by the three item parcels. Future orientation was indicated by the scales of motivation, planning and expectation. Academic achievement was indicated by three grades from the participants' major classes and the delinquency and substance use scales were indicators for problem behavior.

Anderson and Gerbing's (1988) two-step modeling approach was used to examine both structural and measurement components of the hybrid model (Kline, 2005). First, a confirmatory factor analysis (CFA) was run to test the measurement model (see Figure 3). This model was analyzed to determine how well the observed items measured the latent variables of supportive adult relationships, future orientation, academic achievement, and problem behavior. How well the CFA model fit the data was determined using three goodness of fit indices (χ^2, CFI, and RMSEA). The model Chi-square statistic (χ^2) estimates the probability that the model differs by chance from the fully saturated model, in which every path is estimated and fits the data perfectly. This

statistic is a measure of change from this saturated model, therefore, a large, significant Chi-square statistic is an indicator that the model is significantly worse than the saturated model. It is suggested that a non-significant model Chi-square statistic (χ^2) $p > .05$ is indicative of adequate fit. However, chi-square is sensitive to violations of normality and may be misleading. More recently, researchers have suggested that if good fit is indicated by the other fit tests the significant chi-square is not a reason by itself to reject the model. (Garson, 2007). The Bentler Comparative Fit Index (CFI) is an incremental fit index that compares the fit of the researcher's model relative to a null model (the model that assumes none of the observed variables are correlated). A CFI of greater than .90 is an indicator of good model fit (Kline, 2005). Finally, the Root Mean Square Error of Approximation index (RMSEA) assesses the amount of error based on model degrees of freedom. It is suggested that a value less than or equal to .05 indicates a good fitting model and a value between .05 and .08 indicates an adequate fitting model (Kline, 2005).

According to the fit indices, the measurement model adequately fit the data; χ^2 (58, N = 183) = 96.19 p = .00, CFI = .943, RMSEA = .060 with a 90% confidence interval of .028 – .081. The measurement portion of this model suggested that the three item parcels measure supportive adult relationships well, with large and statistically significant standardized factor loadings ranging from .80 to .87. Although motivation, planning and future orientation were significant indicators of future orientation, motivation and expectation loaded strongly (with standardized factor loadings of .60 and .83 respectively) while planning had a lower standardized loading of .41. For the latent variable problem behaviors substance use loaded well (.65) while delinquency loaded less

strongly (.43), although both were statistically significant. Loadings on the academic achievement construct were statistically significant and adequate ranging from .53 - .71.

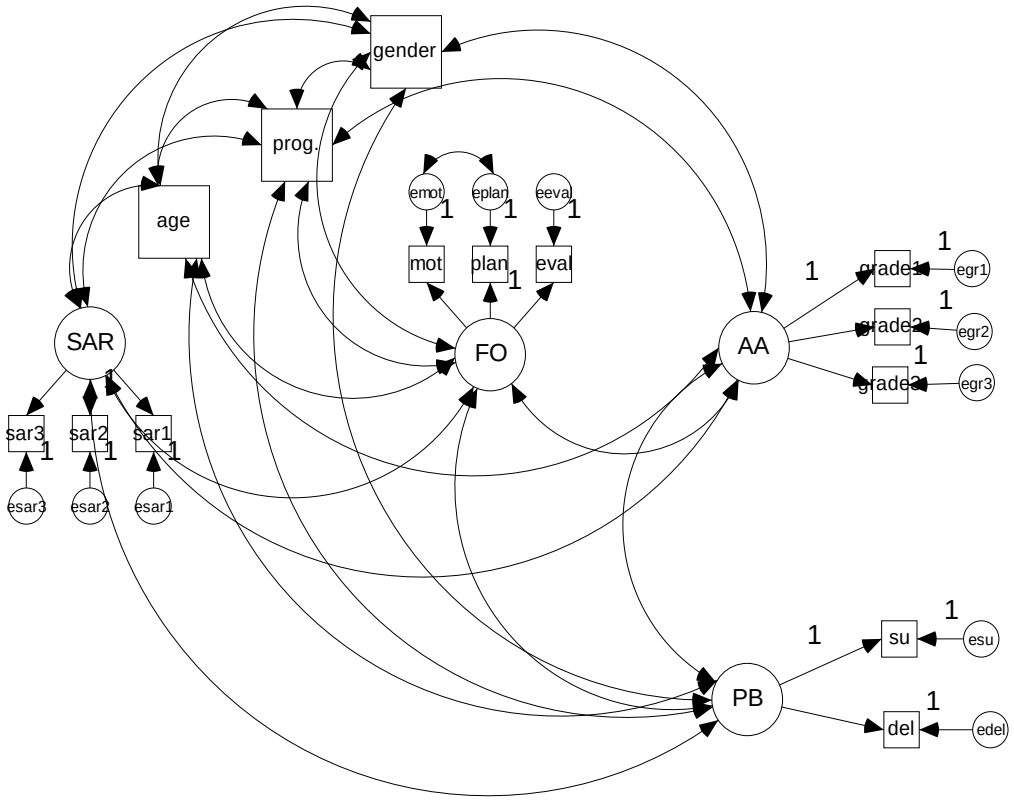

Figure 3: Composite CFA

Composite Mediation Model. Given an acceptable fitting measurement model, the second step involved testing the structural model. Structural paths were added to test the associations. Results suggested that the model fit the data well; χ^2 (39, N = 183) = 104.83 p = .00, CFI = .942, RMSEA = .057 with a 90% confidence interval of .035 – .077. The standardized estimate of the association between supportive adult relationships and future orientation was .76 and the estimate for the association between future orientation and problem behaviors was -.23. Supportive adult relationships accounted for 58% of the

variance in future orientation. As expected, controlling for the effects of age, program participation and gender, presence of a supportive adult relationship was associated with higher levels of future orientation, and a higher level of future orientation was associated with lower levels of problem behavior. Future orientation was not, however, associated with academic achievement. The estimated standardized indirect association between supportive adult relationships and problem behaviors is -.17 and is statistically significant as evidenced by Sobel's test of indirect effects ($z = -2.16$, $p = .03$). This model accounted for 46% of the variance in problem behaviors, partially supporting the mediation hypothesis, such that the presence of a supportive adult relationship is indirectly associated with engagement in problem behavior through its association with future orientation.

There were other significant direct associations present. The standardized estimate of the association between age and problem behavior was .63, indicating that older participants were engaging in more problem behaviors than younger participants. Age was also significantly associated with academic achievement. The parameter estimate was -.35, indicating that older participants had lower grades than younger participants. Gender was significantly associated with academic achievement, with a standardized estimate of-.27, indicating that girls had higher academic achievement than boys.

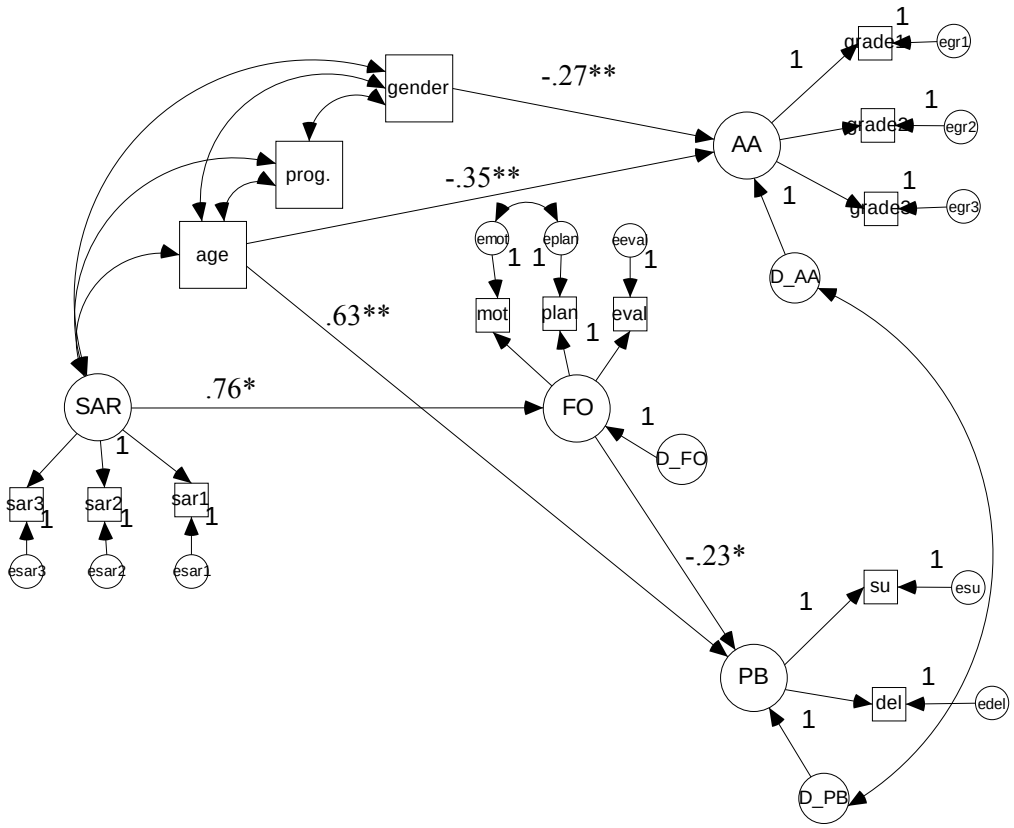

Figure 4: Composite Mediation Model

Process Mediation Model. To further examine the structure of the mediation, the future orientation variable was disaggregated and placed in the model as three separate latent variables. Motivation was indicated by the two motivation scales, planning was indicated by the two planning items, and expectation was indicated by the two expectation scales. According to the fit indices, the measurement model fit the data well; χ^2 (85, N = 183) = 118.58 p = .01, CFI = .965, RMSEA = .047 with a 90% confidence interval of .024 – .065. Given an acceptable fitting measurement model, the second step involved testing the structural model. Results suggested that the hypothesized model fit the data well; χ^2 (106, N = 183) = 149.51 p = .00, CFI = .955, RMSEA = .047 with a 90% confidence interval of .028 – .064. The standardized estimate of the association of

motivation with planning and expectation are .50 and .44, respectively. This finding indicated that as expected, a high level of motivation was associated with high levels of planning and expectation. The standardized estimate of the association of supportive adult relationships with motivation and expectation were .48 and .56, respectively. This finding indicated that the presence of supportive adult relationships was associated with higher levels of motivation and expectation. Finally, only the association between motivation and problem behaviors was significant, with a parameter estimate of -.34 indicating that higher motivation was associated with lower levels of problem behaviors. The estimated standardized indirect association between supportive adult relationships on problem behaviors through motivation is -.16 and is statistically significant ($z = -2.85$, $p = .00$), as evidenced by Sobel's test of indirect effects. This model accounted for 51% of the variance in problem behavior, partially supporting the mediation model, such that supportive adult relationships were indirectly associated with engagement in problem behavior through its association with motivation.

As in the previous model, the covariates of age and gender were significantly associated with the endogenous variables in the model. The standardized estimate of the association between age and motivation was -.14, indicating that older participants had lower levels of motivation than younger participants. Age was also significantly associated with academic achievement and problem behaviors, with parameter estimates of -.36 and .58 respectively. These estimates indicate that older participants had lower grades and engaged in more problem behaviors than younger participants. Gender was significantly associated with academic achievement, with a standardized estimate of-.28, indicating that girls had higher academic achievement than boys.

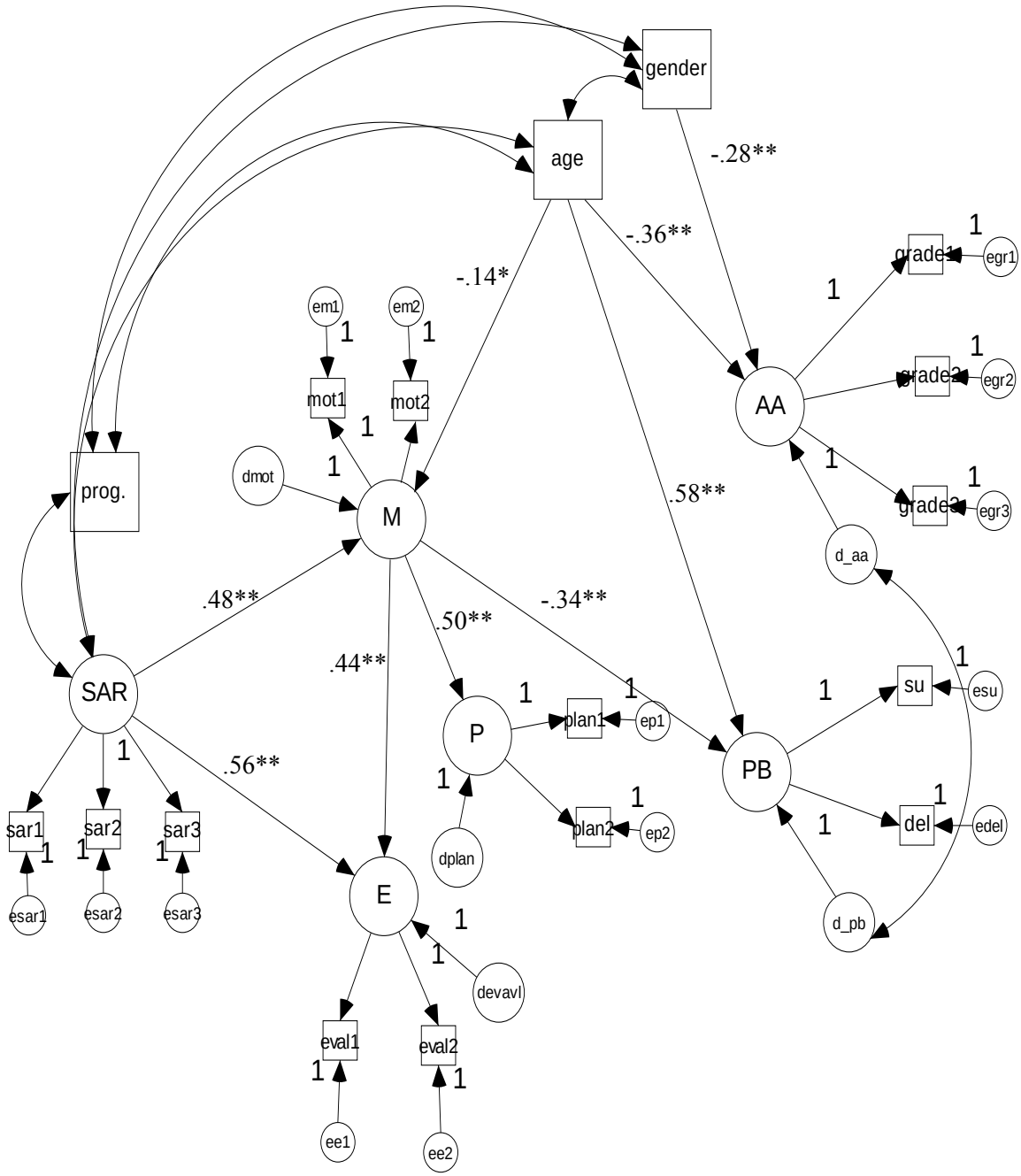

Figure 5: Process Mediation Model

To test moderation, multigroup analysis was conducted to examine whether the associations of supportive adult relationship with problem behavior and academic achievement were similar for youth with low and high future orientation. Similar to the mediation model, when conducting multigroup analyses, a measurement model must be run. However, multigroup CFA tests for measurement invariance, or whether the latent constructs are being measured similarly across groups. To examine measurement invariance, multigroup models were run comparing a model with no equality constraints to a model that forced the factor loadings in each group to be equal.[2] Results indicated both models adequately fit the data as there were no significant differences in fit between models (Table 4). These findings indicated that the latent variables were measured similarly for youth in each group.

Table 4: Comparing Fit across Two Future Orientation CFA Models

Model	χ^2	*df*	$\Delta\chi^2$	Δdf	CFI	RMSEA
Unconstrained	105.56	66	--	--	.904	.058
Factor Loadings	109.89	70	4.33	4	.903	.056

Overall Future Orientation as Moderator. The next step involved testing the structural component of this moderation model. The Future Orientation model was run unconstrained, allowing for separate estimates for the low and high future orientation groups. This unconstrained model fit the data well; χ^2 (70, N = 183) = 110.41, p = .00, CFI = .902, RMSEA = .056 with a 90% confidence interval of .035 - .076. The

[2] Box's test of equality of covariance matrices indicated that each group's covariance structures were not equivalent (M = 27.50, p = .00); therefore, measurement weights were constrained to equality across groups in subsequent analyses.

unconstrained model was then compared to a model that included equality constraints on the factor loadings and structural paths. This model had a significantly worse fit χ^2 (80, N = 183) = 136.61, p = .00, CFI = .862, RMSEA = .063 with a 90% confidence interval of .044 - .080. This significant decrease in fit between the unconstrained and equality constrained model indicates that structural paths within the model need to be free to vary across levels of future orientation. Therefore, after examining the path coefficients in each group in the unconstrained model and considering the research questions, the path from supportive adult relationships to academic achievement was released. As seen in Table 5, releasing this path resulted in a significant increase in model fit ($\Delta\chi^2_{(1)}$ 11.91, p < .01) compared to the fully constrained model. This significant improvement in model fit indicated a significant interaction between supportive adult relationships and future orientation. Based on the coefficients reported in Table 6, among youth with a low future orientation there was a significant positive association, indicating that supportive adult relationships were associated with higher grades. Also, among youth with a high future orientation there was a significant negative association, indicating that supportive adult relationships were associated with lower grades.

Despite this significant improvement in chi square and CFI, the model did not exhibit adequate fit. With the lack of adequate fit, post-hoc modifications were made. Further examination of the unconstrained model suggested releasing the paths from gender to academic achievement and from gender to problem behaviors. Each path was released individually and resulted in a significant increase in model fit (see Table 5). The final model exhibited adequate fit. Also, the fit of this model was not significantly worse than the unconstrained model, ($\Delta\chi^2_{(7)}$ 10.24, p > .10). These findings indicated that in

this sample, high future orientation was associated with girls' academic performance and not with the academic performance of boys. Findings also indicated that low future orientation was associated with girls' decision to take part in problem behaviors, but not boys. The variables explained 27% of the variance in academic achievement in the low future orientation model and 49% of the variance in academic achievement in the high future orientation model.

Table 5: Comparing Fit across Future Orientation Structural Models

Model	χ^2	*df*	$\Delta\chi^2$	Δdf	CFI	RMSEA
Unconstrained	105.56	70	--	--	.904	.058
Equality Constrained	136.61	80	31.05**	10	.862	.063
SAR-AA released	124.70	79	11.91**	1	.889	.057
SAR-AA & G-AA	119.87	78	4.83*	1	.898	.054
SAR-AA, G-AA & G-PB	115.80	77	4.07*	1	.906	.053

SAR-AA indicates the path from SAR to Academic Achievement; G-AA indicates the path from Gender to Academic Achievement; G-PB indicates the path from Gender to Problem Behaviors
* $p = .05$; ** $p = .01$

Table 6: Unstandardized Effects of Predictors on Low and High Future Orientation

	Low Future Orientation	High Future Orientation
SAR → Academic Achievement	.421**	-.592**
Gender → Academic Achievement	-.076	-.726**
Gender → Problem Behavior	-.346**	.019

* $p = .05$; ** $p = .01$

Dimensions of Future Orientation as Moderator. As with the mediation model, the future orientation processes were disaggregated. First motivation was tested as a potential moderator. The fit indices of the CFA in Table 7 demonstrate that both models adequately fit the data and there were no significant differences in fit between groups, indicating that the latent variables were measured similarly across groups.

Table 7: Comparing Fit across Two Motivation CFA Models

Model	X^2	*df*	$\Delta\chi^2$	Δdf	CFI	RMSEA
Unconstrained	102.19	66	--	--	.917	.055
Measurement Weights	106.49	70	4.30	4	.916	.054

The next step involved testing motivation in the structural component of this moderation model. The hypothesized model was run, unconstrained, allowing for separate estimates for the low and high motivation groups. This unconstrained model fit the data well, χ^2 (70, N = 183) = 106.45, p = .00, CFI = .916, RMSEA = .054 with a 90% confidence interval of .031 - .073. As seen in Table 8, the unconstrained model was compared to a model that included equality constraints on the factor loadings and structural paths. This model had a significantly worse fit χ^2 (80, N = 183) = 127.43, p = .00, CFI = .891, RMSEA = .057 with a 90% confidence interval of .038 - .075. A significant decrease in fit from an unconstrained to a constrained model indicates structural paths within the model need to be free to vary across levels of motivation. Therefore, upon examination of the path coefficients in each group in the unconstrained model, and considering the research questions, the path from supportive adult relationships to academic achievement was released. As seen in Table 8, this resulted in a significant increase in model fit. Table 9 displays the unstandardized effects of predictors on low and high motivation. Although neither path is significant, the results indicate a significant difference between youth with low and high motivation on the association between supportive adult relationships and academic achievement, such that the supportive adult is significantly more positive for youth with low motivation. The path from supportive adult relationships to problem behavior was also released, resulting in a significant increase in model fit (see Table 8) Also, the fit of this model was not

significantly worse than the unconstrained model, ($\Delta\chi^2_{(8)}$ 12.30, $p > .10$), indicating that the model fits as well as the unconstrained model. As seen in Table 9, results indicated that there was a significant difference between youth with low and high motivation on the association between supportive adult relationships and problem behavior. This finding indicates that among youth with high motivation, the presence of a supportive adult relationship is associated with decreased problem behavior. The variables explained 19% of the variance in academic achievement in the low motivation model and 24% of the variance in academic achievement in the high motivation model.

Table 8: Comparing Fit across Motivation Structural Models

Model	X^2	*df*	$\Delta\chi^2$	Δdf	CFI	RMSEA
Unconstrained	106.45	70	--	--	.916	.054
Equality Constrained	127.43	80	20.98*	10	.891	.057
SAR-AA released	122.48	79	5.03*	1	.900	.055
SAR-AA, SAR-PB	118.75	78	3.73*	1	.907	.054

SAR-AA indicates the path from SAR to Academic Achievement; SAR-PB indicates the path from SAR to Problem Behaviors
* $p = .05$; ** $p = .01$

Table 9: Unstandardized Effects of Predictors on Low and High Motivation

	Low Motivation	High Motivation
SAR ⟶ Academic Achievement	.338	-.202
SAR ⟶ Problem Behavior	.121	-.248*

* $p = .05$; ** $p = .01$

Planning was also tested as a potential moderator. First, a CFA was conducted to test measurement invariance and both models adequately fit the data indicating that the latent variables are measured similarly across groups. Planning was then tested as the

moderator in the structural component of this moderation model. The hypothesized model was run, unconstrained, allowing for separate estimates for the low and high motivation groups. This unconstrained model fit the data well; χ^2 (70, N = 183) = 98.67.45, p = .00, CFI = .934, RMSEA = .048 with a 90% confidence interval of .022 - .068. The unconstrained model was compared to a model that included equality constraints on the factor loadings and structural paths. This model did not have a significantly worse fit χ^2 (80, N = 183) = 110.70, p = .00, CFI = .929, RMSEA = .046 with a 90% confidence interval of .022 - .066 [$\Delta\chi^2$ (10, N = 183) = 12.03, p = .28]. The lack of a significant decrease in fit indicates that planning does not moderate any associations within the structural model.

Finally, expectation was also tested as a potential moderator. A CFA was conducted to test measurement invariance and both models adequately fit the data indicating that the latent variables are measured similarly across groups. Expectation was then tested as the moderator in the structural component of this moderation model. The hypothesized model was run, unconstrained, allowing for separate estimates for the low and high expectation groups. This unconstrained model fit the data well; χ^2 (70, N = 183) = 101.69, p = .01, CFI = .918, RMSEA = .050 with a 90% confidence interval of .026 - .070. The unconstrained model was compared to a model that included equality constraints on the factor loadings and structural paths. This model did not have a significantly worse fit χ^2 (80, N = 183) = 118.05, p = .00, CFI = .902, RMSEA = .051 with a 90% confidence interval of .030 - .070 [$\Delta\chi^2$ (10, N = 183) = 16.36, p = .09]. The lack of significant decrease in fit indicates that expectation does not moderate any associations within the structural model.

DISCUSSION

This study examined mediation and moderation as possible mechanisms explaining the interplay of future orientation and supportive adult relationships as contributors to positive outcomes in African-American youth raised in areas of risk. Understanding the roles of future orientation and supportive adult relationships is important because both processes are related to positive outcomes, particularly in the lives of youth living in low-income families. This study's findings suggest that these processes are complex and depend on the outcome variable being assessed. Specifically, future orientation mediated the association between supportive adult relationships and problem behaviors, but moderated the association between supportive adult relationships and academic achievement. This study contributes to the understanding of future orientation by elucidating previous associations found in the literature.

Mediation

Composite Mediation Model. This study tested two mediation models: the Composite model and the Process model. In the Composite model, the presence of a supportive adult relationship was positively associated with future orientation, supporting previous research (Kerpelman, Shoffner, & Ross-Griffin, 2002; McCabe & Barnett, 2000b; Nurmi, 1987; Seginer, Vermulst, & Shoyer, 2004; Trommsdorff, 1983). This finding indicated that the presence of a supportive adult relationship has the potential to increase youth's future orientation. Future orientation was also negatively associated with problem behaviors (i.e., substance use and delinquent activities). This finding suggests that a more positive future orientation is related to less engagement in problem behaviors which is also supported by previous findings in the literature (Keough, Zimbardo, &

Boyd, 1999; Oyserman & Saltz, 1993; Trommsdorff & Lamm, 1980; Willis, Sandy & Yaeger, 2001; Wyman et al., 1993). Therefore, this finding suggests that youth who perceive the presence of a supportive adult relationship tend to have a higher future orientation, and in turn tend to engage in less substance use and delinquent activities. In the Composite model there was an indirect association of supportive adult relationships on problem behavior through future orientation as theorized.

However, no direct association was detected between future orientation and the positive youth outcome, school grades. Although this finding was unexpected, the failure to detect a significant association provided support for testing the hypothesis that future orientation and supportive adult relationships interact to affect academic achievement (Baron and Kenny, 1986). This moderation was found in later analysis. Failure to detect an association could also indicate a moderated mediation, such that future orientation mediates the association between supportive adult relationships and academic achievement, but this mediation only occurs within specific age groups (i.e., elementary, middle, high schoolers). This type of interaction would not be detected in the analyses conducted because the strong association between age and grades would suppress these effects. One possibility is that future orientation mediates the association between supportive adult relationships and school grades during more formative years of elementary and middle school but its effect diminishes in older adolescence. During older adolescence, the influence of supportive peers drastically increases (Savin-Williams & Berndt, 1990; Steinberg, 2001, Steinberg & Morris, 2001). It may be that the strength of the strength of each of the paths weakens as youth age, resulting in differential results. This hypothesis was not tested in this study because the sample size lacked the power

necessary to such detect effects. However, future research should investigate this possibility.

There were also interesting secondary findings in the Composite model. The results indicated that older participants had lower grades than younger participants. This finding is consistent with previous literature (Eccles & Midgley, 1989; Gutman and Midgley, 2000; Sanders, 1998; Seidman et al., 1994). For example, Gutman and Midgley (2000) found a significant decline in school grades from 5th to 6th grade among African-American youth living in low income families. Girls also had higher grades than boys. This finding is consistent with research on African-American youth indicating that males are at greater risk for academic difficulties than girls (Brown & Jones, 2004; Carnegie Council on Adolescent Development, 1995; Gutman & McLoyd, 2000; Gutman, Sameroff, & Eccles, 2002; Osborne, 1997; Sanders, 1998). Both findings suggest that although this sample is not generalizable to all youth, it may be representative of African-American youth facing multiple risk factors.

Process Mediation Model. The Process model also provided partial support for Nurmi's model of future orientation. Nurmi theorized that motivation influences planning, which in turn influences expectation. In the Process model, motivation was significantly associated with both planning and expectation. However, planning was not significantly associated with expectation. Failure to detect a significant association between planning and expectation may have been due to the measurement of the planning variable. In the Composite model, the planning indicator had the weakest loading on the future orientation construct. Perhaps a stronger measure of planning behavior would have yielded results that support Nurmi's theory. Failure to detect a significant association

may also have been due to sample size. Using SEM on a smaller sample makes it difficult to detect small and moderate effects. Replicating this study with a larger sample and better measurement of the planning variable may result in a model that fully supports Nurmi's theory. Despite the failure to detect the association between planning and expectation, the Process model supports the theory that future orientation is comprised of these three processes, which are interrelated.

In addition to examining the structure of future orientation, the Process model also examined the differential associations of supportive adult relationships with each of the future orientation processes. The presence of supportive adult relationships was associated with motivation and expectation, but not planning. The measure by which planning was assessed may have contributed to this lack of an observed association between planning and the presence of supportive adult relationships. Alternatively, this lack of association may be due to the type of relationship the youth have with the supportive adult. In the NPU-V area only 53% of adults age 25 and older have a high school diploma and only 22% of adults 25 and older have a postsecondary education (Annie E Casey Foundation, 2004). Familial adults may be a strong source for emotional support, but may lack the knowledge and resources to provide youth with the instrumental support necessary for effective planning. Similarly, a study of African-American mother - daughter dyads found that although all mothers supported their daughters and encouraged the girls to achieve their future academic pursuits, mothers who had attended college were better able to assist their daughters with the academic, financial and emotional preparation necessary to succeed in college (Kerpelman, Shoffner, & Ross-Griffin, 2002). It may be that although the supportive adult

relationships in this study increase youth's motivation and positive expectation of their situation, the adults do not have the knowledge, resources or skills to assist youth in the planning involved in achieving their desired future.

Although this model did not demonstrate an association between future orientation and academic achievement, motivation did mediate the association between supportive adult relationships and problem behavior such that supportive adult relationships was associated with greater motivation, which in turn was related to decreased engagement in substance use and delinquent behavior. According to the model, the other dimensions of future orientation (planning and expectation) had no direct association with either of the outcome variables. This model implies that motivation is an important component of the future orientation variable and is important in influencing positive outcomes. This finding is consistent with both the motivation and future orientation literature. In work on motivation in youth, youth's expectations for success and the amount of value they place on a task influence their choices, performance and persistence (Wigfield and Eccles, 2000). In their research on the expectancy-value theory, Eccles and Wigfield (1995) found that youth's expectation for success was a strong predictor of academic achievement and achievement value. They also found task value to be the strongest predictor of youth's intention to stay on task and the decision to do so (Meece, Wigfield, & Eccles, 1990). Although expectancy-value research is focused on the performance on achievement tasks, this conceptualization can be applied to more general life expectations. It implies that youth with higher levels of motivation will be more likely to work toward achievements and make decisions that will keep them on task

for achieving their goals. Within this population, this may include the decision to limit or avoid engagement in delinquent activity.

Moderation

Overall Future Orientation as Moderator. Moderation of the associations between supportive adult relationships and the outcome variables was tested using four variables: Future Orientation, Motivation, Planning, and Expectation. In the Future Orientation model, future orientation moderated the association between supportive adult relationships and academic achievement. This finding indicated that among youth with a low future orientation, the presence of a supportive adult relationship was related to significantly higher grades. Moreover, these findings indicated that among youth with a high future orientation, the presence of a supportive adult relationship was related to significantly lower grades. The finding among youth with a low future orientation is consistent with previous research conducted by the author (Broomfield, 2004), which found that among African-American girls with low future orientation, the presence of a mentor was related to significantly higher grades. This finding is also supported by work in the resilience literature that describes supportive adult relationships as a protective factor, one that mitigates conditions of risk (Gutman, Sameroff, and Eccles, 2002; Masten, 1994, 2001). According to the literature, low future orientation places youth at risk for a number of negative outcomes such as decreased academic achievement, low school involvement, increased substance use and aggressive behaviors (Nurmi, 1991; Somers & Gizzi, 2001; Wyman, Cowen, Work, & Kerley, 1993).

However, the finding among youth with a high future orientation is puzzling. One possibility for this finding is that depending on level of future orientation, youth receive

differential assistance. It is possible that youth with a low future orientation are directed to adults who provide them with more instrumental help, such as guidance counselors, teachers, or administrators. In contrast, youth with a high future orientation may be receiving emotional assistance, but because these youth espouse positive life future goals, they may not receive the instrumental help necessary for higher grades. Gutman, Sameroff, and Eccles (2002) found that youth exposed to lower risk were less likely to report teacher support than those who were exposed to greater risk. They also found that youth with lower test scores were more likely to report more adult support at school. These supportive adults may be providing youth they perceive as "at-risk" with more directive assistance, manifesting in higher grades. The two high schools located in NPU-V have the lowest graduation rates in the state, 33% and 51%, compared to a 60% graduation rate in the City of Atlanta and 80% graduation rate in Fulton County (Annie E. Casey Foundation, 2004). Therefore adults, although supportive, may accept lower grades if the child seems goal oriented. These adults may believe it is enough of an accomplishment that the child is still in school even if his or her grades are not high.

Unexpectedly, results also indicated that future orientation moderated the associations of gender with academic achievement and problem behaviors. These findings indicated high future orientation was associated with girls' academic performance but not with boys' academic performance and that low future orientation was associated with girls' decision to take part in problem behaviors, but not boys. These findings are consistent with the literature showing high future orientation to be associated with higher academic achievement and low future orientation with increased substance use, delinquency and aggression (Keough, Zimbardo, Boyd, 1999; Oyserman & Saltz,

1993; Peters et al., 2005; Trommsdorff & Lamm, 1980; Willis, Sandy & Yaeger, 2001; Wyman et al., 1993). Research has also found that African-American girls with high educational and career aspirations are at reduced risk for teen pregnancy (Dawson, 1986; Hogan, Astone, & Kitigawa, 1985; Schwab-Zabin, & Hayward, 1993). Since problem behaviors tend to co-occur, it would follow that girls who felt more negatively about their future would be more likely to engage in more risky behavior such as substance and delinquent behavior.

These findings also suggest that future orientation may be a stronger factor for African American girls than for their male peers. These findings are consistent with previous literature that has found African-American girls to be more future oriented around academics and career than boys (Brown, 1997; Johnson & Engelhard, 1992; Kerpelman & Mosher, 2004; Sanders, 1998). However, the fact that future orientation was not associated with boys' decision to take part in problem behaviors or their school grades implies that their choices may be influenced by some other factors that were beyond the scope of this study. One possibility is the influence of societal norms. Research has found that African-American males tend to be more susceptible to neighborhood influences than African-American females leading to engagement in problem behaviors (Crane, 1991; Ensminger, Lamkin, & Jacobson, 1996; Entwisle et al., 1994; Leventhal & Brooks-Gunn, 2000, 2004). . Leventhal and Brooks-Gunn (2004) found that when low income African American youth lived in "high poverty" neighborhoods girls performed better academically then their male peers. However, when low income youth were moved to "low poverty" (or higher income) neighborhoods gender differences disappeared and African-American males were comparable to

African-American females in academic achievement. In addition to neighborhood influences, African-American males also more likely than females to experience school as a hostile environment (Fordham & Ogbu, 1986; Midgley, Arunkumar, & Urdan, 1996). Compounded, it follows that future orientation may not impact the academic and behavioral adjustment in males.

In addition to peer, school and neighborhood influences, these young males are also constantly exposed to images of themselves in mass media in which they are relegated to the roles of athletes, entertainers, and criminals; professions that require little formal education. There are limited images of professional or blue collar males who are gainfully employed and are engaged in their families or communities. These youth also reside in an area where 53 out of 1,000 adults are on probation or parole, twice the rate of the City of Atlanta (26 out of 1,000) and almost 3 times the rate of Fulton County (18 out of 1,000) (Annie E. Casey Foundation, 2004). Therefore, if these young men are not exposed to individuals who confirm this belief in a positive future, they may possess an abstract belief in a positive future, but not a concrete one that affects behavioral and academic outcomes (Mickelson, 1990).

It could be that the presence of a positive supportive male relationship may result in the same similar positive results for boys and girls. It has been found in a sample of African-American youth that the presence of a strong relationship with a father-figure attenuated the association between stress and negative externalizing behaviors for both boys and girls (Grant et al., 2000). Future research should examine risk and protective factors specific to African-American males and females to understand these differences.

Dimensions of Future Orientation as Moderator. Once the processes were disaggregated, again, motivation was the dimension whose associations were similar to those found in the Future Orientation model. Findings from the Motivation model indicated a significant difference between youth with high levels of motivation and those with low levels of motivation in the association between supportive adult relationships and academic achievement. Although the paths are significantly different from one another and the coefficients are different in directions (negative and positive), the nature of the interaction cannot be interpreted because neither path was significant.

In this model, levels of motivation also moderated the association between supportive adult relationships and problem behavior. Among youth with high levels of motivation, those with a supportive adult relationship had decreased engagement in problem behavior. Although this finding is consistent with the literature (Becker & Luthar, 2002; Brody et al., 2000; Grossman & Tierney, 1998; Langhout, Rhodes, Osborne, 2004; Masten, 2001; Rhodes, Grossman, & Resch, 2000; Steinberg, 2001; Willis et al., 2003), further research on a larger sample is needed to confirm this finding, as it was not replicated in the Future Orientation model.

Findings from the Planning and Expectation models indicated that neither variable moderated the associations of supportive adult relationships with academic achievement and problem behaviors. Failure to detect significant interactions between the two levels of the planning variable may have been due to previously mentioned reasons, such as the strength of the planning measure. Also youth, regardless of level of planning behavior, may have had relationships with adults who are unable to assist them with the planning tasks; therefore, no interactions would be evident. However, failure to detect a significant

interaction between expectation and supportive adult relationships was unexpected. It was expected that among youth with low levels of expectation, the presence of a supportive adult would be associated with higher academic achievement and decreased engagement in delinquent activities. The lack of a significant finding may be due to the premise mentioned earlier, that if an individual cannot visualize a positive outcome the presence of a supportive adult may not relate to more positive outcomes. It also may be related to the type of supportive adult, such that school support may moderate this association while parents may not. Future research should assess the differential impacts of adults based on their role in the life of the youth.

Overall, these findings indicate that future orientation mediates the association between supportive adult relationships and problem behaviors and moderates the association between supportive adult relationships and academic achievement. In the mediation model, the presence of a supportive adult relationship was associated with high levels of future orientation, which in turn is associated with decreased engagement in problem behaviors. In the moderation model, among youth with a low future orientation, the presence of a supportive adult relationship was associated with significantly higher grades, and among youth with a high future orientation, the presence of a supportive adult relationship is associated with significantly lower grades. Also, in the motivation model, among youth with high motivation, a supportive adult relationship was related to decreased problem behavior and among youth with low motivation, no association was detected. The fact that future orientation both moderates and mediates associations between the same variables is not uncommon. According to Baron and Kenny, (1986) intermediate variables can serve as both moderators and mediators, such that mediators

help to describe the processes and moderators help to explain at what levels to intervene. In that respect, this study can serve to inform researchers, interventionists and policy makers.

Limitations

This study is limited by its small sample size, cross sectional data and weak measure of the planning variable. Although the sample size was close to 200, which is recommended in SEM analyses, additional participants would have given the analyses greater power to detect effects. However, the ability of this study to consistently detect several associations with a limited sample size implies very strong effect sizes. It will be important to replicate this study with a larger sample to see if the associations remain and whether the other hypothesized associations are detected. Another limitation of this study was the use of cross-sectional data. Cross-sectional data limits the researcher's ability to discuss directionality in the associations detected in the data. Direction of the associations observed in this study can only be inferred based on previous research and theory. Future research should collect longitudinal data to more completely understand the effects of supportive adult relationships on future orientation, academic achievement, and delinquency. Also, this study's measure of planning was not ideal. This measure only consisted of two items which did not load as strongly on the future orientation latent variable as the other indicators. In future research, it will be important to create a stronger measure of planning that includes more items.

Finally, while this study's findings may not be generalizable to all youth, they do have significant implications for youth exposed to a variety of risk factors as this study includes a population that is exposed to multiple risk factors. These risk factors include

limited parental education, a preponderance of female-headed households, low family income, and high rates of unemployment, crime, and neighborhood poverty. According to Neighborhood Counts (Annie E. Casey Foundation, 2004), a child living in NPU-V is more likely to be poor than those living in the City of Atlanta or Fulton County. The child poverty rate in NPU-V is 59%, compared to 38% in the City of Atlanta and 22% in Fulton County. These multiple risk factors place youth at greater risk for negative internalizing and externalizing behaviors (Becker & Luthar, 2002; Brooks-Gunn & Duncan, 1997; Catalano et al., 1998; Dryfoos, 1996; Gorman-Smith & Tolan, 2003; Gutman, Sameroff, & Eccles, 2002; Jessor, 1993; McLoyd, 1998; Seidman 1991; Werner & Smith, 1992).

Strengths

Despite its limitations, this study makes a strong contribution to the literature on future orientation. Few studies have been based on Nurmi's model and examined the three proposed dimensions of future orientation. The majority of research on future orientation has focused solely on motivation and not looked at future orientation as a dimensional construct. This study provided partial support of Nurmi's theory of future orientation and should encourage further research on this important construct. Another strength of this study is the use of an objective outcome measure in the form of report cards, whereas many other studies rely on self reported grades. Although using self-reported grades is an accepted practice, actual school grades are a stronger measure, as participants may misreport their grades. The use of SEM was also a strength of this study because it allowed for the examination of a more complex model while parceling out measurement error.

This study is also one of very few studies on future orientation using an urban, low-income African-American sample. Low income samples are important to study to identify factors that are associated with positive outcomes in the face of considerable risk. Furthermore, this study assessed the effect of future orientation on both positive and negative outcomes. As seen, future orientation was related to each outcome in a different way. Finally, the overall study is an example of participatory research. This study grew from the needs of a community based organization to assess longer-term effects of their program and to survey the community in efforts to provide services relevant to community youth.

Programmatic Implications

The findings of this study have several implications for not only the Center for Black Women's Wellness, but for schools and extra-curricular youth programming, particularly mentoring programs. Specifically, this study emphasizes the importance of supportive adult relationships and a positive future orientation. This study is consistent with research on supportive adult relationships, particularly assigned mentoring in addressing the importance of positive adults in the lives of youth, particularly those facing multiple risk factors (Becker & Luthar, 2002; Catalano & Hawkins, 1996; Cauce et al., 2003; Grossman & Tierney, 1998; Masten, 2001; Smokowski, Reynolds, & Bezruczko, 1999; Steinberg, 2001). Moving forward, it will be important for the Center and other programs to create an environment where youth have access to positive adults who are committed to the program so youth have the opportunity to develop consistent, caring, lasting relationships. In addition to the caring relationships, it is important to integrate activities or an existing curriculum that encourage the development of a positive

future orientation as a component to programming. Engaging youth in discussions about their future, having them think of ways to achieve these goals and affording youth opportunities to implement these plans may place youth on the trajectory to achieving positive outcomes. If possible, integrating the two may be ideal, thus providing youth an opportunity to develop a relationship with a person who will encourage them to think about and plan for their future. In that way, youth are able to construct a positive future with the help of informed adults and can begin to work towards it.

Specific to the Center, these findings can be implemented within existing programming focusing on two populations, community youth and community adults. Currently the SYLTP provides youth with eight weeks of programming on life skills. It may be important to add a component in which youth are engaged in activities where they explicitly discuss their thoughts, goals and plans for the future. In addition, it may be important to re-think the length of the program. According to the literature, supportive adult relationships develop in the face of a consistent caring figure. In order to increase the likelihood of youth developing strong attachments, it may be important to extend the program to span the entire year as opposed to two months during the summer. To address the adult community, the Center can begin with the parent-child relationship. The Center currently offers a parenting program called Askable Adults. In this program, parents are introduced to strategies they can use to communicate more effectively with their children and other community youth about their personal lives. This program also assists adults in engaging youth in conversations about, puberty, safer sexual practices, and STD's. The Center should consider adding a component teaching these adults to converse with youth

about their future orientation. In that way youth will be receiving positive support within the home as well as in extra-curricular activities.

Research and Policy Implications

These findings provide a basis for future research on the effect of future orientation in the lives of African-American youth in low-income families. As previously mentioned, future research in this topic area employing SEM should be conducted with a larger sample. In addition, it will be important to utilize a longitudinal design to assess youth over a significant time period. Using this larger, longitudinal sample, it would be interesting to see whether these relations hold not only across the typical constructs of race and ethnicity, but also socioeconomic and metropolitan status. According to future orientation research, youth living in low-income families tend to have a lower future orientation than those who do not. Given those findings, would future orientation be a stronger mediator or moderator for those with low income than those with a high income? Might it depend on the outcome being assessed (i.e., positive vs. negative outcomes)? Also, does location change the way future orientation mediates or moderates the associations of supportive adult relationship with academic achievement and engagement in problem behaviors?

In addition to assessing the moderating effect of socioeconomic and metropolitan status on future orientation, a stronger measure of planning is necessary when measuring future orientation as a construct. A measure with a larger number of items will allow for greater variability and reliability. To understand planning, it is important to understand what it looks like youth. Starting with qualitative research, we can begin to understand the future orientation process of planning. In addition to asking youth how often they

planned for their future, more specific questions should be added assessing the extent to which they sought out information and talked to other people about future academic and career pursuits. It is important to assess whether youth have conceptualized and explored their future options and whether they have made clear plans and preparations. In developing a stronger measure of planning we will better understand how to promote planning in youth.

Future research should also test Nurmi's future orientation theory in greater detail using a larger, ethnically and economically diverse sample of youth, allowing for robust tests of the measurement of the future orientation processes. For example, a study could randomly divide a large sample and conduct both an exploratory and a confirmatory factor analysis of future orientation. Multi-group analysis could also be conducted to test the future orientation processes across previously mentioned characteristics (ethnicity/SES/metropolitan status). Finally, it will be important to further test the gender interactions observed in the present study to examine whether these results are replicable and whether future orientation is a stronger risk/protective factor for boys than girls.

Another important aspect to examine is the necessity of assessing all dimensions of future orientation, or if it is better to only measure motivation. The majority of research conducted on future orientation measures only the motivational component and the results of this support the finding that motivation is related to positive outcomes in youth. However, although this study failed to detect significant associations of planning and expectation with the outcome variables, it may be premature to say that they have no effect on positive outcomes in youth. In her research on the effect of autonomous-accepting parenting on future orientation, Seginer and colleagues (2004) found that this

parenting style was related to increases in motivation for high school youth. However, she also found that motivation was related to both expectation and planning and planning was related to expectation. Although this study did not look at youth outcomes, it supports the existence of the three-process model of future orientation. While this finding implies that motivation drives the effects of future orientation under the context of a parenting relationship, further research should be conducted looking at how nature of the relationship with the supportive adult differentially effects this association. In this study, the youth were not asked to report their relationship to this adult. It could be that the majority of youth are reporting on relationships with their parents. It is possible that relationships with teachers and coaches would be related to increased planning and expectation which in turn would be associated with more positive outcomes. Future research should also examine the dimensions of future orientation with other predictor and outcomes. Researchers have found that future planning was related to more responsible sexual practices (Dawson, 1986; Rothspan & Read, 1996; Schwab-Zabin & Hayward, 1993). It may be that planning and expectation are affected by other predictors and have effects on other outcomes not measured in this study.

These findings also have implications for policy makers as they speak to the importance of supportive adult relationships in the lives of low-income African-American youth. One major step to be taken, in light of these findings, is a systematic effort to educate adults on the importance of providing youth with positive, ongoing secure relationships, particularly among professionals of color. This information could be distributed to community organizations, schools, religious institutions, and mass media Funding should also be earmarked to support programs such as Big Brother/Big Sisters

whose goal is to provide every youth with a long term relationship with a supportive adult.

In addition to assigned mentors, providing youth with a supportive adult could also translate into decreasing classroom sizes, employing additional school psychologists, and developing more organized extra-curricular activities. It is also important to afford teachers an opportunity to interact with youth in a meaningful way. Decreasing the number of children they are responsible for would allow for more individualized instruction and allow them time to identify and work with youth who may have a negative future orientation. Providing schools in low- income areas with additional resources in the form of guidance counselors, social workers and school psychologists may assist in mitigating the risks these youth are facing daily. Guidance counselors could provide the instrumental support needed to assist youth in planning for their futures, while social workers and school psychologists could assist youth in coping with the issues they face in their day to day lives.

Research has continually found that youth who are involved in organized activities, whether it be a youth development program, sports activities, or social clubs, have more positive academic, emotional and behavioral outcomes than those who are not. Therefore, providing more funding for after-school activities will provide an additional positive environment in which youth are encouraged to develop and work towards a more positive future and are to provided with an additional opportunity to connect with caring adults. In tandem, all of these efforts would be of particular importance in lower-income neighborhoods. However, as it stands under the current funding infrastructure, those who would most benefit from these efforts are the least likely to receive it.

Conclusion

The findings presented in this study provide evidence that future orientation is important in the lives of African-American youth. This study also highlights the importance of supportive adult relationships in these youth's lives. Taking into consideration the protective effects found for participants, these findings should be seriously considered by researchers and practitioners alike. Based on these results, future orientation is a variable that can serve as both a risk and protective factor. Attention to these findings is likely to result in enhanced prevention and intervention programming with African-American youth. In terms of prevention programming, future planning components will be useful for all youth. In terms of intervention, providing mentors or specialized attention to youth with a low future orientation may also result in more positive outcomes.

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Appendix A: Study Measures

Demographics

1. **How old are you?**
    a. 10 years old
    b. 11 years old
    c. 12 years old
    d. 13 years old
    e. 14 years old
    f. 15 years old
    g. 16 years old
    h. 17 years old

2. **What is your sex?**
    a. Female
    b. Male

3. **What grade are you in?**
    a. 5th grade
    b. 6th grade
    c. 7th grade
    d. 8th grade
    e. 9th grade
    f. 10th grade
    g. 11th grade
    h. 12th grade
    i. Graduated from high school
    j. I'm not in school

4. ***How do you describe yourself?***
    a. White
    b. Black or African-American
    c. Asian
    d. American Indian/Alaska Native
    e. Native Hawaiian/Pacific Islander
    f. Hispanic or Latino
    g. Multiracial

5. ***Have you ever participated in the Summer Youth Leadership Training Program at the Center?***
    a. Yes
    b. No

Supportive Adult Relationships

These questions are about parents, guardians, or other adults you care about…

	Strongly Disagree	***Disagree***	***Agree***	***Strongly Agree***
1. There are adults I can depend on to help me if I really need it.	*1*	*2*	*3*	*4*
2. There is not an adult I can turn to for guidance in times of stress.	*1*	*2*	*3*	*4*
3. If something went wrong, no adult would come to my assistance.	*1*	*2*	*3*	*4*
4. There is an adult I could talk to about important decisions in my life.	*1*	*2*	*3*	*4*
5. There is a trustworthy adult I could turn to for advice if I were having problems.	*1*	*2*	*3*	*4*
6. There is no adult I can depend on for help if I really need it.	*1*	*2*	*3*	*4*
7. There is no adult I can feel comfortable talking about my problems with.	*1*	*2*	*3*	*4*
8. There are adults I can count on in an emergency.	*1*	*2*	*3*	*4*
9. There is a special adult in my life who cares about my feelings.	*1*	*2*	*3*	*4*

Future Orientation

Motivation

I want to be a good student…

	Strongly Disagree	**Disagree**	**Agree**	**Strongly Agree**
1. because it is fun.	*1*	*2*	*3*	*4*
2. because it is important to me.	*1*	*2*	*3*	*4*
3. so that I can set a good example for younger people.	*1*	*2*	*3*	*4*
4. to make my parents happy.	*1*	*2*	*3*	*4*
5. because school is interesting.	*1*	*2*	*3*	*4*
6. because I want to get ahead in life.	*1*	*2*	*3*	*4*
7. so that I can give back to my community.	*1*	*2*	*3*	*4*

	Strongly Disagree	**Disagree**	**Agree**	**Strongly Agree**
8. to get praise from my teachers.	*1*	*2*	*3*	*4*
9. because it makes me feel good.	*1*	*2*	*3*	*4*
10. because I want to learn.	*1*	*2*	*3*	*4*
11. because I want my family to live better in the future.	*1*	*2*	*3*	*4*
12. so others will think I am smart.	*1*	*2*	*3*	*4*
13. to show that African-Americans can do it.	*1*	*2*	*3*	*4*
14. because that is what I am supposed to do.	*1*	*2*	*3*	*4*

	Strongly Disagree	**Disagree**	**Agree**	**Strongly Agree**
1. For me, getting good grades in school is important.	*1*	*2*	*3*	*4*
2. For me, finishing high school is important.	*1*	*2*	*3*	*4*
3. For me, going to college after high school is important.	*1*	*2*	*3*	*4*

Planning

	Never	Rarely	Some-times	Often	Daily
1. How often do you think about or plan for your future education?	*1*	*2*	*3*	*4*	*5*
2. How often do you think about or plan for your future career?	*1*	*2*	*3*	*4*	*5*

Evaluation

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. I will probably die before I am thirty.	*1*	*2*	*3*	*4*
2. I think I will have a nice family when I get older.	*1*	*2*	*3*	*4*
3. I am afraid my life will be unhappy.	*1*	*2*	*3*	*4*
4. Bad things happen to people like me.	*1*	*2*	*3*	*4*
5. I think I can have a nice house when I grow up.	*1*	*2*	*3*	*4*
6. I will probably never have enough money.	*1*	*2*	*3*	*4*

Later in life I will…	Strongly Disagree	Disagree	Agree	Strongly Agree
1. Graduate from high school.	*1*	*2*	*3*	*4*
2. Go to college.	*1*	*2*	*3*	*4*
3. Have a job that pays well.	*1*	*2*	*3*	*4*
4. Have a happy family life.	*1*	*2*	*3*	*4*
5. Stay in good health.	*1*	*2*	*3*	*4*
6. Have a baby before I graduate from high school.	*1*	*2*	*3*	*4*
7. Be happy with my life.	*1*	*2*	*3*	*4*
8. Have lots of friends when I grow up.	*1*	*2*	*3*	*4*
9. Be a responsible citizen when I grow up.	*1*	*2*	*3*	*4*

Problem Behavior

Illicit Drug Use

1. **During the past 30 days, on the days you smoked, how many cigarettes, cigars, or blunts did you smoke per day?**
    a. I've never smoked
    b. I have smoked in the past, but not in the last 30 days
    c. Less than 1 cigarette, cigar, etc per day
    d. 1 cigarette, cigar, etc. per day
    e. 2 to 5 cigarettes, cigars, etc. per day
    f. 6 to 10 cigarettes, cigars, etc. per day
    g. 11 to 20 cigarettes, cigars, etc. per day (half a pack to a pack per day)
    h. More than 20 cigarettes, cigars, etc. per day (a pack or more per day)

2. **During the past 30 days, on how many days did you have at least one drink of alcohol (12-ounce beer or one glass of liquor)?**
    a. 0 days
    b. 1 to 2 days
    c. 3 to 5 days
    d. 6 to 9 days
    e. 10 to 19 days
    f. 20 to 29 days
    g. All 30 days

3. **Do you smoke marijuana?**
    a. No, I never tried it
    b. No, but I have tried it at least once
    c. No, but I used to
    d. Yes, I do occasionally (not every day)
    e. Yes, I do every day once or twice
    f. Yes, I do every day 3 or more times

Delinquency

How often do you do the following activities with your <u>friends</u> outside of school?

	Never/ Almost Never	***Once a Year***	***A few times a year***	***Once a month***	***Once a week***	***Almost every day***
1. Do something against the law (like stealing, sneaking into movies).	*0*	*1*	*2*	*3*	*4*	*5*
2. Physical fighting with friends.	*0*	*1*	*2*	*3*	*4*	*5*
3. Destroy other people's property (like graffiti, breaking windows).	*0*	*1*	*2*	*3*	*4*	*5*