

ABSTRACT

OWENS, CAITLYN REIS. The Development of Future Orientation Among Adolescents with a History of Maltreatment: The Role of Caregiver-Youth Relationships and School Engagement. (Under the direction of Dr. Mary Haskett).

Child maltreatment is a public health problem that is associated with many negative emotional, physical, and developmental outcomes. However, there is much variability in the effects of maltreatment and some individuals demonstrate resilient functioning despite experiences of maltreatment. Having a positive future orientation is one protective factor that may buffer against the negative effects of adversity. This study was designed to explore the development of future orientation by examining the transactional relations among youths' future orientation, school engagement, and caregiver-youth relationship among a sample of adolescents involved in the child welfare system ($N=298$). Associations among future orientation, school engagement, and parent-youth relationships were found at various time points during three-year period. To assess if caregiver-youth relationships and school engagement influenced each other to predict future orientation over time, a full cross-lagged path model was analyzed using full-information maximum likelihood estimation (FIML). Results revealed that each of the variables of interest were highly stable. A bootstrapping procedure was also utilized to explore indirect effects. The association between caregiver-youth relationships and future orientation was not mediated by youth school-engagement across the three-year period. Implications of the findings for supporting families involved in child welfare are discussed, as well as recommendations for further research.

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The Development of Future Orientation Among Adolescents with a History of Maltreatment:
The Role of Caregiver-Youth Relationships and School Engagement

By
Caitlyn Reis Owens

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APPROVED BY:

Dr. Mary Haskett
Chair of Advisory Committee

Dr. Kate Norwalk

Dr. David Fitzpatrick

Dr. Kelly Lynn Mulvey

DEDICATION

This dissertation is dedicated to my family, without whom I would not be here today. To my sons, Luke and Jacobs Owens, thank you for letting me be your Mom. It is such a joy watching you both learn and explore the world. To my husband, Micah Owens, thank you for encouraging me to pursue my dreams and always helping me to be my best self. I would not be here today if it wasn't for your unconditional love (and patience). I can't imagine completing this journey without you by my side. To my mom, Jacqueline Gyimesi, and my sister, Courtney Klotz, thank you for always encouraging me to do my best and celebrating every victory (no matter how small). To my Nana and Bumpa, thank you for always being there for me and always being the first ones to call to check on me after a rough day.

BIOGRAPHY

Caitlyn Reis Owens (Formerly, Caitlyn Anne Klotz) was born on September 27, 1991 in Newton, Massachusetts. Caitlyn graduated from James River High School in 2009. She obtained a Bachelor's of Science degree from James Madison University in biology and psychology. After graduating college in 2014, Caitlyn began working as a social worker for a rural social services agency. Her experiences with families involved in the foster care sector inspired Caitlyn to pursue a doctoral degree in psychology. Caitlyn began her graduate school journey in Fall 2016 and focused her clinical and research endeavors on working with families with a history of adversity. During her tenure at North Carolina State University (NCSU), Caitlyn completed a two-year fellowship program with the Carolina Consortium on Human Development and served as a Project Coordinator for an integrated behavioral health program at a high needs pediatric practice. Caitlyn will graduate from NCSU in May 2022 and will be returning to work as a psychologist in a rural community.

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INTRODUCTION

In 2020 an estimated 618,000 children and youth were victims of child abuse and neglect in the United States (U.S. Department of Health & Human Services, 2022). Exposure to maltreatment has been linked to a host of negative outcomes throughout the lifespan, including low academic attainment, behavior problems (e.g., engagement in substance use and delinquency), psychopathology, and relationship difficulties (Duke et al., 2013; Kerker et al., 2015; Romano et al., 2014). The effects of maltreatment can be pervasive and long-lasting even years after the maltreatment has ended (Felitti et al., 1998). However, despite risk for negative outcomes, many youth who have experienced maltreatment demonstrate resilient functioning (Meng et al., 2018). Although there are many potential factors that may promote resilient functioning, the current study focused on one variable that has been linked to resilient functioning among adolescents: positive future orientation. Having an optimistic future orientation has emerged in the literature as an important buffer for youth who have faced adversity (Seginer, 2008). The current study contributes to the understanding of mechanisms underlying the development of future orientation. Specifically, I examined the role of caregiver-youth relationships and school engagement as two factors expected to be associated with the development of an optimistic future orientation among adolescents with a history of maltreatment.

Future Orientation

Adolescence is a period of rapid developmental change in terms of physical, social, and emotional growth. During this time, youth are tasked with a variety of developmental challenges, including learning to live independently and developing an adult identity. Future orientation has been identified as an important aspect of youth development (Seinger, 2008). Future orientation

is broadly defined as an individual's thoughts, motivations, plans, and feelings about his or her future (McCabe & Barnett, 2000). Furthermore, Nurmi (1991) described future orientation as a collection of attitudes and assumptions based off previous experiences that interact with incoming information to help the individual form expectations for their future, set goals, and give personal meaning to these future goals. There are multiple aspects that make up future orientation, including educational goals, career aspirations, health status, and life events (e.g., purchasing a car or a home, getting married) (Johnson et al., 2014). An individual may have different levels of optimism across the various domains of future orientation. For example, an individual may have a positive view towards educational outcomes but not towards life events. The concept of future orientation is grounded in expectancy value theory, thus assuming that current behaviors (e.g., risk-taking behaviors) will be influenced by the individual's future goals and aspirations (Johnson et al., 2014). Therefore, when individuals have an optimistic view of their own future, they will engage in behaviors that will help them achieve their goals and avoid participating in behaviors that may hinder their success. Following is a discussion of some of the outcomes associated with having an optimistic future orientation.

Outcomes associated with future orientation. Optimistic future orientation (often referred to in the literature as positive future orientation) has been linked to a variety of positive outcomes and a reduced risk for problem behaviors. In particular, previous researchers have found links between optimistic future orientation and positive socio-emotional developmental outcomes including higher self-esteem and social competence (Cui et al, 2020; Schmid et al., 2011a; Schmid et al., 2011). Studies have also found links between optimistic future orientation and decreased violent behavior (Stoddard et al., 2011), substance use (Brooks et al., 2018), and alcohol use (Griffin et al., 2004) among adolescents. Additionally, Oyserman and colleagues

(1990) found that having a positive view of one's future predicted lower delinquency among a public school population. Now that I have briefly discussed some of the positive outcomes associated with an optimistic future orientation, we will explore the development of future orientation.

Development of future orientation. There is an emerging field of research that seeks to understand how future orientation develops in adolescents and what factors may be influencing the development of this construct. As a developmental process, it is expected that future orientation would increase as an adolescent ages (Nurmi, 1991). However, there are some conflicting findings in the literature. Although some studies have found future orientation to increase as a youth develops (Borowsky et al., 2009; Steinberg et al., 2008;) other studies have found overall decreases in future orientation (Crespo et al., 2013). Additionally, a study conducted by Oshir and colleagues (2018) found that development of future orientation is not linear and the researchers explored factors associated with this finding (explained later). The results of these studies help to highlight the complex nature of the development of future orientation and the need to better understand other factors that play a role in the development of this construct.

In 2014, Johnson and colleagues created a conceptual framework to explain the development of future orientation and its links to adulthood transition. As shown in Figure 1, the researchers conceptualized future orientation as comprising three parts, including expectations, aspirations and planning. Aspirations captures the adolescent's intentions for the future. This is often referred to as "possible selves" (explained later in more detail). Expectations are the adolescent's impressions of what the future may hold (i.e., hope or optimism about what they believe will happen). Finally, planning is the individual's ability to create a series of logical

action steps to achieve these goals. According to the model, future orientation develops across the lifespan and is influenced by early life experiences—such as experiences of maltreatment—and environmental determinants. In this model, the complex interactions between the attributes of the environment and attributes of the individual influence the development of future orientation. Furthermore, these factors ultimately affect the individual's transition to adulthood. I used this model to understand how two factors (caregiver-youth relationships and school engagement) interacted with each other and influenced the development of future orientation among adolescents with a history of maltreatment.

It is also important to note that Johnson and colleagues (2014) discuss three factors that they argue are potentially important to take into account when trying to understand the development of future orientation: (1) gender, (2) race/ethnicity, and (3) parenting behaviors. Previous research indicates that females tend to have higher levels of future orientation compared to males (Borowsky et al., 2009; Crespo et al., 2013). Some studies have also found differences in the development of future orientation among people based on their racial identity. More specifically, researchers have indicated that African Americans and Hispanic youth tend to hold a more negative view of their future when compared to Caucasian youth (Jamieson & Romer, 2008). It is important to note that there is very limited literature on the differences in future orientation among various racial groups, as well as little research untangling the differential effects of race and social economic status. Finally, the researchers discuss the importance of parenting in the development of future orientation. Parenting, in particular the quality of caregiver-youth relationships, is one of the primary variables of interest in the current study and will be discussed in detail below.

At-risk youth & future orientation. As posited in the theoretical model, early experiences may play an important role in the development of future orientation. The current study was designed to explore how future orientation developed in a sample of individuals with involvement in the child welfare system due to experiences of maltreatment. Youth with a history of maltreatment may have a harder time meeting important developmental milestones given their vulnerability to negative outcomes, including substance use, psychopathology, cognitive deficits, and negative peer involvement (Duke et al., 2013; Jimenez et al., 2017; Romano et al., 2015; Sheridan et al., 2017). Interestingly, previous research indicates that female youth tend to demonstrate more positive outcomes than males even when they are faced with difficult rearing environments (McGloin & Widom, 2001), therefore, gender is an important factor to take into account when exploring outcomes for this particular population. A vast number of studies take a deficit approach to understand the effects of maltreatment on development; in contrast, the current study is grounded in a resilience framework in order to understand how to best support this population and indicate areas for potential intervention.

The developmental literature defines resilience as a process in which a child is able to positively adapt in one or more domains of functioning despite experiences of adversity (Cicchetti, 2013). Additionally, resilience theory posits that resilience is a dynamic process that vacillates over time in response to fluctuating resources and risk factors (Ungar et al., 2013). Thus, taking a longitudinal approach is important in understanding underlying mechanisms involved in the development of processes associated with positive adaptation—such as future orientation—in response to changing contexts (risk and protective factors) (Oshri et al., 2018). To date, there have been two longitudinal studies that examined future orientation among individuals with a history of maltreatment.

Cui and colleagues (2020) sought to understand whether positive future orientation constricted the downstream effects of maltreatment on delinquent behaviors, substance use, self-esteem, and social competence. The investigators utilized data from the Longitudinal Studies on Child Abuse and Neglect (LONGSCAN) project. LONGSCAN measures were administered for the first time when the children were 4 years old and were administered again every 2 years until they reached 18 years old. It is interesting to note that researchers controlled for gender in this study but did not control for race. However, the researchers did find significant differences in the racial distributions between the maltreated group and the non-maltreated group, but did not discuss this finding further. Results revealed that compared to non-maltreated youth, youth with a history of maltreatment were more likely to engage in delinquent behaviors and have lower self-esteem. However, the researchers did not find significant associations between youth with a history of maltreatment and increased levels of substance use or decreased levels of social competence. The researchers suggested that these findings showed that other unexamined protective factors may play a role in this finding. The researchers also found that future orientation significantly reduced the downstream negative effects of maltreatment on youths' delinquent behaviors and substance use. More specifically, future orientation at age 14 influenced changes in delinquent behaviors and substance use from ages 16 to 18. Additionally, future orientation at age 14 predicted self-esteem at age 18. This study highlights the potential of increasing a youth's future orientation to prevent maladjustment among youth who have experienced maltreatment. Although this study provides some foundation for understanding future orientation among this particular population, Cui and colleagues did not examine factors that may influence the development of future orientation. The current study fills this gap by

examining whether caregiver-youth relationships and school engagement interact with each other and influence the development of future orientation.

Oshri and colleagues (2018) utilized data from the National Survey of Child and Adolescent Well-Being (NSCAW-I) to understand the growth trajectories of future orientation among maltreated youth and demonstrated that future orientation was malleable. The sample consisted of 1,461 participants. 56% of the sample was female with a mean age of 12.22 (SD=1.58) at baseline. The sample was racially diverse (52.50% Caucasian, 31.55% African American, 8.15% American Indian, 2.81% Asian/Hawaiian/Pacific Islander, and 4.79% Other). Results revealed three classes of growth trajectories of future orientation: high-persistent, low start/increasing, and high start/decreasing. The researchers demonstrated that future orientation was not completely predetermined by earlier factors and that many maltreated youth demonstrated plasticity in future orientation. In particular, youth in the low start/increasing future orientation group who experienced reductions in risk factors (such as exposure to less harsh discipline) and increases in resources over time (such as better peer relationships and more school engagement) exhibited growth in future orientation; the future orientation of that group was eventually similar to those in the high-persistent group. However, the investigators did not take into account the complex transactional relations between risk and protective factors in relation to the development of future orientation. Thus, it is hard to say how the factors examined in this study potentially interacted in prediction of changes in future orientation over time. In addition, the investigators only examined harsh parental discipline as a risk factor and did not account for the potential protective nature of warm parenting through high quality caregiver-child relationships. The current study was designed to fill this gap in the literature by taking a longitudinal approach and closely examining the transactional relations between two protective

factors—positive caregiver-youth relationships and a high level of school engagement—as they influence future orientation. Following is a discussion of the two potential protective factors of interest.

Caregiver-Youth Relationship Quality

Caregiver-youth relationship quality has been widely studied and a large body of evidence indicates that caregivers play a vital role in the development of their children (Steinberg, 2001). The literature often focuses on three domains to understand caregiver-youth relationships: harmony, autonomy, and conflict (Steinberg & Silk, 2002). Harmony refers to the youth's perceived feeling of support and closeness to their parent. Autonomy refers to the youth's perceptions of individuality from the parent but still feel connected to the caregiver. Finally, conflict refers to the frequency and intensity of disagreements between youth and caregivers and how they overcome these difficulties. Previous literature indicates that high quality caregiver-youth relationships are important in the positive adjustment of youth (Brown & Shillington, 2017; Luthar et al., 2000). In contrast, weak caregiver-youth relationships have been associated with withdrawal, aggression, delinquency, and depressed mood in adolescents (Branje et al., 2010; Fanti et al., 2008; Hair, et al., 2008). Now that we have explored caregiver-youth relationships in a broad population, I will discuss the literature on caregiver-youth relationship quality among youth with a history of adversity.

At-risk youth & caregiver-youth relationships. It is important to begin our discussion on at-risk youth and caregiver-youth relationships by highlighting the use of the term “caregiver” instead of “parents.” Although parents are often the primary caregivers to children and youth, it is not always the case for individuals involved with the child welfare system. Therefore, in the current study, the term caregiver is utilized to refer to any adult(s) that maintain custodial

responsibilities for a child. Our inclusive definition includes biological parents, kinship placements, adoptive parents, foster families, and other forms of guardianship. In 2015, Bell, Romano, and Flynn conducted a study as part of the Ontario Looking After Children (OnLAC) project to examine the development trajectory of children in out of home care or kinship care over a 4-year period. The researchers found that placement type was a non-significant predictor of membership in the resilient trajectory group (defined as lack of internalizing or externalizing difficulties). The researchers attributed these findings to placement stability and use of positive parenting practices. Therefore, there is some literature to suggest that quality of the caregiver child relationship may be important to examine beyond the type of caregiver.

Much of the literature on caregiver-adolescent relationship quality utilizes community samples and therefore may underestimate the effects of caregiver-youth relationship quality on outcomes among high-risk families (Steinberg, 2001). However, a growing number of studies have been designed to understand the role of caregiver-youth relationships in the adjustment of youth who experienced maltreatment. In 2017, Withers, McWey, and Lucier-Greer found that caregiver-youth relationship quality of maltreated youth was associated with subsequent adolescent depression, delinquency, and aggression two years later. Additionally, caregiver-youth relationships that involved providing a secure psychological base for adolescents were associated with lower levels of negative mental health outcomes. Another group of researchers utilized a sample of 620 early adolescent youth with a history of maltreatment or youth labeled “high risk” for maltreatment due to low socioeconomic status, maternal substance use, and other risk factors. The researchers found direct effects between maltreatment history and frequency of aggressive behaviors (Fagan, 2020). More specifically, children with at least one confirmed allegation of maltreatment between birth and age 10 had a significantly greater frequency of

aggressive behaviors at age 12 compared to youth without a history of maltreatment. Children with closer, warmer relationships with caregivers had less instances of aggressive behaviors. Interestingly, there was a significant three-way interaction of race, caregiver-youth relationship quality, and aggressive behaviors such that caregiver-youth relationship quality buffered the association between maltreatment and aggressive behaviors for White, but not Black youth. The authors suggested that Black children had stronger bonds with their caregivers compared to White children in the sample, thus rendering the interaction non-significant. The authors also noted that Black children in the sample may have had supportive relationships with other non-primary caregivers in their lives. Therefore, although the authors documented important links between maltreatment and caregiver-youth relationship quality, they also provided evidence that the association is complex and that researchers should take race into account when examining these associations. It is important to note that neither study discussed here accounted for the complex associations between risk and protective factors in relation to positive adaptation as they did not examine how caregiver-youth relationships evolve in relation to other variables, such as school engagement and future orientation. Thus, the current study sought to fill this gap.

Caregiver-youth relationships and future orientation. There are some previous research studies linking caregiver-youth relationships and future orientation, such that relationships with supportive caregivers and reliable, caring, competent adults may help facilitate the development of a positive future orientation (Aronowitz 2005; Kerpelman et al., 2008; McCabe & Barnett, 2000; Trommsdorff, 1983). Previous studies indicate that caregivers directly and indirectly influence the development of future orientation by establishing standards, serving as role models, helping youth cope with developmental tasks, and demonstrating to youth that attributional beliefs can influence life outcomes (McCabe & Barnett, 2000; Nurmi, 1991). For

example, when caregivers help their child set realistic expectations (e.g., obtaining good grades to go to college) the child will experience feelings of success which may motivate them to continue working towards their goals. Seginer (2008) theorized that parenting practices influence the development of future orientation indirectly through the impact of parenting on youths' self-esteem. Although these studies provide strong evidence for a connection between quality of caregiver-youth relationships and adolescents' future orientation, there are still many gaps in the literature. Specifically, there is a lack of understanding about how the association between future orientation and caregiver-child relationship quality unfolds over time in relation with other factors that are critical in adolescence. One of these factors is the degree to which adolescents are engaged in school. The current study seeks to fill this gap by taking a transactional approach to understanding this phenomenon and highlighting potential areas for intervention.

School Engagement

School engagement is a multifaceted construct that includes students' perceptions, behaviors, and feelings about their experiences in school (Cage et al., 2019). Previous literature indicates that school engagement is a malleable, multifaceted construct that includes behavioral, emotional, and cognitive domains (Fredricks et al., 2004). Behavioral engagement refers to a child's active listening, participation in class assignments and homework, and school attendance. Cognitive engagement refers to self-regulation abilities and a child's involvement in learning. Finally, emotional engagement involves a student's values and feelings towards school including interest in school and connectedness to school (Leonard et al., 2016). To illustrate, a highly engaged student regularly attends and enjoys school, actively participates in classroom discussions and completes assignments on time, manages their feelings appropriately, and feels a strong sense of belonging at their school.

High levels of school engagement have been associated with positive outcomes for youth. A high level of school engagement can reduce substance use and delinquent behaviors (Caraway, et al., 2003). In addition, school engagement has been found to predict higher grades and better school retention (Fredricks et al., 2004). Conversely, low levels of school engagement have previously been associated with higher rates of delinquent behavior (Leslie et al., 2010) and higher rates of depressive symptoms (Resnick et al., 1997).

School engagement of at-risk youth. The focus of the study is children involved in the child welfare system, particularly those with a history of maltreatment. Child welfare involved youth are at a heightened risk for negative outcomes regarding school. For example, child welfare involved youth have higher rates of school dropout compared to non-child welfare involved youth (Cournet et al., 2001), as well as higher grade retention and suspension rates (Trout et al., 2008). Unfortunately, much of the literature on youth involved with child welfare does not account for possible buffering effects that greater school engagement that could mitigate these negative outcomes. One group of researchers did find that among youth involved with child welfare, greater school engagement was linked to lower engagement in risky behaviors (i.e. delinquency and substance use) (Leslie et al., 2010). Additionally, Leonard, Stiles, and Gudino (2016) utilized a sample of youth involved in child welfare to examine how the relations among school engagement, achievement, and mental health outcomes evolved over time. The researchers found that increased school engagement was associated with an increase in reading and math abilities. Additionally, increased school engagement was associated with a significant decrease in adverse mental health symptoms. The researchers highlighted that school engagement is an important factor in promoting positive youth development beyond just school-related outcomes. The researchers proposed that is important to understand factors that foster

positive school engagement of child welfare involved youth. In the current study, I conducted a closer examination of how school engagement evolves in relation to changes in caregiver-youth relationships and future orientation over time. In the next section, I will briefly summarize research on the associations between the degree to which youth are engaged in their school and the degree to which they focus on what might happen in their future careers and relationships.

School engagement and future orientation. Many researchers interested in future orientation have explored the links between future orientation and various academic outcomes (e.g., achievement, dropout, etc.). As explained earlier in the paper, however, fewer studies have examined the association between future orientation and school engagement. Much of the literature in this area has been conducted by one group of researchers and focuses on one aspect of future orientation, possible selves. Possible selves is theorized to be one of the underlying constructs of future orientation according to the current study's theoretical model. Possible selves are defined as hypothetical images of what the adolescent would like to obtain and images they would like to avoid, and are believed to be critical in motivating youth to obtain these images (i.e. behavior strategies needed to obtain these goals). These states may also reflect current situations (i.e. images of the individual being a good student) (Oyserman & Markus, 1990). Oyserman and colleagues conducted studies that identified links between possible selves and school involvement among African American youth (Oyserman & Fryberg, 2006). They found that youth with positive academic-focused possible selves had less juvenile involvement and better school outcomes compared to youth with more negative academic-focused possible selves (Oyserman & Markus, 1990; Oyserman & Saltz, 1993). These studies provide some foundational evidence for the links between future orientation and school engagement; however, these studies focused on just one aspect of future orientation, possible selves. Associations

between future orientation and school engagement may be different when multiple aspects of future orientation are taken into account. Additionally, as explained in the theoretical model of this study, it is also important to understand factors that may foster the development of future orientation, such as caregiver-youth relationships. The following section will link together caregiver-youth relationships, school engagement, and future orientation to provide a better understanding for the rationale behind this study.

Caregiver-Youth Relationships, School Engagement, & Future Orientation

Previous work by researchers in the field of future orientation found important links between quality of caregivers-youth relationships and level of school engagement on youths' future orientation; however, these studies did not examine associations between these variables over time or focus on youth with a history of child maltreatment, the focus of the current study. To date, the closest study to understanding these associations was conducted by Crespo and colleagues (2013). In their longitudinal study, the researchers demonstrated that family and school connectedness both directly and indirectly influenced the development of future orientation. The researchers collected data at three time points (each separated by a year) of 1,774 adolescents in New Zealand. Participants were between the ages of 9 and 16 ($M=12.12$) years old at the first time point. The sample consisted of individuals who identified as New Zealand European (57.8%), Maori (26.9%), and Pacific Island/Asian New Zealand (15.3%). School connectedness, family connectedness, and future orientation were measured at each time point. Preliminary analyses revealed significant between-subject differences across all three variables. More specifically, girls reported significantly higher school connectedness and future orientation compared to males. Conversely, males reported significantly higher family connectedness. The researchers did not examine any differences in the variables of interest

across racial/ethnic backgrounds. There were significant declines in school connectedness and future orientation between time points 2 and 3 and significant decreases in family connectedness between time points 1 and 2. The researchers attributed the decline in future orientation to adolescents starting to have less optimism about the future due to an increased number of challenges that arise over time. Almost half the sample transitioned schools during the study and this hardship may have contributed to the decrease in future orientation. A decrease in future orientation in relation to hardship is an interesting hypothesis, but the authors did not explore this idea any further. According to the developmental literature, future orientation increases as a youth ages; however Crespo and colleagues hypothesized that experiencing challenges or adversity may have hindered the typical development of this construct. The researchers also found that family connectedness predicted future orientation both directly and indirectly via school connectedness. Additionally, school connectedness predicted future orientation both directly and indirectly via family connectedness. The researchers state that their findings highlight how children who establish a meaningful place in their families can establish themselves at school and form supportive relationships with others, such as teachers and peers. As a result of having these connections, these youth feel a sense of security that helps them to explore the outside world and examine possible life options for career and life. Furthermore, the researchers noted that students with strong connectedness to school and their families can successfully navigate developmental challenges associated with adolescence and successfully transition to adulthood. Thus, future orientation is an important factor to understand and promote in all adolescents. The researchers' investigation was an important contribution to the literature and provided a strong foundation for further study.

Crespo and colleagues (2013) did not examine the degree to which the findings were consistent across low- and high-risk youth. Youth with a history of maltreatment tend to have more difficulties with relationships and with school functioning; therefore, the association between the variables of interest may be different for this vulnerable group. The researchers also measured “psychological future” to represent future orientation. Thus, questions about the future were abstract (e.g. “I often think about my future”; “I am the sort of person who sets goals and works hard to achieve them”) and did not capture concrete experiences across dimensions, such as future expectations for education, family, and career. It is important to understand the role of other constructs of future orientation, as conducted in the current study. Crespo and colleagues’ (2013) study provides evidence for the importance of understanding the associations among caregiver-youth relationships, school engagement, and future orientation. I believe that understanding these same associations in youth involved with the child welfare system could provide an important area for intervention for this particular population.

Current Study

Enhancing future orientation has the potential to be a promising route to help youth with a history of maltreatment demonstrate resilient functioning. However, in order to understand how to enhance youth’s future orientation, we need to understand how it changes over time by exploring factors that might be associated with a more optimistic or positive future orientation. By understanding these factors, we can move the emerging literature on future orientation forward and enhance the intervention literature on this concept.

The current study provides information about how future orientation develops within a particular population of youth with a history of adversity, youth with a history of maltreatment. Adolescence is a period of rapid development, in which youth experience internal changes (e.g.,

physical and psychological change) while also dealing with the stress of outside pressures (e.g., societal and economic). Thus, this time period may make it challenging for individuals to successfully develop the ability to think about and plan for their future. According to Jose and Crespo (2012), feeling secure and engaged to family and school helps adolescents navigate this challenging period by providing stability and a sense of belonging. Individuals with a history of maltreatment face stressors that can make navigating these normative developmental tasks more difficult. Therefore, it is important to understand how factors such as caregiver-youth relationships and school engagement may aid in the development of future orientation and help this population of youth successfully transition to adulthood. Johnson, Blum, and Cheng (2014) proposed a theoretical model explaining the development of future orientation. In the current study, I sought to test this framework through a focus on a unique population of youth with a history of maltreatment. Finally, the current study was designed to provide insight into targeted interventions to help youth with a history of maltreatment successfully transition to adulthood. Overall, it was anticipated that this study would be an important contribution to the maltreatment literature using a resilience lens.

In the current study, I sought to understand whether and how caregiver-youth relationships interacted with school engagement over time to enhance the development of future orientation among maltreated youth. Following were the aims of the study:

(1) To identify the strength of associations among caregiver-youth relationships, school engagement, future orientation, and confounding variables (gender and race/ethnicity) over time. I hypothesized that all variables would be significantly related to one another at each of the time points and over time.

(2) To assess if caregiver-youth relationships and school engagement influenced each other to predict future orientation over time. In particular, I wanted to determine whether the expected association between caregiver-youth relationships and future orientation was mediated by youth school-engagement. I hypothesized that caregiver-youth relationship quality would positively influence future orientation directly and indirectly via the influence of parent-youth relationship quality on school engagement.

Method

Description of Extant Data Source

The current study utilized data from the second National Survey of Child and Adolescent Well-Being (NSCAW-II). The NSCAW-II is a national longitudinal data set of children whose caregivers were involved in Child Protective Services (CPS) investigations for suspected abuse or neglect between February 2008 and April 2009. This longitudinal study was sponsored by the Office of Planning, Research, and Evaluation, Administration for Children and Families, and the U.S. Department of Health and Human Services. NSCAW-II was established to examine the well-being of children involved in child welfare and to gather information about instances of abuse and neglect. The data set includes information about children's families, provides information about child welfare services families received, and captures key characteristics of children's development (Dolan et al., 2011).

Sampling Strategy & Participants

Similar to the NSCAW-I (NDACAN, 2007), the NSCAW-II utilized a two-stage stratified sampling design. In the first stage, the United States was divided into nine sampling strata. The first eight strata consist of the eight states with the largest child welfare cases across the nation. The final, ninth stratum, contains the remaining 38 states and the District of

Columbia. Four states were excluded from the study due to difficulties with case workers contacting families before the NSCAW research team, thus the researchers decided to not include these sites in the study. In the second stage, primary sampling units (PSUs) were formed at the county level within each of the strata. Participants were randomly selected from child welfare agencies across 81 PSUs. The sample was constructed to be representative of all U.S. children who were subjects of agencies' investigations for alleged maltreatment during the specified sampling period (Dowd et al., 2012).

The full NSCAW-II sample includes 5,872 children and youth ranging in age from birth to 17.5 years old at the time of sampling. In the current study, I included adolescents ranging from age 11 years old to 14 years old at baseline, $N=657$. In order to identify youth with a history of maltreatment, I then selected cases with substantiated a CPS investigation ($N=333$). Finally, in order to complete the statistical analyses each participant needed to have one data for each of the variables of interest (future orientation, caregiver-child relationships, and school engagement) at one or more of the three time points. Six participants were removed for missing data for caregiver-child relationships and two participants were removed for missing data from the school engagement variable. Three participants were removed for missing data on future orientation and 20 participants were removed because they had completed high school or started a family of their own. The final sample consisted of 298 participants. Data were analyzed using IBM SPSS Statistics (version 27) and Mplus Version 7.3 (Muthen & Muthen, 1998-2012).

Descriptive statistics are presented in Table 1. The final sample consisted of 298 youth (53.7% female). Average age was 12.5 ($SE=1.13$) years old. Many of the youth resided with a biological or stepparent (61.8%). 36.6% of participants were involved with CPS due to suspected abuse, 20.8% were involved for negligence, 14.8% were involved due to caregiver difficulties

(e.g., substance use, substance exposure, domestic violence) and 12.4% were due to other concerns (e.g. voluntary relinquish, abandonment, etc.). The sample consisted of a mix of races: White (45.3%), Black (33.2%), and American Indian (11.4%). The full sample of NCSAW-II participants had a similar breakdown of races.

Data Collection Procedures

Baseline data were collected following the close of the individual's CPS investigation. Time two data were collected 18 months after the investigation and Time three data were collected 36 months after the investigation. In the NSCAW-II, data were collected from interviews with children, caregivers, teachers, and child welfare case workers. Computer-assisted personal interviewing (CAPI) and audio computer-assisted self-interviewing (ACASI) methods were used with adult caregivers and children over the age of 11 years old. The CAPI and a modified version of the ACASI were used to collect data from children under the age of 11. Data were collected from only one child in each family, so children were not nested within caregivers. Use of these extant data for the current study was approved by the NC State University IRB.

Measures

Future orientation. Youth completed a self-report measure of their future orientation at each of the three time points. This measure consisted of a six-item scale adapted from the Expectations About Employment, Education, and Life Span Inventory (Resnick et al., 1997). Questions assessed youth's expectations about achieving adult milestones such as having a good job by age 30, graduating from high school, and living to be at least age 35. Responses ranged from 1 (no chance) to 5 (it will happen).

Previous studies utilizing this measure (all six questions) with adolescents found that higher scores predicted better physical health (McDade et al., 2011) and lower engagement in risky behavior (Resnick et al., 1997). A previous study using the NCSAW-I data set indicated low internal consistency of the total score for this measure (Oshri et al., 2018). Oshri and colleagues (2018) found that “Having a child by 18,” “Getting married by 25,” and “Having children and family” had weak loadings on the future orientation variable (range .11 to .27). Therefore, I performed a Confirmatory Factor Analysis at each time point to check the factor structure of this variable and to determine what questions should be included. Results revealed similar loadings to Oshri and colleagues (2018). As a result, the same three questions mentioned above were dropped at all three waves. A cumulative score was calculated, with higher scores indicating a more positive future orientation. Internal consistencies for this measure were $\alpha_1 = 0.98$, $\alpha_2 = .99$, $\alpha_3 = .99$.

Relationship with primary caregiver. The Rochester Assessment Package for Schools (RAPS; Lynch & Cichetti, 1997) was utilized to assess the youths’ perceptions of their relationships with their primary caregivers at each of the three time points. Youth responded to 12 items that measured their perceptions of emotional security, parental involvement in their lives, parental support of youth independence, and consistent rule setting and enforcement. Youth rated how true each statement was (1=not at all true; 2= not very true; 3=sort of true, and 4= very true). To measure parental emotional security, youth were asked how true it was that a youth felt good, mad, or happy with their caregiver. To measure involvement, youth were asked questions about the caregiver’s interest in, time spent with, and things done with the youth. Support of youth independence was measured by asking youth questions about their caregiver’s trust of them and whether the youth was able to make their own decisions. Consistency and rule

setting (structure) was measured by asking youth about the fairness of their caregiver's treatment, their caregiver's belief in the youth's abilities, and the youth's understanding of their caregiver's wants. A cumulative score was created with higher scores indicating more optimal relationships with caregivers. Internal consistencies for this measure were $\alpha_1 = 0.91$, $\alpha_2 = .83$, $\alpha_3 = .83$.

This scale has demonstrated good internal consistency in the NSCAW II sample ($\alpha = 0.88$; Dolan et al., 2012). Previous studies that have utilized the RAPS have found that caregiver-youth relationships mediate the relation between youth exposure to violent behaviors and adolescent behavior problems (Yoon et al., 2015).

School engagement. Youth reported on their school engagement by completing 11 items adapted from the Drug-Free School Community Act Outcome Study Questionnaire (Dowd, Kinsey, Wheelless, & Suresh, 2002) at each of the three time points. Some example items included: "How often do you get along with your teacher?" and "How often do you try to do your best work in school?" For each of the items, participants responded with: 1=Never; 2=Sometimes; 3=Often, and 4= Almost Always. A cumulative score was calculated for each of the time points, with higher scores indicative of greater school engagement. Internal consistencies for this measure were $\alpha_1 = 0.72$, $\alpha_2 = .74$, $\alpha_3 = .82$. Previous studies utilizing this measure have also found acceptable internal consistency for the measure ($\alpha = .73$) (Leonard, Stiles, & Gudino, 2016). This measure has been found to predict adolescent mental health functioning (both internalizing and externalizing symptoms) and academic achievement in reading and math (Leonard et al., 2016).

Results

Correlation Analyses

Descriptive statistics, including correlations, means, and standard deviations for each of the analytic variables, are presented in Table 2. To address the first aim of this study, which was to examine the associations over time between caregiver-youth relationships, school engagement, and future orientation, bivariate correlations were conducted between each variable across the three time points. Associations between these variables and gender and race/ethnicity were also examined. Identifying as White was not significantly associated with any of the variables of interest except for gender ($r=-.17$). Being female was associated with school engagement at time point two ($r=.17$) and relationship with caregiver at time point one ($r=-.17$). Correlations within each time point ranged from .19 to .36. All of the with-in time correlations between variables were statistically significant. Correlations among variables between adjacent time points ranged from .09 to .44. All correlations were statistically significant, with the following exceptions: future orientations at time two and relationship with caregiver at time three; and school engagement at time two and relationship with caregiver at time three. Correlations between non-adjacent time points (i.e., time 1 and time 3) ranged from .11 to .39. All were statistically significant with the exception of time one relationship with caregiver and time three future orientation; and time 1 school engagement and time three relationship with caregiver.

Longitudinal Panel Model with Mediation Analyses

To assess if caregiver-youth relationships and school engagement influenced each other to predict future orientation over time (aim 2), a full cross-lagged path model was analyzed using full-information maximum likelihood estimation (FIML) to retain the full sample. In using FIML, missing data is neither replaced nor imputed. Instead, the missing data is handled within

the analysis model. This method is preferred over others because it takes into account all available pieces of data, corrects for multivariate non-normality in the data, and avoids listwise or pairwise deletion (Sentse et al., 2016). Model fit was compared with multiple analyses. Although I evaluated for a significant result from a chi-squared test, chi-squared analyses are very sensitive to sample size; therefore, I used additional methods to assess model fit. First, I assessed model fit using Comparative Fit Index (CFI) for which acceptable model fit is indicated by values of 0.95 or higher. Second, the Root Mean Error of Approximation (RMSEA) was examined, with acceptable model fit being below .06. Finally, Standardized Square Residual (SRMR) was considered, with acceptable model fit being below .08 (Hu & Bentler, 1999).

An autoregressive cross-lagged model was computed for caregiver/youth relationships-school engagement-future. In this model, selected pathways were only included in one direction based on the theoretical model discussed (See Figure 2). Potentially confounding variables (gender and race/ethnicity) were controlled for at time one for the main analyses. The model fit the data well χ^2 (df=28) = 40.35, $p=.06$, root mean square error of approximation (RMSEA)=.04, comparative fit index (CFI)= .97, standardized root mean square residual (SRMR)=.07.

The standardized and unstandardized coefficients for the proposed directional paths among relationship with caregiver, school engagement, and future orientation (with standard errors) are presented in Table 3 and statistically significant pathways are shown in Figure 3. As expected, caregiver-youth relationships at time point one predicted caregiver-youth relationships at time two ($\beta=.43$, $p<.001$) and caregiver-youth relationships at time two predicted caregiver-youth relationships at time three ($\beta=.68$, $p<.001$). School engagement at time one predicted school engagement at time two ($\beta=.52$, $p<.001$) and school engagement at time two predicted

school engagement at time three ($\beta=.92, p<.001$). Future orientation at time point one predicted future orientation at time two ($\beta= .42, p<.001$) and future orientation at time two predicted future orientation at time three ($\beta=.81, p<.001$). I also examined crossed-lagged paths to explore if hypothesized directionality of my model was correct. As shown in Table 3 and Figure 3, contrary to hypotheses, the only significant cross-lagged pathway was between school engagement at time one and future orientation at time two ($\beta=.16, p<.05$).

My primary hypothesis was that the association between relationship with caregiver and future orientation would be mediated by school engagement. Therefore, I tested the indirect effect of time one caregiver-youth relationship on time three future orientation thorough time two school engagement. All indirect effects were tested using the percentile bootstrap with 10,000 bootstrap sample draws (Taylor, MacKinnon, & Tein, 2008). To quantify effect size, I reported the completely standardized sum of indirect effects (Preacher & Kelley, 2011) with bootstrapped 95% confidence intervals. For my mediation pathway to be considered significant, it must not contain zero in the confidence interval. The standardized and unstandardized coefficients for proposed directional paths among the relationship with caregiver, school engagement, and future orientation variables (with standard errors) are presented in Table 3, and statistically significant pathways are shown in Figure 3. The β coefficients for the indirect effects indicate how much the dependent variable would be expected to change (expressed on the metric of standard deviation) for a 1 standard deviation change in the predictor. The 95% confidence interval for the sum of indirect effects contained zero, therefore, it was not significant ($\beta=.01, p=.968, 95\% CI= [-.2, 0.2]$). Thus, school engagement at time two did not function as a significant mediator of the relation between caregiver-youth relationship at time one and future orientation at time three.

Discussion

Child maltreatment is recognized as a public health problem (Gilbert et al., 2009) and has affected the lives of so many children and families. Previous researchers have documented the negative consequences, both short-term and long-term, associated with experiences of child maltreatment (Duke et al., 2013; Felitti et al., 1998; Kerker et al., 2015; Romano et al., 2014). However, there is also a growing body of literature in which researchers have sought to understand individuals that demonstrate resilient functioning despite their experiences of maltreatment (Meng et al., 2018). This research was designed to explore the how behind resilient functioning among individuals with a history of maltreatment by exploring the underlying mechanism of a protective factor, future orientation. Future orientation has been associated with various positive adjustment outcomes among adolescents, such as high self-esteem and social competence (Cui et al., 2020; Schmid et al., 2011a; Schmid et al., 2011). Positive future orientation is also associated with the absence of various negative outcomes, such as less frequent engagement in violent behavior, substance use, and delinquency (Brooks et al., 2018; Oyserman et al., 2011; Stoddard et al., 2011). Future orientation is not a static factor; instead, it has been shown to fluctuate based on the presence or absence of various risk and protective factors (Cui et al., 2020; Oshri, et al., 2018). Thus, the current study sought to take a strengths-based approach to explore the development of future orientation by examining the complex transactional relations among future orientation, caregiver-youth relationships, and school engagement among youth with a history of maltreatment. By better understanding the underlying mechanism in the development of future orientation, it might be possible to promote and develop interventions that seek to strengthen it, as well as advocate for policies that support this particular population of youth.

The first aim of this study was to explore the associations among future orientation, caregiver-youth relationships, and school engagement across a three-year period. Results revealed that the three variables of interest were associated with one another in expected ways. School engagement at each time point was associated with future orientation at each of the time points. This finding provides further evidence supporting the work of Oyserman and colleagues (1990) regarding the relation between school engagement and possible selves (an aspect of future orientation). In addition to their work demonstrating links between school engagement and orientation, Oyserman, Tyree, and Bybee (2002) also created a 9-week after school small group intervention program to help students better formulate their goals as adults and link those ideals to current motivation and activities in school. Using an active learning paradigm, the intervention sought to help students develop a vision for their future, as well as learn strategies to obtain their vision. The intervention also included a parent component, in which youth and parents worked to establish a more positive parent-youth relationship by fostering healthy communication strategies. The sample consisted of 146 low-income African American students in middle school and the researchers found that students who participated in the program reported better school engagement, higher motivation to do well in school, stronger ideals about themselves in the future, better school attendance, and more plausible strategies to obtain their future selves compared to before they completed the program. Perhaps interventions that seek to enhance school engagement and future orientation may be beneficial for youth involved with the child welfare system as well. Future research should explore whether these types of interventions benefit this particular population.

As expected, youths' future orientation was associated with quality of the youth's relationships with their caregivers. As mentioned in the literature review, previous researchers

suggested that caregivers influence the development of their adolescents' future orientation by establishing expectations, serving as role models, and demonstrating to youth that attributional beliefs can influence life outcomes (McCabe & Barnett, 2000; Nurmi, 1991). Thus, the observed relationships among these two variables provides further support for the need for interventions that strengthen parent-youth relationships. Many commonly used parenting interventions such as Triple- P Positive Parenting Program (Sanders et al., 2014), Incredible Years (Gardner & Leijten, 2017) and Strengthening Families (Kumpfer, Whiteside, Greene, & Allen, 2010) include elements that focus on building a caregiver's capacity to provide warmth and responsiveness, as well as set clear and appropriate limits. In theory, enhancing these particular skills should foster the development of future orientation in children and adolescents. However, to date this has not been directly measured. Future studies should examine the effects of common parenting interventions on youths' optimistic future orientation. It may also be beneficial to add explicit elements to evidence-based parenting programs that are directed at enhancing future orientation. For example, McCabe and Barnett (2000) found that parent encouragement of future planning was linked to a child's thinking in more detail about their future. The researchers suggested that it would be helpful for parents to talk about youth's future in a realistic manner that includes both possible positive and negative thoughts in order to help youth better plan and problem solve should obstacles arise.

The second aim of the current study was to use a transactional approach to study the development of future orientation over time in relation to caregiver-youth relationships and school engagement. In particular, the purpose was to test a proposed model in which the expected association between caregiver-youth relationships and future orientation was mediated by youth school-engagement.

The first finding from testing this model was the high level of stability of each of the variables of interest over time. Each of the variables of interest predicted themselves one year later. Previous literature demonstrates that relationships between youth and caregivers, engagement in school, and youths' orientation to the future are malleable and influenced by both external and internal factors (Crespo et al., 2013; Oshri et al., 2018). However, given findings from the current study showing stability in these constructs over time, powerful influences might be needed to shift trajectories of these constructs. Youth self-esteem might be one such influence. Researchers have found links between an adolescent's level of self-esteem and future orientation (Jackman & MacPhee, 2017) as well as links between self-esteem and school engagement (Mihalec-Adkins & Cooley, 2019) and self-esteem and parent-youth relationships (Bulanda & Majumdar, 2009). Hoyle and Sherrill (2006) proposed that adolescents who have developed the ability to think critically about their future and have a positive self-esteem would be more likely to engage in identity exploration and have more positive outcomes. Additionally, Seginer (2008) theorized that parenting behaviors influence the development of future orientation indirectly through the impact of parenting on youths' self-esteem. Given these findings future studies should examine how levels of self-esteem may influence future orientation development and the potential role of self-esteem in influencing the development of future orientation, parent-youth relationships, and school engagement.

Results from testing the theoretical model (see Figure 3) revealed only one significant cross-lagged pathway, from school engagement at the initial time point to future orientation one year later. There is no clear explanation as to why this pathway was significant at the first and second time points but not between the second and third time points. Future research could be designed to examine this pattern of findings by examining individual aspects of both school

engagement (e.g., behavioral, cognitive, and emotional) and future orientation (aspirations, expectations, and planning) to determine the underlying mechanism of these two constructs.

The current study did not find that early relationships between caregivers and the youth in their care predicted the youths' subsequent future orientation directly or indirectly through school engagement. This was in contrast to findings of Crespo and colleagues (2013) who demonstrated that family and school connectedness predicted future orientation both directly and indirectly for a sample of individuals in New Zealand. The non-significant findings from the current study may be due to differences in conceptualization and measurement of the constructs. Specifically, in the current study, aspects of future orientation were measured by asking youth questions about their expectations for various specific experiences (e.g., "good job by 30"; "graduate high school") whereas Crespo et al. (2013) measured future orientation by asking youth about their broad expectations for their "psychological future" (e.g., "I often think about my future"). Furthermore, Crespo et al. (2013) measured youths' family connectedness, in contrast to the current measure of youths' relationships with a particular caregiver. Adolescence is a period of physical, cognitive, and social change and one area of that has been found to change are the dynamics of caregiver-youth relationships. More specifically, while youth may still rely on parents as a secure base during this period, adolescents are also seeking to form a more egalitarian relationship with their caregivers (Ebbert, Infurna, & Luthar, 2018), as well as seeking support from other important influences in their lives (e.g., siblings and peers). Therefore, it may be that youth in Crespo (2013) felt connected to different individuals in their families (e.g., siblings) and not just the primary caregiver as measured in the current study.

Although mediation by school engagement was not present in the full sample of children in this study who had a history of CPS involvement, it is possible that youth engagement in

school operates as a mediator for certain subgroups of youth who have experienced maltreatment. For example, the current study did not take into account the length of time individuals had resided with the caregivers they described. Although the mean score for parent-child relationship appeared high there was variability in quality of the relationship, so there could be group differences in which individuals who resided with their caregiver for a longer period may have different scores on parent-child relationships compared to those who recently experienced placement instability. Previous research supports the idea that resilient children who experience stable placements consisting of sensitive caregiving with non-biological parents are more likely to form secure attachment relationships with caregivers and experience more positive social-emotional outcomes compared to those without stable placements (Oyserman & Schengel, 2008; Ponciano, 2010; Stovall-McClough & Dozier, 2004; Stovall & Dozier, 2000). Therefore, youth with placement stability may be able to focus more on exploring identities and thinking about their future. Thus, it would be interesting to explore how the model used in this study may operate differently for individuals with stable placements compared to those who experienced placement changes.

This study provides support for the need to support ALL caregivers of children involved in the child welfare system, regardless of the type of caregiver role. In the present study, 61.8% of the sample identified their primary caregiver as a biological or stepparent and the other 48.2% endorsed a different caregiver including foster parents and relatives. While exploring potential meaningful variables in this study, ad hoc analyses were performed to determine associations among future orientation, school engagement, and type of caregiver (e.g, biological, non-biological, adopted caregivers). Results revealed that the quality of caregiver-youth relationships was related to youth adjustment (i.e., engagement and future orientation) regardless of the

caregiver type. Thus, providing evidence for the need remember that for youth involved in the child welfare system, relationships with adults are vital and we must enact policies that support all caregivers serving in a parenting role. In North Carolina, a Foster Parents' Bill of Rights (2021) was recently passed by the North Carolina General Assembly. This Bill explicitly lays out the rights of foster parents including the need for training and resources to ensure foster parents are prepared to care for children with a history of loss and trauma. This bill also allows foster parents to be active participants in decisions regarding the children in their care, such as transition planning. While this law is a progressive step in supporting children and caregivers involved with child welfare, there is still a lot of work to ensure this law is carried out an effective manner. For example, the law requires training and resources for foster parents but doesn't specifically stipulate these services must be evidence-based. In order to provide the most effective support for children and caregivers, it is important that the services provided are backed up by rigorous studies that provide support for the positive impact of these interventions among this particular population. Depending on the needs of the children and caregivers, there are various evidence-based interventions that can support these families. One example of a potentially beneficially program is Parent Child Interaction Therapy (PCIT). PCIT has been shown to decrease parenting stress and child behavior problems, as well as increase positive parenting skills in child welfare involved families (Mersky, Topitzes, Janczewsi, & McNeil, 2015; McNeil, Herschell, Gurwitch, & Clemens-Mowrer, 2005). PCIT utilizes psychoeducation, coaching, modeling, and role-play to help build attachment and help parents establish a structured and consistent approach to managing misbehavior. This intervention may be helpful to train foster parents build relationships with the youth in their care, as well as navigate challenging youth behaviors that may arise. All in all, the current study provides support for the

need to support all caregivers of youth involved with child welfare and the North Carolina Foster Parent Bill of Rights is an important step in supporting and protecting this population. Therefore, it would be beneficial for other states to adopt similar policies.

Limitations

A strength of the current study is that it is the first to explore the complex relationships between future orientation, parent-youth relationships, and school engagement for children who experienced maltreatment; however there are several methodological limitations. First, the measure used to capture future orientation consisted of only three questions due to a lack of internal consistency among the items. Variability in future orientation might have been lost by having to delete three questions from the measure. This has been an issue with other studies that also used this measure of future orientation (Oshri et al., 2018) and other researchers have suggested that reduced variability has potential impacts on the power to detect significant associations. Future investigators should seek to create a measure of future orientation that encompasses all aspects proposed by Johnson and colleagues (2014): aspirations, expectations and planning. Second, this study follows the lives of individuals involved in the child welfare system over a three-year period, thus this study provides a narrow glimpse into the window of time in individual's lives. It is important to explore the development of future orientation beginning in earlier developmental periods, such as late childhood. To date, studies have focused on examining future orientation in adolescents and emerging adults. However, it may be useful to explore future orientation in earlier developmental stages to fully understand the unfolding of future orientation and to create more targeted interventions that seek to increase children's positive expectations about their future. Finally, the generalizability of the findings of this study

may be limited by the focus on adolescents with a history of maltreatment involved in the child welfare system.

All in all, despite the limitations identified, the findings from this study add to the literature on future orientation of youth. This study helped to identify important connections between child welfare involved youth's views about their future accomplishments, their relationship with their primary caregiver, and their engagement in the school setting. Thus, these findings have important implications for interventions and policies to support this vulnerable population including adding a future orientation development model to already widely used parenting interventions and creating policies for youth involved with child welfare.

References

- Aronowitz, T. (2005). The role of “envisioning the future” in the development of resilience among at-risk youth. *Public Health Nursing, 22*(3), 200-208. doi: [10.1111/j.0737-1209.2005.220303.x](https://doi.org/10.1111/j.0737-1209.2005.220303.x)
- Bell, T., Romano, E., & Flynn, R.J. (2015). Profiles and predictors of behavioral resilience among children in child welfare. *Child Abuse & Neglect, 48*, 92-103.
<https://doi.org/10.1016/j.chiabu.2015.04.018>
- Blattner, M. C., Liang, B., Lund, T., & Spencer, R. (2013). Searching for a sense of purpose: The role of parents and effects on self-esteem among female adolescence. *Journal of Adolescence, 36*, 839– 848. <https://doi.org/10.1016/j.adolescence.2013.06.008>
- Borowsky, I. W., Ireland, M., & Resnick, M. D. (2009). Health status and behavioral outcomes for youth who anticipate a high likelihood of early death. *Pediatrics, 124*(1), 81-88. doi: [10.1542/peds.2008-3425](https://doi.org/10.1542/peds.2008-3425)
- Branje, S. J, Hale, W. W., Frinjs, T., & Meeus, W. H. (2010). Longitudinal associations between perceived parent-child relationship quality and depressive symptoms in adolescence. *Journal of Abnormal Child Psychology, 38*(6), 751-763. doi: [10.1007/s10802-010-9401-6](https://doi.org/10.1007/s10802-010-9401-6)
- Brooks, M., Miller, E., Abebe, K., & Mulvey, E. (2018). The observed longitudinal relationship between future orientation and substance use among a cohort of youth with serious criminal offenses. *Substance Use & Misuse, 53*(12), 1926-1936.
doi:[10.1080/10826084.2018.1441311](https://doi.org/10.1080/10826084.2018.1441311)
- Brow, S. M. & Shillington, A. M. (2017). Childhood adversity and the risk of substance use and delinquency: The role of protective adult relationships. *Child Abuse & Neglect, 63*, 211-221. doi: [10.1016/j.chiabu.2016.11.006](https://doi.org/10.1016/j.chiabu.2016.11.006)

- Bulanda, R.E. & Majumdar, D. (2009). Perceived parent-child relations and adolescent self-esteem. *Journal of Child and Family Studies, 18*, 203-212. Doi: 10.1007/s10826-008-9220-3
- Cage, J., Yoon, S., Barhart, S., Coles, C., McGinnis, H. A., & Starns, A. L. (2019). Measuring school engagement for child welfare involved youth: Assessing the dimensionality of the drug free school scale. *Child Abuse & Neglect, 92*, 85-92.
<https://doi.org/10.1016/j.chiabu.2019.03.019>
- Caraway, K., Tucker, C. M., Reinke, W. M., Hall, C. (2003). Self-efficacy goal orientation, and fear of failure ad predictors of school engagement in high school students. *Psychology in the Schools, 40*(4), 417-427. doi: 10.1002/pits.10092
- Cicchetti, D. (2014). Annual research review: Resilient functioning in maltreated children: Past, present, and future perspectives. *Journal of Child Psychology and Psychiatry, 54*(4), 402-422. doi: 10.1111/j.1469-7610.2012.02608.x
- Courtney, M. E., Piliavin, I., Grogan-Kaylor, A., & Nesmith, A. (2001). Foster youth transitions to adulthood: A longitudinal view of youth leaving care. *Child Welfare: Journal of Policy, Practice, and Program, 80*(6), 685–717.
- Crespo, C., Jose, P. E., Kielpikowski, M., & Pryor, J. (2013). “On solid ground”: Family and school connectedness promotes adolescents’ future orientation. *Journal of Adolescence, 36*, 993-1002. doi: 10.1016/j.adolescence.2013.08.004.
- Cui, Z., Oshri, A., Lui, S., Smith, E. P, Kogan, S. (2020). Child maltreatment and resilience: The promotive and protective role of future orientation. *Journal of Youth and Adolescence, 49*(1). doi: 10.1007/s10964-020-01227-9

- Dolan, M., Smith, K., Casanueva, C. E., & Ringeisen, H. (2011). NSCAW II baseline report: Introduction to NSCAW II. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, US Department of Health and Human Services.
- Dowd K., Dolan, M., Wallin, J., Miller, K., Biemer, P., Aragon-Logan, E., & Smith, K. (2012) National Survey of Child and Adolescent Well-being II: Combined waves 1-2 data file user's manual. Ithaca, NY: Cornell University.
- Dowd, K., Kinsey, S., Wheelless, S., Thissen, R., Richardson, J., & Suresh, R. (2007). National Survey of child and adolescent well-being, NSCAW, combined waves 1-5 data files user's manual, restricted release version. Research Triangle Institute, University of North Carolina at Chapel Hill, and Caliber Associates, University of California at Berkley.
- Duke, N. N., Pettingell, S. L., McMorris, B. J., & Borowsky, I. W. (2010). Adolescent violence perpetration: Associations with multiple types of adverse childhood experiences. *Pediatrics*, 125 (4), 778-786. <https://doi.org/10.1542/peds.2009-0597>
- Ebbert, A.M., Infurna, F.J., & Luthar, S.S. (2018). Mapping developmental changes in perceived parent-adolescent relationship quality through middle school and high school. *Development & Psychopathology*, 31(4), 1541-1556. doi:10.1017/S0954579418001219
- Fagan, A. A. (2020). Child maltreatment and aggressive behaviors in early adolescence: Evidence of moderation by parent child relationship *quality*. *Child Maltreatment*, 25(2), 182-191. <https://doi-org.prox.lib.ncsu.edu/10.1177/1077559519874401>

- Fanti, K. A., Henrich, C. C., Brookmeyer, K. A., & Kuperminc, G. P. (2008). Toward a transactional model of parent-adolescent relationship quality and adolescent psychological adjustment. *The Journal of Early Adolescence, 28*(2), 252-276.
doi: 10.1177/0272431607312766
- Felitti V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. *American Journal of Prevention Medicine, 14*, 245-258. [https://doi.org/10.1016/S0749-3797\(98\)00017-8](https://doi.org/10.1016/S0749-3797(98)00017-8)
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School Engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*(1), 59–109. <https://doi-org.prox.lib.ncsu.edu/10.3102/00346543074001059>
- Gardner, F. & Leijten, P. (2017). Incredible years parenting intervention: Current effectiveness research and future directions. *Current Opinions in Psychology, 15*, 99-104.
- Gilbert, R., Widom, C.S., Browne, K., Fergusson, D., Webb, E., Janson, S. (2009). Burden and consequences of child maltreatment in high-income countries. *Lancet 373*(9657), 68-71.
DOI: 10.1016/S0140-6736(08)61706-7
- Griffin, K. W., Botvin, G. J., Nichols, T. R., & Scheier, L. M. (2004). Low perceived chances for success in life and binge drinking among inner-city minority youth. *Journal of Adolescent Health, 34*, 501-507. DOI: 10.1016/j.jadohealth.2003.07.026
- DRH10385-NB-150, 2021 North Carolina General Assembly, Regular session (North Carolina 2021).
<https://static1.squarespace.com/static/5d5216c8c4e5e300014c0a9b/t/60903e5d8d9a813065d174a8/1620065885969/DRH10385-NB-150.pdf>

- Hair, E. C., Moore, K. A., Garrett, S. B., Ling, T., & Cleveland, K. (2008). The continued importance of quality parent-adolescent relationships during late adolescence. *Journal of Research on Adolescence, 18*(1), 187–200. <https://doi-org.prox.lib.ncsu.edu/10.1111/j.1532-7795.2008.00556.x>
- Hoyle, R. H. & Sherrill M.R. (2006). Future Orientation in the self-system: possible selves, self-regulation, and behavior. *Journal of Personality, 74* (6), 1673-1696. <https://doi-org.prox.lib.ncsu.edu/10.1111/j.1467-6494.2006.00424.x>
- Hu, L. T. & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1-55.
doi: 10.1080/10705519909540118
- Jackman, D.M. & MacPhee, D. (2017). Self-esteem and future orientation predict adolescent risk engagement. *The Journal of Early Adolescence, 37*(3), 339-366.
- Jamieson, P. E. & Romer, D. (2008). Unrealistic fatalism in U.S. youth ages 14-22: Prevalence and characteristics. *Journal of Adolescent Health, 42*(2), 154-160.
<https://doi.org/10.1016/j.jadohealth.2007.07.010>
- Jimenez, M. E., Wade, R., Lin, Y., Morrow, L. M., & Reichman, N. E. (2016). Adverse experiences in early childhood and kindergarten outcomes. *Pediatrics, 137*(2).
<https://doi.org/10.1542/peds.2015-1839>
- Jose, P. E., & Crespo, C. (2012). Social connectedness in adolescence. In R. J. Levesque (Ed.), *Encyclopedia of adolescence* (pp. 2759–2768). New York: Springer.
- Johnson S. R., Blum R. W., & Cheng T. L. (2014) Future orientation: A construct with implications for adolescent health and wellbeing. *International Journal of Adolescent Medical Health, 26*(4):459-68. doi:10.1515/ijamh-2013-0333.

- Kerpelman, J. L., Eryigit, S., & Stephens, C. J. (2008). African American adolescents' future education orientation: Associations with self-efficacy, ethnic identity, and perceived parental support. *Journal of Youth and Adolescence*, *37*, 997-1008.
<https://doi.org/10.1007/s10964-007-9201-7>
- Kerker, B. D., Zhang, J., Nadeem, E., Stein, R. E. K., Hurlburt, M. S., Henghan, A., Landsverk, J., & Horwitz, S. M. (2015) Adverse childhood experiences and mental health, chronic medical conditions, and development in young children. *Academic Pediatrics*, *15*(5), 510-517. doi: 10.1016/j.acap.2015.05.005
- Kumpfer, K. L., Whiteside, H. O., Greene, J. A., & Allen, K. C. (2010). Effectiveness outcomes of four age versions of the Strengthening Families Program in statewide field sites. *Group Dynamics: Theory, Research, and Practice*, *14*(3), 211–229.
<https://doi-org.prox.lib.ncsu.edu/10.1037/a0020602>
- Leonard, S., Stiles, A. A., & Gudiño, O. G. (2016). School engagement of youth investigated by child welfare services: Associations with academic achievement and mental health. *School Mental Health: A Multidisciplinary Research and Practice Journal*, *8*(3), 386–398.
<https://doi-org.prox.lib.ncsu.edu/10.1007/s12310-016-9186-z>
- Leslie, L. K., Monn, J. S., Monn, A. Kauten, M. C., Zhang, J., & Aarons, G. (2010) Health-risk behaviors in young adolescents in the child welfare system. *Journal of Adolescent Health*, *47*(1), 26-34. doi: 10.1016/j.jadohealth.2009.12.032
- Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*, *71*(3), 543–562.
<https://doi-org.prox.lib.ncsu.edu/10.1111/1467-8624.00164>

- Lynch, M. & Cicchetti, D. (1997). Children's relationships with adults and peers: An examination of elementary and junior high school students. *Journal of School Psychology, 35* (1), 81-99.
- Meng, X., Fleury, M. J., Xang, Y.T., Li, M., & D'Arcy, C. (2018). Resilience and protective factors among people with a history of child maltreatment: A systematic review. *Social Psychiatry and Psychiatric Epidemiology, 53*, 453-475. doi:10.1007/s00127-018-1485-2
- McCabe, K. M. & Barnett, D. (2002). The relation between familial factors and the future orientation of urban, African American sixth graders. *Journal of Child and Family Studies, 9*(4), 491-508. <https://doi-org.prox.lib.ncsu.edu/10.1023/A:1009474926880>
- McDade, T. W., Chyu, L., Duncan, G. J., Hoyt, L. T. Doane, L. D., & Adamas, E. K. (2011). Adolescents' expectations for the future predict health behaviors in early adulthood. *Social Science & Medicine, 73*, 391-398. doi: 10.1016/j.socscimed.2011.06.005
- McGloin, J. M., & Widom, C. S. (2001). Resilience among abused and neglected children grown up. *Development and Psychopathology, 13*, 1021-1038.
<http://dx.doi.org/10.1017/S095457940100414X>
- McNeil, C., Herschell, A.D., Gurwitch, R.H., & Clemens-Mowrer, L.C. (2005). Training foster parents in parent-child interaction therapy. *Education and Treatment of Children, 28*, 182-196.
- Mersky, J.P., Topitzes, J., Janczewski, C.E., & McNeil, C.B. (2015). Enhancing foster parent training with parent-child interaction therapy: Evidence from a randomized field experiment. *Journal of the Society for Social Work & Research, 6*(4), 2334-2315. doi: 2334-2315/2015/0604-0007

- Mihalec-Adkins, B.P. & Cooley, M.E. (2019). Examining individual-level academic risk and protective factors for foster youth: School engagement, behaviors, self-esteem, and social skills. *Child & Family Social Work, 25*(2), 256-266.
<https://doi-org.prox.lib.ncsu.edu/10.1111/cfs.12681>
- Mo, Y., & Singh, K. (2008). Parents' relationships and involvement: Effects on students' school engagement and performance. *RMLE online, 31*(10), 1-11.
- Muthen, L. K. & Muthen, B. O. (1998-2012). Mplus users guide, 7th edition, Los Angeles, CA: Muthen & Muthen.
- Murray, C. (2009). Parent and teacher relationships as predictors of school engagement and functioning among low-income urban youth. *Journal of Early Adolescence, 3*, 276-404.
- Nurmi, J. E. (1991). How do adolescents see their future? a review of the development of future orientation and planning. *Developmental Review, 11*(1), 1–59. [https://doi-org.prox.lib.ncsu.edu/10.1016/0273-2297\(91\)90002-6](https://doi-org.prox.lib.ncsu.edu/10.1016/0273-2297(91)90002-6)
- Oshri, A., Dupret, E. B., Kogan, S. M., Carlson, M.W., & Liu, S. (2018). Growth patterns of future orientation among maltreated youth: A prospective Examination of the emerge of resilience. *Developmental Psychology, 54*(8), 1456-1471. doi: 10.1037/dev0000528
- Oyserman, D., & Fryberg, S. (2006). The possible selves of diverse adolescents: Content and function across gender, race and national origin. In C. Dunkel & J. Kerpelman (Eds.), *Possible selves: Theory, research and applications* (p. 17–39). Nova Science Publishers.
- Oyserman, D. & Markus, H. R. (1990). Possible selves and delinquency. *Journal of Personality and Social Psychology, 59*, 112-125. doi:10.1037//0022-3514.59.1.112

- Oyserman, D., & Saltz, E. (1993). Competence, delinquency, and attempts to attain possible selves. *Journal of Personality and Social Psychology*, *65*(2), 360–374. <https://doi-org.prox.lib.ncsu.edu/10.1037/0022-3514.65.2.360>
- Oyserman, D., Terry, K., & Bybee, D. (2002). A possible selves intervention to enhance school involvement. *Journal of Adolescence*, *25*, 313-326. doi: 10.1006/jado.2002.0474
- Preacher, A. J. & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, *36*, 717–731. <https://doi.org/10.3758/BF03206553>
- Resnick, M. D, Bearman, P. S., Blum, R. W., Bauman, K. E., Harris, K. M., Jones, J., Tabor, j., Beuhring, T., Sieving, R. E., Shew, M., Ireland, M. , Bearinger, L.H., & Udry, J.R. (1997). Protecting adolescents from harm: Findings from the national longitudinal study on adolescents health. *Journal of the American Medical Association*, *278*, 823-832. doi:10.1001/jama.1997.03550100049038
- Romano, E. R., Babchishin, L., Marquis, R., & Frechette, S. (2015). Childhood maltreatment and educational outcomes. *Trauma, Violence, & Abuse*, *16*(4), 418-437. doi: 10.1177/1524838014537908
- Sanders, M. R., Kirby, J. N., Tellegen, C. L., & Day, J. J. (2014). The Triple P-Positive Parenting Program: A systematic review and meta-analysis of a multi-level system of parenting support. *Clinical Psychology Review*, *34*, 337-357. <https://doi.org/10.1016/j.cpr.2014.04.003>

- Schmid, K. L., Phelps, E., Kiely, M. K., Napolitano, C. M., Boyd, M. J., & Lerner, R. M. (2011). The role of adolescents' hopeful futures in predicting positive and negative developmental trajectories: Findings from the 4-H study of positive youth development. *The Journal of Positive Psychology, 6*(1), 45-56. doi:10.1080/17439760.2010.536777
- Schmid, K. L., Phelps, E., & Lerner, R. M. (2011). Constructing positive futures: Modeling the relationship between adolescents' hopeful future expectations and intentional self-regulation in predicting positive youth development. *Journal of Adolescence, 34*, 1127-1135. doi: 10.1016/j.adolescence.2011.07.009
- Seginer, R. (2008). Future orientation in times of threat and challenge: How resilient adolescents construct their future. *International Journal of Behavioral Development, 32*(4), 272-282. <https://doi.org/10.1177/0165025408090970>
- Sentse, M., Prinzie, P., & Salmivalli, C. (2017). Testing the direction of longitudinal paths between victimization, peer rejection, and different types of internalizing problems in adolescents. *Journal of Child Psychology, 45*, 1013-1023. doi:10.1007/s10802-016-0216-y
- Sherian, M. A., Peverill, M., Finn, A. S., & McLaughlin, K. A. (2017). Dimensions of childhood adversity have distinct associations with neural systems underlying executive functioning. *Development Psychopathology, 29*(5), 1777-1794. doi: 10.1017/S0954579417001390
- Steinberg, L., Graham, S., O'Brien, L., Woolard, J., Cauffman, E., & Banich, M. (2009) Age differences in future orientation and delay discounting. *Child Development, 80*(1), 28-44. doi:// 10.1111/j.1467-8624.2008.01244.x.

- Steinberg L & Silk J. S. Parenting adolescents. In: Bornstein MH, editor. Handbook of parenting: Vol. 1: Children and parenting. Mahwah, NJ: Lawrence Erlbaum Associates; 2002. pp. 103–133.
- Stoddard, S. A., Zimmerman, M. A., & Bauermeister, J. A. (2011). Thinking about the future as a way to succeed in the present: A longitudinal study of future orientation and violent behaviors among african american youth. *American Journal of Community Psychology*, 48, 238-246. doi: 10.1007/s10464-010-9383-0
- Trommsdorff, G. (1983). Future orientation and socialization. *International Journal of Psychology*, 18, 1-4. <https://doi-org.prox.lib.ncsu.edu/10.1080/00207598308247489>
- Trout, A. L., Hagaman, J., Casey, K., Reid, R., & Epstein, M. H. (2008). The academic status of children and youth in out-of-home care: A review of the literature. *Children and Youth Services Review*, 30(9), 979–994. <https://doi-org.prox.lib.ncsu.edu/10.1016/j.childyouth.2007.11.019>
- Withers, M. C., McWey, L. M., & Lucier-Green, M. (2017). Parent-adolescent relationship factors and adolescent outcomes among high-risk families. *Family Relations*, 65(5). <https://doi.org/10.1111/fare.12220>
- Ungar, M., Ghazinour, M., & Richter, J. (2013). Annual research review: What is resilience within the social ecology of human development. *Journal of Child Psychology and Psychiatry*, 54(4), 348-366. DOI: 10.1111/jcpp.12025
- U.S. Department of Health and Human Services (2022). Child maltreatment 2020. Administration for Children and Families, Children's Bureau. Retrieved February 4, 2022 from <https://www.acf.hhs.gov/sites/default/files/documents/cb/cm2020.pdf>

Yoon, S., Kobulsky, J. M., Voith, L. A., Steigerwald, S., & Holmes, M. R. (2015). Gender differences in caregiver-child relationship mediation of the association between violence exposure severity and adolescent behavior problems. *Child Abuse & Neglect, 50*, 104-115. <http://dx.doi.org/10.1016/j.chiabu.2015.10.012>

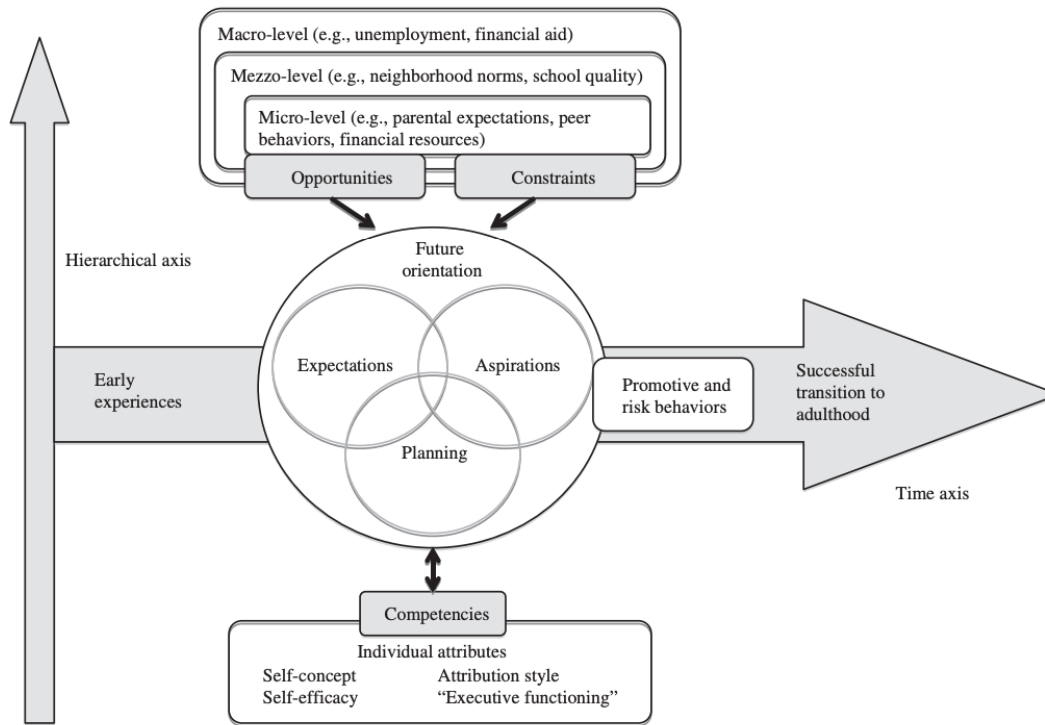


Figure 1. Conceptual framework of future orientation. (Johnson et al., 2014)

Table 1*Demographic Characteristics*

| Full Sample (n=298) | N (%) |
|---------------------------------|-------------|
| Race | |
| White | 135 (45.3%) |
| Black | 99 (33.2%) |
| American Indian | 14 (4.7%) |
| Asian/Hawaiian/Pacific Islander | 34 (11.4%) |
| Missing | 16 (5.4%) |
| Caregiver Type | |
| Biological/Step Parent | 184 (61.8%) |
| Adoptive Parent | 4 (1.3%) |
| Foster Parent | 47 (15.8%) |
| Relative | 49 (16.4%) |
| Other | 14 (4.7%) |
| Type of Maltreatment | |
| Abuse | 109 (36.6%) |
| Neglect | 62 (20.8%) |
| Caregiver Issues | 37 (12.4%) |
| Other | 44 (14.8%) |
| Not Reported | 46 (15.4%) |

Table 2*Correlations and Descriptive Statistics*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|-----------|------|--------|--------|--------|--------|--------|--------|-------|--------|-------|-------|
| 1 Race | | | | | | | | | | | |
| 2 Female | .15* | | | | | | | | | | |
| 3 T1 FO | -.03 | .01 | | | | | | | | | |
| 4 T2 FO | -.06 | .09 | .47*** | | | | | | | | |
| 5 T3 FO | .12 | .03 | .39*** | .52*** | | | | | | | |
| 6 T1 SE | .01 | .05 | .44*** | .33*** | .18* | | | | | | |
| 7 T2 SE | .04 | .17** | .23*** | .39*** | .27** | .52*** | | | | | |
| 8 T3 SE | -.01 | .09 | .29*** | .36*** | .34*** | .49*** | .53*** | | | | |
| 9 T1 RC | -.03 | -.17** | .22*** | .21** | .11 | .36*** | .21** | .18* | | | |
| 10 T2 RC | .03 | -.08 | .21*** | .27*** | .19* | .29*** | .24*** | .23** | .43*** | | |
| 11 T3 RC | -.04 | -.11 | .26** | .11 | .25** | .12 | .09 | .19* | .28** | .14 | |
| <i>M</i> | | | 12.71 | 13.11 | 13.42 | 34.08 | 34.14 | 34.63 | 39.92 | 40.68 | 40.41 |
| <i>SD</i> | | | .13 | .13 | .13 | .29 | .29 | .38 | .38 | .41 | .49 |

Note. Race (1=White, 0= American Indian, Black, Asian/Hawaiian/Pacific Islander); T1 FO= future orientation at Time 1; T2FO= future orientation at time 2; T3 FO= future orientation at time 3; T1 SE= school engagement at time 1; T2 SE= school engagement at time 2; T3 SE= school engagement at time 3; T1 RC= caregiver youth relationship at time 1; T2 RC= caregiver youth relationship at time 2; T3 RC= caregiver youth relationship at time 3; *M*=mean; *SD*= standard deviation. * $p<.05$, ** $p<.01$, *** $p<.001$

Table 3*Mediation Analysis: Direct and Indirect Effects*

| Parameters | <i>b</i> | SE | β |
|-------------------------------------|----------|-----|------------------|
| Stability coefficients | | | |
| T1RC→T2RC | .43*** | .06 | .43 |
| T2RC→T3RC | .69*** | .21 | .68 |
| T1SE→ T2SE | .48*** | .06 | .52 |
| T2SE→ T3SE | 1.01*** | .16 | .92 |
| T1FO→ T2FO | .38*** | .07 | .42 |
| T2FO→T3FO | .69*** | .21 | .81 |
| Direct Effects (Cross-Lagged Paths) | | | |
| T1RC→ T2SE | -.01 | .04 | -.01 |
| T2RC→T3SE | .05 | .07 | .07 |
| T1SE→T2FO | .07* | .03 | .16 |
| T2SE→T3FO | -.02 | .05 | -.07 |
| | | | β [95% CI] |
| Indirect effects through SE | | | |
| T1RC→ T3FO | | | .01 |
| Sum of Indirect Effects | | | 0.01[-.02, .02] |

Note. T1 FO= Future Orientation at Time 1; T2FO= future orientation at time 2; T3 FO= future orientation at time 3; T1 SE= school engagement at time 1; T2 SE= school engagement at time 2; T3 SE= school engagement at time 3; T1 RC= caregiver youth relationship at time 1; T2 RC= caregiver youth relationship at time 2; T3 RC= caregiver youth relationship at time 3; *M*=mean; *SD*= standard deviation. * $p < .05$, ** $p < .01$, *** $p < .001$

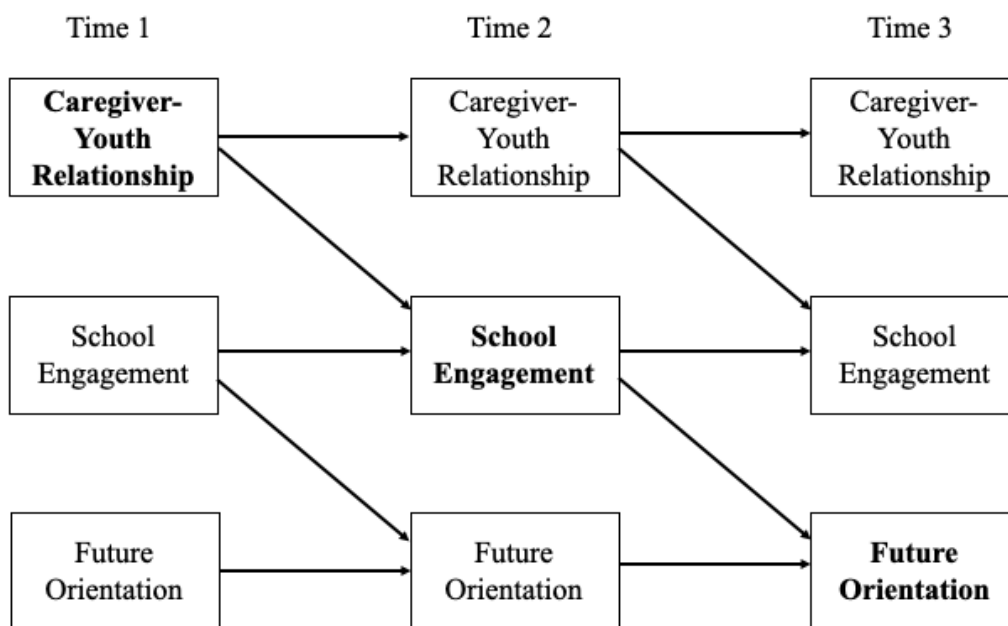


Figure 2. Hypothesized autoregressive model with cross-lagged paths. Bolded variables depict the mediation model of interest: Examining the relationship between time 1 caregiver-youth relationship and time 3 future orientation through time 2 school engagement. Covariates are included in the model but not depicted in this figure.

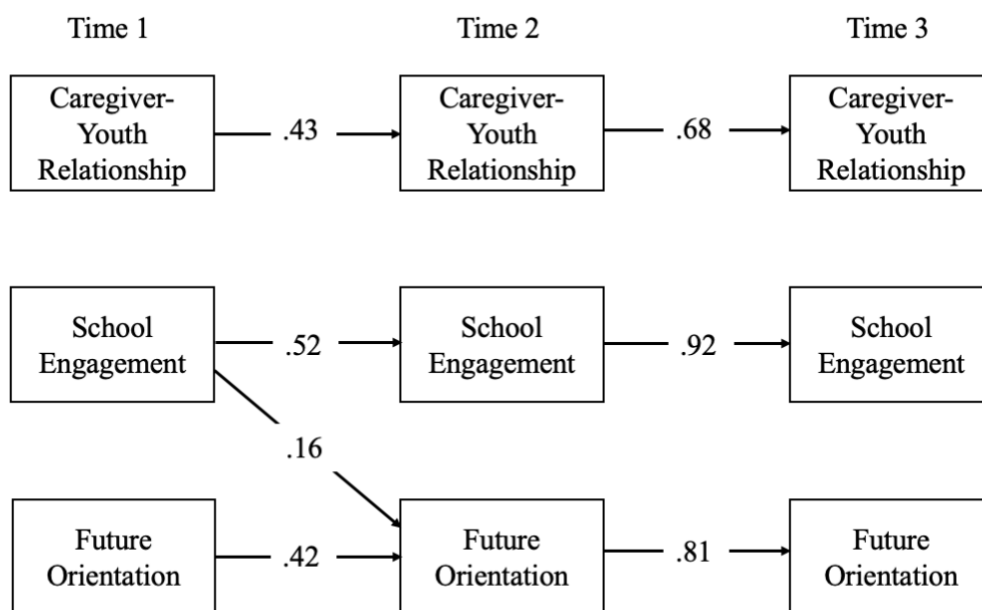


Figure 3. Significant directional paths in autoregressive model with cross-lagged paths. The model also included non-significant directional paths, covariates, correlations among all exogeneous variables at the first time point, and correlations among residuals within each time point that are not shown in this figure.