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An Evaluation of Reciprocal Associations Across the Mentoring Relationship for Mentors and Mentees with Attachment Needs

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An Evaluation of Reciprocal Associations Across the Mentoring Relationship for Mentors and
Mentees with Attachment Needs

A Dissertation

Presented in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Philosophy

By

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August 2022

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Biography

The author was born in Hayward, California, March 28, 1994. She graduated from Irvington High School in Fremont, California. She received her Bachelor of Science degree from the University of Alabama in 2012, and her Master of Arts degree in Psychology from DePaul University in 2018.

Table of Contents

| | |
|------------------------------------|-----|
| Dissertation Committee..... | i |
| Acknowledgments..... | ii |
| Biography..... | iii |
| List of Tables..... | iv |
| List of Figures..... | v |
| Abstract..... | 1 |
| Introduction..... | 4 |
| Rationale..... | 21 |
| Statement of Hypotheses..... | 21 |
| Method..... | 22 |
| Participants..... | 22 |
| Procedure..... | 23 |
| Measures..... | 26 |
| Results..... | 29 |
| Descriptive Statistics..... | 29 |
| Missing Data Analysis..... | 30 |
| Data Assumptions..... | 31 |
| Cross-Lagged Panel Models..... | 32 |
| Dyadic Analysis..... | 40 |
| Supplementary Mentor Analyses..... | 43 |
| Discussion..... | 43 |
| Strengths and Limitations..... | 48 |

| | |
|------------------------|----|
| Future Directions..... | 53 |
| References..... | 59 |
| Appendix..... | 76 |

List of Tables

| | |
|---|----|
| Table 1. Mentee Descriptive Statistics and Missing Data Patterns..... | 29 |
| Table 2. Mentor Descriptive Statistics and Missing Data Patterns..... | 30 |
| Table 3. Measurements of Goodness of Fit for Mentee Data..... | 34 |

List of Figures

| | |
|--|----|
| Figure 1. Conceptual CLPM for Mentoring Relationship and Internalizing Problems..... | 35 |
| Figure 2. Conceptual CLPM for Mentoring Relationship and Interpersonal Relationships.. | 38 |
| Figure 3. Interpersonal Relationships at Baseline and Mentoring at Three Months..... | 39 |
| Figure 4. Actor-Partner Interdependence Model 1..... | 41 |
| Figure 5. Actor-Partner Interdependence Model 2..... | 42 |

Abstract

Mentoring programs are a popular approach for supporting low-income youth by providing them with an adult mentor who is intended to be a positive role model and fulfill unmet attachment needs. Low-income youth who become mentees are often understood through an attachment lens and treated as the focus of any mentoring intervention. Although significant research has been devoted to understanding the impact of the mentoring relationship on mentees, the function of the mentoring relationship for mentees remains unclear. Some studies have found direct effects of the mentoring relationship on mentee emotional and behavioral outcomes, while other studies have suggested indirect effects via improvements to other relationships.

Additionally, research has shown that the role of mentee characteristics is also important to consider in the evaluation of the mentoring relationship and its success, but the literature lacks integration of these interrelated variables. Whereas substantial evidence has been gathered on mentees, research is limited on mentors beyond match characteristics and mentee-related outcomes that continue to emphasize the mentee. Mentors are assumed to be competent and caring individuals with the capacity to form lasting relationships with their mentees if given some training, but mentors may carry similar relational vulnerabilities to their mentees. For college students, as they navigate new challenges of early adulthood and heightened mental health difficulties, attachment difficulties may become particularly pertinent.

This study views mentors similarly to mentees and seeks to build on the current literature on mentors and mentees by testing the pathways through which each population experiences change during the course of the mentoring relationship. It is hypothesized that 1) Mentees/ors will demonstrate a reciprocal relationship between internalizing problems and mentoring relationship quality, such that lower internalizing problems at baseline will predict higher

mentoring relationship quality at three months and higher mentoring relationship quality will predict lower internalizing problems at subsequent timepoints, and 2) Mentees/ors will demonstrate a reciprocal relationship between interpersonal relationships and mentoring relationship quality, such that stronger interpersonal relationships at baseline will predict higher mentoring relationship quality at three months and higher mentoring relationship quality will predict stronger interpersonal relationships at subsequent timepoints. This study will also explore the following research question: In consideration of possible interdependence within the mentoring relationship, what patterns of influence exist between mentors and mentees on reports of mentoring relationship quality and other interpersonal relationships?

Participants included 80 undergraduate mentors (M age = 19.83, 76.3 percent female, 52.5 percent non-Hispanic White) and elementary aged mentees (M age = 10.61, 53.8 percent female, 91.3 percent Black) who were enrolled in a coping-based mentoring program between 2016 and 2020. This study used an adapted version of the Match Characteristics Questionnaire (MCQ) to assess mentee and mentor perceptions of quality of the mentoring relationship at three months, six months, and nine months (post-intervention). To assess mentor and mentee interpersonal relationships independent of the mentoring relationship (as a proxy for attachment), this study utilized three self-report measures of relational experiences with important adults at home, in school, or in the community, which were administered at baseline, three months, six months, and post-intervention. Lastly, the Internalizing Symptoms composite of the Behavioral Assessment System for Children (BASC) was used to assess emotional difficulties at baseline, three months, six months, and post-intervention. Cross-lagged panel models (CLPMs) were used to individually assess the hypothesized mentor and mentees pathways of change, while an

exploratory Actor-Partner Interdependence Model (APIM) was used to explore possible dyadic effects of mentor and mentee pathways on each other.

Results of the mentee CLPMs provide support for the impact of mentees' internalizing symptoms and interpersonal relationships on their perceptions of the mentoring relationship, consistent with prior mentee research. However, the hypothesis that higher mentoring relationship quality would be associated with improved internalizing symptoms and other interpersonal relationships was not supported. Due to mentor sample size limitations, none of the assessed CLPMs were identifiable. Alternatively, multiple regressions were conducted for the mentor data which suggested mentors who reported higher internalizing problems at baseline viewed the mentoring relationship more negatively at three months. In terms of dyadic analyses, results of the APIM suggested a possible association between higher mentor ratings of the mentoring relationship and subsequently lower mentee ratings of their other interpersonal relationships. Taken together, these findings highlight the need for dyadic perspectives in future mentoring research to better understand what mentees and mentors contribute to and receive from the mentoring relationship, as well as how programs may improve support for both mentee and mentor needs.

An Evaluation of Reciprocal Associations Across the Mentoring Relationship for Mentors and Mentees with Attachment Needs

Mentoring programs have become increasingly common for youth identified as at risk for a variety of social, emotional, and behavioral problems due to the effects of poverty and other chronic stressors. Over 15 million children in the United States live in families with incomes below the poverty line, with Black families disproportionately affected as a result of systemic oppression and inequitable access to resources (National Center for Children in Poverty, 2019). Structural poverty rooted in racism and discrimination (e.g., employment, housing) generates a broad range of chronic stressors, with low-income Black families often living in underinvested communities with limited access to employment opportunities and affordable childcare as well as a lack of safety net programs to support financial stability (Haider, 2021; U.S. Census Bureau, 2010). These factors substantially impact caregivers' capacity for attachment with their children, as caregivers may experience both restricted availability and heightened mental and physical health problems due to compounding stressors (Conger & Donnellan, 2007; Grant et al., 2005; Gutman et al., 2005; Sanchez et al., 2014). Attachment theory posits that children seek comfort and security from their caregivers in times of distress and learn based on their caregiver's response whether they can rely on their attachment figure to help in times of need (Bowlby, 1969; Bowlby, 1988). In order for children to form a secure attachment, their attachment figure must be available, sensitive, and responsive to their needs; otherwise, children continue to seek an attachment bond characterized by anxiety or avoidance (i.e., insecure attachment; Milyavskaya & Lydon, 2012; Mikulincer & Shaver, 2007). Incorporating these early experiences with their caregivers, children develop working models of relationships which inform how they view themselves (e.g., "I am not worthy of love") and others (e.g., "I cannot trust anyone")

(Bretherton, 1985). These working models in turn affect their interpersonal behaviors, such that youth may become prone to conflict or avoidance of others if they learn they cannot consistently get their needs met through their relationships with others (Ainsworth, 1989; Bowlby, 1988).

In further consideration of attachment theory and poverty, youth with a higher number of socioeconomic barriers are more likely to experience less secure and more disorganized attachments as a result of economic stress impacting both caregiver sensitivity and the emotional climate at home (Cyr et al., 2010; Raikes & Thompson, 2005). Youth who lack secure attachment with their caregiver due to compromised systems maintain stable negative expectations of social interactions, but these working models have the possibility to be altered based on newly acquired experiences in relationships (Bowlby, 1988; Bretherton, 1985). Research grounded in attachment theory has found that pairing youth with a supportive, non-familial adult mentor can modify youth's working models to improve perceptions of and functioning in relationships across parents, peers, and other adults, while helping to ameliorate the risk of numerous negative outcomes (DuBois et al., 2002; Karcher, 2005; Rhodes et al., 2000; Rhodes et al., 2005; Rhodes et al., 2006). Mentors who are consistently present and attuned provide youth with a dependable source of support, which may encourage youth to incorporate advice from their mentor, engage in more support-seeking behavior, and explore healthier relationships with others (Rhodes et al., 2006). In this way, a mentor may become a surrogate attachment figure for their mentee or reshape working models of interpersonal relationships and encourage development of other relationships (Rhodes et al., 2006). Thus, the mentoring relationship may create an avenue for a "corrective experience" for youth with a history of dissatisfactory or dysfunctional relationships (Rhodes, 2005).

Mentee Characteristics

Although the purpose of mentoring is often identified as providing youth with a close adult relationship, research has indicated that youth may vary in their ability to engage in this relationship based on their preexisting adult connections. It is well-established that children who have poor parental attachment are more likely to develop lower quality relationships across teachers, peers, and other intimate relationships (Allen et al., 2007; Bergin & Bergin, 2009; Pallini et al., 2014; Rydell et al., 2005). In consideration of attachment theory, youth's working models of interpersonal relationships influence their relationship styles and behaviors (Ainsworth, 1989; Bowlby, 1988). While mentors may be able to change these working models, significant barriers may exist for youth with more severe relational difficulties and behavioral challenges, as well as histories of emotional, sexual, or physical abuse that significantly impact attachment capacities (Grossman & Rhodes, 2002). Research has connected these risk factors to decreased benefits from mentoring, as youth with such presentations may require a higher level of care or mentors who have more extensive training and support (Grossman & Rhodes, 2002). For instance, Raposa and colleagues (2016) identified that youth with higher levels of environmental stress at home or at school experienced shorter matches, while both mentors and mentees reported lower relationship satisfaction when youth presented with poor academic performance or misconduct. Schwartz and colleagues (2011) also found that higher interpersonal risk (i.e., challenging and distant relationships with parents and teachers) was associated with lower quality and duration of the match, as well as fewer academic benefits compared to moderate risk youth (i.e., relationships with adults and peers that were neither particularly close nor challenging). More generally, a meta-analysis by DuBois and colleagues (2011) identified that the effects of mentoring were weaker for youth who were identified to have both high environmental (e.g., family conflict, poverty) and individual (e.g., behavioral, academic, or

interpersonal difficulties) risk relative to youth who only experienced one level of risk. However, these findings have not been consistently replicated as another large-scale study of environmental and individual risk reported no significant differences in match quality and length across risk profiles (Herrera et al., 2013). While further research is needed, overall, youth with poor attachment history may interpret mentor behaviors more negatively, struggle to self-regulate, and act dismissively toward mentor demonstrations of support, which may then impact mentor engagement and influence early relationship termination (Spencer, 2007; Zilberstein & Spencer 2014).

Although research has shown youth with attachment difficulties may face many barriers to successfully engaging in mentoring, youth with strong preexisting interpersonal relationships may also be less likely to benefit from mentoring as the mentoring relationship may feel less necessary (Schwartz et al., 2011). In fact, one study found that youth who have moderate quality relationships with peers and adults are best situated to benefit from the addition of a mentoring relationship, with greater improvements to prosocial behaviors and academic performance relative to youth with strong or weak relationships following participation for a full academic year (Schwartz et al., 2011). However, the authors found no differences in perceptions of the quality of the mentoring relationship regardless of relational profile, suggesting most youth were able to form close relationships with their mentors despite differential improvements in other domains. Further research has indicated youth with secure attachment styles may benefit more from a positive mentoring relationship than youth with insecure attachment styles, including reduced chance of early relationship termination (DeWit et al., 2016) and greater improvements to self-concept and feelings of loneliness although the effect sizes remain small (Goldner & Scharf, 2014). Another recent mentoring intervention with low-income early adolescent girls

referred by their school counselors found that those who experienced lower trust and communication with their mothers reported less satisfaction with their mentoring relationships, while those who experienced higher alienation from their mothers unexpectedly reported higher quality mentoring relationships, with alienation perhaps representing a more developmental issue rather than foundational attachment challenge (Williamson et al., 2019). In light of the current research, mentoring may be a beneficial opportunity for youth who are seeking to build more positive relationships, but perhaps limited by the quality of their preexisting connections.

Although relationally vulnerable youth appear to benefit from being paired with a mentor, these benefits may be limited for mentees presenting with the most significant challenges, including the constellation of environmental stressors (e.g., heightened poverty, discrimination), insecure attachment, and emotional and behavioral problems. Although the root of youths' emotional and behavioral problems are strongly tied to issues of attachment and environmental stressors, person-environment interaction models posit that individual factors, while influenced by environmental factors, may in turn influence environmental factors (Kristof-Brown, 2020). In this way, research has indicated mentees with individual risk factors experience increased likelihood of early relationship termination, further cementing attachment difficulties. Therefore, it is essential to continue evaluating the combination of individual and environmental mentee interpersonal risk as well as explore potential avenues within the mentoring relationship for mitigating these risks. In order to obtain a more comprehensive understanding of the mentoring relationship and its mechanisms, both mentees and mentors need to be considered in terms of their baseline characteristics and range of mentoring outcomes.

Mentee Outcomes

As the mentoring relationship blossoms, youth also begin developing across several domains, including improvements to academics, emotional well-being, and behavior problems with the results of several meta-analyses indicating moderate effect sizes of mentoring (DuBois et al., 2011; DuBois et al., 2002; Raposa et al., 2019; Tolan et al., 2014). A study by Herrera and colleagues (2013) found that mentees facing a wide range of challenges (e.g., poverty, racism/discrimination, mental health) reported fewer depressive symptoms, greater acceptance by peers, more positive beliefs about their potential for academic success, and better grades after 13 months from their initial assessment, with the strongest effect size (-.32) shown for reduction of depressive symptoms. Several other studies have similarly indicated small effect sizes for mentees obtaining better grades and improving their school attendance, as well as being more likely to finish high school and enroll in college (DuBois & Silverthorn, 2005; Herrera et al., 2007). Another study by DeWit and colleagues (2016) cited additional evidence of fewer depressive symptoms in addition to reduced social anxiety and behavioral problems for mentees who had engaged in long-term mentoring relationships, even relationships that had since ended. Mentees may also develop skills in understanding, expressing, and regulating their emotions (McDowell et al., 2002) in addition to strengthening their coping strategies (DeWit et al., 2016). Clearly, participation in mentoring may carry a range of benefits for mentees, but it is essential to further evaluate how these benefits may vary by mentees' specific experiences within their mentoring relationship.

In looking at mentees' experiences within the mentoring relationship, the results of several studies have indicated that higher quality mentoring relationships are predictive of both relationship length (DeWit et al., 2016) and better outcomes for mentees. Goldner and Maysless (2009) found that mentor closeness predicted higher ratings by teachers on academic functioning

and social adjustment following an 8-month mentoring intervention. Another study reported youth who shared a stronger working alliance with their mentors were more likely to improve their academic competence, participation in class, tendency to seek help from teachers, and academic perseverance compared to other mentored and non-mentored students (Larose et al., 2010). Similarly, in an evaluation of a school-based mentoring program, Lyons and colleagues (2019) found that higher quality relationships with mentors generally predicted better outcomes, although effect size varied. More specifically, mentees showed effect sizes ranging from near zero to small for school grades as opposed to small to moderate effect sizes for behavioral outcomes (i.e., delinquency and misconduct). Bayer and colleagues (2015) found that participation in mentoring had no effect on academic outcomes following a school year of mentoring unless mentees rated their mentoring relationship as “somewhat close” or better. Based on this pattern of findings, it appears that the mentoring relationship itself is central to growth across a number of domains.

Similar to direct effects on academic and behavioral outcomes, the mentoring relationship may also promote improvements across other relationships. In consideration of relational outcomes, Renick Thomson and Zand (2010) examined the predictive value of mentoring relationship quality on parental attachment and relationships with other adults, measured at eight months and 16 months after youth were matched with a paid adult mentor. Results of hierarchical regression indicated that higher quality mentoring relationships significantly predicted improved parent attachment (only at eight months), friendship with other adults, and disclosure to adults. Additionally, Goldner and Mayseless (2009) found improvements in perceptions of mentees’ social support from their mothers, but not fathers or friends, for mentees with higher perceived closeness with their mentors. Another study indicated mentored boys, but

not girls, reported more positive perceptions of emotional support from peers and parents (DeWit et al., 2016), suggesting mentoring may fulfill different relational needs by gender. Based on these various findings, from an attachment perspective, the mentoring relationship may serve as the vehicle through which mentees are able to begin seeing the potential for other relationships to be positive experiences.

While a number of studies have provided evidence for direct effects of the mentoring relationship, some studies have suggested indirect pathways among outcomes, such that the mentoring relationship may foster interpersonal growth in other relationships, which may then influence development across academic, emotional, and behavioral domains. For example, Rhodes and colleagues (2000) found that perceived improvements in their parental relationships as a result of mentoring mediated youths' growth in value placed on school, self-worth, and grades. Another study reported parental relationships mediated the association between mentoring and substance use for matches lasting longer than 12 months, further supporting the notion that the mentoring relationship drives change through improvements across other relationships (Rhodes et al., 2005). More recently, researchers found that higher quality relationships with parents and teachers served as a mediator between mentoring relationship quality and self-esteem, academic attitudes, prosocial behaviors, and misconduct, with effect sizes ranging from .12 to .52 (Chan et al., 2013). As an additional indicator of possible indirect pathways, Dubois and colleagues (2002) found that only youth who spontaneously nominated their mentor as a significant adult in their lives reported positive emotional and behavioral outcomes, mediated by increases in perceived social support. Collectively, the evidence suggests that the quality of the mentoring relationship has strong implications for both direct and indirect effects on a broad range of mentee outcomes, including other relationships in the mentee's life.

Despite substantial evidence of positive effects of mentoring on mentees, it is also important to remember that not all mentoring relationships lead to improved outcomes or even a strong mentor-mentee connection. Whether stemming from mentor or mentee factors or a combination of both, early relationship termination often has a detrimental impact on youth, including increased substance use (Grossman & Rhodes, 2002), feelings of rejection or abandonment (Grossman & Rhodes, 2002; Spencer et al., 2014), and lower self-esteem (DuBois et al., 2011). Re-matched youth face similar challenges such that the health and social benefits of mentoring are often lost (DeWit et al., 2016) and youth may even experience a decline in self-worth and academic functioning (Grossman & Rhodes, 2002; Grossman et al., 2012), although some researchers have found re-matching may not be damaging if youth are able to develop a close relationship with their new mentors (Bayer et al., 2015). Potential flaws of re-matching are understandable given that youth who begin to develop trust in a new attachment figure may have their previous working models reinforced rather than altered, such that they may believe even less in themselves and in others. In general, research has suggested a pattern of relationships lasting a year or longer resulting in the most marked improvements in outcomes, with benefits decreased for shorter relationships and negative effects for the shortest relationships (Grossman & Rhodes, 2002).

In summary, youth who participate in mentoring often show moderate improvements across academic, emotional, behavioral, and interpersonal functioning driven by the development of high quality, long-term mentoring relationships. The development of the mentoring relationship may be associated with both direct and indirect effects, suggesting a couple possible mechanisms of mentee improvements. One possibility, in line with the idea of the mentor as a surrogate attachment figure, is that stability and support provided by the mentor within a close

mentoring relationship directly encourages youth to succeed, as they have someone in their corner advocating for them who they can rely on as a secure base. Another possibility rooted in attachment theory is that the development of a close mentoring relationship can reshape a child's working model of interpersonal relationships, leading to healthy growth in other important relationships (e.g., parents, teachers, peers), which then drives change in other domains of functioning. As evidence exists supporting both of these possibilities, further research is needed to clarify the connection between the mentoring relationship and mentee outcomes, which can perhaps be better accomplished by incorporating the other half of the mentoring relationship: the mentor.

Mentor Characteristics

Although youth mentoring has traditionally been provided by adult volunteers with stable careers, in recent years, programs have been increasingly recruiting college students to fill this role, now representing an estimated 13% of youth mentoring volunteers and growing (Garringer et al., 2017). In many ways, college students are an ideal population for mentoring as they are situated within institutions that can provide the infrastructure for the development and dissemination of mentoring programs, often within the context of service-learning courses (Hughes et al., 2009; Wasburn-Moses et al., 2014; Weiler et al., 2013). College students are closer in age to the youth they mentor which may better situate them to form connections and share relevant advice, operating somewhere between a peer and an adult authority figure (Keller & Pryce, 2010; Lee et al., 2010). Because college students have not yet entered a career, they may also have more flexible schedules to accommodate the mentoring experience (Preston & Raposa, 2019).

At the same time, however, college students may experience more frequent schedule changes and the demands of balancing their coursework with part-time employment and participation in student organizations (Grossman et al., 2012; Rhodes & DuBois, 2006). College students are less likely to have experience in a helping profession, a factor which has been shown to improve outcomes for youth (DuBois et al., 2011; Van Dam et al., 2018). Additionally, the transition to college marks a vulnerable time for many students who are leaving home for the first time and may experience difficulties with maintaining or establishing a strong social support network, a factor which plays an important role in both academic and emotional adjustment (Albright & Hurd, 2017; Bernier et al., 2004; Hefner & Eisenberg, 2009; Li et al., 2014). For students who report insecure attachment relationships with their parents, this transition may generate even more adjustment difficulties due to distal effects on development of other relationships (Mattanah et al., 2011). As they enter emerging adulthood, college-age adults also report heightened levels of psychosocial difficulties, such as anxiety and depression (Blanco et al., 2008; Mistler et al., 2013). Specific to the college student population, a recent report by the American College Health Association (ACHA, 2020) indicated 17.4% and 14.1% of 30,084 undergraduate respondents attended appointments for anxiety and depressive symptoms respectively within the past 12 months. Underrepresented ethnic/racial minority or first-generation students may experience additional distress caused by discrimination, microaggressions, and difficulties with isolation and belongingness (ACHA, 2020; Hurtado & Ruiz, 2012; Jenkins et al., 2013) that may influence susceptibility to depressive symptoms (Jenkins et al., 2013; Wei et al., 2010). As a result, higher levels of social support may be particularly important to bolster the adjustment of underrepresented students impacted by these stressors (Albright & Hurd, 2017).

As youth mentoring highlights the importance of building a strong relationship for mentees, researchers have investigated mentor qualities that may facilitate mentoring relationship formation, particularly among the college student population. Looking at basic characteristics, some research has indicated that cross-race matches may be more likely to terminate than same-race matches but mentee outcomes do not appear to significantly vary based on race of the mentor (Grossman & Rhodes, 2002; DuBois et al., 2002, Rhodes et al., 2002; Sanchez & Colon, 2005). Matches based on mentor-mentee similarity may have more of an impact on outcomes than race or gender (DuBois et al., 2011), although being thoughtful and reflective about economic, racial, and sociocultural differences is important to facilitate an enduring and close relationship (Spencer, 2012).

Beyond match characteristics, previous studies have indicated that mentors with higher self-efficacy and self-worth may be better positioned to develop a positive relationship with their mentees (Parra et al., 2002; Karcher et al., 2005; Leyton-Armakan et al., 2012; Raposa et al., 2016), but other findings have suggested high levels of mentor autonomy (i.e., independent decision-making and initiative) may decrease mentee relationship satisfaction, perhaps due to difficulties collaborating with their mentee (Leyton-Armakan et al., 2012). Additionally, mentors who reported previous experience working with youth may be better able to buffer potential negative effects of youth risk factors, such as environmental stress and behavioral problems (Raposa et al., 2016). However, Raposa and colleagues (2016) also indicated that mentors with formal mentoring experience may in fact have more difficulty engaging youth, perhaps due to unrealistic efforts to duplicate their previous experiences. Although few studies have examined mentor mental health specifically, Leyton-Armakan and colleagues (2012) found that mentor depressive symptoms negatively predicted mentee competence, while mentor anxiety symptoms

positively predicted mentee competence. Preston and Raposa (2019) also found that mentor depressive symptoms were associated with mentors' negative perceptions of the mentoring relationship and relational avoidance. Together, these findings suggest that imbalances in mentor engagement, whether too rigid or too withdrawn, present a risk for disconnection within the mentoring relationship.

A growing body of research has investigated how mentors' own relational experiences may impact their ability to develop a strong mentoring relationship. A study by Spencer and colleagues (2010) found that mentors whose attachment styles were indicative of greater comfort with intimacy and less anxiety in their interpersonal relationships had stronger mentoring relationships at six months as reported by their mentees, with mentor empathy also contributing to mentee feelings of acceptance (Spencer et al., 2010). Similarly, young mentors (between ages 15 and 26) who had lower relational capacity as measured by connection with their parents reported lower match quality, mediated by their attitude toward mentees and empathy skills (Doty et al., 2019). Further supporting the importance of secure attachment relationships, Leyton-Armakan and colleagues (2012) found that mentees experienced higher relationship satisfaction when mentors reported feeling positively toward their relationships with their own parents. Relational capacity of mentors may be especially important given that mentors who are able to take a more developmental approach, focused on building a close relationship with their mentee and improving mentee relationships with others, experience longer matches and more satisfying relationships with their mentees, as opposed to mentors who focus more on skill-building (Raposa et al., 2016). Additionally, securely attached mentors may be better equipped to persist through challenges and conflicts in the mentoring relationship and less likely to personalize these issues (Spencer, 2012).

In contrast to findings supporting the benefits of securely attached mentors, other emerging evidence has pointed to the possibility that mentors' own negative early life experiences, including history of insecure attachment, may actually bolster the relationship with their mentees (Goldner, 2017; Preston & Raposa, 2019). Perhaps due to mentor resiliency and empathic growth (Spencer, 2012) as well as the potential for increased shared experience with their mentees, in two studies, mentees reported higher levels of satisfaction and higher levels of adjustment following mentoring when paired with mentors who had experienced childhood stress (Goldner, 2017; Preston & Raposa, 2019). Based on these mixed findings, the relational capacity of the mentor appears to play an essential role in the development of the mentoring relationship; however, it remains unclear exactly how a mentor's attachment history may help or hurt this process.

Mentors are generally assumed to be competent, caring adults who are able to serve as role models and develop supportive relationships with their mentees (Spencer, 2012). Although most programs provide some level of mentor training, and programs geared toward college students typically offer extensive training and supervision, much of the onus remains on the mentor to establish a close bond and serve as the mechanism that drives changes to their mentee's working model of interpersonal relationships (Herrera et al., 2013; Weiler et al., 2013). However, the literature has not fully considered the mentor's own attachment history and subsequent working models of interpersonal relationships which typically extend through adulthood (Bowlby, 1988). Given that college has been identified as a sensitive period developmentally, college students who lack familial or non-familial adult support may struggle to connect with others, including their mentees. Therefore, many college student mentors may be entering programs without the basic tools to establish a close and enduring relationship with their

mentee. While mentor trainings may be able to counteract some of these deficits, it remains unclear whether college students with poor attachments are able to fully utilize the skills introduced to them when paired with their mentee, or whether college mentors' negative childhood experiences may in some way lend strength to the mentoring relationship. With the mentoring relationship often considered the driving force of mentoring programs (Rhodes et al., 2002), it is essential to look at the capacity to form this relationship through the lens of both mentor and mentee attachment, with consideration of what program supports are already in place and what could be added to strengthen these capacities (Spencer, 2012).

Mentor Outcomes

While mentor interpersonal and psychosocial difficulties may pose barriers to the development of the mentoring relationship, it is also possible that, similar to the expectations for mentees, involvement in mentoring may modify a college student mentor's working model of interpersonal relationships and improve psychosocial outcomes. With consistent program support and supervision, college student mentors may be able to overcome some of these difficulties (Stukas et al., 2013). However, much of the current research on mentor outcomes has been mentee-focused, meaning the gains assessed by studies are directly tied to the mentor's increased understanding of their mentee's background and community (Hughes & Dykstra, 2008). Mentors report benefits such as learning the value of civic action, becoming a positive role model, and gaining awareness about the community (Hughes & Dykstra, 2008). More specifically, college mentors of low-income youth of color identified their mentoring experience as providing the opportunity to challenge assumptions or stereotypes they previously held and increase their understanding of social injustice and the effects of poverty (Hughes et al., 2009). This learning experience often also contributes to making mentors more motivated and empowered to be

civically engaged in the community (Lee et al., 2010). Although acquired knowledge may be associated with increased understanding and acceptance of the mentee, these findings fail to address direct effects of mentoring on the mentors themselves in other areas.

Although limited research has assessed mentor-focused outcomes, some studies have indicated increases in interpersonal skills, problem solving skills, and self-esteem. Qualitative studies of college mentors have uncovered themes including improved communication (e.g., listening skills, patience, and conversational skills), respectful interactions with people with different backgrounds and personalities, and working through issues with others in a thoughtful way, as well as broad contributions to personal growth (Banks, 2010; Wasburn-Moses et al., 2014; Weiler et al., 2014). Few studies have addressed college student mentor outcomes quantitatively. Weiler and colleagues (2013) assessed a 12-week long intensive mentoring program for juvenile justice system-involved youth between ages 10 and 18, while Lee and colleagues (2010) evaluated an academic year program targeting low-income middle school girls. Both identified small effect sizes, ranging from .08 to .09 on college mentor interpersonal skills, problem solving skills, and self-esteem (Weiler et al., 2013) and from .12 to .25 on ability to listen to and interact with people with different views, provision of support towards friends, and dealing with problems. Based on these findings, there is some evidence that participation in mentoring programs supports self-reported improvements in mentor abilities to connect with others and may have some psychosocial benefits as well (e.g., increased self-esteem). However, very little attention has been dedicated to psychosocial outcomes of college student mentors post-mentoring despite the known elevated rates of psychosocial distress in this population (ACHA, 2020). Surprisingly, no known studies of college mentors within the youth mentoring context have investigated possible reductions in depression and anxiety, even though these

symptoms have been strongly linked to interpersonal factors (Albright & Hurd, 2017; Bernier et al., 2004; Hefner & Eisenberg, 2009). Additionally, given that most of the studies on mentor outcomes are qualitative and the limited quantitative studies have only identified small effect sizes, further research is needed to better understand mentor interpersonal and psychological outcomes.

Although little investigation has been conducted with mentors in general, it is also important to consider potential costs of mentoring for college mentors. Several studies have described mentor feelings of disappointment or frustration when their expectations for the mentoring relationship are not met, as such relationships are often less rewarding and more challenging than anticipated or mentors may perceive their mentees as unmotivated or disinterested (Herrera et al., 2013; Spencer, 2007; Stukas et al., 2013). A study by Faith and colleagues (2011) found that college mentors of aggressive youth reported mild yet significant declines in self-efficacy and Big Five personality characteristics following three semesters of mentoring. Interestingly, mentee-rated support negatively predicted mentor attitudes toward future parenting, perhaps as mentors who dedicate substantial effort to the mentoring relationship may begin to perceive parenting as more burdensome. Only mentors who rated the relationship with their mentee as supportive showed improvements over time, including less attachment-related avoidance, suggesting that the relational component of mentoring may be as paramount for mentors as it is for mentees.

Based on the extant literature, participation in mentoring may be associated with a somewhat similar pattern of mentor interpersonal and emotional growth as observed for mentees. However, no clear mechanism of change has been studied for mentors, in contrast to the larger body of research on mentees identifying both direct and indirect pathways of influence on

mentee outcomes. This prominent gap in the research warrants investigation to help bridge the field's understanding of mentoring from the perspective of both the mentee and mentor.

Rationale

Although the mentoring relationship has been studied extensively, few studies have evaluated mentoring predictors and outcomes for mentees and mentors in conjunction. Given that the average cost-per-match in the United States is \$1,695 annually (Garringer et al., 2017), substantial resources are invested each year into supporting mentoring relationships, yet the benefits of these investments are typically only considered from the mentee perspective. With the growing number of college students participating in mentoring programs, shifting the focus of research to encompass both mentors and mentees could help uncover a myriad of possible benefits to support the continued expansion of these programs within university course offerings. At the same time, this research could be used to inform and refine mentoring program training protocols with both mentor and mentee needs in mind. The purpose of this study is to view both mentors and mentees through an attachment lens, applying the same theory often used to explain the mechanisms of mentoring for youth to college mentors, who may enter the relationship with their own personal set of challenges. To accomplish this, the current study utilizes the same assessments for both mentors and mentees to identify patterns of interpersonal and emotional functioning across the mentoring relationship.

Statement of Hypotheses

Hypotheses were altered from the originally proposed hypotheses based on the available data and associated analyses for this study and are listed below.

Hypothesis I: Mentees will demonstrate a reciprocal relationship between internalizing problems and mentoring relationship quality, such that lower internalizing problems at baseline

will predict higher mentoring relationship quality at three months and higher mentoring relationship quality will predict lower internalizing problems at subsequent timepoints.

Hypothesis II: Mentees will demonstrate a reciprocal relationship between interpersonal relationships and mentoring relationship quality, such that stronger interpersonal relationships at baseline will predict higher mentoring relationship quality at three months and higher mentoring relationship quality will predict stronger interpersonal relationships at subsequent timepoints.

Hypothesis III: Mentors will demonstrate a reciprocal relationship between internalizing problems and mentoring relationship quality, such that lower internalizing problems at baseline will predict higher mentoring relationship quality at three months and higher mentoring relationship quality will predict lower internalizing problems at subsequent timepoints.

Hypothesis IV: Mentors will demonstrate a reciprocal relationship between interpersonal relationships and mentoring relationship quality, such that stronger interpersonal relationships at baseline will predict higher mentoring relationship quality at three months and higher mentoring relationship quality will predict stronger interpersonal relationships at subsequent timepoints.

Research Question I: In consideration of possible interdependence within the mentoring relationship, what patterns of influence exist between mentors and mentees on reports of mentoring relationship quality and other interpersonal relationships?

Method

Participants

Mentees participating in this study included 80 youth (46.3 percent male, 53.8 percent female) at three public elementary schools between grades 2 and 8 (M age = 10.61) who were randomized into a coping-based mentoring program (as opposed to a waitlist control group) designed for low-income youth experiencing chronic stressors between fall of 2016 and fall of

2020. A total of 91.3 percent of the youth identified as Black or African American, while the remaining youth described themselves as Biracial or Multiracial (6.3 percent), Latinx/Hispanic (1.3 percent), and Non-Hispanic White (1.3 percent). Although no formal stressor-related or income-based criteria determined youth eligibility for the study, mentees attended schools with student bodies classified as 95 percent low-income, with student attainment (i.e., math and reading scores) below the national average and weak or very weak safety ratings for the surrounding areas (Chicago Public Schools, 2019). For this reason, all students at each of three partner schools were considered eligible to enroll in the study.

Mentors participating in this study included 80 undergraduate students (21.3 percent male, 76.3 percent female, 2.5 percent other) enrolled at one private university between ages 17 and 27 (M age = 19.83) who were randomized into the coping-based mentoring intervention during the same time period. A total of 7.5 percent of the mentors identified as Black or African American, 52.5 percent identified as Non-Hispanic White, 20 percent identified as Latinx/Hispanic, 7.5 percent identified as Asian American, 2.5 percent identified as Middle Eastern, and 10 percent identified as Biracial or Multiracial. Participants were initially recruited from student groups and programs that support low-income and underrepresented ethnic/racial minority students, in an effort to match mentee backgrounds. Recruitment was then expanded to the full university to fill any remaining spots in the study.

Procedure

Participants were recruited to register for the study at their respective schools by completing the consent process and a battery of baseline measures. Youth required parental consent to register and both youth and college participants were compensated with \$30 in gift cards until 2018 when incentives were increased to \$60 in gift cards. All participants were asked

to complete additional surveys for the same compensation every three months for the first year of study participation and every year afterwards. Participants were given an explanation regarding the longitudinal nature of the study and were asked to provide extensive contact information to limit attrition.

Once registered for the study, half of the participants were randomized into the mentoring intervention and half were randomized into a waitlist control group. Intervention participants were required to meet in person or by phone with the Program Director to review expectations of the program and gather information for the matching process. The Program Director was responsible for making matches based on mentor and mentee backgrounds (e.g., experience with mentoring, behavioral issues, common interests). Community stakeholders requested matching by gender such that female mentees were never matched with male mentors, but male mentees were permitted to be matched with female mentors given the higher proportion of participation by female mentors. If spaces became available for mentors or mentees mid-year during the intervention, additional participants were pulled from the waitlist and paired with a mentor or mentee. The current study included participants who were matched with a mentor or mentee within the first three months of the intervention period and who completed surveys at some point during the year beyond baseline. Once added to the intervention, mentors and mentees were expected to commit to a full academic year. Mentors and mentees were then eligible to return in following years for more long-term participation in the program, leading some mentors and mentees to have multiple matches over time, as is common practice in the field of mentoring (Herrera et al., 2013).

The mentoring intervention, known as the Cities Mentor Project, was developed based on basic stress research, which identified that youth exposed to the highest levels of severe and

chronic stressors were unable to benefit from use of coping skills unless they shared a relationship with a supportive adult and were connected to a protective setting (Grant et al., 2014a). With these findings in mind, the Cities Mentor Project was developed to pair youth experiencing systemic stressors with college student mentors within an after-school program designed around a coping-based curriculum (Grant et al., 2014b). The intervention is conducted at each of three partner elementary schools with mentees meeting with their mentors once a week and receiving additional after-school programming on the other days of the week for a full academic year. The Cities Mentor Project utilizes a modified version of Structured Psychotherapy for Adolescents Responding to Chronic Stress (SPARCS; DeRosa et al., 2006), which includes content on mindfulness, relationship building, communication skills, distress tolerance, coping skills, problem solving, meaning making, and psychoeducation about topics such as trauma and triggers. Modifications specific to the Cities Mentor Project include a youth-led advocacy component and more focus on academic goal setting and physical health.

The Cities Mentor Project matches mentor-mentee pairs within a mentor family structure, with three to four mentors and three to four mentees assigned to a graduate-level clinical supervisor for the full academic year. Mentors and mentees are paired to develop one-on-one relationships but also participate in activities within their supervisory and whole group. Supervisors provide transportation for mentors to their mentees' schools during which time mentors receive extensive supervision (approximately 1.5 to 2 hours per week). Outside of supervision time, mentors are enrolled in an experiential learning course at their university, which additionally requires them to complete quarterly half-day trainings that include education on trauma and systemic issues reflected in their mentee's communities, practice using an attunement-focused protocol (Mentoring FAN; Pryce et al., 2018), and trainings on activities

planned within the coping-based curriculum. Mentors and mentees are also expected to have contact outside of mentoring sessions at least once a week, and mentors submit graded reflections on their experiences on a weekly basis for which they receive further support and feedback.

Measures

Emotional Symptoms. The Behavior Assessment System for Children: Self-Report of Personality (BASC-2 and BASC-3; Reynolds & Kamphaus, 2004; Reynolds & Kamphaus, 2015) was used to generate the Internalizing Symptoms composite as a measure of emotional disturbance. All versions of the BASC demonstrate strong psychometric properties, with high internal consistency, test-retest reliability, construct validity, and criterion-related validity (Reynolds & Kamphaus, 2004; Reynolds & Kamphaus, 2015). The measure uses a four-point Likert scale response set with options of *Never* (1), *Sometimes* (2), *Often* (3), and *Almost Always* (4). As both the BASC-2 and BASC-3 were used across multiple age versions (Child, Adolescent, and College) with a different number of items and slight changes to wording, proportion scores (raw score divided by total possible raw score) were used for analysis to promote standardization across measures. The Internalizing Problems (INZ) composite, which was used for this study, included the following scales: Atypicality, Locus of Control, Social Stress, Anxiety, Depression, Sense of Inadequacy, and Somatization (Adolescent and College only), with higher scores indicating higher levels of internalizing problems.

Interpersonal Relationships. Two measures were used as proxies of mentor and mentee interpersonal relationship experiences outside the mentoring relationship itself. These measures specifically pull for relational experiences with adults in an effort to better estimate mentor and mentee attachment experiences, as no specific attachment measure was available for this study.

The Very Important Adults (VIA) measure was developed for the Cities Mentor Project based on existing instruments, most notably a measure of adult functional roles introduced by Hamilton and colleagues (2016). The original scale, utilized with a high-school aged sample, demonstrated satisfactory internal reliability with alphas between .77 and .87 (Hamilton et al., 2016). The current measure has similar structure and content but was modified to be administered to both a younger population of mentees as well as their college student mentors. More specifically, the current study's version of the VIA asks respondents to nominate up to two very important adults, who can be related (e.g., mom, uncle) or unrelated (e.g., coach, pastor) to them. A "very important" adult is defined as someone who is 18 years old or older and is someone you look up to as a mentor (not a friend or romantic partner). Respondents completed a three-point (mentees) or five-point (mentors) Likert scale response set with options of *Never* (1), *Hardly Ever* (2), *Sometimes* (3), *Often* (4), and *Very Often* (5). The response set asks, "How much does this person do each of the following things?" with nine (mentees) or 10 (mentors) items such as, "Says or does something that helps me with my feelings," "Gives me advice or information about how to do something," and "Helps to make sure I have the things I need to be successful." A full copy of both the mentor and mentee version of this measure is available in Appendix A. Total scores at baseline, three months, six months, and nine months were calculated using the mean of all items (mentor $\alpha = 0.87$, mentee $\alpha = .89$), with higher scores indicating more supportive interpersonal experiences.

A new measure designed for the purposes of the Cities Mentor Project intervention, Places I Spend Time (PIST; Duffy et al., 2020), provides information on interpersonal experiences at home (PISTH) and at school (PISTS). Participants answer 22 (mentee) or 30 (mentor) questions about "What kinds of things happen [at this place] and how much do they

happen?” using a three-point Likert scale including *Never* (1), *Sometimes* (2), and *A Lot* (3). Sample items include “Someone helps me when things go wrong,” “I get help solving a problem,” and “Someone shows me that I am important.” A full copy of both the mentor and mentee version of this mentor is available in the Appendix. Total scores for home and school at baseline, three months, six months, and nine months were calculated using the mean of all items (mentor home $\alpha = 0.98$, mentor school $\alpha = .98$, mentee home $\alpha = .94$, mentee school $\alpha = .95$), with higher scores indicating more supportive interpersonal experiences.

Mentoring Relationship Quality. To assess perceptions of mentoring relationship quality, this study will use an adapted version of the Match Characteristics Questionnaire (MCQ Adult Version 2.0; Harris & Nakkula, 2003) for both mentors and mentees. This 22-item measure for mentors and 16-item measure for mentees uses a six-point Likert scale response set ranging from 1 (*Never*) to 6 (*Always*). Example items for both mentors and mentees include “I feel frustrated or disappointed with how the match is going” (reverse coded), “I can trust what my mentee/or tells me,” and “I feel like my mentee/or and I are good friends (buddies, pals).” Additional mentee items include overlapping items from the VIA, such as “My mentor helps to make sure I have the things I need to be successful.” Additional mentor items include, “My mentee does things to push me away” (reverse coded) and “My mentee makes me aware of his/her problems or concerns.” A full copy of both the mentor and mentee version of this mentor is available in the Appendix. The MCQ has shown acceptable internal consistency and construct validity in previous studies (Holt, Bry, & Johnson, 2008; Nakkula & Harris, 2013). Total scores at three months, six months, and nine months were calculated using the mean of all items (mentor $\alpha = 0.92$, mentee $\alpha = .88$), with higher scores indicating more positive perception of the mentoring match.

Results

Descriptive Statistics

Tables 1 and 2 indicate the sample sizes (*N*), percent of missing data, possible range based on the rating system used, and the mean (*M*) and standard deviation (*SD*) at each time point for the mentee and mentor datasets respectively. Mentees and mentors reported similar patterns of generally high perceptions of mentoring and interpersonal relationship quality and low ratings of internalizing problems that were fairly stable over time. Time 1 represents baseline/pre-intervention, while Time 2 represents three months of mentoring, Time 3 represents six months of mentoring, and Time 4 represents the complete nine months of mentoring (post-intervention).

Table 1

Mentee Descriptive Statistics and Missing Data Patterns

| Measure | <i>N</i> (%) Missing) at T1 | <i>N</i> (%) Missing) at T2 | <i>N</i> (%) Missing) at T3 | <i>N</i> (%) Missing) at T4 | Possible Range | <i>M</i> (<i>SD</i>) at T1 | <i>M</i> (<i>SD</i>) at T2 | <i>M</i> (<i>SD</i>) at T3 | <i>M</i> (<i>SD</i>) at T4 |
|-------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| MCQ | -- | 57 (28.7%) | 43 (46.3%) | 46 (42.5%) | 1-3 | -- | 2.586 (.422) | 2.623 (.326) | 2.638 (.374) |
| VIA | 58 (27.5%) | 66 (17.5%) | 44 (45%) | 43 (46.3%) | 1-3 | 2.585 (.465) | 2.580 (.519) | 2.712 (.334) | 2.663 (.385) |
| PISTH | 63 (21.3%) | 73 (8.8%) | 52 (35%) | 47 (41.3%) | 1-3 | 2.445 (.423) | 2.440 (.446) | 2.524 (.389) | 2.456 (.371) |
| PISTS | 62 (22.5%) | 73 (8.8%) | 52 (35%) | 47 (41.3%) | 1-3 | 2.465 (.414) | 2.425 (.415) | 2.489 (.458) | 2.458 (.415) |
| BASC INZ | 60 (25%) | 66 (17.5%) | 43 (46.3%) | 44 (45%) | 0-1 | .234 (.184) | .282 (.218) | .298 (.224) | .248 (.153) |

Note. MCQ = Match Characteristics Questionnaire; VIA = Very Important Adults; PISTH = Places I Spend Time:

Home; PISTS = Places I Spend Time: School, BASC INZ = Behavioral Assessment System for Children:

Internalizing Problems

Table 2

Mentor Descriptive Statistics and Missing Data Patterns

| Measure | N (% Missing) at T1 | N (% Missing) at T2 | N (% Missing) at T3 | N (% Missing) at T4 | Possible Range | Mean (SD) at T1 | Mean (SD) at T2 | Mean (SD) at T3 | Mean (SD) at T4 |
|-------------|---------------------------|---------------------------|---------------------------|---------------------------|-------------------|--------------------|--------------------|--------------------|--------------------|
| MCQ | -- | 51 (36.3%) | 47 (41.3%) | 21 (73.8%) | 1-5 | -- | 3.977 (.875) | 4.065 (.818) | 4.169 (.633) |
| VIA | 8 (90%) | 5 (93.8%) | 36 (55%) | 3 (96.3%) | 1-5 | 4.590 (.511) | 4.556 (.370) | 4.312 (.622) | 4.243 (.846) |
| PISTH | 57 (28.7%) | 44 (45%) | 46 (42.5%) | 27 (66.3%) | 1-3 | 2.390 (.612) | 2.492 (.585) | 2.553 (.500) | 2.387 (.576) |
| PISTS | 56 (30%) | 53 (33.8%) | 51 (36.3%) | 27 (66.3%) | 1-3 | 2.260 (.564) | 2.240 (.562) | 2.278 (.562) | 2.180 (.550) |
| BASC INZ | 58 (27.5%) | 41 (48.8%) | 48 (40%) | 20 (75%) | 0-1 | .203 (.126) | .215 (.124) | .202 (.149) | .207 (.121) |

Missing Data Analysis

The missing values procedure in SPSS (IBM Corp, 2020) was used to assess patterns of missingness in the mentor and mentee datasets. As shown in Tables 1 and 2, both mentor and mentee datasets exhibited an increasing percentage of missing data with time, with mentors displaying an overall higher level of missingness, particularly for the VIA, which was not administered at some time points and years. During the 2019-2020 school year, mentors were also not administered any measures at nine months due to the onset of the COVID-19 pandemic.

The Little's Missing Completely at Random (MCAR; Little, 1988) test was conducted to better understand the nature of these patterns and to establish the usability of missing data techniques. Results of this test for mentees ($\chi^2(585, N = 80) = 551.437, p = .837$) and mentors ($\chi^2(526, N = 80) = 478.907, p = .930$) were insignificant, indicating the null hypothesis (i.e., the data are MCAR) could not be rejected for either dataset. Therefore, the data was treated as MCAR, meaning missing data techniques were deemed acceptable for the current study and the

full information maximum likelihood (FIML) function could be applied to acquire estimates of missing data based on the available data. FIML is available as a feature of MPlus version 8 (Muthén & Muthén, 1998-2017), which was used for subsequent analyses, and is commonly implemented in structural equation modeling (SEM) and general linear models to handle missing data as well as estimate parameters and standard errors in one step (Graham, 2009).

Data Assumptions

Data were evaluated for normality using both skewness and kurtosis values as well as visualization through histograms in MPlus. Under conditions of normality, skewness, which assesses directionality of the curve, is expected to be close to zero and kurtosis, which assesses the shape of the curve, is expected to be close to three (Bai & Ng, 2005).

For mentees, a histogram plotting the mentee Match Characteristics Questionnaire MCQ; Time 2 to 4) showed a pattern of higher mentoring relationship quality ratings indicating a negative skew with skewness values between $-.595$ and -1.562 and kurtosis between $-.654$ and 2.547 . The variables representing mentee perceptions of their interpersonal relationships showed a similar pattern of high ratings leading to a negative skew based on the observed histograms for all time points (Time 1 to 4). For mentee Places I Spend Time: Home (PISTH), skewness was between $-.232$ and -1.137 and kurtosis was between -1.096 and 1.444 . For mentee Places I Spend Time: School (PISTS), skewness was between $-.389$ and $-.784$ and kurtosis was between $-.727$ and $.312$. For mentee Very Important Adults (VIA), skewness was between -1.448 and $-.790$ and kurtosis was between -1.003 and 1.719 . In comparison, the histograms from Time 1 to 4 for the mentee Behavioral Assessment System for Children: Internalizing Problems composite (BASC INZ) showed a pattern of lower ratings of internalizing symptoms consistent with a positive skew and with skewness values between $.511$ and 1.052 and kurtosis between $-.533$ and $.892$.

For mentors, skewness on the MCQ (Time 2 to 4) fell between $-.047$ and $.068$ and kurtosis between -1.364 and $-.352$, consistent with the histogram showing no clear directionality of the curve but an overall low shape to the curve. For the mentor version of the VIA (Time 1 to 4), skewness was between $-.706$ and $-.187$ and kurtosis was between -1.500 and $-.484$ with overall few samples to contribute to shaping the curve. The mentor PISTH (Time 1 to 4) showed a clear negative skew via histogram, which was supported by skewness between -1.128 and $-.518$ and kurtosis between $-.419$ and $.098$. The PISTS mentor measure (Time 1 to 4) evidenced skewness between $-.518$ and $-.251$ and kurtosis between $-.962$ and $-.526$. Lastly, for the BASC INZ (Time 1 to 4), a positive skew was observed via histogram, consistent with skewness between $.208$ and $.831$ and kurtosis between $-.889$ and $.587$.

Based on these findings, bootstrapping methods were used to account for non-normal distributions. Bootstrapping is a statistical procedure that resamples from the current sample many times with the assumption that the sample is representative of the population and can be used in conjunction with FIML for non-normal data (Enders, 2001). For the purposes of this study, 5000 replications were used as more bootstrapped samples improve model estimation (Banjanovic & Osborne, 2016).

Cross-Lagged Panel Models

Due to limitations in the available data for this study, cross-lagged panel models (CLPMs) were used as an alternative to the proposed three-path mediational model for mentee and mentor data independently, and hypotheses were adjusted accordingly. The CLPM is a type of SEM commonly used for longitudinal datasets to assess directional influences between variables of interest over time (Kearney, 2017). Several models were evaluated using CLPMs with FIML in MPlus to estimate the reciprocal relationship between perceived mentoring

relationship quality and ratings on the following measures: VIA, PISTH, PISTS, and BASC INZ. For both mentor and mentee data, each measure was included in the prospective models both individually (e.g., interpersonal relationships or internalizing symptoms only) and in conjunction with the other variables of interest (e.g., both interpersonal relationships and internalizing symptoms). Additionally, VIA, PISTH, and PISTS were combined into a latent variable representing overall interpersonal relationships outside of the mentoring relationship, and this latent variable was utilized in subsequent iterations of the CLPM.

All tested CLPMs for the mentor dataset either did not meet standards of acceptable model fit or could not be defined. Model fit was determined based on the following standard cutoff criteria: Model Chi Square (χ^2) p-value > .05, Comparative Fit Index (CFI) \geq .90, Root Mean Square Error of Approximation (RMSEA) < .08, and Standardized Root Mean Square Residual (SRMR) < .08 (Kline, 2005). To address issues of model fit, additional CLPMs were evaluated in which the measures (i.e., VIA) and time points (i.e., Time 4) with the most missing data were removed from analyses. However, results did not differ as each mentor CLPM with the MCQ continued to either fail to converge (VIA, interpersonal relationships latent variable) or show poor model fit (PISTS, PISTH, BASC INZ). Subsequently, estimates of the reciprocal relationships among all variables of interest for the mentor dataset are not reported as poor model fit indicates observations cannot be predicted accurately.

In contrast to the mentor dataset, the mentee dataset generated multiple identifiable CLPMs with adequate model fit. Model fit information for each identified model with acceptable fit is available in Table 3, all of which included mentoring relationship quality and another variable of interest. As seen in Table 3, the combination of VIA, PISTH, and PISTS into one latent variable allowed for a substantial increase in sample size to include the full sample for

improved estimation, while approaching the cutoffs for acceptable model fit. When internalizing symptoms and interpersonal relationships were modeled simultaneously with quality of the mentoring relationship, the model could not be identified due to an excess of parameters relative to the available sample size. Internalizing symptoms and interpersonal relationships were then cross-lagged together without mentoring relationship quality but the model did not achieve acceptable fit. Therefore, the following mentee results report on 1) the longitudinal effects of internalizing problems and the mentoring relationship over nine months and 2) the longitudinal effects of interpersonal relationships and the mentoring relationship over nine months.

Table 3

Measurements of Goodness of Fit for Mentee Data

| Variable | <i>N</i> | χ^2 | CFI | RMSEA | SRMR |
|-----------------------------|----------|-------------------------|-------|-------|------|
| BASC INZ | 60 | 20.006, <i>p</i> = .273 | .958 | .054 | .140 |
| Atypicality | 61 | 33.214, <i>p</i> = .032 | .845 | .104 | .225 |
| Locus of Control | 64 | 31.212, <i>p</i> = .052 | .838 | .094 | .149 |
| Social Stress | 61 | 23.402, <i>p</i> = .270 | .955 | .053 | .233 |
| Anxiety | 60 | 27.100, <i>p</i> = .133 | .912 | .077 | .212 |
| Depression | 65 | 17.466, <i>p</i> = .623 | 1.000 | .000 | .106 |
| Sense of Inadequacy | 64 | 26.524, <i>p</i> = .149 | .932 | .071 | .140 |
| Interpersonal Relationships | 80 | 225.079, <i>p</i> < .05 | .808 | .105 | .156 |
| VIA | 58 | 16.581, <i>p</i> = .483 | 1.000 | .000 | .117 |
| PISTH | 63 | 24.138, <i>p</i> = .116 | .914 | .082 | .121 |
| PISTS | 62 | 20.528, <i>p</i> = .248 | .970 | .058 | .124 |

Internalizing Problems

Table 3 indicates acceptable fit for both the BASC INZ composite and several of its subscales, with the exception of Somatization, which did not converge due to small sample size ($N=12$). Figure 1 illustrates the CLPM proposed for both BASC INZ and its associated subscales. Prior to evaluating this proposed model, a reduced model was identified using only Time 2 and 3 to assess for any significant covariates (racial/ethnic identity, gender, age, grade, year of participation, and elementary school). Dummy coding was used for all categorical variables included as covariates. This reduced model indicated significant differences in internalizing symptoms based on year enrolled in the program and significant differences in perception of the mentoring relationship by gender (described below). Year of enrollment and gender were subsequently included in the full model. The BASC INZ CLPM did not produce any significant cross-lagged effects and only the gender covariate remained significant such that mentees who identified as male were more likely to rate the quality of the mentoring relationship as lower at three months in comparison to mentees who identified as female ($\beta = -0.338$, $SE = .140$, $\beta^* = -.409$, $p < .01$).

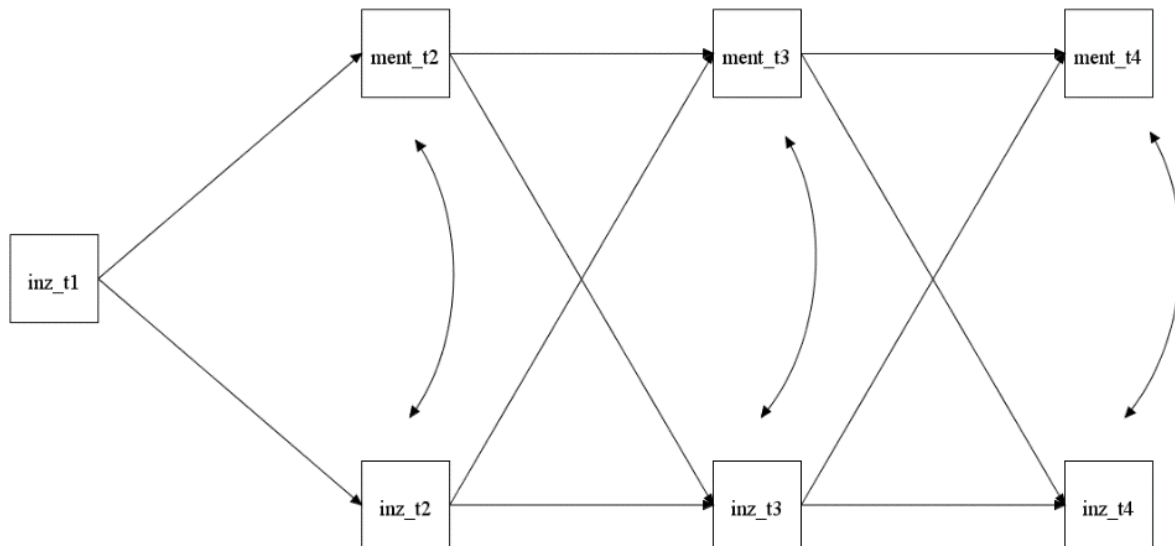


Figure 1. Conceptual CLPM for Mentoring Relationship and Internalizing Problems; ment = MCQ; inz = BASC INZ

The CLPM for the Locus of Control subscale showed broadly acceptable model fit with multiple fit indices nearing the suggested guidelines (see Table 3). The Locus of Control CLPM indicated that higher attribution of experiences to external forces at baseline was associated with lower mentoring relationship quality at three months ($\beta = -.530$, $SE = .253$, $\beta^* = -.298$, $p = .01$). No other significant cross-lagged effects were identified. While the previously identified gender effects remained significant, differences by year enrolled in the program emerged. Mentees enrolled between 2016-2017 showed higher attribution of their experiences to external forces at three months in comparison to mentees enrolled in 2019-2020 ($\beta = .212$, $SE = .101$, $\beta^* = .370$, $p < .05$).

As consistent with the other internalizing symptoms models, the Anxiety subscale showed acceptable model fit (see Table 3). For the Anxiety subscale, higher anxiety at six months was associated with more positive perceptions of mentoring relationship quality at nine months ($\beta = .656$, $SE = .339$, $\beta^* = .455$, $p < .05$). No other cross-lagged effects were identified or covariates that differed across the Anxiety subscale.

While obtaining acceptable model fit (see Table 3), no significant cross-lagged effects were found for the CLPM conducted using the Atypicality, Social Stress, Depression, and Sense of Inadequacy subscales. It should be noted that the Atypicality subscale showed poorer fit in comparison to the other CLPMs, with multiple fit indices falling slightly above or below guidelines. For Sense of Inadequacy, significant differences by year of enrollment were identified such that mentees enrolled in 2016-2017 reported more feelings of inadequacy at six months compared to mentees enrolled in 2018-2019 ($\beta = .135$, $SE = .056$, $\beta^* = .283$, $p < .01$). Additionally, mentees enrolled in 2019-2020 reported less feelings of inadequacy at three

months in comparison to mentees enrolled in 2017-2018 ($\beta = -.211$, $SE = .102$, $\beta^* = -.344$, $p < .05$).

Interpersonal Relationships

VIA, PISTH, and PISTS were combined into one latent variable for each time point as each of these measures are conceptually related with an emphasis on current interpersonal experiences with adults in their life. All time points of this latent variable showed strong factor loadings across each measure ($\beta \geq .607$), while also representing the full sample in contrast to evaluating a more limited subset of the sample using these variables independently. The proposed model assessing the longitudinal relationship between the interpersonal latent variable and mentoring relationship quality is depicted in Figure 2. Following the same process as the internalizing symptoms model, a reduced version of the interpersonal relationships model including only Time 2 and 3 was first evaluated including all available covariates (racial/ethnic identity, gender, age, grade, year of participation, and elementary school) to assess for possible significant effects for inclusion in the full model. Dummy coding was used for all categorical variables. This reduced model indicated differences in interpersonal relationships by elementary school and continued differences in the mentoring relationship by gender (described below). These two variables were subsequently added as covariates to the relevant arms (i.e., interpersonal relationships vs. mentoring relationship) of the proposed model.

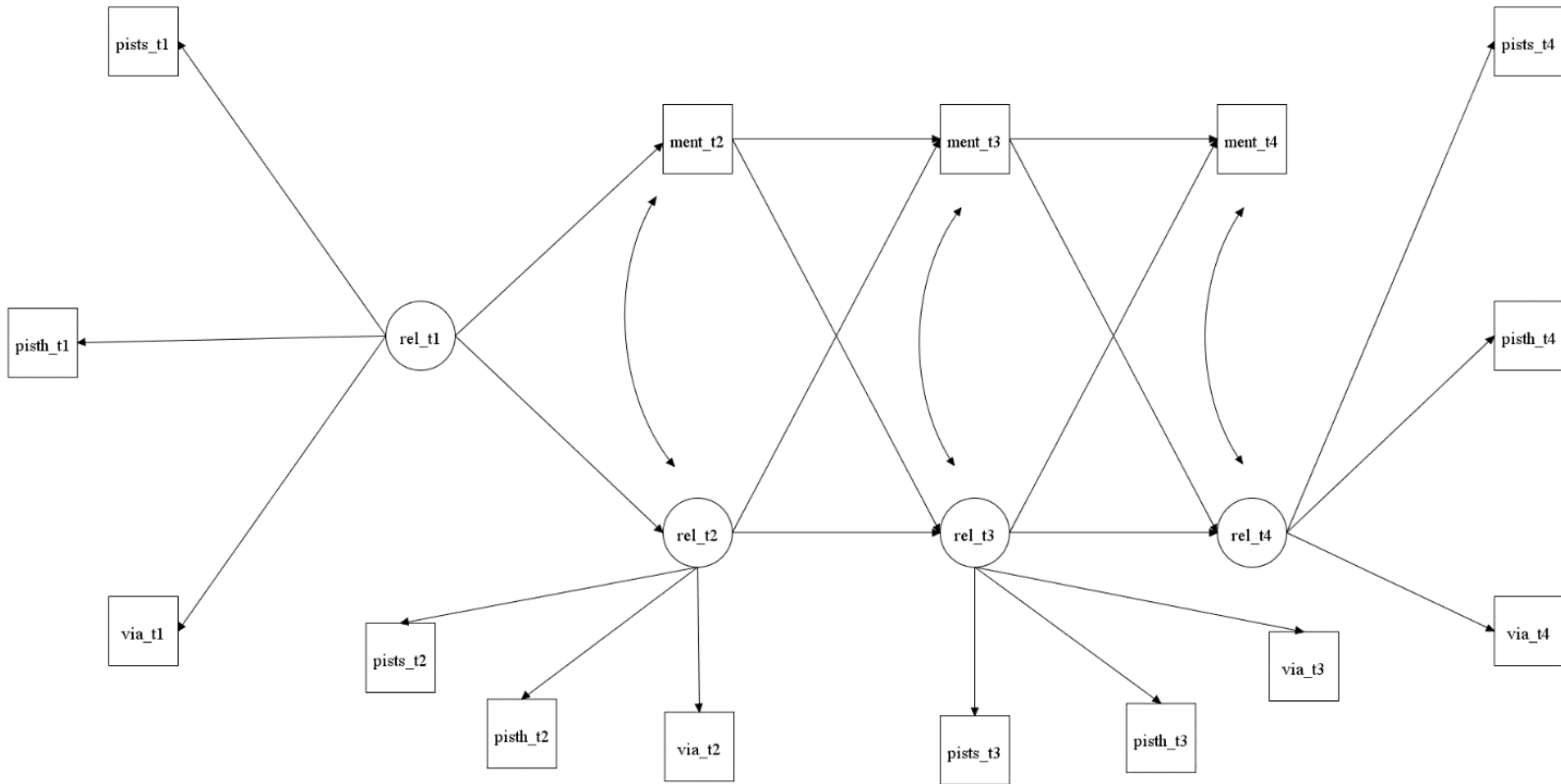


Figure 2. Conceptual CLPM for Mentoring Relationship and Interpersonal Relationships; rel = latent variable from indicators PISTH, PISTS, and VIA

The latent variable model depicted in Figure 2, while attaining a larger sample size, shows weaker model fit, with each of the criteria falling just below typical cutoffs and suggesting results should be interpreted with caution (see Table 3). Cross-lagged effects within the model indicate a significant positive association between interpersonal relationships at baseline and the mentoring relationship at three months ($\beta = .455$, $SE = .197$, $\beta^* = .414$, $p < .01$) as shown in Figure 3. Quality of the mentoring relationship was not predictive of perceptions of other interpersonal relationships at any time point. For the included covariates, students from School B indicated more negative perceptions of their interpersonal relationships at three months in comparison to School C ($\beta = -0.315$, $SE = .110$, $\beta^* = -.323$, $p < .01$), as opposed to more positive perceptions at six months in comparison to School A ($\beta = .324$, $SE = .110$, $\beta^* = .345$, $p < .01$).

Additionally, in line with the internalizing symptoms model, mentees who identified as male were more likely to perceive the quality of the mentoring relationship as lower at three months in comparison to mentees who identified as female ($\beta = -0.274$, $SE = .088$, $\beta^* = -.339$, $p = .001$).

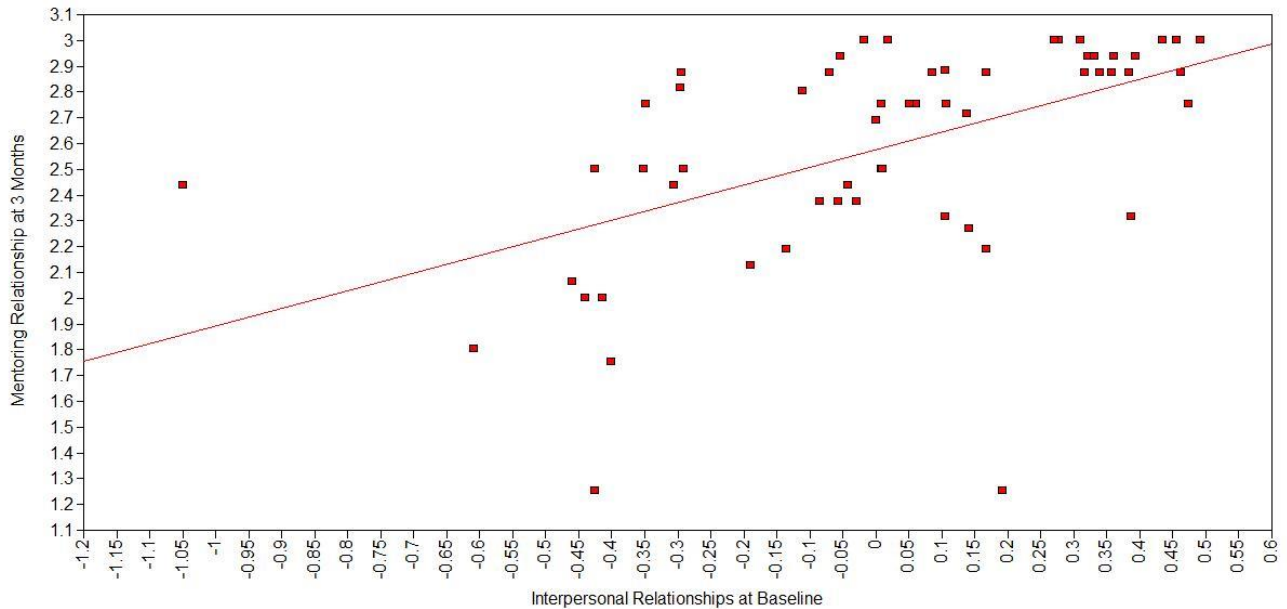


Figure 3. Interpersonal Relationships at Baseline and Mentoring Relationship at Three Months

Following the latent variable model, each individual indicator was assessed independently, generating improved model fit but a reduced sample size. A subsample assessing the reciprocal relationship between the MCQ and VIA alone showed no significant cross-lagged effects or differences in the VIA by school.

For PISTH, baseline interpersonal experiences at home were associated with a non-significant positive trend for MCQ at three months ($\beta = .323$, $SE = .177$, $\beta^* = .320$, $p = .053$). Beyond the established gender covariate, youth enrolled at School B reported lower scores on PISTH compared to both youth at School A ($\beta = -.253$, $SE = .119$, $\beta^* = -.270$, $p < .05$) and School C at three months ($\beta = -.269$, $SE = .122$, $\beta^* = -.287$, $p < .05$). Youth enrolled at School C also showed more positive at-home interpersonal experiences compared to School A at three months ($\beta = .421$, $SE = .154$, $\beta^* = .517$, $p < .01$).

The final interpersonal measure, PISTS, demonstrated a significant positive association between interpersonal experiences at school at baseline and mentoring relationship quality at three months ($\beta = .393$, $SE = .142$, $\beta^* = .385$, $p < .01$). For the school covariate, School B showed lower PISTS than School C at three months ($\beta = -.232$, $SE = .122$, $\beta^* = -.232$, $p < .05$) but higher PISTS at six months compared to School A ($\beta = .321$, $SE = .140$, $\beta^* = .315$, $p < .05$).

Random-Intercept CLPM

The random-intercept CLPM (RI-CLPM) is an extension of the CLPM that better represents trait-like within-person differences over time in comparison to the traditional CLPM (Hamaker, Kuiper, & Grasman, 2015; Mulder & Hamaker, 2021). The RI-CLPM was tested to reassess 1) the longitudinal effects of internalizing problems and the mentoring relationship over nine months and 2) the longitudinal effects of interpersonal relationships and the mentoring relationship over nine months. Both models failed to converge despite increasing the number of iterations and adjusting the variance/covariance for variables.

Dyadic Analysis

To address Research Question I, an additional dataset drawing from a subset of mentor and mentee data was evaluated using dyadic analysis. This dataset included 50 mentor and mentee pairs who provided ratings of the mentoring relationship for at least one time point. As mentors and mentees are assigned different roles within the mentoring relationship, they are considered to be distinguishable dyads and may be analyzed as such (Fitzpatrick, Gareau, Lafontaine, & Gaudreau, 2016).

First, a longitudinal dyadic growth curve model (Ghodse-Elahi, Neff, & Shrout, 2021; Peugh, DiLillo, & Panuzio, 2013) was tested to assess changes in mentor and mentee perceptions of the mentoring relationship and other interpersonal relationships over time in comparison to

each other. This model included both mentor and mentee ratings of their relationship across three, six, and nine months. The growth model failed to converge despite increased iterations.

As an alternative, the Actor-Partner Interdependence Model (APIM; Fitzpatrick, Gareau, Lafontaine, & Gaudreau, 2016; Kenny, 1996; Peugh, DiLillo, & Panuzio, 2013) was used to assess both individual (actor) and dyadic (partner) effects. Two models were evaluated: 1) The effect of interpersonal relationships at home (PISTH) at baseline on perceptions of mentoring relationship quality at three months and 2) The effect of mentoring relationship quality at three months on interpersonal relationships at home (PISTH) between six and nine months. See Figures 5 and 6 for a visualization of the proposed models. Bootstrapping continued to be used for both assessed models.

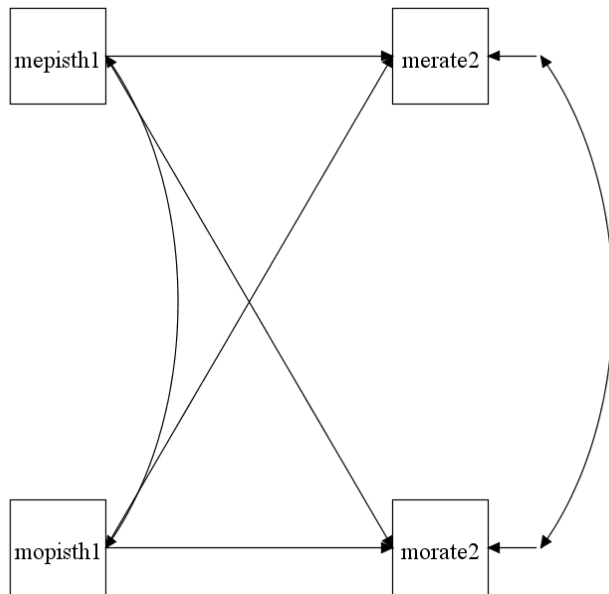


Figure 4. Actor-Partner Interdependence Model 1; mepisth1 = mentee report of PISTH at baseline; mopisth1 = mentor report; merate2 = mentee report of MCQ at three months; morate2 = mentor report

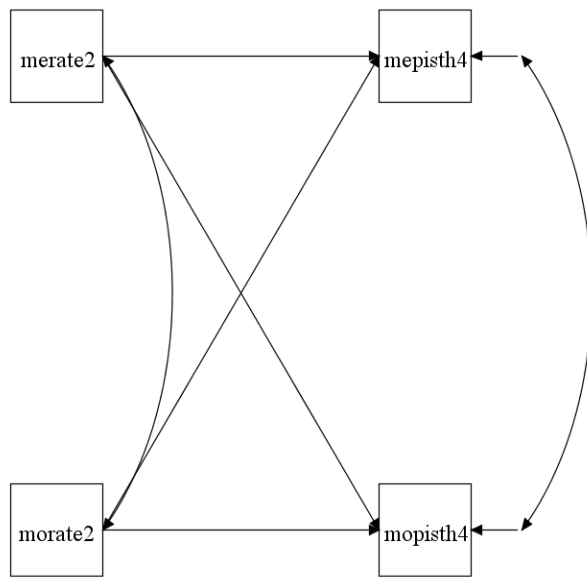


Figure 5. Actor-Partner Interdependence Model 2; mepisth4 = Mentee report of PISTH between six and nine months; mopisth4 = Mentor report

APIM Model 1 demonstrated acceptable model fit based on CFI (1.00), RMSEA (.000), and SRMR (.000), but the Model χ^2 p-value was significant ($p < .001$), suggesting potential issues with model fit. As expected, mentees continued to show significant actor effects such that interpersonal relationships at home at baseline were positively associated with perceptions of the mentoring relationship at three months ($\beta = .112$, $SE = .050$, $\beta^* = .355$, $p < .01$). No significant mentor actor effects or significant partner effects were identified for this model.

APIM Model 2 also demonstrated acceptable model fit based on CFI (1.00), RMSEA (.000), and SRMR (.003), but the Model χ^2 p-value was again significant ($p < .001$), suggesting potential issues with model fit. A significant actor effect was identified such that higher mentee perceptions of the mentoring relationship at three months were predictive of higher interpersonal relationship quality at the mentee's home between six and nine months ($\beta = 1.720$, $SE = .625$, $\beta^* = .571$, $p < .05$). No other significant actor effects were identified. A significant partner effect emerged such that higher mentor ratings of the mentoring relationship at three months were

associated with lower interpersonal relationship quality for mentees between six and nine months ($\beta = -1.644$, $SE = .779$, $\beta^* = -.534$, $p < .05$). Mentor and mentee ratings of the mentoring relationship at three months were also positively associated with each other ($\beta = .008$, $SE = .004$, $\beta^* = .500$, $p < .01$), while mentor and mentee interpersonal relationships at home between six and nine months were not significantly related.

Supplementary Mentor Analyses

Due to sample size limitations in the mentor data, multiple regression was conducted in MPlus using variables and time points with the least missing data. The first evaluated model included PISTH, PISTS, and BASC INZ at baseline as predictors of MCQ at three months. Results indicate that higher levels of mentor internalizing problems at baseline are associated with more negative perceptions of the mentoring relationship at three months ($\beta = -2.116$, $SE = 1.108$, $\beta^* = -.302$, $p < .05$). Neither PISTH nor PISTS nor relevant covariates (i.e., racial/ethnic identity, gender, age, year of participation) significantly contributed to this model. Subsequent models assessing mentoring relationship quality at three months as a predictor of the other study variables at six months did not generate adequate sample size ($N < 20$) and power due to patterns of missingness, and thus could not be evaluated.

Discussion

This study addressed two primary hypotheses evaluated for both mentees and mentors independently: 1) Mentees and mentors will demonstrate a reciprocal relationship between internalizing problems and mentoring relationship quality, such that lower internalizing problems at baseline will predict higher mentoring relationship quality at three months and higher mentoring relationship quality will predict lower internalizing problems at subsequent timepoints, and 2) Mentees and mentors will demonstrate a reciprocal relationship between

interpersonal relationships and mentoring relationship quality, such that stronger interpersonal relationships at baseline will predict higher mentoring relationship quality at three months and higher mentoring relationship quality will predict stronger interpersonal relationships at subsequent timepoints. Additionally, this study evaluated the following research question using mentee and mentor reports in conjunction: In consideration of possible interdependence within the mentoring relationship, what patterns of influence exist between mentors and mentees on reports of mentoring relationship quality and other interpersonal relationships?

For the first set of hypotheses focused on internalizing problems, the mentoring relationship did not appear to have a significant impact on mentee internalizing problems within the context of this study, but locus of control and anxiety were both predictive of later mentee perceptions of the mentoring relationship. The Locus of Control scale on the BASC measures the extent to which individuals believe that rewards and punishments are controlled by external forces, with higher scores indicating less perceived control over their experiences. For locus of control, mentees who attributed more of their experiences to external forces at baseline reported lower mentoring relationship quality at three months. Mentees with higher scores on the Locus of Control scale may feel they are unable to influence events in their lives, creating a tendency to be more passive within the mentoring relationship (Wang et al., 2010). As this effect was only significant in the initial stages of the mentoring relationship, it is likely that mentees with external locus of control may begin perceiving strengths within the mentoring relationship despite not proactively seeking support early on. In contrast, mentees who reported higher levels of anxiety at six months rated the mentoring relationship more positively at nine months. Midway through the intervention, mentees may have established sufficiently close relationships with their mentors to seek support for anxious thoughts and feelings, subsequently developing

more positive perceptions of the mentoring relationship when they receive needed support. While the mentor data was not able to be adequately assessed for associations among study variables, supplemental multiple regression analyses suggested that mentors with higher internalizing problems at baseline perceived the mentoring relationship more negatively at three months. Although considerably more research is needed to confirm this finding, it is important to be reminded of the challenges mentors may enter the mentoring relationship with, the way those challenges may influence their engagement with their mentee, and the opportunity for mentoring interventions to better support both mentee and mentor needs.

Shifting to the second set of hypotheses focused on interpersonal relationships, no significant associations were found for mentors. However, results from the mentee CLPMs indicated that more positive interpersonal relationships at baseline predict more positive perceptions of the mentoring relationship at three months as hypothesized. These findings are consistent with previous research indicating that mentees with lower quality interpersonal relationships may have more difficulty engaging in the mentoring relationship (Schwartz et al., 2011; Spencer, 2007; Zilberstein & Spencer 2014). In assessing possible impact of the mentoring relationship itself on mentee interpersonal relationships, findings from this study did not support the hypothesis that mentoring relationship quality would subsequently lead to improvements in mentees' other interpersonal relationships. As mentoring relationship quality was only assessed at three, six, and nine months, and longer-term post-intervention ratings of interpersonal relationships and internalizing symptoms were not included in this study, it is possible that effects of the mentoring relationship on these potential outcomes may have been missed. Previous research has suggested the possibility of both 1) direct effects of the mentoring relationship on mentees' other interpersonal relationships (see, e.g., DeWit et al., 2016; Renick

Thomson & Zand, 2010) and well-being (see, e.g., Herrera et al., 2013; DeWit et al., 2016) and 2) indirect effects of the mentoring relationship on mentee well-being mediated by improvements to interpersonal relationships (e.g., Chan et al., 2013; Rhodes et al., 2005). While neither direct nor indirect effects were observed in the current study, further investigation is needed to obtain a better understanding of the ways the mentoring relationship may be able to serve as a mechanism for change.

In terms of covariates for both mentee hypotheses, significant gender effects were found for mentoring relationship quality, while effects by year of enrollment and school were found for internalizing problems and interpersonal relationships, respectively. Mentees who identified as male initially provided lower ratings of mentoring relationship quality compared to mentees who identified as female, but gender effects did not persist over time. These findings may be best explained by differences in gender socialization patterns, such that boys may be less open to intimacy and connection as well as less likely to engage in help-seeking behaviors, leading them to require more time to develop a close mentoring relationship (Liang et al., 2013). As gender effects waned with time, it appears that mentees who identify as either male or female are able to develop equally strong perceptions of their mentoring relationships at different paces.

For additional covariates beyond the mentoring relationship, internalizing problems were found to differ by year of enrollment and interpersonal experiences differed by elementary school. Although it is unclear why mentees enrolled in particular years of the program showed different levels of internalizing symptoms at different points in time, a general pattern was observed such that internalizing symptoms appeared to be lower for later cohorts. As there were no significant differences at baseline, these findings may be related to a combination of improvements to the Cities Mentor Project intervention over time as well as other environmental

variables not accounted for in the evaluated models (e.g., variations in stress exposure).

Differences in ratings of interpersonal relationships by school appeared to emerge based on the additive effects of stress and poverty, such that mentees from schools and communities with the most compromised systems tended to rate their interpersonal relationships more negatively in comparison to mentees facing relatively fewer stressors. While all mentees attended schools significantly impacted by stress and poverty, this finding is consistent with previous research in that youth experiencing the most poverty-related stressors may face greater challenges in their interpersonal relationships, which would then have the potential to influence their engagement with a mentor (Raposa et al., 2016; Schwartz et al., 2011).

In assessing dyadic effects, some support was attained for the hypothesis that mentees who rate the mentoring relationship more positively then report higher interpersonal relationship quality at later time points based on a significant actor effect. However, given the unidirectionality of the APIM, these findings do not take into account the impact of interpersonal relationships on the mentoring relationship and may therefore overestimate this association, but warrant further investigation in future research. Additionally, a significant partner effect emerged such that if mentors rated the mentoring relationship more positively at three months, mentees later reported lower quality of interpersonal relationships at home. This finding could suggest that mentees who are able to build a close relationship with their mentor then have a working model (e.g., Rhodes et al., 2006) to compare their other relationships to more critically. However, these results also showed some inconsistencies in comparison to the identified actor effect as mentee and mentor ratings of the mentor relationship were significantly associated, suggesting the actor and partner effects should mirror rather than contradict each other. For this reason, further exploration will be needed to better understand possible interconnections between

mentee and mentor reports. Future research should also explore dyadic effects across a broader scope, such as internalizing symptoms, which were not included within dyadic analyses in the current study, and other social, emotional, behavioral, and academic variables.

Strengths and Limitations

The current study has some significant strengths in its utilization of longitudinal data across four time points for both mentees and mentors. Few studies to date have evaluated intervention effects on mentors, with the majority of mentor data remaining centered on outcomes most pertinent to mentees (e.g., better understanding their mentee; Hughes & Dykstra, 2008). Unlike previous research, this study considers potential vulnerabilities both mentees and mentors may bring into the mentoring relationship from an attachment lens. To this end, the current study shows an additional strength in evaluating two populations facing higher levels of stress and attachment needs: 1) Low-income Black youth whose caregivers may be less available and faced heightened stressors due to the effects of poverty and systemic oppression (Conger & Donnellan, 2007; Grant et al., 2005; Gutman et al., 2005; Sanchez et al., 2014), and 2) A diverse pool of undergraduate students transitioning into adulthood with the psychosocial stressors that often accompany adjustment to college life (Albright & Hurd, 2017; Bernier et al., 2004; Blanco et al., 2008; Hefner & Eisenberg, 2009; Li et al., 2014; Mistler et al., 2013). While the results of this study are not generalizable to other populations, the mentors and mentees in this study both represent understudied and vulnerable groups. Despite these strengths, several limitations created barriers to properly evaluating the stated hypotheses and research question and these limitations warrant further discussion.

Sample Size

As the Cities Mentor Project serves a small number of mentors and mentees each year, four years of data produced a sample size of only 80 mentees and mentors. While the small sample size was bolstered by the inclusion of multiple time points of data, SEMs, such as the CLPM, are typically recommended to include a larger sample size for adequate statistical power (MacCallum & Austin, 2000). While there is no set rule of thumb for minimum sample size in SEM, the majority of studies attain a sample size of at least 100 (MacCallum & Austin, 2000) and a number of researchers have suggested a sample size of at least 200 (Wolf et al., 2013). Of additional consideration, this study contains extensive missing data which substantially increases error and necessitates a larger sample size (Wolf et al., 2013). More specifically, Wolf and colleagues (2013) suggest models with 20% missing data require an approximately 50% increase in sample size. With the current study generally displaying at least 20% missing data across time points, the small sample size attained for this study becomes increasingly problematic. Of some benefit, the current study utilized a latent variable with multiple indicators, which has been shown to improve strength and accuracy of parameter estimates as a single estimation of a construct can result in error (MacCallum & Austin, 2000; Wolf et al., 2013). Overall, however, the small sample size available for the current study interfered with model identification and generalizability of findings.

Missing Data

While missing data was problematic for all data acquired for this study, missing mentor data in particular presented a major limitation that prevented any conclusions from being made regarding the impact of and impact on the mentoring relationship for mentors. The current study utilized data from mentors who participated between fall of 2016 and fall of 2020. While mentors showed a high rate of missingness overall, survey completion improved at specific time

points and years, such that during the 2016-2017 school year, for instance, survey completion was highest at six months. In comparison, during the 2017-2018 school year, completion was highest at baseline and during the 2018-2019 and 2019-2020 school year, completion was highest at three months. Although missingness at the end of the 2019-2020 school year may be largely explained by the onset of the COVID-19 pandemic, all other patterns of survey response rates cannot be attributed to external circumstances and therefore may be more likely to reflect challenges in data collection procedures. As previously discussed, college students face a unique constellation of stressors (e.g., schedule demands, major life transition, psychosocial difficulties) that must be taken into consideration when planning and preparing for data collection with this population. Unlike mentees who could be easily located within their school to complete in-person surveys, mentors could either elect to attend in-person survey opportunities or could complete surveys independently. Mentors were reminded of ongoing data collections via several means (in-person during mentoring, email, phone/text) and survey links were included in these communications for mentors who opted to complete the surveys on their own time. Survey links were also designed such that mentors could complete their surveys in multiple sittings as needed to accommodate their class schedules. In-person survey opportunities were planned at various times, including evenings to again accommodate class schedules, and food and drinks were provided at each in-person data collection.

Despite these efforts to promote mentor participation, many mentors neglected to complete surveys at given time points. Additionally, the majority of completed surveys consisted of skipped questions or entire measures as mentors could not be required to answer every question. Qualitatively, mentors reported the survey was too long and tedious even when compensation was increased to \$60 in gift cards, and mentors additionally complained of delays

in receiving their gift cards as immediate compensation was only available for those who chose to attend in-person. Mentors also reported not understanding the purpose of completing surveys and feeling this was not a required component of their role. In the later stages of the study (i.e., 2019), the researchers improved upon efforts during recruitment to emphasize the research component of the study as opposed to the mentoring intervention, including sharing evidence from previous research about potential benefits to mentors (Banks, 2010; Wasburn-Moses et al., 2014; Weiler et al. , 2014). The research team also attempted to implement more formalized data quality checks by identifying any surveys with greater than 25% missing responses and contacting mentors to complete skipped items prior to distributing payment. Lastly, survey measures were reviewed and distributed across fewer time points based on theoretical applications, such that measures expected to remain stable across time were only given at single time point to reduce demand on mentors.

Despite the current study's implemented changes to data collection procedures, missing mentor data continued to be a significant issue across all years of the project. Future research with mentors should prioritize quality over quantity in terms of measures, such that shorter surveys are administered to mentors to increase response rates as well as valid responding, consistent with findings from a number of studies (Fan & Yan, 2010; Nulty, 2008). Given higher mentee response rates in this study, future research should also weigh the advantages and disadvantages of replacing one mentoring session every three months with a data collection session requiring both mentors and mentees to complete their surveys in-person during this p time. Although this strategy would slightly decrease intervention exposure, it would carry the benefit of greatly increasing survey response rates for the intervention group, especially as data collection periods generally coincided with the end of each academic quarter, competing with

more pressing final exams. It should be noted, however, that while the current study only assessed the intervention group, this proposed strategy would not help to target control group attrition, which would be important to consider for alternative research questions.

Measures

While the selected measures for the current study showed sufficient reliability, all measures were self-report, introducing several opportunities for bias (e.g., social desirability, limited introspection, misinterpretation, response bias). Additionally, the available measures were not able to directly capture the theoretical construct of interest for this study, attachment theory. The VIA, PISTH, and PISTS were used as proxies of attachment by indicating interpersonal relationship quality with adults but were unable to provide specific information about attachment styles. While these constructs are expected to be closely related, specific conclusions regarding attachment could not be drawn in the current study. Lastly, certain relevant covariates were unable to be included in the current analyses as they were either not collected (e.g., socioeconomic status) or inconsistently collected (e.g., dosage data). Dosage data would have provided more information on intervention exposure across different categories (e.g., session attendance, outside contact with mentor), but these data were not consistently and accurately recorded until later years of the study. Therefore, this study was unable to evaluate ways in which intervention effects beyond quality of the mentoring relationship may have contributed to the other variables of interest.

CLPM

In recent years, a number of researchers have begun to question the validity of the traditional CLPM in its potential to overestimate or misrepresent relationships among study variables. More specifically, Hamaker and colleagues (2015) have proposed replacing the CLPM

with the RI-CLPM, which separates between-person and within-person effects to better distinguish stable, trait-like individual differences from causal influences. While the CLPM and RI-CLPM may produce similar results, several recently published studies comparing the two techniques have found distinct differences that further support the argument that the RI-CLPM provides a more nuanced interpretation of the data (Etherson et al., 2022; Yang et al., 2021; Yirmiya et al., 2021). The RI-CLPM was attempted in the current study, but each RI-CLPM failed to converge and therefore no results were available for interpretation. Accordingly, only the CLPM could be performed and interpreted for the current study, and the limitations of this analysis should thus be noted in addition to the other known barriers to interpretation (e.g., small sample size, missing data).

Future Directions

The current study established the importance of viewing both mentees and mentors as intervention recipients with attachment needs to allow for assessment of both individual and dyadic effects. Several options for dyadic analysis, such as the APIM, have been utilized across the social sciences but have had limited applications within the field of mentoring (Fitzpatrick et al., 2016). Collecting high quality data from both mentors and mentees is an important next step to better understanding interconnected outcomes for mentoring dyads. With dyadic analyses in mind, future studies should select measures that can be administered to both mentors and mentees and that are clearly grounded in theory of potential actor and partner effects, such as attachment style (Goldner, 2017; Spencer, 2012; Preston & Raposa, 2019). Given the challenges with data collection in the current study and community-based research in general, future research should carefully select measures most pertinent to hypotheses and research questions of interest. As very few studies have been conducted with mentors themselves, an important next

step for the field is to obtain a clearer understanding of both halves of the mentoring dyad, including factors each person brings into the relationship and outcomes associated with the relationship.

While this study provided a limited glimpse into the mentor experience, consistent with previous research, results suggested that mentors' own mental health challenges may interfere with their feelings of connectedness or engagement within the mentoring relationship. It is well-established that the college student population faces a myriad of mental health challenges and these rates have continued to rise over time. A recent study by Lipson and colleagues (2022) of over 350,000 students at 373 college campuses indicated that the number of students meeting criteria for one or more mental health problems has doubled since 2013, while mental health service utilization has not proportionally increased. These findings suggest that increased campus mental health programming and outreach may be needed to support vulnerable students, resembling mentoring program goals of connecting with vulnerable youth. With universities being well-situated to provide both accessible mental health services and service-learning opportunities for students, mentoring programs present an ideal outlet to integrate these offerings and offer explicit, targeted support to not only youth mentees, but adult mentors as well. This notion challenges the traditional structure of mentoring programs, which often presume adults to be more knowledgeable or capable than youth, layered with additional SES- and race-related biases. Learning should be treated as a lifelong process as both mentees and mentors may enter the relationship with a unique set of strengths and needs that can be supported within the mentoring relationship. Accordingly, mentoring programs should seek to foster more egalitarian mentoring relationships, which requires more intentionality in support provided to both mentors and mentees.

In translating these values to practice, it is vital for mentoring programs to treat mentors as intervention recipients who will need extensive training and support to grow as mentors and humans. The Cities Mentor Project utilizes a few approaches that are recommended to support this learning process, including offering a service-learning course associated with the mentoring program as well providing multiple tiers of supervisory support. Mentoring programs affiliated with universities may have the advantage of being able to facilitate a mentoring course that provides not only initial trainings, but also opportunities to build on these trainings over the course of the academic year with additional readings, resources, and reflections. These trainings should cover a wide range of topics relevant to mentoring and relationships in general (e.g., relationship building strategies, attunement), well-being (e.g., psychoeducation, emotion regulation strategies), and broader systemic issues pertaining to mentors and mentees (e.g., history of racism and discrimination in the city of Chicago). As mentors cannot be assumed to have preexisting knowledge of these subjects, coursework should first establish basic foundations before providing more nuanced information as well as opportunities for mentors to seek knowledge more independently (e.g., identifying resources and readings relevant to their experience as a mentor that further challenge their thinking). The concept of critical mentoring, introduced by Weiston-Serdan (2017), provides a helpful framework of working *with* youth rather than *for* youth which may be embedded throughout all levels of training and coursework. More specifically, critical mentoring outlines a vision of mentoring that promotes a strengths-based approach centering youth voices and acknowledging race, racism, and other intersectional forces at play as an essential part of the work (Weiston-Serdan, 2017). With this guiding principle, mentoring programs may be able to further support movement toward egalitarian

mentoring relationships and, from a research perspective, examine the effects of critical mentoring training on both mentor and mentee outcomes.

In addition to formalized trainings, readings, and resources within mentoring courses, from an attachment perspective it is equally important for mentors to build close supportive relationships with their supervisors to further reinforce the learning process and to provide space for individual mentor needs. The Cities Mentor Project pairs each mentor with a team of other mentors and a direct supervisor who meet as a group on a weekly basis to discuss both dynamics within the mentoring relationship and life outside of mentoring. Through this more intimate group setting, mentors may feel more comfortable discussing personal challenges and supervisors may be better able to provide support in the moment. Mentors are also provided with additional support from a Site Director responsible for supporting the program at their assigned school, as well as from the Program Director, who provides training and consistent check-ins with mentors throughout the year as the instructor of the mentoring course. This structure offers tiered supports for mentors to build close relationships beyond the mentoring relationship with both their peers and staff, and for supervisors to be able to consult with each other as difficulties arise. A similar model, while requiring significant staffing demands, may be beneficial to other mentoring programs to ensure appropriate safety nets are in place to better identify and support mentor needs.

Although mentees are traditionally the primary focus of mentoring programs, mentoring programs often intervene when youth are perceived to be at a disadvantage without attempting to address the factors that lead to those disadvantages. While further exploration is needed to understand the ways in which the mentoring relationship could serve as a vehicle for change across interpersonal relationships, it is essential to consider the chain of factors that create a

demand for this intervention to begin with. Mentoring may be able to foster secure attachments for youth, but interventions must also engage in further efforts to challenge the systems that originally lead to compromised relationships. Low-income Black youth often lack secure attachments because their caregivers experience limited employment opportunities requiring long hours and poverty-related stressors that can lead to mental and physical health problems that further impair caregiver capacity (Conger & Donnellan, 2007; Grant et al., 2005; Gutman et al., 2005; Sanchez et al., 2014). Further exploration of these challenges suggests the primary underlying factors contributing to poverty include inequitable access to resources and systemic oppression extending across generations, which has a disproportionate impact on families of color resulting from racism and discrimination (National Center for Children in Poverty, 2019).

With an understanding of root causes, it is important that future mentoring programs seek not only to bolster mentees' secure attachment with a mentor, but also to disrupt the systems that present such significant barriers to caregivers and natural supports. While these systems may appear daunting, mentoring programs can utilize their sphere of influence to provide more direct support to caregivers and establish a culture of community care to address broader family and community needs. It is also important for mentoring programs to be open in communicating about the root causes of poverty within both mentor training and mentoring sessions and to pursue youth-led actionable steps to enact further change (Weiston-Serdan, 2017). The Cities Mentor Project, for example, has a prominent advocacy component in which mentees collaborate with their mentors to mitigate an identified community need (e.g., food insecurity) over the course of the year, with discussions about sustaining advocacy beyond the mentoring space. While further research is needed on outcomes associated with social justice frameworks in mentoring (Albright et al., 2017), initiatives such as these are essential to challenging deficit

perspectives inherent to mentoring programs and embracing multilevel change including, but not limited to, the mentoring relationship. Ultimately, while mentors and mentees may be able to mutually fulfill some level of attachment needs as their relationship grows, mentoring programs have a larger responsibility in understanding the nature of these attachment needs and extending their reach past the surface directly to the source of inequity and oppression.

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Appendix

Table A1

Mentee Very Important Adults Measure

| How much does [very important adult] do each of the following things? | | | |
|--|-------|-----------|-------|
| | Never | Sometimes | A lot |
| Helps me with my feelings. | | | |
| Gives me ideas about how to do something. | | | |
| Shows me how to do something. | | | |
| Helps me practice something. | | | |
| Shows or tells me things about their life. | | | |
| Helps me figure out what is really important in life. | | | |
| Helps me by talking with other people who are important in my life. | | | |
| Helps to make sure I have the things I need to be successful. | | | |
| Helps to make sure I have the chance to do activities that are good for me. | | | |

Table A2

Mentee Places I Spend Time Measure

| What kinds of things happen at home [at school] and how often do they happen? | | | |
|--|-------|-----------|-------|
| | Never | Sometimes | A lot |
| Someone helps me when things go wrong. | | | |
| Someone helps me not give up. | | | |
| I get help with things I am afraid or ashamed of. | | | |
| I get help solving a problem. | | | |
| Someone helps me practice something I am learning. | | | |
| Someone shows me how to be kind to others. | | | |
| Someone teaches me how to work hard. | | | |
| Someone shows me that everyone is important. | | | |
| Someone tells me I don't have to be perfect. | | | |
| Someone shows me how to learn from mistakes. | | | |
| Someone tells me it's okay to fail. | | | |
| Someone tells me everyone can get smarter. | | | |
| I learn that I am more than what others think of me. | | | |
| I learn that I am more than what I look like. | | | |
| I learn that everyone should make the world better. | | | |
| I learn to notice the good things and be grateful. | | | |
| I learn to show up and stick with things. | | | |
| Someone shows me that I am important. | | | |
| I learn that we can do more together than apart. | | | |

| | | | |
|---|--|--|--|
| Someone knows what is going on with me. | | | |
| I have good role models. | | | |
| Someone teaches me to do the right thing. | | | |

Table A3

Mentee Adapted Match Characteristics Questionnaire

| Please answer the following questions about you and your mentor's relationship. | | | |
|---|-------|-----------|--------|
| | Never | Sometimes | Always |
| I feel like the match is getting stronger. | | | |
| I feel frustrated or disappointed about how the match is going. | | | |
| I feel like my mentor and I are good friends (buddies, pals). | | | |
| My mentor shows me how much he/she cares about me (my mentor remembers important things I tell him/her, they call to see how I am doing). | | | |
| I feel like my mentor and I have a strong bond (are close). | | | |
| I can trust what my mentor tells me. | | | |
| I feel awkward or uncomfortable when I'm with my mentor. | | | |
| My mentor helps me with my feelings. | | | |
| My mentor gives me ideas about how to do something. | | | |
| My mentor shows me how to do something. | | | |
| My mentor helps me practice something. | | | |
| My mentor shows or tells me things about their life. | | | |
| My mentor helps me figure out what is really important in life. | | | |
| My mentor helps me by talking with other people who are important in my life. | | | |
| My mentor helps to make sure I have the things I need to be successful. | | | |
| My mentor helps to make sure I have the chance to do activities that are good for me. | | | |

Table A4

Mentor Very Important Adults Measure

| How much does [very important adult] do each of the following things? | | | | | |
|---|-------|-------------|------------|-------|------------|
| | Never | Hardly Ever | Some-times | Often | Very Often |
| | | | | | |

| | | | | | |
|--|--|--|--|--|--|
| Says or does something that helps me with my feelings | | | | | |
| Gives me advice or information about how to do something | | | | | |
| Shows me how to do something | | | | | |
| Helps me practice something | | | | | |
| Shows or tells me things about their life | | | | | |
| Helps me think about myself or the world in a different way | | | | | |
| Helps me figure out what is really important in life | | | | | |
| Helps me by talking with other people who are important in my life | | | | | |
| Helps to make sure I have the things I need to be successful | | | | | |
| Helps to make sure I have the chance to participate in activities that are good for me | | | | | |

Table A5

Mentor Places I Spend Time Measure

| What kinds of things happen at your family's home [at school] and how often do they happen? | Never | Sometimes | A lot |
|--|--------------|------------------|--------------|
| Someone helps me when things go wrong. | | | |
| Someone helps me to not give up. | | | |
| I get help with things I am afraid or ashamed of. | | | |
| I learn what to do with something I can't change. | | | |
| I get help solving a problem. | | | |
| Someone helps me practice something I am learning. | | | |
| Someone models being kind to others. | | | |
| Someone teaches me how to work hard. | | | |
| Someone shows me that everyone is valuable. | | | |
| I learn to be kind to others. | | | |
| Someone tells me I don't have to be perfect. | | | |
| Someone shows me how to learn from mistakes. | | | |
| Someone tells me it's okay to fail. | | | |
| Someone tells me everyone can get smarter. | | | |
| I learn that I am more than what others think of me. | | | |
| I learn that I am more than what I look like. | | | |
| I learn that everyone should make the world better. | | | |
| I learn that every person can change for the better. | | | |
| I learn to notice the good things and be grateful. | | | |
| Someone shows me that good can come from bad. | | | |
| I learn to show up and stick with things. | | | |
| Someone shows me that I am valuable. | | | |

| | | | |
|--|--|--|--|
| Someone tells me that it is okay to need help. | | | |
| I learn that we can do more together than apart. | | | |
| Someone knows what is going on with me. | | | |
| Someone gives me good advice. | | | |
| I have good role models. | | | |
| Someone teaches me how to make sense of the world. | | | |
| Someone helps me develop a faith or philosophy. | | | |
| Someone teaches me to do the right thing. | | | |

Table A6

Mentor Adapted Match Characteristics Questionnaire

| Please answer the following questions about your relationship with your mentee. | | | | | | |
|--|-------|--------|----------------|-----------------|---------------|--------|
| | Never | Rarely | Some- times | Pretty Often | Very Often | Always |
| I feel like the match is getting stronger. | | | | | | |
| I feel unsure that my mentee is getting enough out of our match. | | | | | | |
| I feel frustrated or disappointed about how the match is going. | | | | | | |
| My mentee is willing to learn from me. | | | | | | |
| I feel like I am making a difference in my mentee's life. | | | | | | |
| My mentee is open with me (shares thoughts and feelings). | | | | | | |
| My mentee asks for my opinion or advice. | | | | | | |
| My mentee makes me aware of his/her problems or concerns. | | | | | | |
| My mentee is open with me about his/her friends. | | | | | | |
| My mentee talks to me about it when he/she has problems with friends or peers. | | | | | | |
| I feel like my mentee and I are good friends (buddies, pals). | | | | | | |
| My mentee shows me how much he/she cares about me (says things, smiles, does things, hugs me, etc.). | | | | | | |
| I feel like my mentee and I have a strong bond (are close or deeply connected). | | | | | | |
| I can trust what my mentee tells me. | | | | | | |

| | | | | | | |
|---|--|--|--|--|--|--|
| My mentee is very private about his/her life at home (does not talk to me about it). | | | | | | |
| I feel distant from my mentee. | | | | | | |
| My mentee avoids talking with me about problems or issues at home. | | | | | | |
| I feel awkward or uncomfortable when I'm with my mentee. | | | | | | |
| My mentee does things to push me away. | | | | | | |
| My mentee seems uncomfortable (or resistant) when I try to help with problems he/she may be having. | | | | | | |
| My mentee asks me for help when he/she has difficult schoolwork or a major project to do. | | | | | | |
| My mentee seems to want my help with his/her academics. | | | | | | |