THESIS

DOES YOUTH MENTORSHIP QUALITY MODERATE OR MEDIATE THE ASSOCIATION BETWEEN INSECURE PARENT CHILD ATTACHMENT AND EXTERNALIZING BEHAVIORS?

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ABSTRACT

DOES YOUTH MENTORSHIP QUALITY MODERATE OR MEDIATE THE ASSOCIATION BETWEEN INSECURE PARENT CHILD ATTACHMENT AND EXTERNALIZING BEHAVIORS?

Past literature has indicated that youth externalizing behaviors are associated with negative outcomes in adolescence, such as violence and drug use, however it is unclear if mentorship quality acts as a buffer for these behaviors. The current study examined the interactions between parent-child attachment, mentorship quality, and externalizing behaviors in the context of a youth mentoring program. Specifically, this study assessed 1) the association between parent-child attachment and youth anger, delinquency, and school behavior, 2) the extent to which mentorship quality moderated this association, and 3) the extent to which there are indirect effects of mentorship quality on the main association. Participants (N = 676; 58.4% male, 58.6% White; Mage=14.21) self-reported on the measures at baseline and again at program post-test. Findings showed parent-child attachment security was significantly associated with anger but was not significantly associated with delinquency or school behavior. Secondly, there were no significant interactions between parent-child attachment and mentorship quality in relation to any of the externalizing symptoms found. Lastly, the study found significant indirect effects of attachment security on anger, delinquency, and school behavior at the end of the mentorship program through mentee-reported mentorship quality. These results show promise for possible positive impacts of a strong mentorship quality on youth.

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LITERATURE REVIEW

Externalizing behaviors, such as aggression, hostility, and anger, are all associated with negative outcomes in children as they develop into adolescents (Blair, 2017; Dugré et al., 2019). Specifically, children with higher levels of aggression have been shown to exhibit a higher likelihood of violent behavior, drug use, and coronary heart disease later in life (Chida & Steptoe, 2009; Dugré et al., 2019). Incidentally, these children also have been shown to report higher rates of childhood abuse and psychopathology compared to children with lower amounts of aggression (Ainsworth et al., 1978; Dugré et al., 2019). Insecure parent-child attachment, which can develop based on inconsistent behavior from parents that result in a child having unmet needs, can play a role in the development of negative outcomes in children (Ainsworth et al., 1978). Past research has shown that insecure parent-child attachment is associated with less academic engagement, lower self-worth, less social competence with peers, and delinquent behavior (Allen et al., 1998; Allen et al., 2007; Chen, 2017).

One prevention effort effective in youth populations is mentorship programs (Dortch, 2000). Past literature has supported the notion that high-quality youth mentoring, and specifically high levels of mentor-mentee closeness, contributes to beneficial social, emotional, academic, and behavioral outcomes (Goldner & Mayseless, 2009; DuBois et al., 2011; Reitz et al., 2017; Rhodes et al., 2006). However, there are inconsistencies about the specific role that mentor-youth relationship quality plays in the association between attachment insecurity and youth externalizing behaviors such as anger, aggression, oppositional problems, conduct issues and hostility (Cavell et al., 2009; Smedler et al., 2014). Therefore, the goal of the current study is to

investigate the following research question: Does youth mentorship quality moderate or mediate the association between insecure parent-child attachment and externalizing behaviors?

Attachment Theory

Developmental psychology researchers Bowlby (1973) and Ainsworth (1978) established a theory and field of study surrounding a child's emotional connection to an adult caregiver. Bowlby's research has shown that parent-child attachment is central to a child's development and mental health (1998). The core tenet of attachment theory is that a stable and nurturing relationship with a caregiver is necessary for an infant to become a healthy adult (van Rosmalen et al., 2003). Specifically, when children feel safe and secure in the emotional bond with a parent, they are more likely to explore the unfamiliar while understanding that their attachment figure is there to support if needed (van Rosmalen et al., 2003). The caregiver relationship helps to form the internal working models that impact how children regulate emotion, develop personality, and determine trustworthiness in other relationships (Bowlby, 1973).

Through repeated experiences with attuned caregivers, especially during distressing events, a child may develop attachment security. Broadly, attachment security can be thought of as an individual's internal thoughts that they are valued and that others are trustworthy as well as their ability to seek out help when needed and to be independent when support is not needed (Mikulincer & Shaver, 2016). For example, the Strange Situation Procedure (SSP), in which a child is observed in a playroom to see how they react to being separated from their caregiver twice and being introduced to a stranger, can be used as a measurement of attachment security (Ainsworth et al., 1978). In the SSP, a child with a secure attachment style roams the playroom at their will and is friendly towards the stranger while the mother is present (Ainsworth et al., 1978). When the mother leaves, the child may get upset, roam less, and avoid the stranger

(Ainsworth et al., 1978). Once the mother returns, the securely attached child quickly recovers (Ainsworth et al., 1978). In contrast, an insecurely attached child does not explore as much when the mother exits the playroom. They may either become quite upset or not show much emotion at all (Ainsworth et al., 1978). Once the mother returns, the child may show mixed feelings toward her, being clingy yet inconsolable, or the child may ignore the mother (Ainsworth et al., 1978).

Broadly, there are two categories of attachment: secure or insecure. As mentioned above, attachment security is characterized by the notion that one is lovable and self-reliant, and that other people are trustworthy (Mikulincer & Shaver, 2016). Insecure attachment, seen as having higher levels of mistrust in relationships, has multiple subcategories including anxious, avoidant, and disorganized (Brennan et al., 1998). Attachment avoidance can be shown by uneasiness with close relationships, negative ideas of others and overall fewer expressions of attachment behaviors (Mikulincer & Shaver, 2016). Attachment anxiety is shown by an overall greater expression of attachment needs and behaviors along with fear of abandonment and sensitivity to rejection (Mikulincer & Shaver, 2016). Disorganized attachment is characterized by inconsistency in relationships, anxiety around others' intentions, fear of abandonment and emotional intimacy (Groh et al., 2012).

Understandably, individuals with differing levels of attachment security have different perceptions of themselves and the world. Based on past research, levels of attachment security in infancy can predict how a child will engage in the environment in future years (Sroufe et al., 1999). Further, how a child interacts with their environment and peers can depend on their expectations or biases, in some part due to their attachment styles, which can lead to self-fulfilling prophecies for how child is treated (Sroufe et al., 1999). For example, individuals with secure attachment styles are less likely to attribute hostile intent in ambiguous social situations

(Elicker et al, 1992; Sroufe et al., 1999). Additionally, in stressful situations, children with secure styles are more likely to seek out help with the belief that others will be available to help (Sroufe et al., 1999). In contrast, individuals with insecure attachment styles may be more likely to build relationships that are not supportive and when in distress, they may get overwhelmed with negative emotion and be unable to reach out for support (Sroufe et al., 1999).

Attachment and Externalizing Behaviors

Past studies have shown that maladaptive emotional regulation can lead to more outward expressions of aggression (Hitti et al., 2018; Roberton et al., 2011). Importantly, positive self-perceptions and important affect-regulation strategies can be formed when children have learned a sense of secure attachment (Bowlby, 1973; Mikulincer et al., 2003). Based on past attachment research, individuals with insecure attachment have exhibit lower skill level in emotion regulation (Mikulincer & Shaver, 2013; Sroufe et al., 1999). Similarly, past research has found that insecure attachment is positively associated with hostility and that individuals with insecure attachment show more externalizing behaviors (aggression, oppositional problems, conduct issues, or hostility) than children with secure attachment (Critchfield et al., 2008; Mikulincer, 1998; Fearon et al., 2010). Similarly, Wolff and Baglivio found that youth who have experienced adverse parenting practices are more likely to have aggressive tendencies, hostile interpretations of others' actions, and to break the law (2017). Further, past studies inform us that youth with high levels of anger and hostility are more likely to have conflict with teachers and parents (Wolff & Baglivio, 2017). The previous evidence directly supports the idea that attachment security has a significant association with the evolution of children's behavioral issues.

Although the association between attachment security and externalizing behaviors is clear, there are also other variables that must be considered. For example, aggression presents

differently based on youth gender. Girls and boys have similar levels of direct verbal aggression, but boys show greater use of physical aggression (Bjorkqvist, 2018). In contrast, girls use more indirect aggression, like excluding peers or using the silent treatment on peers (Bjorkqvist, 2018). The different types of aggression in which youth partake may impact the youth's levels of anger shown in our data. Further, some studies indicate that gender is a significant moderator of the association between insecure attachment and externalizing behaviors in that girls with insecure attachment exhibit fewer externalizing behaviors than boys with insecure attachment (Fearon et al., 2010). Given that gender is a significant moderator of insecure attachment and externalizing behaviors, the current study considered its use as a covariate.

Importance of Positive Relationships for Youth

Broadly, theory and empirical evidence have shown that positive relationships act as a buffer for an array of negative emotional and behavioral outcomes in adolescents. Specifically, the following literature focuses on youths' relationships with peers, mentors, and teachers because adolescence is a developmental period when youth find support from adults outside of the home and are highly susceptible to peer influence (Jessor et al., 1995; Murray, 2009; Roeser et al., 1998).

From the ecological perspective, human development is influenced by one's interactions with surrounding environment (Bronfenbrenner, 1979). Building upon this theoretical perspective, Lee and Lok suggested that positive relationships in different settings can provide youth support in varying domains (2012). Positive relationships with parents impact youth's attachment style and thus, their self-esteem, problem-solving skills, and ability to build quality friendships (Carter et al., 2005; Schofied, 2002; Bowlby, 1988). Positive relationships with peers are associated with greater academic involvement and perceived social acceptance (Berndt,

2002). Lastly, positive relationships with teachers can result in greater academic achievement and motivation as well as fewer behavioral problems or delinquency (Eccles, 2004).

Based on past literature, positive relationships are often positively associated with reduced emotional distress in youth (Kenny et al., 2013). Positive relationships often indicate frequent positive social interactions, which can result in increased positive emotions and decreased negative emotions related to stress (Chue & Yeo, 2022). Regarding peer relationships, the presence of positive characteristics in youth's best friend relationships was protective against social anxiety, but not against depressive symptoms (La Greca & Harrison, 2005). However, Wong (2001) found that youth who reported positive peer relationships also reported lower depression levels. Additionally, positive relationships with adults and peers were positively associated with reduced suicide attempts in Hispanic adolescents (Hall et al., 2021). Further, positive relationships with adults in the community were significantly protective against suicide attempts, regardless of the adolescent's relationship with their parents (Hall et al., 2021). Overall, positive relationships can act as a buffer for youth's negative emotional experiences.

Generally, positive relationships with peers and teachers are positively associated with reduced levels of behavioral issues at school. For youth with positive peer relationships, Wang and Eccles found that peer social support and supportive teachers were both positively associated with compliance and subjective value of learning at school (2012). Further, for youth between six and eight years old, positive relationships with teachers were significantly associated with lower levels of conduct problems and delinquency in adolescence (Bégin et al., 2022).

Given the extensive theoretical and empirical research on positive relationships' buffering effects on negative developmental outcomes, there is strong reasoning to examine youth mentorship quality as a moderator in the present study.

Mentoring

One common and effective intervention for youth is to provide them with a positive relationship through mentoring. Many mentoring programs' efficacy relies on the quality of the relationship between mentor and mentees (Younginer & Elledge, 2020). Specifically, high-quality mentoring relationships have the following characteristics: closeness, empathy, authenticity, and companionship (Rhodes et al., 2006; Spencer, 2006; Lucas-Thompson et al., 2021). Further, a high-quality mentoring relationship is collaborative and mutual between the mentor and mentee, though it is imperative for mentors to provide guidance to mentees, not purely companionship (Spencer, 2006; Keller & Pryce, 2012).

Many of the cited benefits of mentoring are rooted in attachment theory. Reitz et al. (2017) presented an attachment-informed mentorship framework which indicated that a mentor's presence and attunement can foster a secure attachment between mentor and mentee. In part, this notion is based on the positive behavioral, social, emotional, and academic outcomes associated with closeness in high-quality mentoring relationships (Goldner & Mayseless, 2009; DuBois et al., 2011). Past literature has theorized that when a mentee reports secure attachment to the mentor, thus possibly feeling understood and heard in this relationship, it provides a secure base for the mentee to experience "corrective emotional experiences" and self-regulation interventions (Reitz et al., 2017; Rhodes et al., 2006).

As a possible secondary attachment figure to youth, mentors can provide novel, positive, working models to improve mentees' views of themselves and relationships with adults (Rhodes et al., 2006). Youth may not have encountered a consistent and attuned attachment figure before participating in a mentorship program. Rutter (1990) hypothesized that after experiencing a high-quality mentoring relationship, youth may be more likely to ask for emotional support and thus,

shield youth from effects of negative environment. The current study aimed to further research and fill the gap in the literature on the topic of attachment-informed mentoring to determine if youth mentorship quality acts as a buffer between insecure caregiver-child attachment and anger.

Youth Mentoring as a Mediator

Although there is sufficient evidence on the buffering effects of positive relationships on externalizing outcomes, there is also reason to believe that youth mentorship quality could act as a mediating variable between insecure parent-child attachment and youth externalizing behaviors. Muzi et al.'s recent study on the effect of parents' attachment security on adolescents who exhibit depressive behaviors examined secure peer attachment as a mediator (2022). Specifically, greater parent attachment security and peer attachment security independently predicted fewer depressive symptoms (Muzi et al., 2022). Additionally, when the variables of parent attachment security and peer attachment security were considered simultaneously, peer attachment security was the only significant predictor of fewer depressive symptoms (Muzi et al., 2022). Due to the significant nature of peer attachment security on mediating the association between parents' attachment security and adolescent depressive symptoms, there is reason to examine the mediating effect of youth mentorship quality between insecure parent-child attachment and youth anger. However, only internalizing behavior (depressive symptoms) were examined in Muzi et al.'s study, so the present study aimed to determine if positive peer relationships mediate the association between insecure parent-child attachment and the externalizing behavior of youth (2022).

The Current Study

Given past literature's indications of youth mentorship quality's positive contributions to youth behavioral issues, the current study focused on the interaction between insecure parent-

child attachment, youth mentorship quality, and externalizing symptoms (anger, delinquency, and school behavior). In the current study, I hypothesized that baseline parent-child attachment security was negatively associated with levels of anger in adolescents, such that parent-child attachment insecurity predicted higher levels of anger in adolescents. Based on the extensive research on positive relationships' impacts on youth development, I hypothesized that this association was moderated by youth mentorship quality, such that a high-quality relationship weakened the negative association between baseline parent-child attachment insecurity and youth externalizing outcomes. Lastly, I tested youth mentorship quality as a mediator of the association between baseline parent-child attachment and youth externalizing outcomes due to inconsistencies in past research.

METHOD

Participants

The current study drew upon data collected by Colorado State University's Campus Connections program between the years of 2016 and 2019. The current study's sample included 676 adolescents from a Western city in the United States who had participated in a mentoring intervention known as Campus Connections (CC). Participants were deemed eligible if they were 11-18 years old, had experienced at least one risk factor as indicated on the risk assessment at intake, and were available to participate as a mentee in CC during the program's scheduled hours. This study used a purposive sampling method, because the sample's characteristics and eligibility criteria were determined in advance.

Of the 676 mentees in the study sample, 58.4% were male and the mean age was 14.21 years. Most participants identified as White (58.6%), 27.6% identified as Hispanic/Latino, 10.9% identified as multiracial, 3.1% identified as African American/Black, 1.6% identified as American Indian/Alaskan Native, 0.4% identified as Asian-American, and 0.7% did not report their race/ethnicity. Originally, there were 676 participants, but three participants rescinded consent during the study, so those data were excluded.

Procedure

The current study was part of larger research about site-based mentorship programs and youth outcomes (Haddock et al., 2021); only the procedures relevant to the current study are outlined. CC is a mentoring program for youth at-risk for poor developmental outcomes, such as behavior and emotional problems. Participants were referred to CC by community agencies (e.g.,

Office of District Attorney, Juvenile Probation, Department of Human Services, local school district, and the Center for Family Outreach). Trained professionals from community agencies completed a referral form that included the adolescent's contact information and a completed risk assessment. Upon receipt of the referral, trained CC staff contacted potential participants and conducted an intake appointment to determine program eligibility and obtain the adolescent's assent and parent's consent for research participation. In this appointment, researchers explained the research process, protocols for protecting confidentiality, possible study harms, benefits to study participation, and informed consent. Then, CC staff gave the parents and adolescents the choice to participate in this study. Their decision did not affect their participation in CC. The researchers obtained informed consent and assent by having the adolescent and guardian sign online consent and assent forms during the intake session.

If the adolescent was eligible and wanted to participate in the CC program, the adolescent and parent completed a baseline survey at the intake appointment. In CC, a 12-week program, adolescents were matched with an undergraduate student mentor. Adolescents chose their mentor from several mentor profiles (including mentor's major, interests, and reasons for being a mentor) with the aim of having strong mentor-mentee matches. The mentors and mentees met once a week for four hours together. During the evening, the mentor-mentee dyads engaged in various activities like a 30-minute walk around campus, one hour of completing homework, dinner, and multiple prosocial activities (sports, art, music, diversity, etc.). All activities happened around other mentor-mentee dyads on the university campus. Mentees completed measures at intake, week one, week six, and week eleven.

Measures

Attachment security

Caregiver-child attachment was measured using an adapted version of the Inventory of Parent and Peer Attachment (IPPA) called People In My Life (PIML; Murray & Greenberg, 2006) at intake. Higher scores indicate a more secure attachment between parent and child, while lower scores indicate a more insecure attachment. The adaptation of the PIML used for the Campus Connections data includes 14 items on a self-report questionnaire provided to the participants of the mentorship program at the intake session and the six-month follow-up meeting. The questionnaire items are statements that in response, participants must indicate how true the statements are with the following options: Not true = 1, Sometimes true = 2, Always true = 3. Thus, the PIML uses an interval scale by implementing a three-point Likert scale. Example items include: "My parent(s) listen to me," "My parents are proud of me," "It's hard to talk to my parent(s)," and "I get easily upset with my parent(s)." Four of the fourteen items are reverse scored.

This study used the PIML due to the scale's strong validity and reliability as a measure of attachment (Ridenour et al., 2006). The Cronbach's Alpha value for the PIML used by Campus Connections was found to be 0.89 at intake. These values aligned with past studies' evaluation of the PIML's Parent Attachment-related items (.88, Ridenour et al., 2006), indicating a good to excellent amount of reliability. Ridenour et al. (2006) also found strong validity when conducting Pearson correlation analyses between PIML subscale scores (Parent Attachment and Peer Attachment) and measures of characteristics associated with attachment (Child Behavior Checklist, Reynolds Child Depression Inventory, etc.).

Anger

Anger was measured by the Brief Anger Scale (BAS) at intake, week 11, and six-month follow up of Campus Connections (Coccaro & Deffenbacher, 2003). The BAS has 3 questions

with response items on a ten-point Likert scale. The items are statements that in response, mentees must indicate how true the statements are with the following options ranging from 0 = never to 10 = all the time. The three items are: "I get mad," "I lose my temper," and "I get angry." The Cronbach's Alpha value for the BAS used by Campus Connections was found to be 0.93 at intake and 0.94 at week 11, indicating excellent reliability. Higher scores on the BAS indicate higher levels of anger in the mentee.

Delinquency

A youth's delinquent behavior was measured by a Self-Reported Delinquency scale adapted from Elliott et al. (1985) at intake, week 11, and six-month follow up of Campus Connections. The current study used data from intake and week 11. The Self-Reported Delinquency questionnaire has 10 items that youth must indicate how many days in the last month have the following things happened with a slider ranging from 0 (0 days) to 30 (30 days). Example items include "I damaged property that did not belong to me," "I got drunk," or "I took something from a store without paying for it." The Cronbach's Alpha value for the Self-Reported Delinquency questionnaire used by Campus Connections was found to be 0.83 at intake and 0.89 at week 11, indicating good to excellent reliability. Higher scores on the Self-Reported Delinquency questionnaire indicate a higher frequency of delinquent behavior in the youth.

School Behavior

A youth's delinquent behavior was measured by a Self-Reported School Misbehaviors scale adapted from Elliott et al. (1985) at week 1, week 11, and six-month follow up of Campus Connections. Week 1 was the initial timepoint because youth were often out of school on summer break during intake sessions. The current study used data from week 1 and week 11. The Self-Reported School Misbehaviors questionnaire has 10 items that youth must indicate how

many days in the last month have the following things happened with a slider ranging from 0 (0 days) to 30 (30 days). Example items include: "I didn't finish my homework," "I cheated on a test or assignment," and "I received a compliment from a teacher for good school behavior." Two items were reverse coded. Higher scores indicated higher frequency of misbehaviors at school. The Cronbach's Alpha value for the Self-Reported School Misbehaviors questionnaire used by Campus Connections was found to be 0.83 at intake and 0.61 at week 11, indicating moderate to good reliability.

Mentor-reported mentorship quality

The quality of the relationship between the youth and the mentor was measured using the Mentor Alliance Scale (MAS) at week 6 and week 11 of Campus Connections which assesses aspects like honesty, openness, and satisfaction the mentee has regarding their mentor (Cavell et al., 2009). The current study used data from the week 11 timepoint. The 14 questionnaire items are statements that in response, mentors must indicate how true the statements are with the following options: Never = 1, Hardly Ever = 2, Sometimes = 3, Usually = 4, Always = 5. Thus, the MAS uses an interval scale by implementing a five-point Likert scale. Example items include: "My mentee looks forward to our visits," "When I ask about problems, my mentee talks about them," and "My mentee and I often argue with each other." Six of the items were reverse coded. The Cronbach's Alpha value for the MAS used by Campus Connections was found to be 0.88 at week 11. These values aligned with past studies' evaluation of the MAS (.81-.90, Cavell et al., 2009), indicating a good to excellent amount of reliability.

Mentee-reported mentorship quality

The quality of the relationship between mentee and mentor was measured using the Mentor Alliance Scale (MAS) at week 6 and week 11 of Campus Connections. The current study

used data from the week 11 timepoint. The questionnaire asks youth to indicate the degree of truth of 16 statements. The response options are Never = 1, Hardly Ever = 2, Sometimes = 3, Usually = 4, Always = 5. Thus, the MAS uses an interval scale by implementing a five-point Likert scale. Example items include: "I look forward to meeting with my mentor," "When my mentor asks about my problems, I talk about them," and "When I'm with my mentor I feel ignored." Eight of the items were reverse scored. The Cronbach's Alpha value for the MAS used by Campus Connections was found to be 0.88 at week 11, indicating good to excellent reliability.

Covariate

The covariate included in this study is sex. At the pre-intervention time point, youth were asked demographic questions. One was "What is your biological sex?" There were two choices: Boy = 1, Girl = 0. Biological sex was imputed for individuals that did not identify as exclusively a boy or a girl. Any non-male individuals were put into the group coded as a 0. This covariate is important to adjust for because past literature has determined male individuals typically have more externalizing behaviors than female individuals (Hitti et al., 2018).

Data Analytic Plan

To test the hypothesis that insecure parent-child attachment is associated with higher levels of anger, delinquency, and school behavior issues in adolescents, I conducted three multiple regressions predicting the three externalizing outcomes at week 11 based on parent-child attachment security, controlling for baseline measurements of the externalizing behaviors. To test the hypothesis that youth mentorship quality moderates this association, I created multiplicative interaction terms of parent-child attachment styles, after mean centering and controlling for lower-order terms. I adjusted for the covariate of youth sex in all these analyses.

Then, I examined the extent to which there are indirect effects of attachment on outcomes through mentoring relationship quality with a series of multiple regressions. I used the product of coefficients approach to test the statistical significance of the indirect effect. For this test, I multiplied a (association between parent-child attachment style and youth mentorship quality) and b (association between youth mentorship quality and externalizing outcomes) and then divided by its standard error (MacKinnon & Dwyer, 1993). To determine statistical significance, I compared the resulting score to a standard normal distribution. These estimates came from three models to 1) demonstrate the overall association between the independent variable (IV; parent-child attachment) and the dependent variable (DV; youth externalizing outcomes); 2) demonstrate if the parent-child attachment (IV) predicts youth externalizing outcomes (DV in this model), and 3) show the association between youth mentorship quality (mediator) and youth levels of externalizing outcomes (DV). Finally, I ran a Sobel's test to determine if the indirect effects were significant.

RESULTS

Bivariate Correlations

The bivariate correlations indicated that there were significant negative associations between parent-child attachment and all three externalizing outcomes at both time periods (baseline and week 11), such that lower parent-child attachment security was correlated with higher anger, delinquency, and school behavior (see Table 1). In contrast, parent-child attachment and mentee-reported mentorship quality were positively associated, such that the more secure a mentee's relationship with their parent, the higher their reports of the quality of the relationship with their mentor. A mentee's attachment security with their caregiver was not significantly associated with the mentor-reported mentorship quality. In terms of demographic variables, parent-child attachment and mentee sex were positively associated, meaning male mentees reported significantly more parent-child security than non-male mentees. Mentee sex was negatively correlated with anger at both timepoints, meaning that non-male mentees reported significantly lower anger levels.

As one might expect, each externalizing outcome at the second timepoint (week 11) was positively associated with its baseline measurement. Anger at week 11 was positively associated with anger at intake, delinquency at week 11 was positively associated with delinquency at intake, and school behavior at week 11 was positively associated with school behavior at week 1. The three outcome variables at week 11 were also all positively related to one another, and the baseline measurement of the outcome variables were also all positively related to one another.

Finally, mentee-reported mentorship quality was negatively associated with all three outcome variables at week 11, such that a higher quality mentoring relationship was related to

fewer externalizing outcomes (anger, delinquency, school behavior; see Table 1). Mentor-reported mentorship quality was only associated with the school behavior outcome, such that the greater the mentorship quality, the lower the mentee's behavior issues at school.

Main Effects and Interactions

Regarding my first hypothesis, that parent-child attachment security is negatively associated with levels of externalizing behaviors, parent-child attachment security was significantly associated with anger but was not significantly associated with delinquency or school behavior (see Model 1 of Table 2). There were also no significant interactions between parent-child attachment and mentorship quality (reported by youth or mentors) in relation to any of the externalizing outcomes (see Model 4 of Table 2). Surprisingly, mentor-reported mentor quality was positively associated with youth delinquency at Week 11 (see Model 3 of Table 2), indicating that higher levels of mentorship quality, as reported by mentors, predicted higher levels of delinquent behaviors at the end of the mentorship program.

Indirect Effects

To determine if there were indirect effects of attachment on externalizing outcomes through mentorship quality, I examined if parent-child attachment significantly predicted mentee-reported mentorship quality, controlling for mentee sex. I found that parent-child attachment significantly predicted mentee-reported mentorship quality (b = .300***, SE = .066, r_{sp} = .187) such that higher attachment security predicted higher quality of mentorship quality based on mentee reports. In a separate model, I examined if parent-child attachment significantly predicted mentor-reported mentorship quality, which did not yield significant results (b = -.019, SE = .057, r_{sp} = -.013). Of note, in both cases, mentee sex was significantly associated with mentorship quality (youth-reported: b = -.282***, SE = .053, r_{sp} = -.218; mentor-reported: b = -

.292***, *SE* = .046, r_{sp} = -.252), meaning that male mentees reported significantly lower levels of mentorship quality than non-male mentees.

Then, I examined the extent to which the mentee-reported mentorship quality predicted externalizing outcomes in the same models as attachment. In separate models, there was a significant negative association between mentee-reported mentorship quality and anger, delinquency, and school behavior, such that higher levels of mentorship quality, as reported by mentees, predicted lower levels of anger, delinquency, and school behavior at the end of the mentorship program (see Model 3 in Table 2). These results mean there is the possibility of an indirect effect, thus, I used the Sobel's test to determine if the indirect effect was significant. The Sobel's test yielded significant results for every outcome variable (see Table 3), meaning that there are indirect effects of parent-child attachment security on anger, delinquency, and school behavior through mentorship quality. Specifically, the indirect effects result in reduced anger, delinquency, and school behavior.

Table 1

Descriptive Statistics for and Correlations between Main Variables of Interest

	1	2	3	4	5	6	7	8	9	10
1. Parent-Child Attachment	X	-.207**	-.174*	-.135**	-.196**	-.217**	-.187**	.215**	.154**	-.057
Outcome Variables										
2. Anger at Week 11		X	.173*	.199**	.550**	.209**	.123**	-.084*	-.104*	.019
3. Delinquency at Week 11[a]			X	.223**	.162*	.292**	.126	-.063	-.151*	.121
4. School Behavior at Week 11[a]				X	.154**	.172**	.495**	.055	-.176**	-.109*
Control Variables										
5. Anger at Intake					X	.219**	.087*	-.094**	-.012	.028
6. Delinquency at Intake [a]						X	.159**	-.035	-.103*	.038
7. School Behavior Week 1[a]							X	.007	-.020	-.106*
8. Mentee Male [b]								X	-.195**	-.259**
Mediator Variables										
9. Mentor Alliance - Mentee Report									X	.384**
10. Mentor Alliance - Mentor Report										X
M	2.37	4.23	0.56	5.89	5.47	0.80	6.03	0.58	4.21	3.88
SD	.41	3.16	2.13	2.85	2.97	2.48	2.95	0.49	0.62	0.56

* $p < .05$ ** $p < .01$ *** $p < .001$ Note: [a] Variable log-transformed to ameliorate the effects of significant skew. [b] 1 = male, 0 = not male (female, other)

Table 2

Regression Analyses for Main Effects, Indirect Effects, and Moderating Effects

Model 1

	Anger at Week 11[a]			Delinquency at Week 11[b]			School Behavior at Week 11[c]		
	b	*SE*	r_{sp}	*b*	*SE*	r_{sp}	*b*	*SE*	r_{sp}
Outcome Baseline	.564***	.038	.520	.036***	.010	.261	.520***	.040	.484
Parent-Child Attachment	-.830**	.288	-.101	-.198	.115	-.120	-.031	.029	-.040
Mentee Male	-.284	.230	-.044	.014	.097	.010	.024	.023	.039

Model 3

	Anger at Week 11[d]			Delinquency at Week 11[e]			School Behavior at Week 11[f]		
	b	*SE*	r_{sp}	*b*	*SE*	r_{sp}	*b*	*SE*	r_{sp}
Outcome Baseline	.569***	.039	.521	.034***	.010	.246	.520***	.041	.481
Parent-Child Attachment	-.685*	.303	-.080	-.109	.117	-.065	-.001	.030	-.001
Mentee Male	-.429	.245	-.062	-.045	.100	-.031	.006	.024	.009
Mentor Alliance (Mentee Report)	-.520*	.200	-.092	-.271***	.079	-.239	-.081***	.020	-.150
Mentor Alliance (Mentor Report)	.131	.230	.020	.215*	.087	.173	-.004	.023	-.006

Model 4

	Anger at Week 11[g]			Delinquency at Week 11[h]			School Behavior at Week 11[i]		
	b	*SE*	r_{sp}	*b*	*SE*	r_{sp}	*b*	*SE*	r_{sp}
Attachment X MAS (Mentee Report)[1]	-.085	.471	-.006	-.031	.171	-.012	.016	.047	.012
Attachment X MAS (Mentor Report)[2]	.374	.542	.025	-.064	.189	-.024	.049	.054	.034

* $p < .05$ ** $p < .01$ *** $p < .001$. [a] $R^2 = .316$, [b] $R^2 = .100$, [c] $R^2 = .255$, [d] $R^2 = .325$, [e] $R^2 = .150$, [f] $R^2 = .275$, [g1] $R^2 = .325$, [g2] $R^2 = .325$, [h1] $R^2 = .150$, [h2] $R^2 = .151$, [i1] $R^2 = .275$, [i2] $R^2 = .276$

Table 3

Sobel's Test for Indirect Effects

	Anger at Week 11		Delinquency at Week 11		School Behavior at Week 11	
	Sobel's Test		Sobel's Test		Sobel's Test	
	b	*SE*	*b*	*SE*	*b*	*SE*
Mediator						
Mentor Alliance Mentee Report	-2.26*	.07	-2.74**	0.03	-3.02**	0.01

* $p < .05$ ** $p < .01$ *** $p < .00$

DISCUSSION

The current study assessed the role youth mentorship quality plays in the association between parent-child attachment and youth externalizing behavior within the context of a youth mentoring intervention program. Results indicated that parent-child attachment was negatively associated with change in youth anger, but parent-child attachment was not significantly associated with youth delinquency or school behavior. Although neither mentee- nor mentor-reported youth mentorship quality moderated the association between parent-child attachment and externalizing behavior, mentee-reported youth mentorship quality had indirect effects on the association between parent-child attachment and anger, delinquency, and school behavior through mentoring relationship quality.

Interestingly, mentee-reported youth mentorship quality was a significant mediator of the association between parent-child attachment and externalizing behaviors, such that mentorship quality accounts for a significant portion of the effect of attachment on externalizing outcomes. These findings align with past research that has concluded that a more secure attachment with a caregiver sets the foundation for youth to build more positive relationships with others and separately, that positive peer relationships reduce youth behavior issues (Bégin et al., 2022; Sroufe et al., 1999). Further, the finding about anger levels is consistent with past literature that indicates individuals with insecure attachment exhibit deficits in emotion regulation (Mikulincer & Shaver, 2013; Sroufe et al., 1999). However, the lack of a significant association between parent-child attachment and delinquency and school behavior contradicts past literature on attachment and externalizing symptoms (Critchfield et al., 2008; Mikulincer, 1998; Fearon et al., 2010; Wolff & Baglivio, 2017). These results extend past findings by identifying a potential

intervening variable in the causal pathway between parent-child attachment security and externalizing outcomes, for youth who participate in mentoring. Broadly, these findings may indicate that the ability to create and maintain positive connections with others is integral to youth positive development and avoidance of externalizing behaviors. Additionally, it may be that youth with more secure relationships with their parents will be better able to experience positive relationships with mentors, and likely see fewer externalizing symptoms after the mentoring program. These findings have potentially important practical implications for mentoring programs as they consider how to support youth in building mentoring relationships. These results suggest that youth with less secure parental relationships may require more support to build positive relationships with mentors.

In contrast to my hypothesis, neither report of mentor relationship quality acted as a moderator of the association between parent-child attachment and externalizing behaviors. Despite mentoring not being a significant moderator, mentoring programs still offer youth a supportive adult figure and beneficial social, emotional, academic, and behavioral outcomes (Goldner & Mayseless, 2009; DuBois et al., 2011; Reitz et al., 2017; Rhodes et al., 2006). The lack of a significant moderator contradicts theoretical work that posits that a secure attachment between mentor and mentor would provide a secure base for mentees to learn from self-regulation interventions and other "corrective emotional experiences" (Reitz et al., 2017; Rhodes et al., 2006). However, based on my finding that more secure parent-child attachment predicts higher mentorship quality, youth may struggle to build high quality mentoring relationships if their parent-child attachment is low. Thus, it may not be common for youth to simultaneously have high-quality mentoring relationships and insecure parent-child attachment. Unfortunately, this indicates that mentoring programs may not be best serving youth who need it the most,

suggesting further research is needed on how to support youth with insecure parent-child attachments. Additionally, it is possible that the period of assessment was too short for significant change in outcomes. The current study used attachment theory as the basis for the potential positive impacts of mentoring, however, it may not be realistic to expect a youth to find a secondary attachment figure in their mentor during a matter of eleven weeks. Further, youth are exposed to many factors that can affect their behavior. Past research has found that youth need supports outside of mentoring to achieve positive outcomes and has expressed hesitancy in overstating the effects of mentoring youth (Dubois et al., 2002; Raposa et al., 2019). The idea of exaggerating the effects of mentoring may also explain the unexpected result of the positive association between mentor-reported mentorship quality and youth delinquency at Week 11. This finding is surprising because it contradicts the hypothesis and findings of the study relating mentee-reported mentorship quality and the externalizing behaviors.

Lastly, delinquency and school behavior were not found to be negatively associated with parent-child attachment, which contradicts my hypothesis outlining the main effects. This lack of association contradicts past research indicating that youth with a more secure parent-child attachment show fewer externalizing behaviors, including delinquency and school behavior, compared to youth with a more insecure parent-child attachment (Critchfield et al., 2008; Mikulincer, 1998; Fearon et al., 2010). This may indicate that parent-child attachment security has less of a preventative effect than originally thought. It is possible that other factors impact youth's externalizing behaviors in addition to their parental attachment security. Past research has examined the relationship between variables such as family adversity, positive peer relationships, youth race and ethnicity, youth age, parental attitudes toward discipline, temperament as an infant among others with externalizing behavior in youth (Criss et al., 2003; Miner & Clarke-

Stewart, 2008). However, due to extensive past research on the association between caregiver attachment security and youth externalizing behaviors, this finding may be due to youth underreporting behavior that is viewed as negative.

Clinical Implications

Based on findings from the current study, parent-child attachment security is associated with youth externalizing outcomes indirectly through mentorship quality. It is important for mentoring programs to be aware of mentorship quality as a potential variable of importance, so they understand that youth with more secure relationships with their parents may show more positive relationships with their mentors than youth with less secure parent relationships. Mentoring programs like Campus Connections often have a goal of supporting youth who have experienced adversity and this finding would help these programs refocus and reconsider how to best serve youth that do not have secure parent relationships. Further, mentoring programs should consider including information about attachment theory and the role of mentorship quality in outcomes in mentor training as well as training mentors on how to build strong relationships with mentees.

Limitations and Future Directions

One limitation of the current study is that mentorship quality was the variable examined as a mediator or moderator, mentor-mentee attachment would have likely been a better choice. The primary theoretical framework of the current study was attachment theory, so it might have been more appropriate to test mentor-mentee attachment as moderator and mediator. Though mentor relationship quality is related to attachment, it is not quite the same because measures of attachment for a secondary-attachment figures assess an individual's capacity to provide a safe space to relieve stress, a steady source of support, a strong emotional connection, and a reason of

grief regarding a hypothetical loss of the relationship (Van Ryzin, 2010; Trinke & Bartholomew, 1997). In contrast, the measure I used for mentorship quality assessed for honest, openness, and satisfaction in the relationship (Cavell et al., 2009). Future studies, in addition to self-report measures of mentor-mentee attachment, could use clinical interviews with mentors and mentees to determine the attachment security of the relationship.

Another limitation of the study is that youth were asked to self-report their anger levels, delinquency, and school misbehaviors, which could introduce social desirability bias. Youth may have underreported the frequency of delinquent behaviors or school misbehaviors because of the punitive attitude on the part of society and educational institutions toward those behaviors. Additionally, youth may have indicated a positive relationship with their mentor to avoid disparaging Campus Connections. However, the study team took steps to reduce the influence of social desirability bias, such as having ensured confidentiality of youth responses and used a separate research team to run the data collection. Future studies could include observational assessment of youth externalizing behaviors from a mentee's teachers, parents, or their mentor.

An additional consideration when evaluating the current study is how the measure of anger straddles the line of being an externalizing and an internalizing behavior. One can express anger externally and also feel it internally. Implications of this measurement of anger include the need for further research with parent-child attachment, mentoring, and internalizing symptoms to determine if there are different results by using a lens of internal emotional processes.

Another limitation of the current study is that the Cronbach's Alpha for School Behavior was lower post-test than pre-test, which indicates lower reliability of the scale. The lower reliability at post-test could be explained by Campus Connections differentially affecting subscales of the Self-Reported School Misbehaviors scale. For example, Campus Connections

dedicates one hour each week to Supporting School Success, in which mentors help mentees with homework, which could improve mentee's scores of finishing assignments, but does not necessarily improve mentee behavior at school.

Lastly, it is difficult to determine any long-term effects of mentoring on externalizing outcomes due to the limited timeframe of data collection. Past research on the outcomes of mentoring completed follow-up interviews and assessments at the soonest six-months post-intervention and at the farthest, 30-months post-intervention (Erdem et al., 2016; Grossman & Rhodes, 2002). The current study used a six-month follow-up period which is comparatively a short period of time to conduct assessments of potential outcomes of the mentorship program.

Other future directions include testing whether the associations found in the current study hold for internalizing behaviors, examining the temporal order of change in parent-child attachment, mentorship quality, and externalizing behaviors to strengthen the ability to draw conclusions about the causal nature of these associations. Additionally, a future study could examine if additional mentor training on attachment theory has an impact on mentorship quality by using a randomized control trial in which one group mentors are trained in attachment theory and relationship building skills, and the other group is not. Lastly, future studies could examine if the mentor's parental attachment security plays a role in mentorship quality, specifically determining if the mentor's ability to form a secure attachment with the mentee matters to development of the relationship quality between mentor and mentee.

CONCLUSION

Overall, insecure caregiver-child attachment can act as a risk factor of externalizing behaviors for youth and can even effect affect regulation in youth (Critchfield et al., 2008; Mikulincer, 1998). However, not all adolescents have strong relationships with their caregivers, especially those who have experienced adversity and may be considered "at-risk." It is typical for youth who have experienced trauma to exhibit externalizing symptoms, which can sometimes land them in more trouble with the law or their families (Wolff & Baglivio, 2017). This study sought to determine if mentorship quality could weaken the negative association between parent-child attachment and youth externalizing behaviors. The results show that mentorship quality does not moderate this association, but that mentorship quality does have indirect effects on the association of parent-child attachment and youth externalizing outcomes, such that mentor relationship quality may explain the effect of parent-child attachment on change in externalizing behaviors for youth who participate in mentoring programs. This highlights a need for mentoring programs to pay particular attention to strengthening the quality of the mentoring relationship with youth who have insecure parental attachment. Further research is required to learn what other benefits mentorship has on adolescents who do not have supportive and safe relationships with their parents.

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