Parenting and Child Competence in Aggressive Youth: Bidirectional Associations

and the Role of Parental Depression

By

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Abstract

Previous research has established associations between parenting factors and children's competence, though these studies have been limited in their reliance on parenting styles and their examination of these associations cross-sectionally. The current study examined longitudinal growth trajectories and associations between two parenting practices (i.e., parental supervision and avoidance of discipline) and two dimensions of children's self-perceived competence (i.e., academic and social competence) across six years spanning the transition from elementary school to middle and high school among aggressive youth. Associations and bidirectional influences across time were evaluated. Parental depressive symptoms were also examined as a moderator of these associations.

Latent growth models suggested that child perceived competence and parenting practices showed significant variability and no stable growth trajectories. GEE analyses revealed that parental avoidance of discipline negatively predicted perceived academic competence, which, in turn, negatively predicted parental avoidance of discipline. Likewise, when depressive symptoms were low, similar bidirectional associations between parental supervision and perceived academic competence were evident. At low levels of parental depressive symptoms, avoidance of discipline also negatively predicted perceived social competence. Results lend support to developmental models that evaluate the nature of youth competence and parenting factors uniquely and in the context of other salient factors, such as parental psychopathology. Implications and future directions are discussed.

Keywords: bidirectional associations, parenting, perceived competence, parental depression

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From a developmental psychopathology framework, a child's competence (generally understood as a pattern of effective broad and dimension-specific adaptation to one's environment; Masten & Coatsworth, 1998), is often studied as an indicator of normal and abnormal development (Mash & Wolfe, 2016) and factors heavily into a self-determination theory of motivation and wellbeing (Grolnick & Ryan, 1989). With more explicit consideration of child psychopathology, competence is associated with a host of psychosocial outcomes, including depression (Cole, 1990, 1991) and life satisfaction (Leung, McBride-Chang, & Lai, 2004). Competence and aggressive behavior in youth have often been explored in tandem. Prior literature reveals a consistent pattern of findings linking aggressive behavior in youth to lower social competence (e.g., Belgrave, Nguyen, Johnson, & Hood, 2011; Malti, 2005; Mayberry & Espelage, 2007) and lower academic competence (e.g., Fite, Hendrickson, Rubens, Gabrielli, & Evans, 2013). Possible explanations for these patterns are varied, but all highlight the need to better understand the unique role of competence in the development of aggressive youth in order to inform current prevention and intervention efforts.

Because competence is a foundational dimension of typical child and adolescent development, researchers have attempted to further clarify the underlying mechanisms at work in the development and maintenance of children's competence across multiple domains (e.g., Cheung & McBride-Chang, 2008; Mattanah, Pratt, Cowan, & Cowan, 2005) and developmental periods (e.g., Taylor, Conger, Robins, & Widaman, 2015). Further, because family units represent perhaps the most highly salient socializing influence on a child's development, the influence of important family-level factors, most notably parenting, have been frequently examined in relation to competence. Competence, in its varied conceptualizations, has been positively associated with parenting practices characterized as "sensitive" (e.g., Barnett,

Gustafsson, Deng, Mills-Koonce, & Cox, 2012), "positive" (Castro-Shilo. Taylor, Ferrer, Robins, Conger, & Widaman, 2013), or "authoritative" (e.g., Mattanah et al., 2005).

Though extant literature yields consistent patterns of positive associations among these forms of parenting and children's competence, their growth together over time has not been examined, especially in aggressive youth. Also, passive effects of parental influence (i.e., unidirectional pathway from parent to child) fail to capture the complexities of the transactional and dynamic nature of parent-child relations. Nevertheless, while bidirectional models of influence are plentiful with regard to some psychosocial outcomes (e.g., externalizing behaviors; Childs, Fite, Moore, Lochman, & Pardini, 2014; Fite, Colder, Lochman, & Wells, 2006), few studies have examined bidirectional pathways between parenting and competence. There exists a gap in this line of inquiry, because the few studies that have examined longitudinal, bidirectional associations between parenting factors and youth competence have been limited chiefly in two regards. First, they often only focused on one dimension of youth competence (e.g., social; Barnett et al., 2012; Zhang, 2013). Second, they have relied largely on parenting styles (e.g., sensitive; Barnett et al., 2012) or parent-child relationship factors (e.g., conflict; Zhang, 2013). The field would benefit from examining the unique influence of individual parenting practices themselves, as well as their unique influence on individual dimensions of competence. Doing so will better aid our understanding of how parents contribute to, and respond to, perceived children's competence. Further, examining moderators of these associations, such as parental depression, can help to determine under which circumstances these transactional models are most robust.

The current study aimed to fill this gap by examining longitudinal growth and bidirectional associations between two specific parenting practices (supervision and avoidance of

discipline) and two important domains of youth competence (social and academic) in a sample of aggressive youth across six years spanning the transition from late childhood to adolescence (i.e., 4th to 9th grade). Additionally, parental depression was examined as a moderator of these associations.

Competence and developmental psychopathology

Broad understandings of competence, such as those proffered by White (1963), suggest that the construct represents an individual's ability to interact effectively with the environment (Grolnick & Ryan, 1989; Masten & Coatsworth, 1998). Coupled with this is an internalized process [a.k.a. White's (1963) "sense of competence"; or Harter's (1982) "perceived competence"), reflecting an individual's subjective estimation of their own competence. Harter's (1982) contribution to understanding of the construct was significant in delineating domain-specific aspects of competency. In other words, rather than broad and generalized patterns of adaptation to a child's environment, individuals may vary in their proficiency in specific areas of functioning, including academic or social competence.

As such, it has been argued that multiple domains of competence should be examined separately (Cole, 1990). Harter (1986) noted that a child, especially at the preoperational cognitive stage, might only be able to focus on one salient domain of competence at a time (e.g., academic competence at school; social competence when with peers, etc.), and thereby generalize interpretations of their competence in these domains to all others (e.g., when failing an academic task, believing they are "bad at everything, all the time"; Cole, 1990, p. 423). However, upon reaching a concrete operational stage later in development, the same child might be able to couch negative evaluations of his or her competence in the context of other, more positive evaluations in other areas (e.g., "I'm not good at math, but I sure have lots of friends";

Cole, 1990, p. 423). Because the developmental period encompassing the transition from late childhood to adolescence is considered by most to be an exceptionally salient period of social development, it might be that social competence is especially important during this time frame. However, research investigating the stability of these constructs during the transition to adolescence is mixed, with some research indicating that social competence, for example, demonstrates relative stability (e.g., Masten, Coatsworth, Neeman, Gest, Tellegen, & Garmezy, 1995), while other studies propose that it differs significantly across individuals after middle childhood (e.g., Obradovíc, van Dulmen, Yates, Carlson, & Egeland, 2006). Further, while some research has examined trajectories of other relevant dimensions of competence (e.g., Cole, Maxwell, Martin, Peeke, Seroczynski, Tram, … & Maschman, 2001; Masten et al., 1995), there exists a paucity of research examining these trajectories in relation to parenting constructs; thus, the determination of whether one domain of perceived competence is more important and what parenting behaviors are influential during this time period is less clear. Examining competence in multiple areas is therefore necessary in order to fully capture its influence across development and interaction with other relevant socializing influences (i.e., parenting).

Domains of competence can include those related to peer relations and academic achievement, as well as athletic ability and physical appearance (Harter, 1982); however, Palmen, Vermande, Decović, & van Aken (2011) have suggested that social and academic competence are especially important during the elementary school years. Because early indicators of social and academic competence are shown to predict later school performance and behavior problems (Chen, Li, Li, Li, & Liu, 2000; Ladd, Kochenderfer, & Coleman, 1996; Tremblay, Masse, Perron, Leblanc, Schwartzman, & Ledingham, 1992), they are perhaps especially important domains to consider in aggressive youth, who are already at risk for

negative developmental outcomes in these areas. It is not surprising, therefore, that aggression and social competence have been found to be negatively related in elementary-age (Malti, 2005) and middle school-age youth (Mayberry & Espelage, 2007).

Several possibilities have been posited for why these domains of competence are important factors to consider in the lives of aggressive youth. For example, Mayberry & Espelage (2007) cite literature suggesting that youth with behavior problems have difficulty accurately understanding others' emotions, thereby stifling the development of empathy, which is an important part of social competence (Halberstadt, Denham, & Dunsmore, 2001) and has been shown to be negatively associated with aggression (Joliffe & Farringon, 2004). However, as some researchers have suggested that proactively aggressive youth might be *more* aware of others' emotional states (e.g., Sutton, Smith, & Swettenham, 1999), this effect might be especially pronounced in children displaying more reactive displays of aggression. Indeed, because reactively aggressive youth often attribute hostile intent to ambiguous behavior (Dodge & Coie, 1987), it is not surprising to consider such social-cognitive information processing biases as an impediment to meaningful social relationships. Similarly, aggression, particularly reactive aggression, has also been linked to lower academic achievement (Fite et al., 2013). Sufficient evidence exists suggesting that aggression, and other antisocial behaviors more broadly, predict academic difficulties in school-age youth (e.g., Masten et al., 2005). These linkages could be due to many factors, including underlying cognitive deficits. For example, Waldman & Lahey (2013) review evidence that links lower general cognitive abilities and specific executive functioning deficits to future conduct problems. However, environmental influences, such as parenting practices, are also important to consider in understanding the ways that competence develops in aggressive youth.

Parenting and competence: Unidirectional and bidirectional pathways

The development and maintenance of child competence is often studied within the contexts of the parent-child relationship. Specifically, the role of parenting in its relation to child competence has been assessed through a variety of lenses. At the level of parenting styles or typologies, Leung et al. (2004), in a sample of Chinese 7th-graders, found linear effects suggesting that adolescents' perceptions of maternal concern (i.e., the degree to which adolescents considered their mothers as warm or cold toward them) was positively associated with their own perceptions of their academic competence, whereas perceived maternal restrictiveness (i.e., the degree to which adolescents saw their mothers as stern or mild toward them) was negatively associated with perceived academic competence academic competence. On the other hand, when examining the role of individual parenting practices, Castro-Schillo et al. (2013) found that positive parenting (e.g., providing positive reinforcement for desired behavior) was positively related to child-perceived social competence in a sample of elementary-age children. Barbot, Crossman, Hunter, Grigorenko, & Luthar (2014) found concurrent associations between parent-perceived social competency and parental control and involvement in a sample of mothers of early adolescents. Outside of specific parenting practices, other parent-related psychosocial factors, such as parental stress, have been shown to be related to children's social competence (e.g., Anthony, Anthony, Glanville, Naiman, Waanders, & Shaffer, 2005; Östberg & Hagekull, 2013). While these studies are illustrative of the links between parenting, more broadly, and distinct dimensions of competence, many are limited to cross-sectional designs that preclude examinations of these relations across time and, importantly, across the transition from childhood to adolescence (e.g., Leung et al., 2004; Barbot et al., 2014; Anthony et al., 2005).

Additionally, no studies to date examine bidirectional associations between parenting and competence specifically within samples of aggressive youth.

From a self-determination theory framework (Deci & Ryan, 1985; Grolnick & Ryan, 1989), competence shares a unique relationship with the concept of parenting characterized by *structure* (Grolnick, Raffery-Helmer, Marbell, Flamm, Cardemil, & Sanchez, 2014). Specifically, this dimension of *structure* emerges from an extension within self-determination theory literature of Baumrind's (1966) classic dimensions of *warmth* and *control*. From the combinations of these original polar dimensions emerged the popular parenting styles (i.e., Authoritative, Authoritarian, and Permissive; Baumrind, 1966). However, complicating the *control* dimension were further advancements in the distinction of unique approaches to parental control. For example, the common distinction between *psychological* and *behavioral* control (as discussed in Barber, 1996) was proposed as a key factor in understanding how each construct (though aspects of parental control) was related to such different outcomes in children and adolescents. Grolnick et al. (2014) use this example to justify the separation of the classic *control* dimension into further dimensions of *motivation* (e.g., guilt induction consistent with parental psychological control) and *structure* (e.g., setting limits and healthy boundaries consistent with parental behavioral control). It is this latter dimension that is considered to bolster youth's competence. Grolnick et al. (2014) argue that parental structure—which includes "clear rules and expectations, predictable consequences, provision of rationales, and authority" (Grolnick et al., 2014, p. 358)—allows children the opportunity to tailor their behavior towards specific expectations and to receive consistent and constructive feedback, thereby increasing competence.

Several parenting practices could be considered to represent the structure dimension proposed by Grolnick et al. (2014), but in parenting aggressive youth, prior studies have

highlighted the importance of parental supervision and persistent disciplinary strategies (e.g., Burke, Pardini, & Loeber, 2008; Frick, Lahey, Loeber, Stouthamer-Loeber, Christ, & Hanson, 1992). Burke et al. (2008), in comparing relations between a range parenting practices (including parent-child communication, quality of the parent-child relationship, parental supervision/monitoring, use of corporal punishment, timid discipline, parental involvement, communication, etc.) with symptoms of oppositional and defiant behavior, found reciprocal associations only with respect to timid parenting (e.g., hesitating to enforce rules out of fear for the child's reaction). Similarly, when comparing the use of various parenting practices between groups of children with Conduct Disorder (CD), Oppositional Defiant Disorder (ODD), and a control group, Frick et al. (1992) found that parental supervision and persistence in discipline were reported significantly less in parents of children with CD. Though not all youth with aggressive behavior meet the diagnostic criteria for CD, aggression in youth tends to exhibit a moderate degree of continuity across time (Huesmann, Dubow, & Boxer, 2009). Thus, it is conceivable to a subset of these youth will go on to eventually display aggressive or antisocial behavior consistent with CD, thereby emphasizing the importance of these parenting practices in this population.

Regarding parental supervision, Taylor et al. (2015), in a sample of late childhood to early adolescent youth, found that parental supervision positively predicted children's perceived social competence. Parents who actively supervise their children's social experiences might prevent them from affiliating with delinquent or antisocial peer groups. Additionally, appropriate supervision by parents may facilitate the internalization of healthy, developmentally-appropriate social boundaries and expectations in their children. This kind of self-regulation is a key

determinant of healthy social relationships (i.e., social competence; see Anthony et al., 2005, for a discussion).

While there exist current gaps in the literature regarding the exact linkages between persistent discipline and specific domains of competence, the benefits of consistent discipline in other areas are well-known (e.g., Grusec, Danyliuk, Kil, & O'Neill, 2017; Lösel & Bender, 2014). Further, it has been shown that the children of parents who utilize firm rules and structure consistent with an authoritative parenting style have been found to be more likely to be considered socially competent (see Masten & Coatsworth, 1998, for review). Even in as young as preschoolers, the use of consistent, appropriate discipline has been shown to be positively linked to child social competence. As such, it is not a stretch to propose that persistent discipline (i.e., not avoiding discipline) might be expected to display similar effects. However, this possibility has not been fully evaluated.

While most work investigating the links between parenting and dimensions of competence have focused on the social realm, it is also likely that the proposed mechanisms linking parenting to competence – e.g., social modeling (Denham, 1993; Denham, Renwick-Debardi, & Hewes, 1994) and allowing the child to orient their behavior to specific expectations and receive consistent and constructive feedback (Grolnick et al., 2014) – would also expand to academic competence as well. Nevertheless, greater specificity on the unique practices employed by parents as it relates to these separate types of competence can help to elucidate these pathways, and to disentangle specific practices (e.g., inconsistent discipline) from larger typologies and styles (e.g., warmth) that have been the focus of other studies examining parenting and these other domains (e.g., academic competence; Leung et al., 2004). Further research is needed to clarify the nature of parental influence across distinct competence domains.

The association between parenting and competence, however, may not only move in one direction; it could be the case that competence also predicts changes in parenting. Barbot et al. (2014) found, in a sample of early adolescents, that child-perceived social competence predicted increases in parental involvement and monitoring. It could be that greater child-perceived competence promotes fewer distressing events in the context of the parent-child relationship, thereby increasing the likelihood of parents engaging in more adaptive parenting practices (e.g., more supervision or persisting in discipline).

Further, the notion of reciprocal relationships between parent and child influences, where changes in one direction promote a feedback effect of changes in the opposite direction, is not new. Indeed, plentiful models of these reciprocal and transactional relationships exist in the literature on child problem behavior (e.g., Childs et al., 2014; Pearl, French, Dumas, Moreland, & Prinz; Fite et al., 2006). The same pattern may be true for parenting and competence. For example, Zhang et al. (2013) found bidirectional effects between father-child conflict (defined as the father's "perception of negativity and conflict with the child", p. 86) and parents' perceptions of their preschoolers' social competence. Even in samples as young as infants, Barnett et al. (2012) found bidirectional relations between sensitive parenting and parents' perceptions of girls' social competence. Relatedly, Newton, Laible, Carlo, Steele, & McGinley (2014) found bidirectional influences between maternal sensitivity and parent-reported youth prosocial behaviors, which is used in some studies (e.g., Zhang et al., 2013) as measure of social competence. While these studies comprise a literature that is growing, more work is still to be done in clearly delineating these complex relationships. Few studies have examined bidirectional associations between parenting practices and perceived competence, especially in late childhood to early adolescence, a time when children make several significant transitions (e.g., from

elementary school to middle school and from middle school to high school) that can influence

behavior (e.g., Holmbeck, Paikoff, & Brooks-Gunn, 1995). Further, previous research (e.g.,

Pardini, Fite, & Burke, 2008) has found increasing influence of factors such as parental

supervision on child conduct problems, and vice versa, becoming stronger across transitions

from childhood to early- and middle-adolescence, further justifying the importance of examining

changes in parenting and child adjustment during this important developmental period. The

current study aimed to fill this gap by focusing on the unique associations between distinct

parenting behaviors and dimensions of competence across an important developmental time

period. In doing so, the separation of parenting typologies into single foci of parenting behaviors

allows for greater parsimony in accurately understanding and representing developmental models

of parenting and competence over time.

The role of parental depressive symptoms

In addition to better understanding the pathways from parenting to child competence, and

vice versa, it is important to also consider factors that might influence the nature or strength of

these pathways, in order to better understand the broader scope of these ecological interactions.

One consideration that has received a great deal of attention as it relates to the dynamics of

parent-child relationships is that of parental psychopathology, especially parental depressive

symptoms (e.g., Callender, Olson, Choe, & Sameroff, 2012). Though there are perhaps many

salient parental factors worth considering in the lives of aggressive youth, including parental

stress (Crum & Moreland, 2017), parental substance use (Fuller, Chermack, Cruise, Kirsch,

Fitzgerald, & Zucker, 2003), and parental antisocial behavior (Tzoumakis, Dean, Green, Zheng,

Kariuki, Harris, …, & Laurens, 2017), the relatively high prevalence of depressive symptoms

among U.S. adults justifies the focus on this particular aspect of parental psychosocial

functioning. Estimates suggest that among adults ages 18-44, Major Depressive Disorder has the highest prevalence compared to other common psychiatric diagnoses, including Generalized Anxiety Disorder and Substance Use Disorder (Kessler, Berglund, Demler, Jin, Merikangas, & Walters, 2005). Indeed, the pathway from parental depressive symptoms to negative youth outcomes is one of the most frequently studied risk factors in abnormal child development, though most often studied in the context of mothers (Beardslee, Versage, & Gladstone, 1998). Because having a mother who is depressed is a risk factor for future violent and disruptive behavior (as discussed in Hay, Pawlby, Angold, Harold, & Sharp, 2003), the experience of parental depressive symptoms is a particularly relevant factor to consider in the lives of aggressive youth.

Anthony et al. (2005) discuss several of the means by which parental depressive symptoms impact the parent-child relationship, and these provide insight into the ways that parental depressive symptoms might impact youth competence. Maternal depression and anxiety is associated with the use of inconsistent discipline, lack of structure, and having unrealistic expectations of their child (Crawford & Manassis, 2001; Rodgers, 1998). Maternal depressive symptoms have been found to be associated with the perception of higher child maladjustment (Forehand & Brody, 1985). Thus, parents' own use of appropriate parenting practices in response to their child's perceived competence might be weaker when they concurrently experience a high degree of depressive symptoms themselves, thereby possibly skewing their perceptions. Parental depressive symptoms, on the whole, are often a correlate of strained and difficult parent-child relationships (Patterson, 1982; Seagull, 1987). That is, parents' own depressive symptoms might serve to amplify the association between maladaptive parenting practices, such as avoiding discipline and low supervision, and the child's self-perceived competence. Because of these

considerations, it is possible that parental depressive symptoms might moderate both directions of the proposed bidirectional pathways between parenting and competence, and further study of its influence is warranted.

The current study

The current study, therefore, builds upon this previous literature in a number of ways. First, though extant literature has documented links between parenting and competence in aggressive youth, there has been little examination of these links together over time. Indeed, though growth models have examined concurrent parenting and competence over time in early childhood samples (e.g., Adler-Baeder, Garneau, Vaughn, McGill, Harcourt, Ketring, & Smith, 2016), no studies to-date have employed growth models examining distinct parenting practices and child competence in the transition from childhood to adolescence, let alone in a sample of aggressive youth. The current study followed these associations in a sample of aggressive youth across six years. These successive waves of data allowed for greater specificity in understanding these dynamic relations across time. Further, the majority of previous studies have only examined this relationship in one direction (i.e., parent to child effects). The current study examined influences between parenting and child-perceived competence across time and in both directions, thereby allowing for a framework through which to draw conclusions about the nature of this relationship across an important developmental time period (i.e., late childhood to early adolescence), featuring several significant transitions. This also assisted in determining which of these unique parenting practices more saliently reflects the *structure* domain proposed to be most relevant to the development of competence (Grolnick et al., 2014). The current study also examined the role of parental depressive symptoms, an important factor to consider when

examining aggressive youth, as a moderator of both the pathways from parenting to competence, and vice versa.

It should be noted that competence in the current study was examined as *perceived* competence. Complicating the current understanding of the role of competence in child development is the confusion of terminology that pervades much of the current literature. Competence involves both external (e.g., academic achievement) and internal (e.g., self-perceived academic competence) processes. As such, research focusing on competence has frequently employed inconsistent definitions. For example, in MacMillan & Violato's (2008) examination of the link between parenting and children's emotional and behavioral competence featured outcomes that were indistinguishable from other kinds of emotional and behavioral checklist. Similarly, Zhang et al.'s (2013) finding of bidirectional and reciprocal influences between father-child conflict and social competence (such that increased conflict predicted decreased social competence, and vice versa) was based on the use of prosocial behaviors as a proxy for social competence. This overlap between "objective" measures of competence and related symptom-specific measures presents empirical problems related to measuring the development of competence as a separate construct. Also, while some studies have found "inaccuracies" in youths' self-reports of competence (e.g., Klaver, Palo, & DiLalla, 2014), it has been argued by some (Dew & Huebner, 1994; Huebner, 1991; Huebner & Alderman, 1993) that individuals' *perceptions* of their own competence might be more salient with regard to overall wellbeing. This would seem to be corroborated by the reliance on perceived competence in influential models of development, such as Cole's (1990, 1991) model of depression. For these reasons, the use of perceived competence in the current study was warranted.

Based on available literature, the following hypotheses were offered. Consistent with trends evident in prior work (Fredricks & Eccles, 2002), youth's perception of their academic competence was expected to decrease over time, corresponding with greater social comparison and use of norm-referenced grading used in middle and high school. Self-perceived social competence, however, was expected to increase during this period as children might learn to self-select into peer groups in which they are more comfortable (e.g., Cole et al., 2001). Also, because youth antisocial behavior commonly results in decreases in parental supervision (Laird, Criss, Pettit, Bates, & Dodge, 2009), parental supervision was expected to decline over time. Finally, as suggested by prior work (e.g., Luyckx, Tildesley, Soenens, Andrews, Hampson, Peterson, & Duriez, 2011), avoidance of discipline was expected to remain relatively stable, as this is often indicative of parents' consistent parenting style. Growth patterns between self-perceived competence and parenting were expected to be associated, such that the influence of one on the other will attenuate the strength of decreasing growth trajectories (i.e., decrease less) and amplify the strength of increasing growth trajectories (i.e., increase more). It should be noted that while the bulk of prior work would suggest that each domain of competence might be expected to operate similarly with respect to parental supervision and avoidance of discipline, results were considered separately in order to evaluate the degree to which these domains exhibited similar or distinct patterns over time and provide possible justification for studying them as distinct developmental phenomena. Both parental supervision and avoidance of discipline were expected to predict social and academic competence at each subsequent time point, such that greater supervision and less avoidance of discipline would be associated with increased competence in each domain. Social and academic competence were expected to predict parental monitoring and avoidance of discipline at each time point in a similar manner. And,

finally, these associations were expected to vary as a function of parental depression, such that associations between good parenting and child competence would be attenuated at high levels of parental depression.

Method

Participants

Participants in the current study included parents and children participating in a larger investigation of the Coping Power Program (CPP; Lochman, Wells, & Murray, 2007). Recruitment for the current study took place in 17 elementary schools in a medium-sized city in the south. During recruitment, teachers rated children in their respective classes on verbal aggression, physical aggression, and disruptiveness. Children rated by their teachers as being in the top 31% of aggression were considered eligible for the study and were given the opportunity to participate in the study. Sample descriptions have been provided in prior literature (e.g., Fite et al., 2008), which reveal levels of proactive and reactive aggression at higher levels than reported in other community-based samples (e.g., Pederson & Fite, 2014; Williford, Fite, Johnson-Motoyama, & Frazer, 2015). Initial ratings took place during the summer between children's fourth and fifth grade academic years. Of these participants, 245 families provided consent to participate. This sample of 245 families was randomized to either treatment or non-treatment control groups. The sample used in the current study consisted of the 126 families assigned to the non-treatment control group, in order to rule out any treatment-related effects (Lochman, Boxmeyer, Powell, Roth, & Windle, 2006; Lochman, Baden, Boxmeyer, Powell, Qu, Salekin et al., 2014).

The sample was 66% male, with the mean age at the first wave of data collection being 10.4 years ($SD = 0.51$). All participants at the beginning of the study had just completed the 4th

grade. The ethnic breakdown of the sample is as follows: African American (79%), Caucasian (17%), and other (4%). This breakdown is representative of the community from which the sample was obtained. Of the caregivers reporting, the majority were mothers (90%). Approximately half of the parents (47%) were married or cohabitating, 31% were single, 20% were divorced/separated, and 2% were widowed.

Measures

   Demographics. At the initial wave of data collection, parents and caregivers provided information on their child's age, gender, and race, as well as information regarding the family's average income.

   Parenting Practices. Parenting practices were assessed using two scales of the Parenting Practices Questionnaire – Parent Version from the Loeber Youth Questionnaire (Loeber, Farrington, Stouthamer-Loeber, & Van Kammen, 1998). Parental monitoring was assessed via the Supervision scale, which includes two items assessing whether the parent implements structure and monitoring (e.g., *Does your child have a set time to be at home on school nights?*). Items are rated on a scale of $0 – 2$ (e.g., *0 – No set time; 1 – Sometimes set time; 2 – Always set time).* Avoidance of discipline was assessed via the Discipline Avoidance scale, which includes six items assessing whether the parent exhibits apprehension in disciplining their child (e.g., *Do you hesitate to enforce the rules with your child because you fear he/she might harm someone in your household?).* Items are rated on an interval scale of 1, 3, or 5 (i.e., *1 – Almost Never; 3 – Sometimes; 5 – Often).* In both scales, item responses are averaged, with higher scores representing greater parental supervision/monitoring and avoidance of discipline, respectively. Alpha was not computed for the Supervision scale, because it was comprised of only two items. Internal consistency of the Discipline Avoidance scale was moderate to good ($\alpha = .66 - .81$).

Perceived Competence. Children's perceptions of their own competence were assessed using Harter's (1982) Perceived Self-Competence Scale (PSCS). The scale consists of 40 items to which participants must respond in a two-step manner. First, two competing parallel statements concerning general behavior are provided. Participants must first select which statement is more like them. After selecting the statement, participants must then rate the statement as "*Really true for me*" or "*Sort of true for me*." Traditionally, the scale yields four subscales: Athletic Competence, Peer/Social Competence, Academic/Cognitive Competence, and Self-Concept. For the current study, only two domain-specific competence subscales were examined, Peer/Social Competence (7 items) and Academic/Cognitive Competence (7 items). Internal consistency for the Academic Competence scale was moderate to high across each wave of data collection (α = .62 - .73). For the Social Competence scale, internal consistency estimates demonstrated a high degree of variability ranging from low to moderate reliability (α = .23 - .74)[1]. It should be noted that competence data were not available for Time 4, and models were estimated accordingly.

Parental Depression. To assess parents' own depressive symptoms, they were administered the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). The BDI asks respondents to select among a series of statements that might reflect their thoughts, feelings, or behaviors in the past two weeks. Items reflect symptoms associated with depressive disorders. Items were summed, such that higher scores represented elevated depressive symptoms. The BDI was administered at all six time points. Internal consistency was high across each wave of data collection (α = .81 - .90).

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[1] For Times 1-3: α = .65-.74. Time 5: α = .45. Time 6: α = .23. Despite low alphas at Times 5 and 6, social competence demonstrated relative stability across time points, such that, with the exception of Time 2, all values were positively associated with the values immediately preceding it (Pearson's *r* = .31 - .51).

Procedures

All procedures and questionnaires were approved by the Institutional Review Board of the Principal Investigator's university. Each wave of data collection took place during the summers between academic years at approximately one-year intervals. Parents/caregivers and children provided consent and assent, respectively, to participate in the study. At each collection, trained study staff conducted separate interviews with both parents/caregivers and children. Over 90% of interviews were conducted in participants' homes. For their time, parents and caregivers were compensated $40, and children were compensated $10, at each time point.

<div align="center">Data Analytic Approach</div>

Basic descriptive statistics—including means, standard deviation, skewness, kurtosis, and bivariate associations (i.e., Pearson's *r* and t-tests)—were first estimated. Descriptive statistics for potential control variables, specifically gender, ethnicity, and socioeconomic status (SES), were also included as these factors might be expected to influence both parenting behaviors and children's perceived competence. For example, Masten et al. (1995) found greater stability in girls' social competence during adolescence than in boys'. Hill & Sprague (1999) found differences between Black and White parents' parental expectations and discipline strategies. Bradley & Corwyn (2002) in a review of the negative influence on low socioeconomic status and child development, cite evidence of linkages between low SES and both lower child well-being and less adaptive parenting behaviors. All variables were standardized ($M = 0$; $SD = 1$) prior to subsequent analyses.

Latent growth and panel models were estimated using Full Information Maximum Likelihood (FIML), which has been shown to be robust to relatively non-normal data

distributions (i.e., skewness ± 3 and kurtosis ±10; Kline, 2010) and less biased and more efficient than other strategies (e.g., listwise or pairwise deletion) in accommodating up to 50% missing data (Arbuckle, 1996). Model goodness-of-fit was be assessed via the model chi-square value, comparative fit index (CFI), and the root mean square error of approximation (RMSEA). Good model fit is indicated by values of $\chi^2/2 < 2.0$, CFI/TLI $\geq$ .95 and RMSEA $\leq$ .08 (Curran & Bollen, 2001; Hu & Bentler, 1999; Tabachnick & Fidell, 2001). FIML assumes missing data to follow a missing-at-random (MAR) pattern.

With regard to power, the sample size used in the current study (n = 126) was expected to be able to detect medium-to-large effects. This estimation was based on simulation studies conducted by Fan (2003) with regard to detecting individual differences in slope trajectories in latent growth models using a structural equation model (SEM) framework. Further, previous studies using similar datasets (e.g., Fite, Colder, Lochman, & Wells, 2008) have estimated bivariate latent growth curve models with samples of similar size, proving some evidence for our ability to detect effects.

Due to power considerations, generalized estimation equation (GEE) models were estimated to examine the influence of parental depression on each of the proposed bidirectional relations (e.g., Childs et al., 2014). In doing so, participants were collapsed across grade resulting in population averages rather than individual effects. This collapsing increases the power with which to determine significant interaction effects. A series of GEE models were estimated in which a single outcome was regressed onto a single independent variable of interest, along with control variables. Autoregressive effects were also controlled for using an exchangeable correlation structure (for a discussion of general GEE principles, see Muth, Bales, Hinde, Maninger, Mendoza, & Ferrer, 2006). Cross-product interaction terms including parental

depression (e.g., "parental depression* social competence" or "parental depression*avoidance of discipline") were added to the model. Significant interactions were then probed at high (one standard deviation above the mean) and low (one standard deviation below the mean) levels of parental depression to determine the nature of the effects (Aiken & West, 1991).

Results

Descriptive Statistics

In order to better understand univariate characteristics of study variables, descriptive statistics were estimated, including means, standard deviations, and normality indicators (i.e., skewness and kurtosis). These are presented in Table 1. Parental supervision at Time 3 and parental avoidance of discipline at Time 6 were the only variables that contained extreme values of skewness and/or kurtosis outside the ranges recommended for ML estimation (i.e., skewness ± 3; kurtosis ± 10; Kline, 2010). Subsequent models including these variables, therefore, were estimated using robust maximum likelihood (MLR) estimation, which provides the same estimates as typical full information maximum likelihood estimation with adjusted standard errors robust to model non-normality (Muthén & Muthén, 2017).

Correlations were estimated in order to examine bivariate associations among study variables (see Table 1). Because of its continuous nature, family socioeconomic status (as measured by Hollingshead index) was also included as a control variable in this step of bivariate analyses. Hollingshead index values were not significantly associated with any outcome variable and were therefore excluded from further analyses.

At the bivariate level, perceived social and academic competence each showed stability across individual time point lags, such that values at each subsequent time point were moderately-to-strongly positively associated with the value immediately preceding it (rs = .31 -

.51; $ps < .01$). Likewise, avoidance of discipline and supervision followed the same pattern, with significant moderate-to-large positive associations across individual time point lags ($rs = .25 - .68$; $ps < .01$). The only exception to this pattern was the nonsignificant positive association between supervision at Times 1 and 2 ($r = .14$; $p = .15$). With a few exceptions, for perceived social competence, perceived academic competence, and supervision, patterns of stability weakened as a function of time, such that values obtained in closer proximity (i.e., within 1-2 time points) were more positively associated, and associations weakened and became nonsignificant as time lags increased beyond 1-2 waves. All values of avoidance of discipline were significantly positively associated across all time points ($rs = .38 - .63$; $ps < .01$), suggesting little variability in this construct as a function of time.

Competence variables were relatively consistent across dimension, such that, at each time point, perceived social and academic competence shared significant positive associations ($rs = .37 - .53$; $ps < .01$). Parenting practices were generally unrelated, with the exception of negative associations between avoidance of discipline at Time 6 and supervision at Times 1 and 2. Supervision was not associated with either competence variable. Avoidance of discipline at Time 3 was negatively associated with academic competence at Times 3, 5, and 6.

A series of independent samples t-tests were estimated in order to evaluate the degree to which study variables differed as a function of child gender (i.e., boy or girl) and child ethnicity (dichotomized, such that children were coded as either belonging to Caucasian or racial minority status). Significant mean differences as a function of gender were found in perceived Academic Competence at Time 2 [$M_{boys} = .15$; $M_{girls} = -.30$; $t_{(110)} = 2.31$; $p = .02$], Time 3 [$M_{boys} = .15$; $M_{girls} = -.29$; $t_{(106)} = 2.24$; $p = .03$], and Time 5 [$M_{boys} = .20$; $M_{girls} = -.36$; $t_{(56.92)} = 2.57$; $p = .01$]. Significant mean differences as a function of ethnicity were found in Avoidance of Discipline at

Time 2 [$M_{\text{Caucasian}}$ = .34; M_{minority} = -.07; $t_{(106)}$ = 2.33; p = .03]. Because of these patterns of differences, gender was considered as a covariate in all subsequent analyses including perceived academic competence, and child ethnicity was included in all subsequent analyses including avoidance of discipline.

Univariate Latent Growth Curve Models[2]

To examine growth patterns in study variables over time, 4 separate univariate latent growth curve models were estimated using Mplus v.8 software (Muthén & Muthén, 2017). For perceived academic competence, an intercept-only model was estimated using maximum likelihood estimation, in which a latent intercept factor was estimated with equal factor loadings across all indicators constrained to values of 1. Model fit indices indicated adequate fit (see Table 2). Next, a latent linear slope factor was added to the model, with the factor loadings of indicators set to values of 0, 1, 2, 4, and 5 (because no Time 4 data were obtained for academic competence, this value was intentionally skipped). The addition of a linear slope factor did not improve model fit significantly [$-2\Delta LL_{(df=1)}$ = .01; p = .91]. Thus, the linear slope factor was not retained. Finally, to account for the conditional effects of child gender, the latent intercept factor was then regressed onto child gender. This addition resulted in significantly improved model fit [$-2\Delta LL_{(df=1)}$ = 7.67; p = .01] and was therefore retained in the final model. Model fit statistics for the conditional intercept-only model indicated adequate fit (see Table 2).

For perceived social competence, an intercept-only model was estimated using maximum likelihood estimation, in which a latent intercept factor was estimated with equal factor loadings across all indicators constrained to values of 1. Model fit statistics indicated modest model fit

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[2] Post-hoc analyses were conducted using only participants listing mothers as primary respondents. Results of these analyses revealed fewer statistically significant findings but in the same direction of effects as those with the entire sample of caregivers. For power considerations, results from analyses with entire sample of caregivers are reported.

(see Table 2). Next, a latent linear slope factor was added to the model, with the factor loadings of indicators set to values of 0, 1, 2, 4, and 5 (because no Time 4 data were obtained for social competence, this value was intentionally skipped). The addition of a linear slope factor did not improve model fit significantly [$-2\Delta LL_{(df = 1)} = .00$; $p = .95$]. Thus, the linear slope factor was not retained. Model fit statistics for the unconditional intercept-only model indicated modest fit (see Table 2).

For parental avoidance of discipline, an intercept-only model was estimated using robust maximum likelihood estimation to account for non-normality, in which a latent intercept factor was estimated with equal factor loadings across all indicators constrained to values of 1. Model fit indices indicated good fit (see Table 2). Next, a latent linear slope factor was added to the model, with the factor loadings of indicators set to values of 0, 1, 2, 3, 4, and 5. The addition of a linear slope factor did not improve model fit significantly [Scaled $-2\Delta LL_{(df = 1)} = .03$; $p = .86$]. Thus, the linear slope factor was not retained. Finally, to account for the conditional effects of child ethnicity, the latent intercept factor was then regressed onto child ethnicity. This addition resulted in significantly improved model fit [Scaled $-2\Delta LL_{(df = 1)} = 4.50$; $p = .03$] and was therefore retained in the final model. Model fit statistics for the conditional intercept-only model indicated good fit (see Table 2).

For parental supervision, an intercept-only model was estimated using robust maximum likelihood estimation to account for non-normality, in which a latent intercept factor was estimated with equal factor loadings across all indicators constrained to values of 1. Model fit statistics indicated good model fit (see Table 2). Next, a latent linear slope factor was added to the model, with the factor loadings of indicators set to values of 0, 1, 2, 3, 4, and 5. The addition of a linear slope factor did not improve model fit significantly [Scaled $-2\Delta LL_{(df = 1)} = .00$; $p = $

1.00]. Thus, the linear slope factor was not retained. Model fit statistics for the unconditional intercept-only model indicated adequate fit (see Table 2).

Panel Models

Because systematic patterns of latent growth were not found in any of the variables across the developmental period assessed in the current study, these models were not pursued further. Rather, multivariate change over time was examined via path analyses using a panel model design in Mplus v. 8 (Muthén & Muthén, 2017). In a series of bivariate panel models, values of competence dimensions and parenting practices at each wave were included with autoregressive paths between each time point, as well as cross-lag paths from one construct to another between each successive time point (see Figure 1 for example). Indicators were allowed to covary within time across waves.

In order to fit the most parsimonious models, all panel models were built sequentially by first estimating a model in which all paths were freely estimated. Next, theoretically plausible changes suggested by model-specified modification indices were made (e.g., residual covariances within constructs across waves). Following this step, autoregressive and cross-lag pathways were systematically constrained to equal values across time. Finally, conditional effects of child ethnicity and gender were added to models including avoidance of discipline and academic competence, respectively. After each successive change to the model, -2ΔLL tests were estimated to determine whether these changes significantly impacted model fit.

The first panel model included academic competence and avoidance of discipline (see Table 3). The initial model allowing all identified parameters to be estimated resulted in modest model fit. Modification indices provided by Mplus suggested adding residual covariances between avoidance of discipline at Time 3 and Time 4 and between academic competence at

Time 2 and Time 5. The addition of these parameters significantly improved model fit; therefore, they were retained. Next, autoregressive paths for academic competence were constrained to be equal across time. This resulted in a model that did not fit significantly worse; therefore, this constraint was retained. Autoregressive paths for avoidance of discipline were then constrained to be equal across time, which again resulted in a model that did not fit significantly worse. This constraint was retained as well. Cross-lag paths predicting academic competence across time were then constrained to be equal, which resulted in a non-significant reduction in model fit; thus, this constraint was retained. Cross-lag paths predicting avoidance of discipline were constrained to be equal across time, which again resulted in a non-significant reduction in model fit. Child gender was then regressed onto all values of academic competence, which resulted in improved model fit. Finally, child ethnicity was regressed onto all values of avoidance of discipline, which resulted in improved model fit. Figure 1 represents the final model, which demonstrated acceptable fit to the data (see Table 3).

Both academic competence and parental avoidance of discipline exhibited a moderate to large degree of stability, as evidenced by significant positive associations between each successive time point with the time point immediately preceding it. Academic competence did not predict parental avoidance of discipline, and vice versa. At times 3 and 5, academic competence and avoidance of discipline shared negative within-time residual covariances; however, this pattern was not evident at any other time point. Though accounting for child gender and ethnicity on all values of avoidance of discipline and academic competence, respectively, resulted in improved model fit, ethnicity was not significantly related to any values of avoidance of discipline. Child gender was only associated with academic competence at baseline, such that girls reported feeling less academically competent than boys.

The second panel model included academic competence and parental supervision (see Table 4). The initial model allowing all identified parameters to be estimated resulted in modest model fit. Modification indices provided by Mplus suggested adding residual covariances between academic competence at Time 2 and Time 5. The addition of these parameters significantly improved model fit; therefore, they were retained. Next, autoregressive paths for academic competence were constrained to be equal across time. This resulted in a model that did not fit significantly worse; therefore, this constraint was retained. Autoregressive paths for parental supervision were then constrained to be equal across time, which again resulted in a model that did not fit significantly worse. This constraint was retained as well. Cross-lag paths predicting academic competence across time were then constrained to be equal, which resulted in a non-significant reduction in model fit; thus, this constraint was retained. Cross-lag paths predicting parental supervision were constrained to be equal across time, which again resulted in a non-significant reduction in model fit. Child gender was then regressed onto all values of academic competence, which resulted in improved model fit. Figure 2 represents the final model, which demonstrated modest fit to the data (see Table 4).

Parental supervision and academic competence demonstrated moderate positive stability, such that higher levels of each construct at each time point predicted higher levels at the next time point. Parental supervision did not predict subsequent values of academic competence, and vice versa. Child gender was significantly associated with academic competence at Time 2 and Time 5, such that girls reported less academic competence than boys.

The third panel model included social competence and avoidance of discipline (see Table 5). The initial model allowing all identified parameters to be estimated resulted in modest model fit. Modification indices provided by Mplus suggested adding residual covariances between

avoidance of discipline at Time 3 and Time 4. The addition of these parameters significantly improved model fit; therefore, they were retained. Next, autoregressive paths for social competence were constrained to be equal across time. This resulted in a model that fit significantly worse; therefore, this constraint was not retained. Autoregressive paths for avoidance of discipline were then constrained to be equal across time, which resulted in a model that did not fit significantly worse. This constraint was therefore retained. Cross-lag paths predicting social competence across time were then constrained to be equal, which resulted in a non-significant reduction in model fit; thus, this constraint was retained. Cross-lag paths predicting avoidance of discipline were constrained to be equal across time, which resulted in a significant reduction in model fit; therefore, this constrained was not retained. Finally, child ethnicity was regressed onto all values of avoidance of discipline, which resulted in improved model fit. Figure 3 represents the final model, which demonstrated good fit to the data (see Table 5).

Both social competence and avoidance of discipline demonstrated moderate to large positive stability effects across time, as evidenced by their significant autoregressive effects. Avoidance of discipline negatively predicted social competence across time points, such that higher levels of discipline avoidance were associated with lower levels of social competence at subsequent time points. Social competence at baseline negatively predicted avoidance of discipline at Time 2, such that higher ratings of initial social competence were associated with lower levels of subsequent avoidance of discipline. At Time 2, social competence and avoidance of discipline were shared a positive residual covariance, but this pattern was not observed at any other time point.

The final panel model included social competence and parental supervision (see Table 6). The initial model allowing all identified parameters to be estimated resulted in modest model fit. Modification indices provided by Mplus suggested adding residual covariances between social competence at Time 3 and Time 1, and at Time 3 and Time 2. The addition of these parameters significantly improved model fit; therefore, they were retained. Next, autoregressive paths for social competence were constrained to be equal across time. This resulted in a model that did not fit significantly worse; therefore, this constraint was retained. Autoregressive paths for parental supervision were then constrained to be equal across time, which again resulted in a model that did not fit significantly worse. This constraint was retained as well. Cross-lag paths predicting social competence across time were then constrained to be equal, which resulted in a non-significant reduction in model fit; thus, this constraint was retained. Cross-lag paths predicting parental supervision were constrained to be equal across time, which again resulted in a non-significant reduction in model fit. Figure 4 represents the final model, which demonstrated acceptable fit to the data (see Table 6).

Social competence and parental supervision remained stable across each time point, as evidenced by significant positive moderate to large autoregressive effects. Social competence did not predict parental supervision across waves, and vice versa. Neither parental supervision nor social competence were significantly associated within time points across waves.

Generalized Estimating Equations

In order to maximize the power of the current sample and to more accurately assess longitudinal associations between competence and parenting, a series of generalized estimating equations (GEE) were then estimated. GEE modeling allows for estimating longitudinal effects by collapsing individual values across time into average values, while simultaneously accounting

for dependency across time points. This collapsing process allows for greater power to detect potential influences on these associations in time (Muth et al., 2016), such as parental depression. Dependency is accounted for by specifying an *a priori* correlation structure to represent autoregressive effects across each successive wave. In step 2, the majority of best-fitting panel models were those in which autoregressive and cross-lag effects were constrained to be equal. Thus, a compound symmetry correlation structure (i.e., covariance parameters assumed to be equal) was specified in each equation.

Using PROC GENMOD within SAS version 9.4 (SAS Institute, Inc., 2017), parental avoidance of discipline was regressed onto academic competence and parental depressive symptoms (see Table 7). Linear time, child ethnicity, and prior levels of avoidance of discipline were included as control variables. Academic competence was negatively associated with avoidance of discipline over time, such that greater academic competence was predictive of less parental avoidance of discipline. Parental depressive symptoms significantly predicted avoidance of discipline, such that greater levels of depressive symptoms were associated with greater avoidance of discipline over time. Next, a multiplicative interaction term between parental depressive symptoms and academic competence was added to the model. No significant interaction was evident.

Academic competence was then regressed onto avoidance of discipline and parental depressive symptoms (see Table 8). Linear time, child gender, and prior levels of academic competence were included as control variables. Avoidance of discipline negatively predicted academic competence over time, such that higher levels of avoidance of discipline were associated with lower academic achievement over time. Parental depression was not associated with academic competence over time. Next, a multiplicative interaction term between parental

depressive symptoms and avoidance of discipline was added to the model. No significant interaction was evident.

Parental avoidance of discipline was regressed onto social competence and parental depression (see Table 9). Linear time, child gender, and prior avoidance of discipline were included as control variables. Child social competence was not associated with avoidance of discipline over time. Parental depressive symptoms positively predicted avoidance of discipline, such that higher depressive symptoms were associated with greater avoidance of discipline over time. Next, a multiplicative interaction term between parental depressive symptoms and social competence was added to the model. No significant interaction was evident.

Social competence was then regressed onto avoidance of discipline and parental depression (see Table 10). Linear time and prior levels of social competence were included as control variables. Neither avoidance of discipline nor parental depressive symptoms were associated with social competence over time. Next, a multiplicative interaction term between parental depressive symptoms and avoidance of discipline was added to the model. A significant interaction was evident, such that the influence of parental avoidance of discipline differed as a function of parental depressive symptoms. At high levels (+1 SD) of parental depressive symptoms, avoidance of discipline was unrelated to social competence (β= -.02; SE = .03; p = .55). However, at low levels (-1 SD) of parental depressive symptoms, avoidance of discipline negatively predicted social competence (β= -.21; SE = .07; p = .00), such that greater avoidance of discipline predicted lower social competence over time. Simple slopes of the interaction at high and low levels are graphically depicted in Figure 5.

Parental supervision was regressed onto academic competence and parental depressive symptoms (see Table 11). Linear time and prior levels of parental supervision were included as

control variables. Academic competence negatively predicted parental supervision over time. Additionally, parental depression negatively predicted parental supervision over time. Next, a multiplicative interaction term between parental depressive symptoms and academic competence was added to the model. A significant interaction effect was evident, such that the influence of academic competence on parental supervision over time varied as a function of parental depression. At high levels of parental depressive symptoms (+1 SD), academic competence was not associated with parental supervision over time (β= .00; SE = .07; p = .95). However, at low levels of parental depressive symptoms (-1 SD), academic competence negatively predicted parental supervision (β= -.21; SE = .05; p = .00), such that greater academic competence was associated with less parental supervision over time. Simple slopes of the interaction at high and low levels are graphically depicted in Figure 6.

Academic competence was then regressed onto parental supervision and parental depressive symptoms (see Table 12). Linear time, child gender, and prior levels of parental supervision were included as control variables. Parental supervision negatively predicted academic competence over time. Parental depressive symptoms were unrelated to academic competence. Next, a multiplicative interaction term between parental depressive symptoms and parental supervision was added to the model. At high levels of parental depressive symptoms (+1 SD), parental supervision was not related to academic competence (β= -.03; SE = .05; p = .64). However, at low levels of parental depressive symptoms (-1 SD), parental supervision negatively predicted academic competence (β= -.18; SE = .06; p = .00), such that greater supervision was associated with less academic competence over time. Simple slopes of the interaction at high and low levels are graphically depicted in Figure 7.

Parental supervision was regressed onto social competence and parental depressive symptoms (see Table 13). Linear time and prior levels of parental supervision were included as control variables. Social competence did not significantly predict parental supervision over time. Parental depression negatively predicted supervision, such that higher depressive symptoms were associated with less supervision over time. Next, a multiplicative interaction term between parental depressive symptoms and social competence was added to the model. At high levels of parental depressive symptoms (+1 SD), social competence was not related to parental supervision (β= .13; SE = .08; p = .11). However, at low levels of parental depressive symptoms (-1 SD), social competence was marginally negatively related to parental supervision (β= -.10; SE = .05; p = .06), such that greater social competence was associated with less parental supervision over time. Simple slopes of the interaction at high and low levels are graphically depicted in Figure 8.

Social competence was then regressed onto parental supervision and parental depressive symptoms (see Table 14). Linear time and prior levels of social competence were included as control variables. Neither parental supervision nor depressive symptoms significantly predicted social competence over time. Next, a multiplicative interaction term between parental depressive symptoms and parental supervision was added to the model. No interaction effect was evident.

Discussion

Conceptualizing competence broadly as adaptation to one's environment (Masten & Coatsworth, 1998), aggressive youth are by default already at a significant detriment. Knowing how competence develops in these youth, as well as important environmental influences, is imperative to being able to intervene against the myriad negative outcomes commonly seen in this population. As such, the current study examined the unique influence of parenting effects on

two distinct domains of perceived competence, whether these effects were unidirectional or bidirectional in nature, and whether or not parental depressive symptoms moderated these associations. The findings of the current study not only provide clear insight into how competence and parenting develop, but also provide informed targets for future interventions targeting this vulnerable population.

It is first important to note that neither the two parenting practices nor the two perceived competence domains exhibited stable patterns of linear growth over time, as results indicated that an intercept-only growth model best characterized each construct. Results from path models and GEE further suggested that levels of each construct across were most strongly predicted by the levels immediately preceding them. Thus, while individual rank-order might differ from wave to wave, mean level differences remained somewhat stable across individual time points. It is possible, therefore, that while prior literature has suggested stable inclines in academic and social competence (Cole et al., 2001; Fredricks & Eccles, 2002), and declines in supervision (Laird et al., 2009), these patterns might not hold for aggressive youth. In terms of youth competence, this type of individual variability during adolescence has been observed previously. For example, Obradovíc et al. (2006), found that after middle childhood, the stability of social competence decreased in boys and girls. On the other hand, Masten et al. (1995), though finding overall stability in social competence across development, found greater stability for girls than boys. While the inclusion of the effects of parenting practices on these changes might have helped to make sense of this variability, the influences of supervision and avoidance of discipline did not reveal any distinct growth trajectories. It might be necessary, therefore, to examine the influence of other demographic (i.e., gender) or ecological factors in these relations to make meaningful inferences about any systematic growth. For example, Laird et al., (2009) noted that parental

supervision behaviors likely differed as a function of factors such as neighborhood safety, which might be of relevance for aggressive youth.

Further, Fite et al. (2006), in a sample of aggressive youth, found similarly low stability with respect to parental supervision. As they argued, some parents might decrease their supervision due to the perception that it is no longer necessary during this developmental period. Conversely, others might increase supervision in response to perceived dangers associated with this period. In either scenario, models assuming a stable pattern of growth, especially in aggressive youth, are unlikely to capture these unique changes. It is also possible that trajectories of change in competence and parenting during this period might be best summarized by distinct classes or profiles (e.g., increasing, decreasing, stable, etc.). For example, Luyckx et al. (2011) demonstrated that four distinct classes of parenting behavior (i.e., indulgent, uninvolved, authoritarian, and authoritative) could be found in a community sample of youth transitioning from elementary to high school. Each class differentially moderated trajectories of youth development during this period. Lack of systematic change in the avoidance of discipline was consistent with our expectations and prior work (Luyckx et al., 2011). The tendency to avoid discipline out of fear of the child might be a more indicative indicator of a stable parental characteristic, rather than a distinct and transient behavior, such as supervision.

Despite neither parenting nor perceived competence demonstrating consistent patterns of growth across individuals, specific reciprocal effects were found. In particular, academic competence, which has been far less represented in prior literature on aggressive youth, emerged as uniquely important for these youth. Indeed, regardless of parental depressive symptoms, perceived academic competence shared reciprocal relations with both avoidance of discipline and parental supervision. In other words, if aggressive youth perceived themselves to be more

academically competent, parents were likely to avoid discipline less often. Similarly, if parents avoided discipline less often, then aggressive youth were perceived themselves to be more academically competent. These results are intuitive, consistent with expectations, and provide support for the notion of parental structure as key to the development of this particular domain of competence put forth by Grolnick et al. (2014). What was perhaps less intuitive was the reciprocal association between perceived academic competence and parental supervision. Specifically, when aggressive youth felt more academically competent, parents reported supervising their activities less, but when parents reported higher levels of supervising their children, these youth reported feeling themselves less academically competent. What might be evident in these patterns is the establishment of a normative developmental pattern (i.e., youth considers themselves more competent, so parent feels supervision is less necessary) that is distorted if the parent deviates (i.e., if parent supervises *more*, youth interprets as evidence of lower academic competence). It might be that in these families, as parental supervision increases, it might take on the characteristics of related negative aspects of parental control, such as restrictiveness, which prior studies (e.g., Leung et al., 2004) have linked to lower academic achievement.

In the current study, perceived social competence did not demonstrate the same number of significant effects as academic competence. It should be noted that, in the current sample, indices of internal consistency decreased over time with respect to perceived social competence. In other words, participants rated themselves in this domain less reliably over time. The transition from elementary school to middle school and from middle to high school coincides with rapidly changing metrics of social success. This is likely especially true for aggressive youth who are more likely to exhibit social-cognitive biases that might impair both social

functioning and self-evaluation (as discussed in Mayberry & Espelage, 2007). However, when parental depressive symptoms were considered, perceived social competence was more salient. When parental depressive symptoms were lower, avoidance of discipline negatively predicted youth's perceptions of their social competence, suggesting that a parent with fewer depressive symptoms that persists in discipline might be likelier to promote the development of social competence.

Indeed, parental depressive symptoms were originally conceptualized as a risk factor with respect to the proposed interactions, such that increased parental depressive symptoms would amplify the deleterious impact of parental avoidance of discipline and minimize the promotive impact of parental supervision. However, what was most evident from these results was that the *lack of* parental depressive symptoms proved to be a protective factor. For example, the reciprocal association between perceived academic competence and parental supervision became nonsignificant at higher levels of parental depressive symptoms. As parents experience higher depressive symptoms, their influence on their child's sense of social or academic competence, as well as their own perceptiveness and responsiveness to their child's sense of competence, might diminish due to distorted appraisals and a negative cognitive style resulting from these symptoms (Klaver et al., 2012). Because parental depressive symptoms are a known risk factor for child violence and disruptive behaviors (Hay et al., 2003), the lack of these symptoms might indeed be more meaningful in a sample of youth already identified as aggressive in nature. It should be noted that when depressive symptoms were higher, both perceived social competence and parental supervision were consistently low.

In general, that perceived academic competence was related to both parental supervision and avoidance of discipline, regardless of parental depressive symptoms, and that social

competence was only related to avoidance of discipline when parental depressive symptoms were lower, is noteworthy. Far more studies have highlighted the unique role of social competence in aggressive youth while the current findings suggested that academic competence might be more consistently robust with respect to parental influences. While not accounting for the lack of parental influences on perceived social competence, the lack of social competence predicting changes in parenting practices might be indicative of shared social difficulties between parents and their children. For example, youth often learn aggressive behavior via social learning processes from parents and caregivers. It is possible, therefore, that because antisocial parent behavior is a significant risk factor for child aggressive behavior (Tzoumakis et al., 2017), the parents of aggressive youth might also be aggressive themselves, and thereby exhibit similar social-cognitive difficulties as those outlined by Mayberry & Espelage (2007). They might be less perceptive to their child's own sense of social competence, which is complex and nuanced, whereas academic competence might be considered on a more objective scale (e.g., academic performance). It might also be the case that aggressive youth, particularly those who embody more proactive and goal-oriented forms of aggression, are considered socially competent in some areas while not in others.

Limitations and Future Directions

The current study was limited in a few important ways. First, the current sample was comprised of predominantly African American families, and parents were represented largely by mothers. Because both youth competence and parenting might differ across racial, ethnic, and gender groupings (Cole et al., 2001; Hill & Sprague, 1999), future studies should attempt to generalize the findings in samples with sufficient power to utilize multiple-group comparisons by gender and SES.

Another limitation in the current study is that the measure of social competence used did not reliably maintain internal consistency in the later waves of the study, thereby increasing standard errors and reducing the certainty with which conclusions might be made regarding social competence in this sample. Indeed, while Harter's PSCS (1982) has been shown to be equivalent in its assessment of perceived academic competence across ethnic groups, the social competence scale does not fair similarly, especially in African American youth (e.g., Michaels, Barr, Roosa, & Knight, 2007). This might be an artifact of the current sample or might reflect developmental differences in the ways in which African American youth evaluate themselves in social competence during the latter part of the transition from middle to high school. Future studies should consider alternative metrics of social competence that could be more meaningful at this age and in this population. Further, while parental depressive symptoms are indeed of relevance to competence and parenting in aggressive youth, other relevant aspects of parental psychopathology or psychosocial stress might also be important to consider, including parental stress (Crum & Moreland, 2017), parental substance use (Fuller et al., 2003), or parental antisocial behavior (Tzoumakis et al., 2017). Future studies should consider the influence of other aspects of parental psychopathology in the relation between competence and parenting.

Regarding parental depressive symptoms, their influence in the current study was limited to moderation effects. While this approach emphasizes the contextual nature of how this factor might influence longitudinal relations between parenting and competence, it is not the only way to conceptualize its effect. Parental depressive symptoms might exist, for example, as a causal process between youth competence and parenting behaviors. Future studies would benefit by considering other factors of relevance to parents, children, or the parent-child dynamic as they relate to the link between parenting and child competence.

It should be noted that while competence is a multifaceted construct, the current study only examined two dimensions – academic and social – from youths' self-perception. Because prior studies have found inconsistencies between youths' perceptions of their own competence and parent-reported as well as observed indicators of competence, future inquiry is needed to determine whether the patterns evident in the current results are consistent with respect to alternative metrics of competence. In light of the distinct findings across these two dimensions in the current study, future studies should examine the development of other relevant domains of competence, as well as their relation to parenting during this important developmental period. It is also worth noting that other child characteristics, notably cognitive deficits, which have been shown to be relevant to both youth aggression and parental depressive symptoms (as discussed in Hay et al., 2003), as well as child depressive symptoms, which are often comorbid in aggressive youth (Wolff & Ollendick, 2006), were not considered in the current study. Further consideration of these influences in the interplay between competence and parenting would likely reveal additional nuances in these complex patterns.

Finally, a pressing limitation of the current study was the reliance on self-reports of parenting behaviors. Prior research has suggested that parents' reports of their own parenting behaviors can be discrepant from observations during parent-child interactions, and that these discrepancies might vary as a function of factors including parental distress and socioeconomic status (Herbers et al., 2017). The current sample might, therefore, be prone to similar types of informant bias. Also, the Supervision scale of the Parenting Practices Questionnaire contained only 2 items, thereby limiting the variability of responses and precluding more detailed examination of specific components of parental supervision, which is a complex behavior. Future examination of the influence between parenting and youth competence would benefit from a

more detailed assessment of parenting practices, especially supervision, preferably using multiple methods (e.g., parent-report, child-report, observation).

Clinical Implications and Conclusions

For aggressive youth, the most pressing targets for clinical attention are often the reduction of aggressive behavior first and foremost. Research documenting the effectiveness of interventions targeting this population with this aim indicate that, in general, behavioral approaches that incorporate contingency management, structure, and relevant skills training often perform best (see Boxer & Frick, 2008, for review). These classes of interventions have been shown to be effective in a range of contexts, including individual families (e.g., *Incredible Years*, Webster-Stratton, 2001; *Defiant Children*, Barkley, 2013; *Functional Family Therapy*, Sexton & Alexander, 2002), groups (e.g., *Coping Power Program*; Lochman et al., 2007), and communities (e.g., *Multisystemic Therapy*; Henggeler, Schoenwald, Bourduin, Roweland, & Cunninham,1998). The current findings, rather than necessitating novel interventions, per se, instead offer implications for each of these intervention contexts. For example, in considering the etiology of child problem behavior, which is often a psychoeducational component of many parent management programs (e.g., *Defiant Children*, Barkley, 2013), parents are encouraged to consider possible factors contributing to their child's misbehavior. In Barkley's (2013) program, for example, these factors are outlined as child characteristics, parent characteristics, situational consequences, family stress, and the reciprocal interaction among these factors. In this framework, the current findings are given a structure in which to make clinical sense. For example, the current results suggest that when parent depressive symptoms are low (parent characteristic), parental supervision (situational consequences) and a child's perceived academic competence (child characteristic) share bidirectional associations (reciprocal interactions among

factors). This framework could help clinicians and families alike to better understand these how these transdiagnostic indicators are of relevance to the lives of aggressive youth and might inform the specific content of strategies aimed at mitigating aggressive behavior. If a goal in the treatment of aggressive youth is the promotion of greater social competence, for example, clinicians might wish to consider whether parents are timid or persistent in their disciplinary approach, and whether the parents exhibit any degree of depressive symptoms. Clinicians administering interventions for aggressive youth in group settings (e.g., Coping Power Program, Lochman et al., 2007) would also be best served to consider obtaining information regarding parents discipline and supervision behaviors, and parental depressive symptoms, in better understanding the unique experiences of the group's participants. Further, the current findings underscore the broader importance of understanding the convergence of multiple ecological systems in the treatment of aggression consistent with a Multisystemic Therapy (MST; Henggeler et al., 1998) approach. MST therapists, for example, might wish to target parental depressive symptoms as a distal treatment goal, while also promoting the persistence of the parent's disciplinary strategies with the hope of improving a child's social competence as a more proximal treatment goal.

The bidirectional associations found among perceived academic competence and both parenting practices (supervision and avoidance of discipline), combined with the moderating influence of parental depressive symptoms, provide considerable support for the importance of interventions that heavily emphasize the dynamic interplay between parents (or comparable caregivers) and adolescents during this developmental period. Functional Family Therapy (FFT; Sexton & Alexander, 2002) is an example of such an intervention. The results of the current study perhaps exemplify the potential of the *generalization* phase of FFT, wherein skills learned

within the family system are transferred to other relevant systems and settings. The back-and-forth interplay between parental structure (i.e., supervision and avoidance of discipline) and youths' academic competence might be an important part of this phase. A parent's depressive symptoms, for example, could be an important barrier to this process, and might be a particularly relevant target of family therapy if generalization in this manner is not achieved.

Additionally, the need for clinicians treating aggressive youth to be mindful of parental depressive symptoms, or other parental psychopathology for that matter, is not new. While it is unclear whether *heightened* depressive symptoms would significantly alter the course of the longitudinal associations between parenting and competence, parents reporting lower depressive symptoms contributed significantly to bidirectional patterns across time. The lack of depressive symptoms in the parents of aggressive youth might be serve as an indicator of general resilience and available psychosocial resources. In the treatment of aggressive youth, therefore, this might be a positive prognostic indicator.

The unique patterns of influence evident between the effects of specific parenting practices and individual domains of competence support the notion that broad categories are not adequate in assessing and understanding these factors during this important developmental period, especially in aggressive youth. Further, the current findings also highlight the importance of understanding how the relations between parenting practices and child competence might be influenced by parental depressive symptoms.

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Table 1. *Descriptive statistics, including correlations, means, standard deviation, and normality indicators*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. SES	--															
2. Social Competence (T1)	.03	--														
3. Social Competence (T2)	.12	**.51****	--													
4. Social Competence (T3)	.01	**.51****	**.49****	--												
5. Social Competence (T5)	.10	.15	**.31****	**.31****	--											
6. Social Competence (T6)	-.07	.15	.08	**.23***	**.46****	--										
7. Academic Competence (T1)	.10	**.39****	**.24***	**.24***	.01	.00	--									
8. Academic Competence (T2)	.09	**.19***	**.37****	**.22***	.19	.16	**.48****	--								
9. Academic Competence (T3)	.10	**.34****	**.32****	**.53****	.14	.16	**.23***	**.45****	--							
10. Academic Competence (T5)	.12	.16	.19	**.41****	**.41****	**.35****	.13	**.43****	**.46****	--						
11. Academic Competence (T6)	-.01	.09	**.23***	**.32****	**.48****	**.51****	**.19***	**.40****	**.38****	**.47****	--					
12. Supervision (T1)	.07	-.03	-.07	.03	-.08	-.10	-.10	-.08	.00	-.06	-.04	--				
13. Supervision (T2)	.02	.04	.11	.17	-.03	-.07	.02	.00	.12	.03	-.05	**.31****	--			
14. Supervision (T3)	.00	.19	.17	.07	-.16	-.10	.05	-.06	-.04	-.06	-.13	.15	.14	--		
15. Supervision (T4)	.09	-.01	.02	.09	-.13	-.09	-.12	-.04	.18	-.10	-.08	.09	**.28****	**.25***	--	
16. Supervision (T5)	-.04	.01	.04	-.02	-.15	-.05	-.07	-.03	.02	-.15	-.07	.08	**.28****	**.28****	**.58****	--
17. Supervision (T6)	.01	-.07	.06	-.10	-.14	-.03	-.18	-.07	-.08	-.10	-.13	.13	.16	**.26****	**.28****	**.51****
18. Avoidance of Discipline (T1)	-.07	-.10	-.14	**-.25***	**-.25***	**-.20***	.03	-.10	-.09	-.19	-.11	-.09	-.09	-.06	.03	-.02
19. Avoidance of Discipline (T2)	.12	**-.22***	-.13	-.17	-.08	-.13	.10	-.08	-.08	-.15	-.06	-.04	-.12	-.11	-.03	-.02
20. Avoidance of Discipline (T3)	-.04	-.10	-.05	-.15	-.17	**-.21***	.16	-.11	**-.36****	**-.38****	**-.21***	-.07	-.07	.02	.00	-.02
21. Avoidance of Discipline (T4)	-.03	.00	-.05	-.07	-.05	-.05	.19	-.06	-.16	-.09	.02	.01	-.11	-.07	-.04	-.07
22. Avoidance of Discipline (T5)	.07	-.04	-.11	-.19	**-.21***	-.18	.17	-.05	-.13	**-.28****	-.10	-.09	-.18	-.02	.02	-.07
23. Avoidance of Discipline (T6)	.02	-.10	-.11	-.15	-.14	-.09	.12	-.10	-.13	-.17	-.18	**-.25****	**-.31****	-.03	.02	-.12
24. Parent BDI (T1)	**-.27****	-.10	-.10	-.08	-.13	-.17	.09	-.06	-.17	**-.25***	-.09	**-.26****	**-.20***	.01	-.12	-.01
25. Parent BDI (T2)	**-.22***	.01	-.06	-.11	-.19	-.14	.07	-.11	-.19	**-.25***	-.17	-.11	-.06	.18	.09	.05
26. Parent BDI (T3)	**-.19***	-.16	-.18	-.13	-.03	.04	.05	-.09	-.18	-.17	-.17	**-.22***	-.13	-.03	-.04	-.09
27. Parent BDI (T4)	**-.32****	-.11	-.07	**-.23***	-.19	-.10	.00	-.10	-.19	-.18	-.04	**-.29****	**-.32****	.06	-.11	-.13
28. Parent BDI (T5)	-.18	-.08	-.01	-.09	-.13	-.12	.04	-.14	**-.27****	-.18	-.16	-.14	**-.20***	.06	**-.24***	-.15
29. Parent BDI (T6)	-.15	-.11	-.04	-.15	-.14	-.08	.08	-.03	**-.22***	-.19	-.07	**-.25****	**-.29****	.12	**-.22***	-.15
Mean	37.76	3.06	3.22	3.19	3.05	3.14	3.03	3.11	2.99	2.95	2.92	1.79	1.83	1.88	1.84	1.77
SD	16.37	.64	.65	.64	.48	.38	.62	.63	.64	.58	.56	.45	.35	.34	.35	.50
Skewness	-.14	-.77	-.96	-.71	-.91	-.91	-.35	-.66	-.34	-.60	-.72	-2.37	-2.42	-3.24	-2.02	-2.32
Kurtosis	-.94	.17	.98	.05	.22	.33	-.72	.20	-.59	.01	-.16	5.34	6.71	11.76	2.96	4.93

Note: *p < .05; **p < .01

Table 1. (cont.)

	17	18	19	20	21	22	23	24	25	26	27	28	29
17. Supervision (T6)	--												
18. Avoidance of Discipline (T1)	-.18	--											
19. Avoidance of Discipline (T2)	-.05	.68**	--										
20. Avoidance of Discipline (T3)	-.15	.43**	.42**	--									
21. Avoidance of Discipline (T4)	-.12	.48**	.58**	.57**	--								
22. Avoidance of Discipline (T5)	-.22*	.53**	.48**	.55**	.52**	--							
23. Avoidance of Discipline (T6)	-.10	.43**	.51**	.38**	.41**	.63**	--						
24. Parent BDI (T1)	-.20*	.36**	.31**	.47**	.32**	.28**	.25**	--					
25. Parent BDI (T2)	-.03	.18	.14	.37**	.14	.23*	.31**	.68**	--				
26. Parent BDI (T3)	.01	.11	.28**	.41**	.23*	.17	.37**	.47**	.53**	--			
27. Parent BDI (T4)	-.14	.52**	.30**	.49**	.32**	.31**	.42**	.64**	.43**	.45**	--		
28. Parent BDI (T5)	.00	.17	.16	.48**	.30**	.33**	.28**	.63**	.57**	.55**	.62**	--	
29. Parent BDI (T6)	-.14	.25**	.14	.34**	.12	.28**	.42**	.53**	.45**	.43**	.64**	.75**	--
Mean	1.80	1.31	1.29	1.35	1.29	1.37	1.33	.29	.28	.26	.27	.26	.25
SD	.44	.48	.43	.45	.47	.54	.54	.28	.29	.25	.34	.29	.28
Skewness	-2.33	2.39	2.33	1.69	2.94	2.64	3.24	1.90	2.03	1.32	2.37	2.09	2.13
Kurtosis	5.17	7.39	7.78	2.8	12.99	8.14	13.87	5.13	5.35	1.71	7.06	6.40	6.06

Note: *p < .05; **p < .01

Table 2. *Fit indices for univariate latent growth curve models*

	-2ΔLL			X^2 Test of Model Fit				
	Estimate	df	p-value	Estimate	p-value	RMSEA	CFI	SRMR
Academic Competence								
Intercept only	--			21.52	0.06	0.07	0.92	0.09
Linear growth	0.01	1	0.91	25.51	0.04	0.08	0.91	0.09
Child gender covariate	**7.67**	**1**	**0.01**	**27.76**	**0.05**	**0.07**	**0.91**	**0.09**
Social Competence								
Intercept only	**--**			**37.33**	**0.00**	**0.12**	**0.77**	**0.12**
Linear growth	0.00	1	0.95	37.32	0.00	0.13	0.77	0.12
Avoidance of Discipline								
Intercept only	--			20.52	0.37	0.03	0.98	0.07
Linear growth	0.03	1	0.86	20.12	0.33	0.03	0.98	0.07
Child ethnicity covariate	**4.50**	**1**	**0.03**	**28.83**	**0.22**	**0.04**	**0.96**	**0.07**
Parental Supervision								
Intercept only	**--**			**21.95**	**0.29**	**0.04**	**0.93**	**0.10**
Linear growth	0.00	1	1.00	21.80	0.24	0.04	0.91	0.10

Note: Bold text indicates final model fit statistics

Table 3. *Fit indices for academic competence and avoidance of discipline path models*

	Scaled -2ΔLL			X^2 Test of Model Fit				
	Estimate	df	p-value	Estimate	p-value	RMSEA	CFI	SRMR
Base model	--			96.47	0.00	0.12	0.77	0.16
Model-specified modifications	19.48	2	0.00	65.12	0.00	0.09	0.88	0.12
Academic competence autoregressive paths equal	0.47	2	0.79	66.37	0.00	0.09	0.88	0.12
Academic competence and avoidance of discipline autoregressive paths equal	8.58	4	0.07	75.78	0.00	0.09	0.86	0.13
Academic competence cross-lag paths equal	0.56	3	0.91	77.41	0.00	0.08	0.86	0.13
Academic competence and avoidance of discipline cross-lag paths equal	1.98	3	0.58	76.67	0.00	0.08	0.87	0.13
Child gender covariate (academic competence)	17.47	6	0.00	88.59	0.00	0.08	0.87	0.12
Child gender (academic competence) and child ethnicity (avoidance of discipline) covariates	**12.41**	**6**	**0.05**	**96.78**	**0.00**	**0.08**	**0.86**	**0.12**

Note: Bold text indicates final model fit statistics

Table 4. *Fit indices for academic competence and parental supervision path models*

	Scaled -2ΔLL			X^2 Test of Model Fit				
	Estimate	df	p-value	Estimate	p-value	RMSEA	CFI	SRMR
Base model	--			68.47	0.00	0.09	0.80	0.12
Model-specified modifications	22.72	1	0.00	48.93	0.04	0.06	0.91	0.09
Academic competence autoregressive paths equal	0.30	2	0.86	49.56	0.05	0.06	0.91	0.10
Academic competence and supervision autoregressive paths equal	8.02	4	0.09	59.13	0.02	0.06	0.88	0.10
Academic competence cross-lag paths equal	3.32	3	0.35	62.83	0.02	0.06	0.88	0.10
Academic competence and supervision cross-lag paths equal	4.58	3	0.21	67.40	0.02	0.06	0.87	0.10
Child gender covariate (academic competence)	**31.45**	**5**	**0.00**	**72.83**	**0.02**	**0.06**	**0.88**	**0.10**

Note: Bold text indicates final model fit statistics

Table 5. *Fit indices for social competence and avoidance of discipline path models*

	Scaled -2*Δ*LL			X^2 Test of Model Fit				
	Estimate	df	p-value	Estimate	p-value	RMSEA	CFI	SRMR
Base model	--			78.81	0	0.1	0.82	0.14
Model-specified modifications	18.47	2	0.00	47.76	0.04	0.06	0.94	0.11
Social competence autoregressive paths equal	10.13	2	0.01	57.05	0.01	0.07	0.91	0.11
Avoidance of discipline autoregressive paths equal	8.04	4	0.09	57.95	0.01	0.07	0.91	0.12
Social competence cross-lag paths equal	0.25	3	0.97	59.29	0.02	0.06	0.92	0.12
Social competence and avoidance of discipline cross-lag paths equal	8.61	3	0.03	65.66	0.01	0.07	0.91	0.12
Child ethnicity covariate (avoidance of discipline)	**20.52**	**6**	**0.00**	**65.33**	**0.02**	**0.06**	**0.92**	**0.11**

Note: Bold text indicates final model fit statistics

Table 6. *Fit indices for social competence and parental supervision path models*

	Scaled -2ΔLL			X^2 Test of Model Fit				
	Estimate	df	p-value	Estimate	p-value	RMSEA	CFI	SRMR
Base model	--			59.51	0.00	0.08	0.85	0.10
Model-specified modifications	35.31	2	0.00	42.78	0.10	0.05	0.93	0.09
Social competence autoregressive paths equal	1.23	2	0.54	44.34	0.11	0.05	0.94	0.09
Social competence and supervision autoregressive paths equal	8.84	4	0.07	55.12	0.04	0.06	0.90	0.10
Social competence cross-lag paths equal	2.60	3	0.46	58.63	0.04	0.06	0.89	0.10
Social competence and supervision cross-lag paths equal	**4.48**	**3**	**0.21**	**62.84**	**0.03**	**0.06**	**0.89**	**0.10**

Note: Bold text indicates final model fit statistics

Table 7. *Academic competence predicting avoidance of discipline*

Parameter	Model 1			Model 2		
	Estimate	S.E.	p-value	Estimate	S.E.	p-value
Intercept	0.24	0.18	0.17	0.23	0.18	0.19
Time	0.02	0.02	0.25	0.02	0.02	0.26
Prior avoidance of discipline	0.08	0.05	0.12	0.07	0.05	0.18
Ethnicity (Caucasian)	-0.32	0.20	0.11	-0.31	0.19	0.11
Academic competence	-0.14	0.05	0.01	-0.13	0.05	0.01
Parental depressive symptoms	0.20	0.05	0.00	0.21	0.05	0.00
Interaction				-0.09	0.05	0.08

Table 8. *Avoidance of discipline predicting academic competence*

Parameter	Model 1			Model 2		
	Estimate	S.E.	p-value	Estimate	S.E.	p-value
Intercept	0.16	0.09	0.06	0.14	0.09	0.10
Time	-0.04	0.02	0.07	-0.04	0.02	0.07
Prior academic competence	0.26	0.05	0.00	0.26	0.05	0.00
Child gender (Male)	-0.19	0.11	0.08	-0.19	0.11	0.09
Avoidance of discipline	-0.15	0.06	0.01	-0.18	0.07	0.01
Parental depressive symptoms	0.03	0.06	0.66	0.01	0.05	0.83
Interaction				0.06	0.06	0.35

Table 9. *Social competence predicting parental avoidance of discipline*

	Model 1			Model 2		
Parameter	Estimate	S.E.	p-value	Estimate	S.E.	p-value
Intercept	0.24	0.17	0.16	0.24	0.17	0.16
Time	0.03	0.02	0.16	0.03	0.02	0.16
Prior avoidance of discipline	0.10	0.05	0.06	0.10	0.05	0.06
Ethnicity (Caucasian)	-0.32	0.19	0.09	-0.32	0.19	0.10
Social competence	-0.05	0.03	0.16	-0.05	0.03	0.16
Parental depressive symptoms	0.20	0.05	0.00	0.20	0.05	0.00
Interaction				0.07	0.05	0.21

Table 10. *Avoidance of discipline predicting social competence*

Parameter	Model 1			Model 2		
	Estimate	S.E.	p-value	Estimate	S.E.	p-value
Intercept	0.01	0.08	0.95	-0.02	0.08	0.82
Time	0.01	0.02	0.49	0.01	0.02	0.56
Prior social competence	0.36	0.06	0.00	0.33	0.06	0.00
Avoidance of discipline	-0.07	0.04	0.08	-0.11	0.04	0.01
Parental depressive symptoms	-0.05	0.06	0.37	-0.07	0.05	0.16
Interaction				0.09	0.03	0.00

Table 11. *Academic competence predicting parental supervision*

Parameter	Model 1			Model 2		
	Estimate	S.E.	p-value	Estimate	S.E.	p-value
Intercept	0.03	0.07	0.69	0.03	0.07	0.62
Time	-0.02	0.02	0.50	-0.01	0.02	0.53
Prior supervision	0.25	0.06	0.00	0.25	0.07	0.00
Academic competence	-0.10	0.04	0.01	-0.11	0.04	0.00
Parental depressive symptoms	-0.11	0.05	0.04	-0.12	0.05	0.02
Interaction				0.10	0.05	0.04

Table 12. *Parental supervision predicting academic competence*

Parameter	Model 1			Model 2		
	Estimate	S.E.	p-value	Estimate	S.E.	p-value
Intercept	0.16	0.09	0.06	0.18	0.08	0.04
Time	-0.04	0.02	0.06	-0.05	0.02	0.05
Prior academic competence	0.27	0.05	0.00	0.28	0.05	0.00
Child gender (Male)	-0.17	0.11	0.12	-0.17	0.11	0.11
Parental supervision	-0.08	0.04	0.05	-0.10	0.04	0.01
Parental depressive symptoms	-0.03	0.06	0.69	-0.02	0.06	0.70
Interaction				0.08	0.04	0.03

Table 13. *Social competence predicting parental supervision*

Parameter	Model 1			Model 2		
	Estimate	S.E.	p-value	Estimate	S.E.	p-value
Intercept	0.02	0.07	0.81	0.03	0.07	0.70
Time	-0.02	0.02	0.63	-0.01	0.02	0.64
Prior supervision	0.25	0.06	0.00	0.25	0.07	0.00
Social competence	0.02	0.04	0.67	0.01	0.04	0.73
Parental depressive symptoms	-0.10	0.05	0.05	-0.09	0.05	0.05
Interaction				0.11	0.05	0.04

Table 14. *Parental supervision predicting social competence*

Parameter	Model 1			Model 2		
	Estimate	S.E.	p-value	Estimate	S.E.	p-value
Intercept	0.01	0.08	0.94	0.02	0.08	0.84
Time	0.01	0.02	0.51	0.01	0.02	0.55
Prior social competence	0.35	0.06	0.00	0.35	0.06	0.00
Parental supervision	0.01	0.04	0.73	0.00	0.04	0.97
Parental depressive symptoms	-0.07	0.06	0.24	-0.07	0.05	0.23
Interaction				0.05	0.03	0.10

Figure 1. *Path model including parental avoidance of discipline and academic competence*
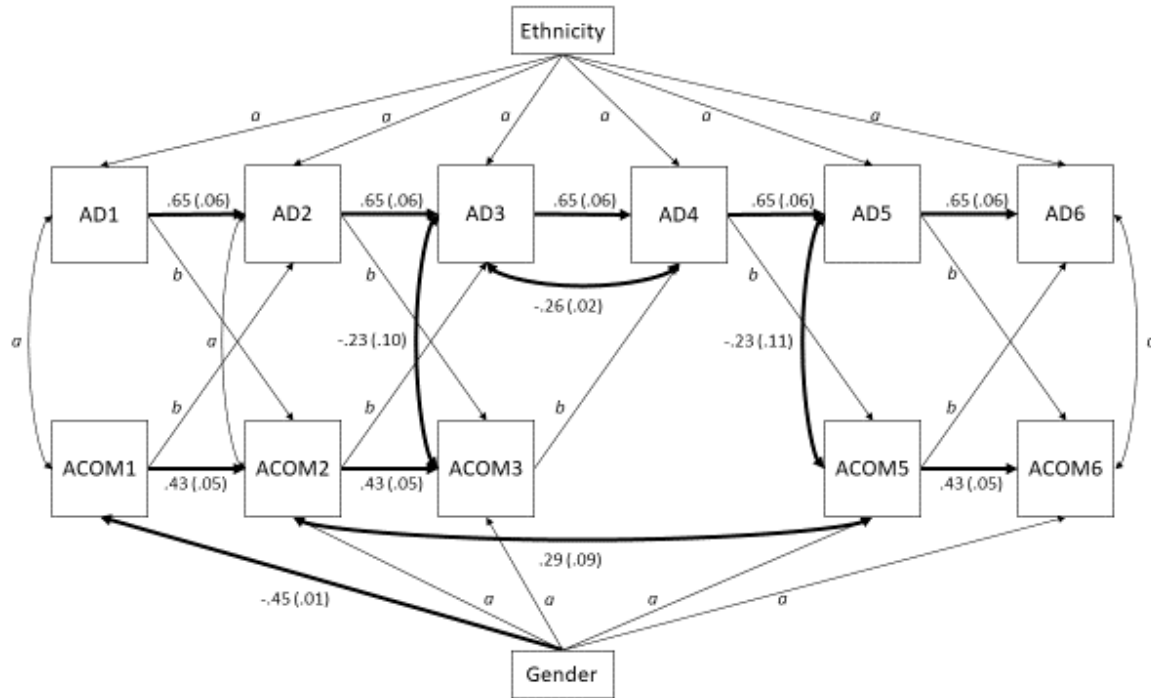
Note: Values reported for significant pathways only; AD = Avoidance of discipline; ACOM = Academic competence; *a* = free parameter; *b* = constrained parameter (equal values within construct); X^2 = 96.78, *p* = .00; RMSEA = .08; CFI = .86; SRMR = .12

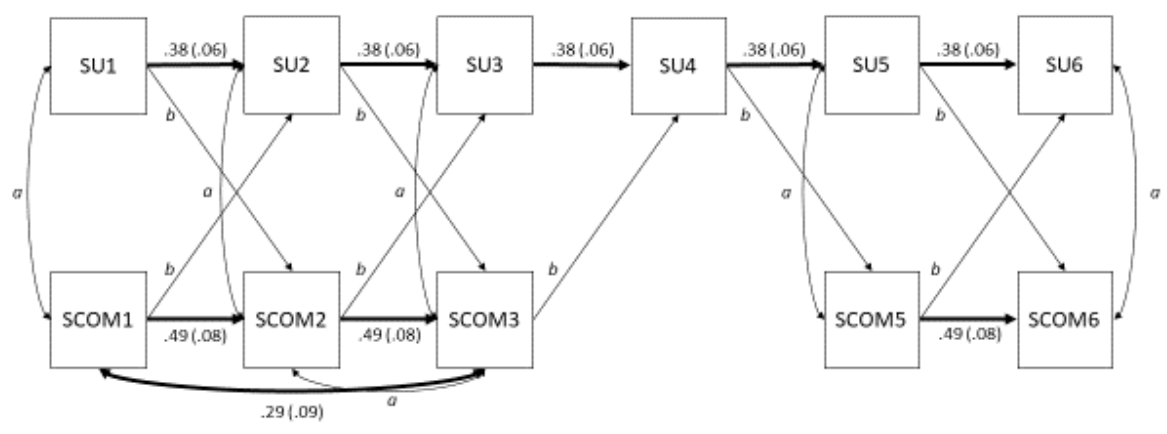**Figure 2.** *Path model including parental supervision and academic competence*
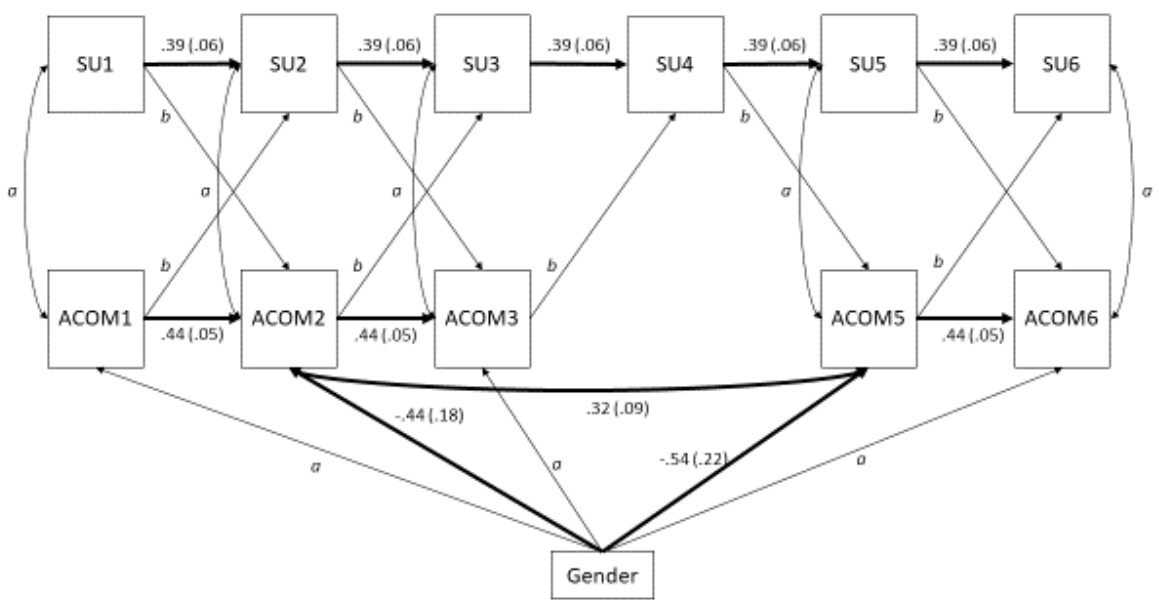
Note: Values reported for significant pathways only; SU = Parental supervision; ACOM = Academic competence; *a* = free parameter; *b* = constrained parameter (equal values within construct); X^2 = 72.83, *p* = .02; RMSEA = .06; CFI = .88; SRMR = .10

Figure 3. *Path model including parental avoidance of discipline and social competence*
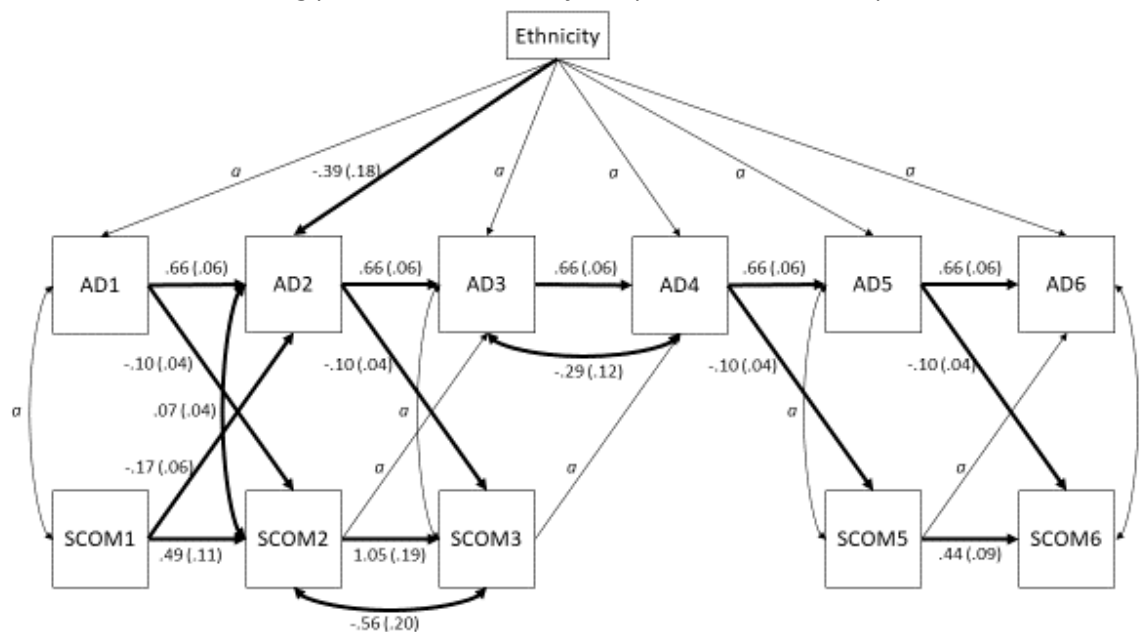
Note: Values reported for significant pathways only; AD = Avoidance of discipline; SCOM = Social competence; a = free parameter; b = constrained parameter (equal values within construct); X^2 = 65.33, p = .02; RMSEA = .06; CFI = .92; SRMR = .11

Figure 4. *Path model including parental supervision and social competence*

Note: Values reported for significant pathways only; SU = Parental supervision; SCOM = Social competence; *a* = free parameter; *b* = constrained parameter (equal values within construct); X^2 = 62.84, *p* = .03; RMSEA = .06; CFI = .89; SRMR = .10

Figure 5. *Parental avoidance of discipline predicting social competence at high and low levels of parental depressive symptoms*
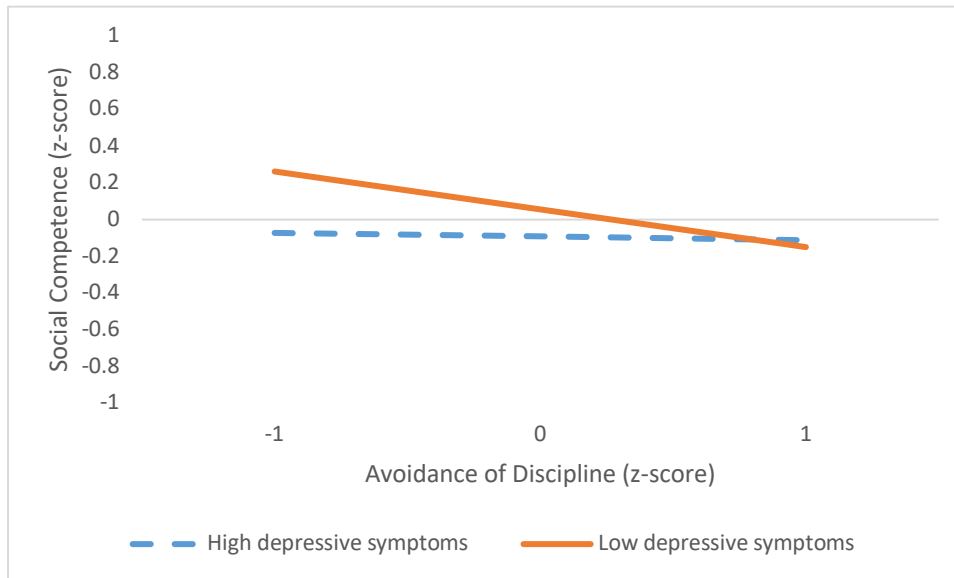
Figure 6. *Academic competence predicting parental supervision at high and low levels of depressive symptoms*
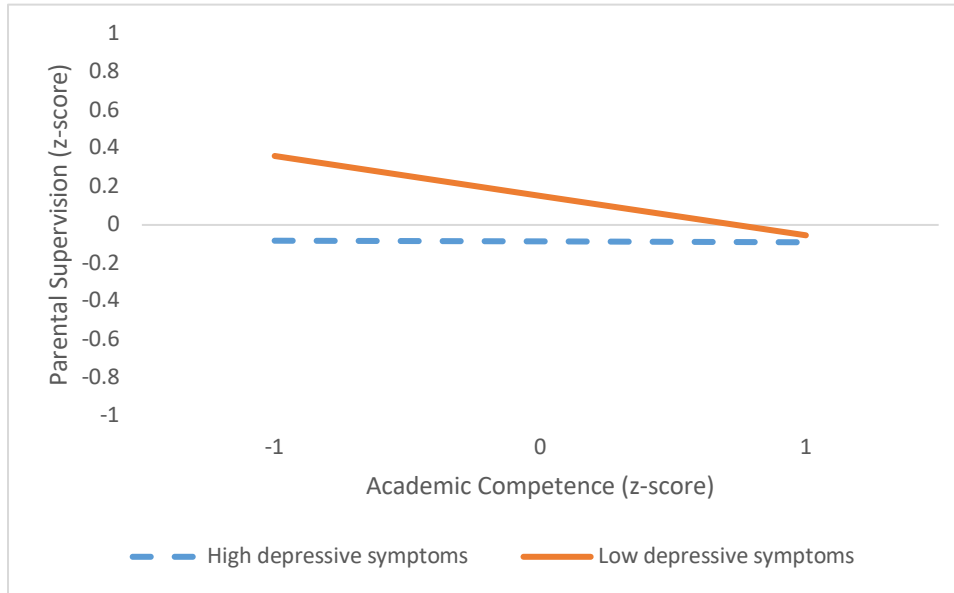
Figure 7. *Parental supervision predicting academic competence at high and low levels of parental depressive symptoms*
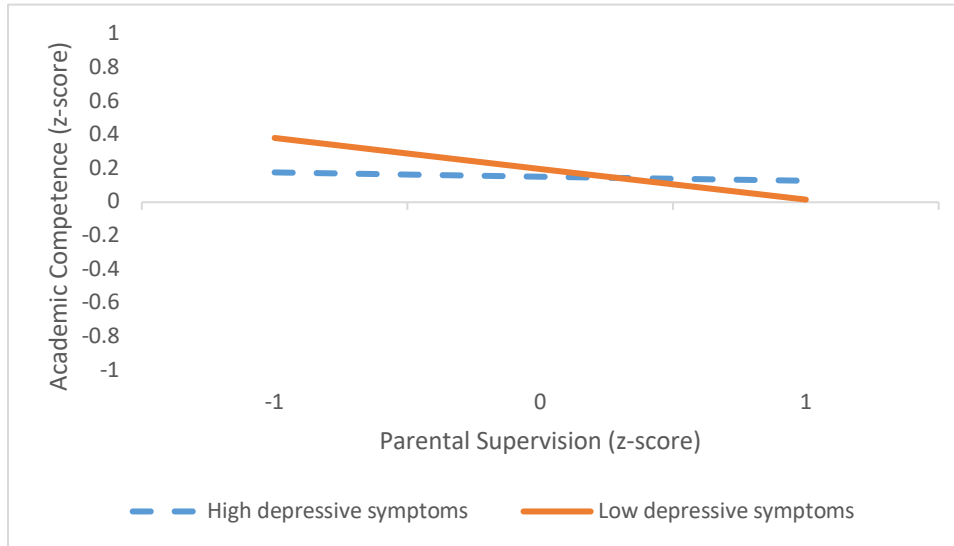
Figure 8. *Social competence predicting parental supervision at high and low levels of depressive symptoms*