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LONGITUDINAL RELATIONS BETWEEN PARENTAL MESSAGES SUPPORTING
FIGHTING AND AGGRESSIVE BEHAVIOR IN EARLY ADOLESCENCE: THE
MODERATING ROLE OF POSITIVE PARENTING PRACTICES

A thesis submitted in partial fulfillment of the requirements for the degree of
Master of Science at Virginia Commonwealth University

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Abstract

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The prevalence of physical aggression increases during adolescence and is associated with negative health outcomes. It is important to identify risk and protective processes for adolescent aggression in the context of the parent-adolescent relationship. The current study examined the potential moderating role of positive parenting at Wave 1 on relations between perceived

parental messages supporting fighting at Wave 1 and adolescent aggression based on parent- and student-report at Wave 2. Participants included a sample of 537 adolescents and their primary caregivers, recruited from four sites in the U.S. No significant moderating effects were found. However, parental messages supporting fighting were positively associated with increased student-reported aggression six months later, and positive parenting was related to decreased parent-reported aggression over the same timeframe. Implications suggest that parental messages supporting fighting and positive parenting represent a risk and promotive factor, respectively, in relation to aggressive behavior in early adolescence.

Introduction

Reflective of the broader public health concern of youth violence, aggression is unfortunately prevalent during adolescence. Incidents of physical aggression (i.e., threatened and perpetrated physical violence) occur to the extent that over half a million youth ages 10 to 24 received treatment in U.S. emergency departments for violence-related injuries in 2010 (Centers for Disease Control and Prevention, 2010). More than one million juvenile justice cases were handled by courts in the U.S. during 2013, and 26% of these cases involved violent offenses against others (Office of Juvenile Justice and Delinquency Prevention, 2013). Consequences of engaging in aggressive acts are manifold and may include physical injury, as well as potential involvement with the juvenile justice system (Odgers et al., 2008). Outside of legal repercussions, aggressive behaviors may result in suspension or expulsion in school settings (Breslau, Breslau, Miller, & Raykov, 2011; Zimmerman, Schutte, Taskinen, & Koller, 2013), and are related to higher frequencies of other risk-taking behaviors such as delinquency and substance use (Jessor, 1987). Overall, the perpetration of aggression in adolescence can lead to difficulties in areas of academic and social functioning, and create health issues (Odgers et al., 2007, 2008; Zimmerman et al., 2013).

The identification of risk and protective processes related to aggression is important, particularly for early adolescents. This timeframe spans ages 10 to 14 and is characterized by increased rates of aggression (Pellegrini & Long, 2004), with physical aggression reaching its highest levels during this developmental period (Marcus, 2007). A number of factors influence adolescent aggressive behaviors at individual, peer, family, school, and neighborhood levels. At the individual level, cognitive, social, and emotional growth is rapid in adolescence and may contribute to increased vulnerability for engaging in aggressive behavior. For example,

maturation of the limbic system and prefrontal cortex are timed differently, so that emotions elicited in response to interpersonal situations may override less well-developed analytical decision-making processes (Steinberg, 2008). Peer and family factors also impact adolescents' aggressive behaviors. As adolescents seek ways to understand and define their self-identity, peer influences become stronger and affiliation with deviant peers is associated with increased risk for engaging in aggressive behavior (Espelage, Holt, & Henkel, 2003). Although adolescents become more autonomous from their families, parents remain a key source of socialization and play an important role in deterring or exacerbating youths' involvement in aggression (Padilla-Walker, Nelson, Madsen, & Barry, 2008). School and neighborhood contexts characterized by low levels of cohesion, organization, collective efficacy, and the presence of norms supporting violence may also increase adolescents' risk for engaging in aggressive behaviors (Cooley-Strickland et al., 2009; Pickett, Iannotti, Simons-Morton, & Dostaler, 2009). For families living in disadvantaged neighborhoods with high levels of crime and violence, parenting practices may be more complex with the goal of helping youth safely negotiate environments where exposure to violence may be high. Exposure to community violence is also connected to socio-economic status (SES), with lower SES predicting higher frequencies of exposure to community violence, which is associated with externalizing behavior problems (Cooley-Strickland et al., 2009).

The current study focused on risk and protective processes for aggression among adolescents within the family domain. Two specific constructs, positive parenting (i.e., warmth and monitoring/involvement) and parental messages supporting aggressive responses to conflict were assessed. Some studies have shown that aspects of positive parenting served as promotive factors by directly increasing the likelihood of positive adjustment outcomes in youth. For example, higher versus lower parental warmth was associated with greater emotional security

(Alegre et al., 2014), fewer internalizing and externalizing problems (Alegre et al., 2014; Vasonyi et al., 2015), prosocial behavior toward family (Padilla-Walker, Nielson, & Day, 2016) and higher levels of academic engagement and motivation (Hill & Wang, 2015; Lowe & Dotterer, 2013). Similarly, parental sensitivity—cooperation, communication, and responsiveness to children—predicted calmer, more harmonious parent-child interactions and relationships, as well as lower frequencies of aggressive and antisocial behavior (Ainsworth et al., 1974, Gardner, 1992). Lastly, parental monitoring/involvement was related to lower levels of aggressive, delinquent, and antisocial behaviors (Gryczkowski, Jordan, & Mercer, 2010; Henneberger, Varga, Moudy, & Tolan, 2014; Laird, Criss, Pettit, Dodge, & Bates, 2008), and internalizing symptoms (Day & Padilla-Walker, 2009). Thus, positive parenting has implications for adjustment outcomes including externalizing behaviors in adolescents.

Another parenting practice that may influence externalizing behavior during adolescence is parental messages supporting aggressive responses to conflict (e.g., Farrell, Henry, Mays, & Schoeny, 2011; Garthe, Sullivan, & Larson, 2015; Kramer & Farrell, 2016; Orpinas, Murray, & Kelder, 1999). As parents' direct supervision of activities and peer interactions tends to decrease in adolescence (Prinstein, Boergers, & Vernberg, 2001), parental messages represent an important mechanism by which values, beliefs, and attitudes regarding behavioral responses are transmitted. Not surprisingly, parental messages supporting fighting are positively linked to adolescents' aggressive behavior both concurrently (e.g., Orpinas et al., 1999) and over time (Farrell et al., 2011; Garthe et al., 2015; Kramer-Kuhn & Farrell, 2016). Although some studies examined direct effects between parental messages supporting fighting and this outcome (Garthe et al., 2015; Kramer-Kuhn & Farrell, 2016; Orpinas et al., 1999), few have focused on the identification of parenting practices that may attenuate this relation (Farrell et al., 2011). One

exception is a longitudinal study by Farrell and colleagues (2011) that did not find support for parental involvement/monitoring as a moderator of relations between parental messages supporting aggression and adolescents' physical aggression.

The current study tested the role of positive parenting (i.e., a combination of warmth and monitoring/involvement) as a potential moderator of longitudinal relations between parental messages supporting fighting and sixth graders' aggressive behavior six month later. It addressed several limitations in the current literature. With few exceptions (Kramer-Kuhn & Farrell, 2016) studies assessing relations between parental messages supporting aggression and adolescents' aggressive behavior have relied primarily on self-report (e.g., Garthe et al., 2015; Orpinas et al., 1999) or self- and teacher-report data (e.g., Farrell et al., 2011; Farrell et al., 2012). The present study included self- and parent-reported aggression outcomes. It also capitalized on data from 18 middle schools representing four different sites in the U.S. and a diverse sample based on racial/ethnic composition and SES (MVPP, 2004). By assessing whether positive parenting moderated relations between parental messages supporting fighting and adolescent aggressive behavior, parental factors that influence the development of adolescent aggression can be better understood, informing youth violence prevention efforts.

Review of the Literature

This literature review begins with a general discussion of the parent-adolescent relationship and developmental processes during this timeframe that impact this relationship. The focal study constructs are then introduced along with relevant theory. An emphasis is placed on the role of positive parenting practices as protective factors in adolescents' development. Subsequently, parent-adolescent communication is examined, focusing on relations between

parental messages supporting fighting and adolescents' aggressive behaviors, and the potential moderating role of positive parenting on these relations.

Parent-Adolescent Relationship

A number of normative developmental changes in adolescence impact parent-adolescent relationships. Physical maturation and cognitive growth (e.g., in abstract reasoning, perspective-taking, and information processing speed) create a dynamic shift in youth and parent perceptions of each other that often alters expectations for rules, responsibilities, interdependence, and independence within the family system (Arnett, 2004). A key part of adolescence involves forming a sense of self-identity, striving for autonomy and a sense of individuality. Erikson (1963) argued that adolescents strive to discover what makes them unique, and that the central issue in this life stage is the formation of a stable, secure identity versus role confusion.

Adolescents generally spend less time with their families than in earlier stages of development (Darling & Steinberg, 1993). For example, Larson et al. (1996) found that the time spent with parents each week between fifth and twelfth grades decreased from 35% to 14%. Youth gravitate toward peer-dominated social influences and rely on peers to a greater extent for informational, instrumental, companionship, and esteem support (Berndt, 1996). As adolescents transition to middle and high school, additional demands in balancing family life with social, work, and extracurricular activities along with academic expectations may contribute to stress more generally and specifically within parent-adolescent relationships.

The quality of the parent-adolescent relationship is related to psychosocial adjustment, physical health, educational outcomes, and relationship dynamics with friends and dating partners (e.g., Allen & Bell, 1995; Allen & Kuperminc, 1995). Several researchers found that secure attachment in adolescence predicted a host of positive outcomes, including high levels of

self-esteem and psychological and physical well-being (Allen & Kuperminc, 1995; Allen & Land, 1999; Juang & Nguyen, 1997). Because of positive experiences with parents, securely attached adolescents also maintain stronger and more intimate friendships and romantic relationships (Allen & Bell, 1995; Roisman, Madsen, Henninghausen, Sroufe, & Collins, 2001). In contrast, a large literature links insecure, anxious attachment to adjustment difficulties in adolescence (Carlson & Sroufe, 1995; Egeland & Carlson, 2004; Sroufe et al., 1999). Generally speaking, an adolescent's level of attachment security is connected to many important outcomes, both during adolescence and later in adulthood, including educational, occupational, relationship success, and health (Allen & Bell, 1995; Allen et al., 1998).

There is also a rich literature examining adolescents' adjustment in relation to parenting styles, whether it is positive or less so (Baumrind, 1991a, 1991b; Dornbusch et al., 1990; Steinberg, 1996, 2000). Adolescents who grew up with authoritative parents (i.e. representing a combination of high levels of both parental responsiveness and demandingness) tend to have adaptive outcomes, including being more socially skilled and independent, as well as doing better in school and having more positive social relationships (Baumrind, 1991a, 1991b; Fugligni & Eccles, 1993; Lamborn et al., 1991). The other types of parenting styles are associated with fewer positive and more negative outcomes, depending on the specific style. For example, adolescents with authoritarian parents (i.e. characterized by a disciplinary style where children are expected to obey parental rules without question in a context of low warmth and responsiveness) can become dependent, passive, and conforming, whereas adolescents from more permissive households often show signs of immaturity, irresponsibility, and lack of conformity (Arnett, 2004). Of course there are many other factors that contribute to adolescents' outcomes, including environmental factors and the bidirectional or transactional interactions

between parents and their adolescents (Patterson & Fisher, 2002), but the impact of parenting styles and resulting parenting practices ripple throughout adolescents' social and emotional development.

While the pervading stereotype of the American adolescent is one that highlights a lack of connection between parents and adolescents, empirical findings show that this is not necessarily true. However, normative changes in parent-adolescent communication patterns do occur during this developmental stage. As adolescents spend more time with peers that is not directly supervised by parents, communication including parental solicitation and adolescent disclosure of information become key means by which information about adolescents' whereabouts, activities, and behaviors is shared with parents (Kerr & Stattin, 2000). Along with parental control, or the direct enforcement of rules and restrictions related to adolescents' activities, these two mechanisms of communication are the main ways that parents acquire knowledge about and monitor adolescents' behavior (Kerr & Stattin, 2000).

When conflicts arise among parents and adolescents, research suggests that it is less adolescents' attempts to disengage from their relationship with parents, but rather stems from issues such as adolescents seeing more choices as personal and under their own domain, rather than that of their caregivers. For example, adolescents felt that deception was acceptable in situations where parent directives or messages might restrict personal activities (e.g., involvement in extracurricular activities) or if parental messages were perceived as violating adolescents' moral code. In contrast, requests from parents that related to prudential acts (e.g., those involving academics or physical well-being) were seen as legitimate and acceptable. Conflict may also arise when parents and adolescents try to negotiate how much autonomy adolescents should have (i.e., what level of independence is acceptable and appropriate)

(Smetana & Daddis, 2002). With adolescents seeing more of their actions and decisions as personal choices versus those judged as acceptable by parents, an escalation in disagreement about rules and expectations is fairly common in early- to mid-adolescence.

In conclusion, the parent-adolescent relationship is impacted by many aspects of adolescent development. Adolescents' increasing maturity creates normative transitions in independence and autonomy, but does not diminish the need for a positive relationship with parents. In fact, given the transition to peer-centered relationships that are more difficult to directly monitor, the quality of the parent-adolescent relationship including positive interactions and involvement may become increasingly important in influencing adolescents' behaviors.

Parenting Practices

Broadly conceptualized, parenting practices can be viewed as controls and supports. Parental controls have been largely defined as direct monitoring behaviors used to determine the nature and context of adolescents' activities (Johnson, Finigan, Bradshaw, Haynie, & Cheng, 2012; Kerr & Stattin, 2000) and may include parent behaviors and verbal messages directed toward adolescents. Parental supports represent aspects of parenting that influence the quality of the parent-adolescent relationship such as involvement, warmth, and responsiveness (Baumrind, 1991; Lindstrom Johnson et al., 2012). The parenting constructs represented in the current study can be conceptualized as forms of control (i.e., parental messages supporting fighting) and support (i.e., positive parenting). These constructs are linked to theory and related empirical studies reviewed in the next sections.

Social learning theory. This theory is relevant in understanding relations between parental messages supporting fighting and adolescent aggressive behavior, as well as the

potential moderating role of positive parenting practices on this relation. Despite developmental shifts in increasing autonomy and heightened reliance on peers for support (Furman & Buhrmester, 1992), parents remain an essential part of adolescents' lives and strongly influence their psychosocial development. Social learning theory suggests that parents directly and indirectly influence their adolescents via modeling of behaviors. More generally, Bandura's (1977) theory posits that individuals—in this case, adolescents—learn from other people (e.g., parents) via three methods: observation, imitation, and modeling; that is, reenacting what they have seen others do. Through these methods, youth learn to behave in ways that help them attain their goals. According to Bandura's theory, youth are more likely to adopt a modeled behavior if it results in a desired outcome, and if the model is similar to them and has an "admired" status. In the case of aggression, if children learn that acting aggressively aids them in meeting desired goals, they will be more likely to repeat these types of actions. Likewise, if children have a role model, caregiver, and/or powerful adult who offers messages supportive of aggression, they may conceptualize aggression as a useful and acceptable tool to meet their own social and material goals.

In studying adolescent aggression, Bandura noted a "reciprocal determinism" in the shaping of patterns of behavior; that is, there is a transactional relation between the world and the child. This suggests that a harsh or coercive environment will elicit more negative reactions from a child, who will in turn elicit negative reactions from those around him. As with Bronfenbrenner's (1979) bio-ecological model of development, Bandura's idea of reciprocal determinism suggests that the environment a child or adolescent is brought up in will elicit certain types of behavior, and that those behaviors in turn will elicit other behaviors from those in different levels of the child's micro-, meso-, and exo- systems (e.g. parents, teachers, and law

enforcement). For example, adolescents who are raised in a household where aggression occurs may learn through repeated experiences within that environment that needs are met via aggression. Aggressive responses to cues or perceived threats may thus be learned by living in this environment. Overall, parents play an important role in influencing their child's behavior by modeling responses (appropriate and inappropriate) to social and environmental cues.

Positive parenting practices. Some key aspects of positive parenting practices include parental warmth toward their children (Eisenberg, Zhou, Spinrad, Valiente, Fabes, & Liew, 2005) and connectedness in terms of the degree to which parents monitor and are involved in their children's daily lives. Examples of parental warmth include showing affection through smiles, hugs, or verbal encouragement. Parental monitoring/involvement is often thought of in terms of rule-setting and consequences given in order to set limits on youths' behavior. However, in the context of attachment theory (Bowlby, 1969), monitoring/involvement reflects connectedness on the part of the caregiver as demonstrated by spending time with adolescents and bi-directional communication. These types of behaviors provide parents both a way of becoming better informed about what their adolescents are doing and building an environment of trust and support. Positive parenting practices encompassing warmth and monitoring/involvement are consistent with Baumrind's (1968) parenting dimension of responsiveness in that they reflect a warm and responsive parenting style where parents are cognizant of and strive to meet their children's needs. These behaviors also are supported by Bowlby's (1969) theory of attachment in that they enhance the quality of the parent-adolescent relationship and adolescents' perceptions that parents are a dependable source of comfort.

Empirical studies have shown that these parenting practices (i.e., warmth and monitoring/involvement) are associated with higher levels of adaptive adjustment and lower frequencies of internalizing and externalizing behaviors. Parental warmth has consistently been demonstrated as having a protective function in relation to youths' social, emotional, and behavioral functioning (e.g., Hill & Wang, 2015; Lowe & Dotterer, 2013; Padilla-Walker, Nielson, & Day, 2016) and several studies focused specifically on externalizing outcomes (Alegre et al., 2014; Vasonryi et al., 2015; Wang, Hill, & Hofkens, 2014). Among 203 early adolescents living in Spain, higher levels of parental warmth were concurrently associated with lower frequencies of aggressive and delinquent behaviors (Alegre et al., 2014). In another cross-sectional study, Vasonryi et al. (2015) found that parental warmth was inversely related to delinquent behaviors such as vandalism, assault, and stealing in over 12,000 Georgian and Swiss adolescents. Finally, a longitudinal growth model was conducted with a sample of 1,400 ethnically diverse adolescents across three time points when youth were in seventh, ninth, and eleventh grades. Study findings showed that higher levels of parental warmth resulted in decreasing frequencies of problem behavior over time including aggression, delinquency, and truancy (Wang et al., 2014).

Several studies found that parental monitoring/involvement is related to lower frequencies of externalizing behaviors (Day & Padilla-Walker, 2009; Gryczkowski et al., 2010; Henneberger et al., 2014; Laird et al., 2008; Lowe & Dotterer, 2013). However, results were qualified by subgroup effects for relations between this parenting practice and externalizing difficulties in adolescence. In a sample of 504 adolescents, Laird et al. (2008) used growth mixture modeling to identify two sub-groups of youth characterized by decreasing and increasing levels of parental monitoring, respectively. The subgroup with decreasing parental monitoring

had greater increases in delinquency and deviant peer associations from ages 13 to 16 as compared to the other subgroup. Other studies demonstrated differences in findings based on maternal versus paternal influences (Day & Padilla-Walker, 2009; Gryczkowski et al., 2010). For example, parental involvement was inversely associated with externalizing behaviors for fathers but not mothers in a sample of 349 families with early adolescents (Day & Padilla-Walker, 2009). Similarly, Gryczkowski et al. (2010) found that among 135 families with children ages 6 to 12, father but not mother involvement was negatively related to externalizing behaviors for boys only. Lastly, Henneberger et al. (2014) found differences in relations between parental involvement/monitoring and aggressive behavior by race/ethnicity. More specifically, this positive concurrent relation was found for African-American but not European-American or Hispanic middle school students.

Buck and Dix (2014) presented a model that suggested paths by which positive parenting practices may contribute to declines in antisocial behavior. This model included three parts: a) parents' ability to socialize and control children, b) create positive connectedness, and c) coordinate interactions that naturally promote the decline of antisocial behavior in part by increasing adolescents' positive representations of the parent-adolescent relationship. The positive connectedness component represents the idea that sensitive parenting practices involve acknowledging adolescents' cues promptly and consistently, negotiating conflicting interests, compromising, and responding with positive affect, empathy, and without blame (Moretti & Obsuth, 2009). Involvement is the other crucial part of positive connectedness, and is comprised of spending time with the adolescent, doing cooperative activities, and talking to adolescents about their interests, feeling, and experiences (Beyers et al., 2003). Thus, the synergy between

these positive parenting practices may create an environment where incidents of aggressive behavior among youth is less likely to occur (Buck & Dix, 2014).

Some researchers have used composite measures of parenting practices including parental warmth and involvement/monitoring. For example, Gorman-Smith and Tolan (1998) examined relations between exposure to violence, family dynamics, and adolescent aggression. These authors found that parenting practices (i.e., parental warmth and involvement/monitoring)—not family dynamics—were related to lower frequencies of adolescent aggression. Similarly, studies have also found that relationship difficulties and conflict is often the product of dysfunctional family systems or individual (i.e., the parent's and/or child's) mental health problems (Offer & Offer, 1975; Rutter et al., 1976). However, positive parenting practices—typically associated with authoritative parenting styles—are linked to positive parent-child relationships and less conflict. Clear, warm communications from parents about behavioral expectations, along with high levels of reasoning and explanation are associated with adolescents' prosocial behavior (Eisenberg, Fabes & Spinrad, 2006). Likewise, adolescents' perceptions of their parents' involvement and acceptance of them are related to adolescents' empathic behaviors, among other positive outcomes (Jackson, Dunham, & Kidwell, 1990; Kamptner, 1988). These positive, prosocial behaviors seem to be antithetical to the development of aggressive and antisocial behaviors that may arise from harsh or coercive parenting practices.

Parental messages. This construct is an aspect of parent-adolescent communication that represents verbal messages that parents tell their children about the appropriateness or inappropriateness of various behaviors and in what circumstances they would be acceptable. As direct parental supervision wanes during adolescence, messages are a way that parents may attempt to exert control and transmit their expectations for adolescent behavior. Several

researchers have considered the impact of parental messages supporting aggressive responses to conflict on risk-taking behaviors, including aggression (Copeland-Linder et al., 2007; Farrell et al., 2011, 2012; Garthe et al., 2015; Kramer-Kuhn & Farrell, 2016; Orpinas et al., 1999; Solomon, Bradshaw, Wright, & Chen, 2008; Werner & Grant, 2009). More specifically, these are messages suggesting that aggression may be justified and acceptable in certain circumstances (Farrell et al., 2011). Examples of parental messages supporting aggressive responses to conflict include, “If someone hits you, hit them back,” “If someone calls you names, hit them” and “If you can't solve the problem by talking, it is best to solve it through fighting,” (Orpinas et al., 1999).

One way that parental messages may influence adolescent behavior is by their impact on adolescent attitudes, values, and beliefs (Copeland-Linder et al., 2007; Werner & Grant, 2009). Among African American youth ages 10 to 15, Copeland-Linder et al. (2007) found that adolescents' perceptions of parental support for fighting were more strongly linked to adolescents' attitudes supporting retaliation and aggression than were parents' self-report of their support for fighting. This finding suggests that adolescents' attitudes supporting retaliation and aggression were most strongly influenced by their own perceptions of parental viewpoints. In a longitudinal study, Werner and Grant (2009) showed that mothers' cognitions about aggression not only predicted mothers' level of disapproval in response to their children's aggressive acts, but also their children's beliefs about the acceptability of aggression. More specifically, these authors found that mothers' normative beliefs about relational aggression predicted their daughters' normative beliefs, suggesting that mothers who viewed relational aggression as more acceptable had daughters who held similarly beliefs. These two studies highlight the salience of perceived and actual parental views about aggression in relation to adolescents' attitudes and

belief system.

Research findings have also demonstrated positive relations between adolescents' perceptions of parental messages supporting fighting and their own frequencies of externalizing behaviors (Farrell et al., 2011, 2012; Garthe et al., 2015; Kramer-Kuhn & Farrell, 2016; Orpinas et al., 1999; Solomon et al., 2008). In an ethnically diverse sample of urban middle school students, perceived parental attitudes supporting fighting had the strongest association of several parenting factors with higher frequencies of adolescent aggression, including fighting, injuries due to fighting, and weapon carrying (Orpinas, Murray, & Kelder, 1999). In another cross-sectional study, Farrell et al. (2012) found that among 477 sixth graders, perceived parental messages support for aggression were positively associated with adolescent aggressive behaviors. Several studies have demonstrated longitudinal relations between parental messages supporting aggression and this behavioral outcome (Farrell et al., 2011; Garthe et al., 2015; Kramer-Kuhn & Farrell, 2016). Parental messages supporting aggression predicted increased physical aggression across three years among an ethnically diverse sample of 5,581 middle school students (Farrell et al., 2011). Consistent with this finding, Kramer-Kuhn and Farrell (2016) found that parental messages supporting aggression led to increased physical aggression across sixth grade for 537 adolescents characterized by high rates of social influence and aggression. Moreover, among 520 middle school students, perceived parental messages supporting aggression predicted subsequent increases in the frequency of adolescent aggressive behaviors from the fall to spring of sixth and seventh grades (Garthe et al., 2015). Overall, these studies underscore the role of parent socialization processes (i.e., parental messages) in influencing adolescent externalizing behaviors both concurrently and prospectively.

Parental messages and their influences on adolescent behavior are shaped by a number of

factors. Developmental considerations are important as some studies suggest that younger adolescents may be more receptive to parental messages than older adolescents. For instance, among 1,649 middle school students, Sawyer and Stevenson (2008) found that the impact of parental messages disapproving of drug use varied even within a short developmental time frame, and inverse relations between parental disapproval and drug use were stronger for sixth as compared to eighth graders. This finding suggests that parental messages may be most influential on behavioral outcomes for younger as compared to older adolescents.

Parental messages about violence may be shaped in part by social controls present to address crime and violence and the incidence of these behaviors within neighborhoods, SES, and family factors such as cohesion (Lindstrom Johnson, Finigan, Bradshaw, Wright, & Cheng, 2011). In environmental contexts with high levels of crime and violence, parents may support adolescents' aggressive responses in certain situations (Copeland-Linder et al., 2007; Lindstrom Johnson et al., 2011; Orpinas & Kelder, 1999; Solomon et al., 2008). For example, Lindstrom Johnson et al. (2012) collected data from 48 parent/adolescent dyads living in disadvantaged urban neighborhoods who described their responses to vignettes of hypothetical threatening situations. Most parents advocated for nonviolent responses using active or proactive coping but simultaneously described scenarios in which their child might need to use aggression as a coping strategy in self-defense (e.g., another peer was aggressing against their child or their child is "outnumbered" in a dangerous situation).

In conclusion, this body of work highlights the complexity of parental messages, whether those messages are supporting aggression or nonviolent responses to conflict, or if the messengers themselves are endorsing specific responses dependent on situational contexts. However, if parental messages serve to convey beliefs or attitudes that support aggression, this

may encourage youth to respond to situations in this manner (Krevans & Gibbs, 1996). As previous literature has demonstrated, parental messages supporting fighting shape adolescent behavioral outcomes, an idea that highlights the importance of understanding factors that may influence these relations across development and in different environmental contexts.

Interactions between parental messages and positive parenting practices. Relatively little literature has examined interactions between parental messages (e.g., supporting aggression) and positive parenting practices (e.g., parental warmth and involvement/monitoring). Parenting theories, such as those put forward by Baumrind (1966), highlight the role of parental supports (e.g., parental warmth and involvement/monitoring) in forming a context in which parent controls (e.g., verbal or behavioral modeling) may work best to promote parents' overall behavioral goals for their adolescents. Similarly, Grusec's (2000) relationship theory suggests that the easiest way for youth to internalize parents' beliefs, values, and attitudes is in the context of a warm, caring relationship. Overall, these theories support the notion that parental supports such as positive parenting practices form a climate within the parent-adolescent relationship that may heighten the degree to which controls such as parental messages about violence are internalized and translated into behavior patterns by adolescents.

Positive parenting creates a supportive emotional climate between parents and their children, and it is related to more harmonious relationships with lower levels of conflict (Knafo & Schwartz, 2003). Parent-child conflict has been shown to be negatively associated with children's ability to accurately perceive parental messages and may elicit negative emotional reactions to these messages (Cooper, 1988). Parental warmth and responsiveness is related to high levels of congruence between parent and child values, children's positive attitudes toward parents, and frequent parent-child discussions about values (Henry, 1994; Knafo & Schwartz,

2003; Rohan & Zanna, 1996). Overall, the supportive emotional climate and receptivity created in the context of positive parenting may support the transmission of parental values via messages, as well as adolescent's receptivity to those messages.

Empirical studies also support the theoretical premises previously described. Henry's (1994) study of family system characteristics focused on adolescents' perceptions of their parents' support and subsequent family satisfaction ratings. Study findings showed that parenting behaviors (e.g., parental support or parental punitiveness) accounted for a significant amount of the variance in adolescent ratings of family satisfaction. This suggests that parental support and some of the "internal family resources" nested within the parent-adolescent relationship contribute to adolescents' sense of membership and inclusion in their family (Henry, 1994, pp. 452). Similarly, adolescents who have more positive perceptions of their caregivers and family were more likely to engage in greater emotional disclosure with those caregivers (Rapini, Farmer, Clark, Mika, & Barnett, 1990). In a study of 326 African American adolescents and their maternal caregivers, Garthe, Sullivan, and Kliewer (2015) found that adolescents' perceived parental acceptance predicted lower frequencies of delinquent behavior through increased levels of child disclosure. Thus, this positive characteristic of the parent-child relationship facilitated communication processes that were negatively associated with externalizing behaviors. Consistent with this study, Kliewer et al. (2006) found that parental messages supporting both aggression in potentially dangerous situations and prosocial behaviors more strongly influenced adolescents' responses when combined with warm coaching from a caregiver.

Given that relatively little empirical research has been conducted on how supports (i.e., positive parenting) influence the relation between verbal controls (i.e., messages that transmit parental expectations) and adolescent externalizing behaviors, it is possible that positive

parenting practices impact relations between parental messages supporting fighting and externalizing outcomes. Taken together, theory related to parent-adolescent relationships (e.g., Baumrind, 1991) and related research (e.g. Henry, 1994; Knafo & Schwartz, 2003; Rohan & Zanna, 1996) suggests that parental messages supporting fighting may be more strongly related to adolescent aggressive behavior in the context of high versus low levels of positive parenting.

Parental involvement/monitoring as defined in the current study assesses how frequently parents and children talk about the child's daily activities and how often children participate in family activities. Thus, in contrast to parental monitoring measures that assess parent-directed rules and supervision (e.g., Kerr & Stattin, 2000), this measure reflects the time parents and children spend together in conversation and positive activities such as going to the "movies, sports event, or other outings" (Gorman-Smith, Tolan, Zelli, & Huesmann, 1996). It also assessed parent- and child-directed communication about the child's activities. Thus, higher levels of parental involvement/monitoring as assessed by this measure represent parent's accessibility to their children and the child's receptivity to discussing information about their daily activities to parents. In a context of high levels of parental involvement/monitoring, parents may not only learn a great deal about their child's whereabouts, activities, and behaviors (Kerr & Stattin, 2000) but may also be in a knowledgeable position to influence their child's values and behavior by using parental messages.

The Present Study

Aggression in adolescence is concerning in that it occurs frequently and exacts high costs in terms of youths' physical well-being, mental health, and achievement in academic and social domains (CDC, 2015; Crick et al., 2007; Guerra & Bradshaw, 2008). Although peer influence strengthens during this developmental timeframe, parental factors including parenting practices

continue to strongly impact adolescent behavior (Gallarín & Alono-Arbiol, 2012). Parenting practices can be conceptualized as supports (e.g., practices that enhance the quality of the parent-adolescent relationship) and controls (e.g., direct or indirect parental modeling of behavior). The current study examined the potential moderating role of positive parenting on relations between parental messages supporting fighting and adolescent aggressive behavior over six months. One relatively novel aspect of this study is its focus on an ethnically diverse sample of sixth graders who were rated by teachers as exhibiting high frequencies of aggressive behavior and having high levels of social influence on peers. In some ways, this limits the generalizability of the study based on the specificity of the sample selection. On the other hand, the identification of parenting processes that may influence aggressive behavior in this high-risk sample is particularly relevant as changing the behavior of students in this sample may create a ripple effect impacting peer behavior and the school climate more broadly. The current study addressed prior limitations in the literature by focusing on a diverse sample based on race/ethnicity, SES, and setting (e.g., urban and rural) and examining adolescent aggression using student- and parent-report. It also contributed by addressing gaps in empirical research regarding the role of family processes, such as positive parenting, in attenuating relations between parental messages supporting fighting and adolescent aggressive behavior.

Moderation Model

The current study tested the moderating role of positive parenting at Wave 1 on relations between parental messages supporting aggressive responses to conflict at Wave 1 and adolescent aggressive behavior at Wave 2. A visual depiction of this model is shown in Figure 1. Change in aggression levels was assessed using student- and parent-report data at Wave 2 with the remaining study variables representing student-report data at Wave 1.

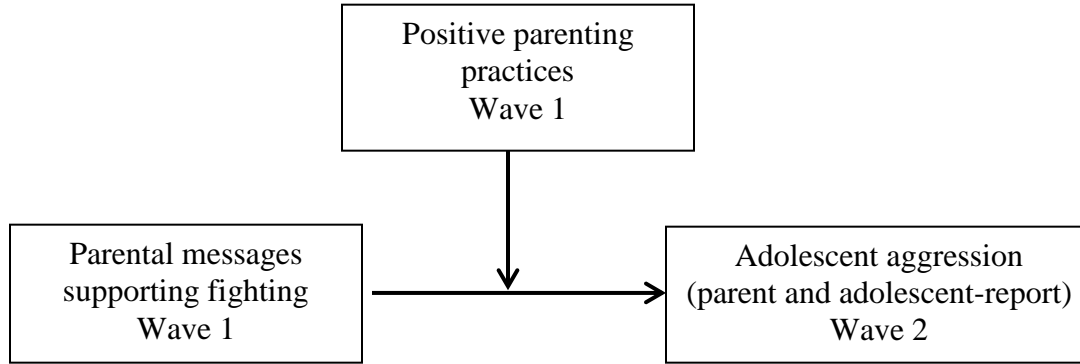


Figure 1. Theoretical model of relations between study variables.

Study Hypothesis

Using attachment (Bowlby, 1969) and relationship theories (Grusec & Goodnow, 2000), the study hypothesis was based on the idea that warm, responsive parenting environments (e.g., those characterized by parental warmth and involvement/monitoring) serve to amplify parents' messages to adolescents. Based on the model shown above, the current study focused on one primary hypothesis. It was anticipated that positive parenting at Wave 1 would moderate relations between parental messages supporting fighting at Wave 1 and student- and parent-reported aggression at Wave 2. At low levels of positive parenting, little variability was anticipated in the influence of low or high levels of parental messages supporting fighting on rates of student- and parent-reported aggression. At high levels of positive parenting, youth who reported low parental support for aggression were expected to engage in lower levels of aggressive behavior as compared to youth who reported high parental support for aggression. These anticipated relations between study variables are consistent with theory, (e.g., Grusec and Goodnow, 2000) and related lines of empirical research (e.g., Farrell et al., 2011).

Method

Setting

The present study used data from the Multisite Violence Prevention Project (MVPP, 2004), a seven-year project funded by the National Center for Injury Prevention and Control (NCIPC) at the Centers for Disease Control and Prevention. The Multisite Violence Prevention Project evaluated the effectiveness of violence prevention programs and included 37 middle schools in 4 geographical sites in the U.S. (8 schools in Durham, North Carolina; 9 in Northeastern Georgia; 12 in Chicago, Illinois; and 8 in Richmond, Virginia). Most middle schools included sixth to eighth graders, but Chicago schools served students in kindergarten through eighth grade. A high percentage of youth were from low-income families, with 42% to 96% qualifying for the federal free or reduced price school lunch program. In participating school districts, the average poverty and youth arrest rates were 28% and 63/100,000, both higher than the national averages of 16% and 43/100,000 (Henry, Farrell, & MVPP, 2004). The violence prevention programs included in the Multisite Violence Prevention Project were universal school-based prevention programs for students and teachers and a targeted, family-based program. To evaluate the targeted intervention, a subset of students was identified who were rated by teachers as having higher levels of aggression as compared to peers but also having high levels of social influence. A total of 1,679 students were eligible to be recruited for the targeted sample, and 1,237 adolescents (74%) provided both parental permission and student assent. Data were collected from 1,217 adolescents and 1,128 caregivers. Students in the targeted sample attended schools that were randomized to one of four conditions (i.e., universal intervention, targeted intervention, combined universal and targeted intervention, or no-intervention control). Because the targeted intervention was a family-based intervention that

included weekly group sessions focused on parenting practices and the parent-child relationship, schools randomized to receive the targeted program or the combined universal and targeted programs were excluded from this study. Based on this decision, the final sample included 537, primarily male, ethnically and racially diverse adolescents and caregivers.

Participants

As previously mentioned, the targeted sample included the sixth-grade students who were nominated by their teachers using a rating system to identify youth who exhibited higher levels of aggressive behavior than their peers and had high levels of social influence among peers. The process involved two sixth-grade teachers within each school who knew the students well, who were then given a list of aggressive behaviors to help them to nominate the students who fell within the top 25% based on these aggressive behaviors. Examples of behaviors included on this list were “encourages other students to fight;” “frequently intimidates other students;” “has a short fuse, gets angry very easily;” and “gets into frequent physical fights.” Teachers then rated the selected students (i.e., the top 25% on aggression) on their social influence (e.g., “Who are the students other students listen to about attitudes, how to behave, what's good, important, or cool?” “Who sets the trends among students?” and “Who seems respected by other students?”). Teachers rated these behaviors using a response scale that ranged from 1 - *Not at all influential among peers* to 5 - *Very influential among peers*. Students who received influence ratings of 4 or 5 were selected. The importance of identifying students who were both aggressive and socially influential among their peers was based on the premise that selected students might be responsible for a disproportionate number of aggressive incidents at school, and based on their

social influence, a reduction in their aggressive behavior could have a far-reaching impact within each participating school.

Procedure

The procedures for the Multisite Violence Prevention Project were approved by the institutional review boards at each of the four participating universities, as well as the CDC. Consent and assent forms were sent home with the students. Participants at three sites were given a \$5 gift card for returning their forms, irrespective of whether or not they participated in the study. Data for the targeted sample were collected from multiple sources: students, parents, and teachers across two cohorts. The first wave of data were collected from the targeted sample of sixth grade students as part of the pretest assessment in the fall of 2001 for Cohort 1 and the fall of 2002 for Cohort 2. For Cohort 1, data were collected at the beginning and end of sixth grade and at the end of seventh and eighth grade. For Cohort 2, data were collected at the beginning and end of sixth and seventh grade and at the end of eighth grade. The current study focused on the first two waves of data collected at the beginning and end of sixth grade, and included a combined sample of students from Cohorts 1 and 2.

At each wave, surveys were administered to the students and their teachers and parents. Students and parents who wished to participate were administered a computer-assisted survey interview (CASI) either in their home or another location that was convenient for the family. This computerized survey allowed participants to both read and listen to each item and the response choices. After the completion of each survey, students received a \$5 gift card at participating schools for three of the four sites. Parent surveys were administered in a separate location from their adolescent. Research staff read the survey questions aloud to parents to address any concerns about reading ability and possible inexperience with laptop computers.

Measures

Measures for the current study included a risk variable, moderator, dependent variable, and covariates. The risk variable was parental messages supporting fighting. The moderator was a composite measure of two subscales: a) parental involvement/monitoring, and b) positive parenting, which assessed aspects of parental warmth. The dependent variable, aggression, was assessed by both student-reported physical aggression and parental report of their child's physical aggression. Covariates included student- and parent-reported aggression at Wave 1, as well as dummy-coded variables representing adolescents' gender, race/ethnicity, family structure, and intervention condition. Because of the differences in demographic characteristics across different sites (i.e. family structure, race/ethnicity, and SES), race/ethnicity was dummy-coded such that 1 = racial/ethnic minority, 0 = Caucasian. Additionally, family structure was dummy-coded with 1 = two-parent families (including families with a biological parent and a step-parent), 0 = non-two-parent families (i.e. single parents), and gender was dummy-coded, such that 1 = male and 0 = female. Intervention condition was also included as a covariate, with 1 = universal condition and 0 = all other conditions. Finally, study site was coded using simple contrast coding with the Georgia site serving as the reference group.

Youth-reported aggression. A subscale of the Problem Behavior Frequency Scales (PBFS; Farrell, Kung, White, & Valois, 2000) was used in the current study to measure physical aggression. For the Multisite Violence Prevention Project, the PBFS comprised 26 items representing separate subscales assessing physical aggression, nonphysical aggression, drug use, and delinquent behavior. For the current study, the 7-item physical aggression scale was used and assessed acts or threats of physical aggression (e.g., "been in a fight when someone was hit"). All questions were preceded by the stem: "In the last 30 days, how many times have you

___?” with the following 6-point response scale: 1 = *Never*; 2 = *1-2 times*; 3 = *3-5 times*; 4 = *6-9 times*; 5 = *10-19 times*; 6 = *20 or more times*. Higher scores indicated higher frequencies of physical aggression. Alphas were calculated for Wave 1, $\alpha = 0.83$, and Wave 2, $\alpha = 0.85$.

Parent-reported aggression. The nationally normed Behavior Assessment System for Children - Parent Form (BASC-PRS-A; Reynolds & Kamphaus, 1992) was used to assess parent-reported aggression. For the Multisite Violence Prevention Project, 4 of the 11 subscales comprising this measure were administered, including the aggression subscale that was used in the current study (e.g., “bullies others,” “hits other children”). Parents rated how often their child engaged in each behavior. Responses options ranged from 0 (*Never*) to 3 (*Almost Always*), with scores calculated by summing responses for each scale and converting them to T-scores using the standard formula with a mean of 50 and standard deviation of 10. Higher scores represented higher rates of aggression. Alphas were calculated for Wave 1, $\alpha = 0.84$, and Wave 2, $\alpha = 0.86$.

Parenting Practices. This measure was comprised of five subscales that assessed parenting practices including monitoring and involvement, supervision and rules, positive parenting, discipline effectiveness, and discipline avoidance (Gorman-Smith, Tolan, Zelli, & Huesmann, 1996). Two youth-reported subscales: a) monitoring and involvement, and b) positive parenting were used in the current study. The 12-item monitoring and involvement subscale was comprised of items assessing the parent’s involvement in their child’s daily activities and routines, knowledge of the child’s whereabouts and activities, and bidirectional communication between parent and child. A variety of different response options were included for various items (e.g., “When was the last time you talked with a parent about what you were going to do for the coming day?”). Higher scores indicated higher levels of parent involvement with and monitoring of their children’s activities. The 6-item positive parenting subscale

assessed parents' use of positive rewards and encouragement of their children's appropriate behavior (e.g., "How often did one of [your parents] give you a hug, pat on the back, or kiss?"). Responses were coded using the following 3-point scale: 1 = *Almost never*, 3 = *Sometimes*, and 5 = *Almost always*. Higher scores indicated higher rates of positive parenting. The composite measure had an alpha of $\alpha = 0.87$.

Parental Support for Fighting. This measure assessed youths' perception of parental support for aggressive and /or non-aggressive solutions as a means of solving conflicts. These items initially comprised a single scale (Orpinas, Murray, & Kelder, 1999), with items developed based on middle school focus groups (Kelder et al., 1996; Orpinas et al., 2000). Further scale development as part of the Multisite Violence Prevention Project resulted in the scale being split into two subscales assessing aggressive solutions to conflict (5-items) and non-aggressive solutions to conflict (5-items) (Miller-Johnson, Sullivan, & Simon, 2004). The current study included only the aggressive solution to conflict subscale. For each item, students responded "yes" or "no" based on their perception about messages their parents told them about aggression (e.g., "If someone hits you, you hit back"). Higher scores represent higher rates of perceived parental support for fighting. The alpha was calculated at Wave 1, $\alpha = 0.56$.

Data Analysis

Prior to exporting data to *M-Plus 7.3* (Muthen & Muthen, 2013) for analyses, the data were cleaned using *IBM Statistics SPSS—Version 23* software (IBM Corp, 2013). All items comprising the study measures were examined to assure each fell within the acceptable range of values based on the response options for that item. Next, the skewness and kurtosis of each measure was checked to assess the normality of the distribution; measures with absolute values equal to or greater than 3 were considered to be skewed and/or kurtotic, respectively (Kline,

2005). Based on the non-normal distribution found for student-reported aggression at Wave 1, the MLR estimate was used for analyses in *M-Plus*. The MLR estimate provides a mean-adjusted chi-square statistic using a scaling factor correction for non-normally distributed continuous data (Satorra & Bentler, 1999).

Data were then exported into *M-Plus*, and means, standard deviations, and correlations were calculated for all variables. Two separate moderation models were run using manifest variables and based on the full sample. The first model tested positive parenting at Wave 1 as a moderator of relations between parental support for fighting at Wave 1 and student-reported physical aggression at Wave 2. The second model tested positive parenting at Wave 1 as a moderator of relations between parental support for fighting at Wave 1 and parent-reported aggression at Wave 2. These models included a predictor variable that was mean centered (parental messages supporting fighting), a moderator variable that was mean centered (positive parenting), and a moderator X predictor variable (parental messages supporting fighting X positive parenting). The outcome variables were student- and parent-reported aggression. Covariates for both models included student- and parent-reported aggression at Wave 1, simple contrast-coded variables for intervention site, as well as dummy-coded variables representing adolescents' gender, race/ethnicity, family structure, and intervention condition.

The fit of each model was evaluated using the Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA). The CFI compares the hypothesized model to a null model that assumes no correlations among the variables (Bentler, 1990). Models with an adequate fit have CFI values of .95 or higher (Hu & Bentler, 1999). The RMSEA measures the error of approximation taking into account model complexity and sample size, with values of 0.07 or below indicating that the model adequately fits the data (Steiger, 2007). Finally, as

recommended by Arbuckle (1996), full information maximum likelihood (FIML) estimation was used to accommodate instances of missing data.

Results

Descriptive Statistics

Descriptive statistics, including means and standard deviations, are presented for each study variable in Table 1. Correlations were also run among study variables. Parental report of aggression at T1 was positively related to all variables except positive parenting (*rs* ranging from 0.10 to 0.60). Parent- and student-reported aggression were positively related both at T1 ($r = 0.21$) and T2 ($r = 0.35$). With the exception of parent-reported aggression at Wave 2, parental messages supporting fighting were positively related to all measures of aggression across both time points (*rs* ranging from 0.10 to 0.45), and were negatively related to positive parenting ($r = -0.13$). Positive parenting was negatively related to all other variables (*rs* ranging from -0.10 to -0.19).

Table 1: *Means, Standard Deviations, and Scale Ranges of Study Variables for Total Sample*

Variable	Total Sample		
	<i>M</i>	<i>SD</i>	Range
1. Aggression (PR) W1	8.35	5.46	0-30
2. Aggression (PR) W2	7.31	5.65	0-27
3. Physical Aggression (SR) W1	1.70	0.90	1-6

4. Physical Aggression (SR) W2	1.72	1.07	1-6
5. Parental Messages Supporting Fighting (SR) W1	0.26	1.10	0-1
6. Positive Parenting (SR) W1	3.64	0.25	1-5

Note. SR = self-report; PR = parent-report; W1 = Wave 1; W2 = Wave 2.

Relations between parental messages, positive parenting, and student-reported aggression

A longitudinal path model was run using M-Plus 7.11 (Muthén & Muthén, 2013) to determine the extent to which positive parenting at Wave 1 moderated relations between parental messages supporting fighting at Wave 1 and student-reported aggression at Wave 2. Covariates in this model included gender, race/ethnicity, family structure, study condition, and study site, and student-reported physical aggression at Wave 1. The model fit the data well, $\chi^2(10) = 7.84$, $p = 0.64$, CFI = 1.00, and RMSEA = 0.00 (90% CI = 0.00-0.04). Student-reported aggression at Wave 1 was significantly related to student-reported aggression at Wave 2, ($\beta = 0.52(0.05)$, $Z = 11.20$, $p < .001$). None of the other covariates at Wave 1 were significantly related to self-

Table 2: *Intercorrelations among positive parenting, parental messages supporting fighting, and adolescent aggressive behavior*

	1.	2.	3.	4.	5.
1. Physical Aggression PR – W1	-				
2. Physical Aggression PR – W2	0.60**	-			

3. Physical Aggression SR – W1	0.21**	0.17**	-
4. Physical Aggression SR – W2	0.20**	0.35**	0.44** -
5. Positive Parenting SR – W1	-0.10*	-0.19**	-0.14** -0.11* -
6. Parental Messages SR – W1	0.10*	0.06	0.45** 0.28** -0.13** -

Note. PR = parent report; SR = student report; W1 = Wave 1; W2 = Wave 2.

* $p < 0.05$. ** $p < .01$.

reported aggression at Wave 2. Parental messages supporting fighting at Wave 1 predicted increased reported aggression at Wave 2. Parental messages supporting fighting at Wave 1 predicted increased frequencies of student-reported aggression at Wave 2, ($\beta = 0.11$ (0.05), $Z = 2.30$, $p = .02$). Positive parenting at Wave 1 was not significantly related to changes in student-reported aggression at Wave 2, ($\beta = -0.05$ (0.04), $Z = -1.25$, $p = .21$). Positive parenting did not moderate relations between parental messages supporting fighting at Wave 1 and student-reported aggression at Wave 2, ($\beta = 0.06$ (0.05), $Z = 1.19$, $p = .23$).

Relations between parental messages, positive parenting, and parent-reported aggression

Another longitudinal path model was run to whether positive parenting at Wave 1 moderated relations between parental messages supporting fighting at Wave 1 and parent-reported aggression at Wave 2. Covariates in this model included gender, race/ethnicity, family structure, study condition, study site, and parent-reported aggression at Wave 1. The model fit the data well, χ^2 (10) = 8.29, $p = 0.60$, CFI = 1.00, and RMSEA = 0.00 (90% CI = 0.00-0.04). Parent-reported aggression at Wave 1 was significantly associated with parent-reported aggression at Wave 2, ($\beta = 0.72$ (0.03), $Z = 24.66$, $p < .001$). None of the other covariates at

Wave 1 were significantly related to parent-reported aggression at Wave 2. Positive parenting at Wave 1 predicted decreased frequencies of parent-reported aggression at Wave 2, ($\beta = -0.07$ (0.03), $Z = -2.37$, $p = .02$). Parental messages supporting fighting at Wave 1 were not significantly related to changes in parent-reported aggression at Wave 2, ($\beta = -0.01$ (0.03), $Z = -0.37$, $p = .71$). Positive parenting did not moderate relations between parental messages supporting fighting at Wave 1 and parent-reported aggression at Wave 2, ($\beta = -0.06$ (0.04), $Z = -1.63$, $p = .10$).

Discussion

The purpose of the current study was to examine the potential moderating role of positive parenting on relations between parental messages supporting fighting and adolescent aggressive behavior over six months. Positive parenting did not moderate these relations for either student- or parent-reported aggression outcomes. Direct effects emerged for relations between: a) parental messages supporting fighting at Wave 1 and increased student-reported aggression at Wave 2, and b) positive parenting practices at Wave 1 and decreased parent-reported aggression at Wave 2. This study contributed to the literature in this area by including student- and parent-reported aggression outcomes, as most prior studies have relied on self- (e.g., Orpinas et al., 1999) and/or teacher-report data (e.g., Farrell et al., 2011; 2012) to assess adolescent aggression. It also capitalized on data from 18 middle schools representing four different sites in the U.S. and a diverse sample based on racial/ethnic composition and SES (MVPP, 2004). Lastly, it sought to clarify relations between two important parental factors (i.e., parental messages supporting fighting and positive parenting) and their impact on the frequency of adolescent aggressive behavior.

Parental messages supporting fighting predicted increased student- but not parent-reported aggressive behavior over six months. The present study's findings are consistent with previous work in which researchers found positive relations between adolescents' perceived parental attitudes supporting fighting and frequencies of adolescent aggression (Farrell et al., 2012; Orpinas et al., 1999). Within the same sample as the current study, Kramer-Kuhn and Farrell (2016) also found that parental messages supporting aggression led to increased physical aggression across sixth grade for middle school students. Finally, in another sample of middle school students, perceived parental messages supporting aggression predicted subsequent increases in the frequency of adolescent aggressive behaviors from the fall to spring of sixth and seventh grades (Garthe et al., 2015).

Interestingly, the current study found that adolescents' perceptions of parental support for fighting predicted student- but not parent-reported aggression. Other studies examining longitudinal relations between these constructs have assessed self-reported aggression (Garthe et al., 2015), a composite measure of student- and teacher-reported aggression (Farrell et al., 2011), and a composite measure of student-, teacher-, and parent-reported aggression (Kramer-Kuhn & Farrell, 2016). In the current study, it is possible that the significant relation between perceived parental messages supporting fighting and self-reported aggression is a function of method variance. However, variations in the response timeframes for recalling incidents of aggression (i.e., over 30-days for self-report and over several months for parent-report) may contribute to the differential findings as could the discrepant items assessed. Finally, students and parents are likely privy to observing aggression in different contexts, and thus their respective reports may reflect both overlapping and different experiences involving adolescent aggressive behaviors.

Positive parenting practices were associated with subsequent decreases in parent- but not student-reported aggression. More broadly, this finding is consistent with studies that show parental involvement/monitoring and parental warmth act as promotive factors and are related to lower rates of externalizing behaviors (e.g., Laird et al., 2008; Vasonyi et al., 2015). However, the differential findings based on self- and parent-report were somewhat surprising. It may be that parenting practices that involve direct contact with adolescents, like involvement/monitoring and parental warmth, occur in more circumscribed contexts. Thus, they may be most effective in curtailing adolescent aggressive behavior in those settings in which parents and adolescents tend to interact. This may be particularly relevant as the amount of time parents and adolescents spend together tends to decrease during this developmental timeframe. In contrast, adolescents are spending more time with peers and in other settings and experience a myriad of risk factors for aggressive behavior in peer, school, neighborhood, and community contexts (Cooley-Strickland et al., 2009; Pickett, Iannotti, Simons-Morton, & Dostaler, 2009). Protective family processes may not extend to problem situations across all contexts. This may explain in part the differential findings for student- and parent-reported aggression.

Contrary to expectations, no moderating effects were found for positive parenting practices on relations between parental messages supporting fighting and adolescent aggressive behavior over time. This finding was consistent with Farrell et al. (2011) who found that parental involvement/monitoring did not moderate relations between parental support for aggression and a composite of student- and teacher-reported aggression across middle school. However, it is not consistent with theory (Grusec & Goodnow, 2000) and empirical research (Kliewer et al., 2006) that support this moderating effect. Relationship theory suggests that positive parenting serves to amplify parents' messages in the context of a warm, responsive environment that is one of trust

and support. Adolescents are more likely to hear and internalize parental messages in such an environment (Grusec & Goodnow, 2000). Parenting theories, such as those put forward by Baumrind (1966), emphasize the role of parental warmth and involvement/monitoring in forming a context in which parent controls, such as verbal messages, may work best to promote parents' overall behavioral goals for their adolescents. Research by Kliewer and colleagues (2006) has also shown that – regardless of the message being positive or negative in regard to aggression – warm coaching from a caregiver more strongly influences adolescents' behavior.

One possible explanation for these non-significant findings is that subgroup effects exist that were not assessed. For example, other studies have shown that relations between parental involvement/monitoring and adolescent externalizing behaviors differed based on father or mother involvement with significant relations found only for father involvement (Day & Padilla-Walker, 2009; Gryczkowski et al., 2010). In the current study, the vast majority of parent reports of adolescent behavior were completed by maternal caregivers, and the study's focus was not on understanding differences in relations between parenting factors and adolescent aggression outcomes for fathers versus mothers. There may also be gender differences in the moderating role of positive parenting practices on relations between parental messages supporting fighting and this outcome that were not tested. Finally, differences in relations between these parental factors may exist by race/ethnicity, as Henneberger et al. (2016) found significant relations between parental involvement/monitoring and lower frequencies of externalizing behaviors for African American but not European American or Hispanic middle school students. These findings underscore several noteworthy subgroup differences in relations between positive parenting practices and adolescent externalizing behaviors.

Another possible explanation of the null findings for the proposed moderating effect is that typologies of youth could exist based on parent factors, which may provide a more meaningful way to understand links between these factors and adolescent aggression. For example, Kramer-Kuhn and Farrell (2016) used latent profile analyses to identify classes of adolescents with different patterns of family functioning characteristics. Results yielded three classes: a) parent-reported low family functioning, b) adolescent-reported low family functioning, and c) a well-functioning class. Adolescents in the well-functioning class experienced a protective-stabilizing effect and were buffered from risk factors for exposure to violence such as parental messages supporting aggression (Kramer-Kuhn & Farrell, 2016). Results such as these highlight the importance of examining different typologies of adolescents as defined by parental factors in order to better understand relations between parenting practices and externalizing behaviors.

Limitations

While there were a number of strengths within the current study, it is also important to acknowledge several limitations. Although the current study highlighted important relations between parental messages supporting fighting, positive parenting practices, and aggressive behaviors, there are many additional parent-child behaviors and dynamics to consider, such as the transactional role of child disclosure and parental solicitation in parent-child communication and the means by which parents communicate their beliefs about fighting and aggression, respectively. Communication processes are complex, with many behaviors contributing to the transmission of messages. The current study considered messages about aggression from the student's perspective, but it is important to consider how an adolescent shapes what kinds of messages he or she receives from a parent.

Additionally, the current study considered only student-reported perspectives for parental messages supporting fighting and positive parenting. Future research considering parent-report of these variables would extend the current research in this area. The student-report of parental messages supporting fighting also had a low alpha ($\alpha = .56$), which is a limitation.

Because of the geographical diversity of the sample, it is important to consider the role of environment and culture on parenting practices (see Jones et al., 2008; Pinderhughes, Nix, Foster, & Jones, 2001; Rankin & Quane, 2002). Differences in parenting practices exist across cultures, and have varied implications for adolescents, based on their families' culture. Additionally, the composite for the positive parenting measure (i.e., the combined Positive Parenting and Monitoring and Involvement subscales) may also have affected the results. It is possible that examining each subscale would have yielded different results. If each subscale assessed aspects of parenting practices that were uniquely related to parental messages supporting fighting or aggressive behavior, combining them into one measure may have precluded the ability to find such relations. Based on this, future work might consider examining relations between the individual subscales and the other study variables.

This was also a short-term longitudinal study, with time points spanning students' sixth grade year. Previous work, such as that by Sawyer and Stevenson (2008) found that inverse relations between parental disapproval and drug use were stronger for sixth as compared to eighth graders, suggesting that parental messages may be most influential on behavioral outcomes for younger as compared to older adolescents. Although the time points were chosen for their developmental importance (i.e. the transition to middle school), future work would benefit from extending the time points through middle school to gain a better understanding of

risk and protective processes related to aggression throughout early adolescence (e.g., Kramer-Kuhn & Farrell, 2016).

Another limitation of the study is that it does not assess changes in family processes over the course of early adolescence. For example, parents may make adjustments in parenting practices based on their adolescent's needs or behavior, or there may be changes within a parent-adolescent dyad that affects (negatively or positively) aspects of its functioning. Another way to conceptualize this is to ask how parenting variables influence each other and adolescent outcomes over more extended periods of time. A study testing a model that includes family factors and that allows for the examination of how both risk and protective factors change over time would be an important contribution to this area of research (Kramer-Kuhn, 2013).

Finally, the data gathered included predominantly maternal caregiver reports of adolescent behaviors (i.e., aggression). Thus, differences in parenting (i.e. mothers vs. fathers) were not assessed. This is reflective of the paucity of information about fathers' parenting practices and is not specific to this study alone. However, it does point to a greater need to expand the literature on fathers' roles in adolescents' lives. Similarly, gender differences were not examined in this study and this is an important direction for future research. Lastly, this subset of targeted students is unique, in that the adolescents were selected based on teacher nomination of both aggression and social influence among their peers. While targeting such a population makes sense from an intervention standpoint, because of the students' social status and potential influence on peers, this sample is specific in some regards, and information garnered from it may be more difficult to generalize broadly.

Implications & Future Research Directions

The current study findings emphasize the importance of parenting practices including supports (i.e., warmth and monitoring/involvement) and controls (i.e., messages) in early adolescence. The links between adolescent aggression and positive parenting and parental messages supporting fighting highlight the connection between parenting practices and adolescent behavior. However, positive parenting did not moderate relations between perceived parental support for aggression and adolescent aggressive behavior over time.

Several studies have shown that aspects of positive parenting (e.g., parental warmth and monitoring/involvement) are negatively associated with externalizing behaviors (Alegre et al., 2014; Gryczkowski, Jordan, & Mercer, 2010; Henneberger, Varga, Moudy, & Tolan, 2014; Laird, Criss, Pettit, Dodge, & Bates, 2008; Vasonyi et al., 2015). Future research should consider the indirect effect of parental –adolescent communication processes such as messages on relations between positive parenting and externalizing outcomes. Additionally, further work should consider various types of outcomes, not only physical aggression, but relational, psychological, and cyber-aggression, as well as conduct problems. Practically speaking, because of its assumptions of causality, mediation analysis can help to identify the critical components of interventions (MacKinnon & Dwyer, 1993). In regard to this study, testing relations among these parenting factors and aggression in a mediation model could help to identify important target risk and protective factors for intervention (e.g. parental messages).

Based on the current study limitations, several other directions for future research were identified. First, there is need to address the role of fathers' parenting in adolescents' development of aggressive behaviors. Second, it is also important to consider the role of gender

within family subsystems (i.e., fathers' and mothers' interactions with sons and daughters) and how this impacts parent-adolescent communication. More generally, more research is needed that examines gender differences in relations between positive parenting, parent-adolescent communication, and aggression for boys and girls in early adolescence. Finally, cultural differences in parenting practices and processes should be taken into account when looking at family or dyadic relationships.

Intervention work should continue to highlight the importance of positive parenting practices as a means to decrease aggressive behavior in early adolescence. Within this work, it is imperative to recognize the role of context when considering the development and implementation intervention programs focused on positive adolescent development. As noted by Lindstrom Johnson and colleagues (2012), adolescents are not always presented with absolute scenarios in which they should/should not use aggressive responses. That is, messages supporting aggression may be given in some contexts but not others. Intervention then becomes more complicated, highlighting the need to consider the messages adolescents are hearing from different adults in their lives across contexts.

Understanding the interplay of parental messages supporting both non-violent and aggressive responses to conflict in real world situations highlights the complexity of parent-adolescent communication. This also points to the need to understand the processes by which an adolescent receives, interprets, and acts on parental messages about aggression both at home and in school settings. Researchers and interventionists must work toward understanding the processes by which adolescents shift or compartmentalize their beliefs about the acceptability of such behaviors across contexts. It may be that there are potential benefits to incorporating components addressing coaching and modeling of non-violent responses to conflict into

prevention programs that focus on disciplinary practices or family functioning as a whole (Farrell et al., 2011).

Conclusions

Although previous research demonstrated that positive parenting practices (e.g., monitoring/involvement and warmth) were associated with fewer externalizing symptoms among adolescents (e.g. Racz & McMahon, 2011; Stattin & Kerr, 2000; Vieno et al., 2009), few studies have examined relations between parental messages about fighting and positive parenting practices as they relate to adolescent aggression (e.g., Kramer-Kuhn & Farrell, 2016). Results from the current study replicated findings of positive associations between perceived parental support for fighting and aggression (e.g., Garthe et al., 2015), and also demonstrated the influence both parental messages and positive parenting have on aggressive behaviors in adolescence. While adolescents in general are at a higher risk for externalizing behaviors, the implications of this study highlight that parenting processes influence early adolescents' aggression levels. These findings emphasize the importance of future research to determine what aspects of positive parenting and messages supporting fighting within specific contexts and social situations may influence adolescents' behaviors over time. Overall, future research should build on the current study by addressing some of its limitations in order to identify both risk and protective factors for high-risk adolescents. Such work is vital to informing the development of targeted interventions designed to aid in positive youth development.

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Appendix

Measures

Problem Behavior Frequency Scales, Aggression Subscale

(Farrell, Kung, White, & Valois, 2000)

Child Report

Response options: 1 = Never, 2 = 1-2 Times, 3 = 3-5 Times, 4 = 6-9 Times, 5 = 10-19 Times, 6 = 20 times or more

Items for Aggression (includes Physical, Nonphysical, Relational) Subscale:

Physical Aggression Subscale:

1. Thrown something at someone to hurt them
2. Been in a fight in which someone was hit
3. Threatened to hurt a teacher
4. Shoved or pushed another kid
5. Threatened someone with a weapon (gun, knife, club, etc.)
6. Hit or slapped another kid
7. Threatened to hit or physically harm another kid

Parenting Practices Scale, Monitoring & Involvement and Positive Parenting Subscales)

(Gorman-Smith, Tolan, Zelli, & Huesmann, 1996)

Child Report

Monitoring & Involvement Subscale

1. When was the last time that you talked with a parent about what you were going to do for the coming day?
2. How often does a parent talk to you about what you are going to do for the coming day?
3. When was the last time that you talked with a parent about what you had actually done during the day?
4. How often does a parent talk with you about what you had actually done during the day?
7. In the past 30 days, how often did you help with family fun activities?
8. In the past 30 days, how often did you like to get involved in family activities?
9. In the past 30 days, how often did a parent have time to listen to you when you wanted to talk with one of them?
10. In the past 30 days, how often did you and a parent do things together at home?
11. In the past 30 days, how often did you go with members of the family to movies, sports events, or other outings?
12. In the past 30 days, how often did you have a friendly talk with a parent?

13. In the past 30 days, how often did you help with chores, errands, and/or other work around the house?

14. In the past 30 days, how often did a parent talk with you about how you are doing in school?

Positive Parenting Subscale

Response categories: 1 = Almost never 3 = Sometimes 5 = Almost always

28. How often did one of them give you a wink or a smile?

29. How often did one of them say something nice about it; praise or approval?

30. How often did one of them give you a hug, pat on the back, or kiss for it?

31. How often did one of them give you some reward for it, like a present, extra allowance or something special to eat?

32. How often did one of them give you some special privilege such as staying up late, watching TV, or doing some special activity?

33. How often did one of them do something special together with you, such as going to the movies, playing a game or going somewhere special?

Parental Support for Fighting Scale, Aggressive Solutions to Conflict Subscale

(Orpinas, Murray, & Kelder, 1999)

Child Report

Response format as administered to students: Yes, No

1. If someone hits you, hit them back.
2. If someone calls you names, hit them.
3. If someone calls you names, call them names back.
5. If someone asks you to fight, hit them first.
9. If you can't solve the problem by talking, it is best to solve it through fighting.

Vita

Megan Carlson was born in February 1990, in Bettendorf, Iowa. She graduated from Waukee High School in 2008. She received her Bachelor of Science in Psychology, her Bachelor of Arts in English with honors, and a minor in Spanish from The University of Iowa, Iowa City, Iowa in May of 2012. Megan worked as an undergraduate research assistant in the Comparisons and Health in Psychology lab under the direction of Dr. Jerry Suls, as well as working as a post-baccalaureate research assistant in the Child Development lab, under the direction of Dr. Grazyna Kochanska. Megan now attends Virginia Commonwealth University in Richmond, Virginia, and is a doctoral student in the Clinical Psychology program as a Developmental/Clinical Scholar. She currently works in two research labs, and serves as a research assistant at Virginia Commonwealth University.