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**BUILDING THEORY ON ADOLESCENT AGGRESSION TOWARD PARENTS:  
DO NEUROPSYCHOLOGICAL FACTORS AND  
SYMPTOM PATTERNS MATTER?**

A Thesis in

Psychology

by

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### Abstract

The present study explored factors that may lead an adolescent to aggress toward their parents in a sample of at-risk teenagers. This extended previous research by exploring whether an adolescents' neuropsychological functioning and symptom patterns, in combination with the quality of their parent-child relationship, predicted this type of aggression. Specifically, models focused on depressive and aggressive symptoms and were examined by gender. Mixed support was found for interpersonal risk predictors; clear differences in predictors emerged for boys and girls. Depressive symptoms were not found to be a significant predictor for either boys or girls. Some neuropsychological factors and aggressive symptoms were found to be a significant predictor for girls only. Clinical, developmental, and theoretical implications for girls and their aggression are reviewed.

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Building Theory on Adolescent Aggression toward Parents:  
Do Neuropsychological Factors and Symptom Patterns Matter?

Introduction

Aggression during adolescence has been associated with several deleterious outcomes including delinquency, substance abuse, and school failure (Hinshaw & Lee, 2003). Each of these outcomes has substantial costs for society. For example, it is estimated that juvenile delinquency alone costs the United States \$158 billion annually (Siegel, Welsh, & Senna, 2005). Although many types of adolescent aggression have been well researched within the field of psychology (e.g., peer aggression, (McCloskey & Lichter, 2003; Ozer, Tschann, Pasch, & Flores, 2004; Prinstein & Cillessen, 2003), and dating violence (Capaldi & Clark, 1998; Capaldi, Dishion, Stoolmiller, & Yoerger, 2001; Chase, Treboux, O'Leary, & Strassberg, 1998)), aggression directed toward parents has received less attention.

This type of adolescent aggression, especially if the aggression toward parents is severe, has many negative consequences. First, parents may experience negative outcomes. Qualitative studies indicate that parents may experience a range of consequences from embarrassment to injury (Cottrell & Monk, 2004). Similarly, quantitative studies with normative samples indicate the possibility of injury to parents including black eyes, bruises, and welts (Agnew & Huguley, 1989). Second, there may be substantial consequences for the adolescent. The parent-adolescent relationship, an important psychosocial protective factor for a child even during adolescence (Furman & Buhrmester, 1992; Werner, 2000), may be negatively affected when the adolescent aggresses toward the parent. Police and legal intervention is frequently warranted when

adolescents become severely aggressive towards their parents (Evans & Warren-Sohlberg, 1988) and having legal involvement is detrimental to the teenagers' future (e.g., incarceration, placement in foster care or residential treatment facilities). The cumulative effect of these negative consequences is likely substantial. Therefore, the present study explored factors related to the ontogenesis of this type of aggression, and specifically, examined whether neuropsychological risk and two different types of symptoms may lead an adolescent to aggress toward their parent(s).

Literature that provides a rationale for examining symptom patterns, in combination with other factors, leading to adolescent aggression toward parents will be reviewed. This review argues that theory on adolescent development and some forms of the cycle of violence hypothesis, potential explanations for aggression directed toward parents, do not adequately explain this phenomenon. Instead one form of the cycle of violence hypothesis, Patterson's coercion theory (Patterson, 1982, 2002), may provide a comprehensive explanation for aggression directed toward parents. Both Patterson's core idea of responding to social contingencies, which has been used to account for negative parent-child interactions, and his more recent acknowledgement of how individual differences may amplify coercive processes serve as the foundation for the two models, including symptoms patterns as predictors, examined in the present study. The examination of these models attempts to advance research on the ontogenesis of adolescent aggression toward parents and advance theory about this type of adolescent aggression.

*Is this Aggression a Normative Phenomenon?*

In a landmark study, using an epidemiological sample of adolescents, Rutter and colleagues examined whether adolescence is related to disturbance in the parent-child relationship (Rutter, Graham, Chadwick, & Yule, 1976). Although they found that this relationship exists only if child psychiatric symptoms were present prior to adolescence (Rutter et al., 1976), their study has set a precedent of examining whether adolescence leads to disturbance in the parent child relationship. Given this precedent, and the possibility of a simpler explanation for this type of aggression, a prudent search for the origins of adolescent aggression toward parents should begin with an examination of whether this phenomenon is normative for the adolescent developmental period. The following section argues that aggressing toward one's parent during adolescence is not normative in the general population. However, just as Rutter and colleagues' (Rutter et al., 1976) findings would imply, in clinical samples there is some evidence to suggest that the phenomenon is significantly more common than in the general population. Therefore, as will be seen in a later section, a search for the origins of adolescent aggression toward parents may lead one to explore how clinical symptoms contribute to this phenomenon.

Evidence on the incidence of adolescent aggression toward parents, along with theory and research on patterns of parent-child interaction during adolescence, suggest that this form of aggression is not normative for the general population. Although studies using samples representative of the general population indicate some aggression toward parents is common in preschoolers (e.g., occurring in 96% of preschool children; (Sears, Maccoby, & Levin, 1957; Ulman & Straus, 2003)), by adolescence, such behavior has dropped in incidence significantly (Ulman & Straus, 2003). Specifically, large survey

studies of non-clinical adolescent males and females have estimated that only between 7 and 10% of adolescents have aggressed towards their parents during adolescence (Agnew & Huguley, 1989; Brezina, 1999). Additionally, theory on normative adolescent development does not account for physical aggression within the parent child relationship (Arnett, 1999; Steinberg & Morris, 2001). Although more conflict with parents is thought to occur during adolescence in comparison to other developmental periods (due to conflict that may arise with more time being spent with friends, the beginning of involvement in romantic relationships, and other striving for autonomy) (Arnett, 1999; Smetana, 1989), this increased conflict usually takes the form of “bickering” and “squabbling” between parents and adolescents (Steinberg & Morris, 2001), and usually does not escalate beyond this level. Therefore, normative conflict does not typically involve physical altercations. Altogether this suggests that aggression toward parents is not a normative phenomenon during adolescence in the general population.

In contrast, evidence does suggest that this type of aggression is more common in clinical samples and may be explained by a more long-standing pattern of parent-child conflict. First, rates of adolescent aggression toward parents tend to be higher in at risk samples. For example, in a sample of adolescents who have been involved with the police, rates of aggression toward parents as high as 56% have been reported (Evans & Warren-Sohlberg, 1988). In both inpatient and outpatient clinical samples of adolescents, the rates of aggression toward parents are between 20-50% (Carlson, 1990; Kethineni, Blimling, Bozarth, & Gaines, 2004). These higher rates suggest that adolescent aggression toward parents may be related to other maladaptive processes that are occurring for these adolescents. Second, an examination of both theory (Steinberg, 1990)

and research (Rueter & Conger, 1995) on adolescent development support the assertion that maladaptive processes within the parent-child relationship prior to adolescence may be related to aggression toward parents during adolescence. One longitudinal study found that the characterization of the parent-child relationship prior to adolescence predicted two different patterns of interaction during adolescence. A warm and emotionally close relationship prior to adolescence leads to successful resolution of parent-adolescent conflict; whereas hostile and coercive interactions prior to adolescence lead to unresolved and dysfunctional parent-adolescent conflict over time (Rueter & Conger, 1995). These findings support the idea that adolescent aggression toward parents may be related to a more long standing negative pattern of parent-child interactions.

This notion of adolescent aggression directed toward parents representing a longer standing negative pattern of parent-child interaction is echoed in other theoretical explanations for adolescent aggression towards parents. Two overlapping theories will be reviewed because they are theories on which the models presented in the current study are based. The first theoretical explanation has been called the cycle of violence hypothesis and will be reviewed in the next section. The second theory is coercion theory, which could be considered one form of the cycle of violence hypothesis, and will be reviewed in a later section.

#### *The Cycle of Violence and Aggression towards Parents*

Historically, the cycle of violence hypothesis has been used to explain the intergenerational transmission of family violence. The cycle of violence hypothesis may be related to adolescent aggression toward parents since most researchers of this phenomenon have found a relationship between adolescent aggression directed toward

the parent and parental aggression towards the child (Brezina, 1999; Browne & Hamilton, 1998; Carlson, 1990; Cornell & Gelles, 1982; Langhinrichsen-Rohling & Neidig, 1995; Larzelere, 1986; Peek, Fischer, & Kidwell, 1985; Ulman & Straus, 2003) or witnessing partner violence (Carlson, 1990; Cornell & Gelles, 1982; McCloskey & Lichter, 2003; Ulman & Straus, 2003).

One researcher who indirectly suggests the cycle of violence hypothesis, posits social learning theory to explain aggression toward parents (Brezina, 1999). Brezina posited that adolescents may model the aggression that adults in their home environment present, and thus, this may explain their heightened potential to aggress toward their parents. In addition, Brezina (1999) uses social-psychological strain theory (a criminology theory similar to psychological theories of coping (Folkman, 1984; Folkman & Lazarus, 1988)), to posit that along with modeling the adults in their life, the child employs aggressive behavior to cope with the hostile and aggressive behavior of their parents. Similarly, other researchers who have alluded to the cycle of violence hypothesis have used stress theory to explain adolescent aggression toward parents (Evans & Warren-Sohlberg, 1988; Kratcoski, 1985). This too suggests that adolescents' aggression toward parents is a means of coping with stressful environments. Clearly, researchers of adolescent aggression toward parents have used different forms of the cycle of violence hypothesis to explain this phenomenon.

Although these researchers have specified mechanisms (i.e., modeling) that underlie the cycle of violence hypothesis, each of these theories does not clearly specify why some adolescents who experience similar rearing environments (i.e., aversive home environments and a negative pattern of parent-child interactions) do not aggress towards

their parents. Following the developmental psychopathology principle of multifinality (Sroufe & Rutter, 1984), it might be argued that not all children who are exposed to aggression within the home will aggress toward parents. Since it has been found that some adolescents who experience parental aggression towards them do not aggress towards their parents (Kratcoski, 1985), this suggests that individual differences may be important for this phenomenon. Therefore, it becomes important to consider a form of the cycle of violence hypothesis that explains both mechanisms underlying the cycle of violence, such as responsiveness to parental behaviors, and additional ones that account for how individual differences, such as symptom patterns, may affect adolescents' aggressive behaviors towards parents.

#### *Coercion Theory and Aggression toward Parents*

As previously mentioned, Patterson's (1982) coercion theory also alludes to a negative pattern of parent-child interactions being related to adolescent aggression toward parents. Patterson not only accounts for a negative pattern of parent-child interactions through the core principle of responsiveness to social contingencies (Patterson, 2002), but also in more recent writing with his colleagues has acknowledged how child characteristics, or individual differences, may intensify coercive processes (Patterson & Bank, 1989; Patterson & Fisher, 2002). Because coercion theory accounts for both a negative pattern of parent-child interactions, and the role individual differences play in the amplification of negative interactions, this theory provides a better and more comprehensive explanation of adolescent aggression toward parents than the theories of modeling and psychological coping outlined in the previous section. The core idea of responsiveness to social contingencies (Patterson, 2002) is the basis for the hypothesis

presented in this section. The role individual differences, and specifically symptom patterns, play in escalating coercive processes within the parent-child relationship is the basis for the hypotheses presented in the next section.

Following from the core idea of responsiveness to social contingencies, coercion theory proposes several processes which have been used to more broadly explain childhood and adolescent aggression. There is preliminary evidence to suggest that some of these processes, such as reciprocity of coercive actions and escalation of coercive actions, are present in the parent-child relationships of adolescents who aggress toward their parents. Also, when coercive processes occur within a parent-child relationship factors indicating risk within this relationship are often present. Similar factors are found to predict adolescent aggression toward parents. Given this overlap in factors indicating a negative pattern of parent-child interaction, coercion theory, and specifically its core principle of responsiveness to social contingencies, may also explain adolescent aggression toward parents.

There is some research on adolescent aggression towards parents that preliminarily suggests processes purported by coercion theory may be occurring within these adolescents' homes. First, one study has found that approximately 80% of adolescent aggression towards parents is a response to parental aggression towards the child (Browne & Hamilton, 1998). This finding suggests that when adolescents engage in aggression towards their parents they are often reciprocating their parents' aggression and likely are being negatively reinforced for their aggressive behavior. Other researchers of aggression toward parents also suggest that adolescents are being negatively reinforced for their aggression such that the adolescent's aggression leads to the cessation of their

parents' noxious behavior that led the adolescent to aggress toward them (Brezina, 1999). Second, escalation has been reported in qualitative descriptions of adolescent aggression towards parents, in which parents report that most adolescents yell at them before proceeding to episodes where the adolescent physically aggresses towards them (Eckstein, 2004). Clearly, these quantitative and qualitative findings suggest that coercive processes may be related to adolescent aggression toward parents.

In addition, findings on the similarity of home environments (e.g., the environment of the parent-child relationship) when both coercive processes and adolescent aggression toward parents are present suggest that coercion theory may explain aggression toward parents. Work by Patterson's colleagues (Snyder & Stoolmiller, 2002) indicates that the occurrence of coercive processes (e.g., reciprocity of noxious behavior, negative reinforcement, and escalation) leads to a negative environment. For example, Snyder (1995) has reported that when coercive processes are present adolescents are more likely to report feeling negatively toward their parents; many extended coercive exchanges between a parent and child may ultimately lead to the adolescent feeling a lack of social support from their parents. This negative environment is then likely reflected in the adolescents' perception of their parents' and their relationship with their parents.

Factors found to suggest a hostile environment within the parent-child relationship have also been found to relate to adolescent aggression toward parents. These factors include decreased social support from parents (Agnew & Huguley, 1989; Brezina, 1999; Kratcoski, 1985; Peek et al., 1985), decreased use of positive discipline strategies within the parent-child relationship (Larzelere, 1986), and as noted above the

presence of parental aggression toward the child (Brezina, 1999; Browne & Hamilton, 1998; Carlson, 1990; Cornell & Gelles, 1982; Kratcoski, 1985; Langhinrichsen-Rohling & Neidig, 1995; Larzelere, 1986; Peek et al., 1985; Ulman & Straus, 2003). These findings preliminarily support the idea that coercive processes may be operating in the homes of adolescents who aggress toward their parents.

Although research on adolescent aggression toward parents indicates a potential relationship with coercive processes, no study has examined whether all three of these factors in combination predict aggression towards parents. In combination, these three variables may reflect a family system that is similar to those described by Patterson's theory. Therefore, the present study tests the hypothesis that adolescents' perception of the three variables presented in the above paragraph in combination, which will be referred to as interpersonal risk factors throughout the rest of the paper, predicts adolescent aggression toward parents (see Figure 1). Two additional hypotheses based on coercion theory, and accounting for symptom patterns, will be tested and are described in the next section.

#### *Two Models Accounting for Adolescent Individual Difference Factors*

As mentioned in the previous section, Patterson and colleagues' work has indicated that, along with interpersonal risk accounting for the occurrence of aggression, individual difference factors might also account for aggression (Patterson & Bank, 1989; Patterson & Fisher, 2002). Similarly, a transactional view of development (Sameroff & Chandler, 1975) and theory on adolescent aggression toward parents (Browne & Hamilton, 1998), suggests that not all incidents of this aggression can be attributed to interpersonal risk or maladaptive processes within the family. Since the rate of adolescent

aggression toward parents is higher in clinical samples, considering whether clinical symptoms lead to this type of aggression may be particularly fruitful. Indeed, the same interpersonal risk factors that predict adolescent aggression toward parents have been shown to be associated with symptom patterns during adolescence, including depressive symptoms (Brown, Cohen, Johnson, & Smailes, 1999; Cole & McPherson, 1993; Marmorstein & Iacono, 2004; Sheeber, Hops, Alpert, Davis, & Andrews, 1997; Stuewig & McCloskey, 2005) and aggressive symptoms (Dodge, Bates, & Pettit, 1990; Dodge, Pettit, Bates, & Valente, 1995; Kazdin, 1995; Keiley, Howe, Dodge, Bates, & Pettit, 2001). Therefore, these two symptom patterns may be important child characteristics to investigate.

To date, only one study has shown a link between depressive symptoms and adolescent aggression toward parents. The evidence linking symptoms to interpersonal risk, and indirect evidence suggesting symptoms may be linked to aggression toward parents will be reviewed in the sections that follow. The present study attempts to advance research by examining whether depressive *and aggressive* symptoms, in addition to interpersonal risk factors, are related to aggression directed toward parents. That is, two models will be examined. The first model will examine whether depressive symptoms, in addition to interpersonal risk factors predicts aggression toward parents. The second model will examine if aggressive symptoms, in addition to interpersonal risk and neuropsychological risk, predicts aggression toward parents. Finally, since depressive and aggressive symptoms during adolescence have been shown to present differently by gender, a rationale for examining the models by gender will also be provided.

*Do depressive symptoms matter?* There is direct evidence to suggest the importance of depressive symptoms in predicting aggression toward parents. One study found a relationship between depressive symptoms and adolescent aggression, such that, adolescents who aggressed toward their parents were twice as depressed as their peers who did not aggress toward parents (McCloskey & Lichter, 2003). Therefore, it is possible to see that depressive symptoms may contribute to adolescent aggression toward parents. The role depressive symptoms may play in the ontogenesis of aggression toward parents becomes even clearer when considering some of the key symptoms of depression in children and adolescents: irritability (Goodyer & Cooper, 1993; Ryan, Puig-Antich, Ambrosini, Rabinovich, & et al., 1987) and anger (Blumberg & Izard, 1985, 1986; Quiggle, Garber, Panak, & Dodge, 1992; Riley, Treiber, & Woods, 1989). A depressed adolescent may direct this anger and/or irritability toward their parent if they perceive the parent-child relationship as coercive. This may especially be the case, given that a review conducted by Patterson's colleagues suggests that mothers frequently respond to their adolescents' depressive symptoms with hostility (Davis, Sheeber, & Hops, 2002), and that a coercive interaction may ensue.

Although depressive symptoms in combination with interpersonal risk may lead to aggression directed towards one's parent in adolescence, this relationship may differ by sex. Differences in rates of depression and depressive symptoms during adolescence have been found for boys and girls. Girls are more likely to be depressed than boys (Cicchetti & Toth, 1998; Lewinsohn, Roberts, Hops, & Selley, 1993; Compas et al., 1997; Schraedley, Gotlib, & Howard, 1999). Further, a relationship between coercive interactions with parents, as measured by both an observational coding system and parent

report, during early childhood has been shown to be related to depression in adolescence for girls, but not for boys (Compton, Snyder, Schrepferman, Bank, & Shortt, 2003).

Therefore, it is posited that the model which accounts for depressive symptoms may better explain aggression toward parents in adolescent females (see Figure 2).

*Do aggressive symptoms matter?* Following the frame of coercion theory it is possible to posit another model to explain adolescent aggression toward parents. In this second model adolescent's more general aggressive symptoms may play a role in adolescent aggression directed toward parents, especially when accompanied by neuropsychological deficits (see Figure 3). Details of the role neuropsychological factors, which have also been examined by researchers of coercive processes, play in this pathway will be outlined later in this section. This model is supported by research that has found that children's and adolescents' aggression at one time point predicts their aggression at a later time point, and because aggression in one relationship has been shown to predict aggression in other relationships. Indirect support for this model is also present and includes evidence on the relationship between interpersonal risk and aggression in general.

First, direct evidence for this model is found in research that reports that children's aggression often shows continuity across time (Huesmann, Eron, Lefkowitz, & Walder, 1984; Kokko, Tremblay, Lacourse, Nagin, & Vitaro, 2006; Loeber & Stouthamer-Loeber, 1998; Moffitt, 1993; Nagin & Tremblay, 1999) and across relationships (Chase et al., 1998; McCloskey & Lichter, 2003). The first finding would suggest that knowing whether an adolescent has been aggressive in the past would lead to future aggression. Given this, knowing whether adolescents have been aggressive or are

currently aggressive may be a very powerful predictor of aggression directed toward parents. Further evidence for examining whether aggressive symptoms may lead to aggression directed toward parents comes from a dating violence study that found that male aggression may be part of a larger repertoire of aggressive behaviors (Chase et al., 1998). That is, aggression may generalize to several interactions including interactions with parents. This notion of aggression across relationships is also found in the work of McCloskey and colleagues. McCloskey and Lichter (2003) report a nested relationship for dating violence and aggression directed toward peers, such that most adolescents, male and female, who report aggressing in a romantic relationship have also aggressed toward a peer. In sum, the continuity of aggression across time and across relationships is strong evidence to suspect that other aggressive symptoms may help predict aggression directed toward parents.

Indirect evidence for the model that accounts for aggressive symptoms, based on coercion theory, is also present. The same interpersonal risk factors associated with adolescent aggression toward parents have also have been shown to lead to aggressive symptoms (Dodge et al., 1990; Dodge et al., 1995; Kazdin, 1995; Snyder, 1995; Snyder & Stoolmiller, 2002). For example, research suggests that children exposed to parental aggression directed toward them are more likely to behave aggressively towards peers both in kindergarten (Dodge et al., 1990) and middle childhood (Dodge et al., 1995). A relationship between early harsh parental discipline has also been reported later in development, specifically in relation to a diagnosis of conduct disorder (Kazdin, 1995), but this also encompasses aggressive behavior. Other researchers also suggest a relationship between interpersonal risk (e.g., parental aggression toward the child) and

the child's aggressive behavior (Snyder, 1995; Snyder & Stoolmiller, 2002). Since there is overlap in the predictors of adolescent aggression directed toward parents and aggression in general, it may be that more general aggressive symptoms may be important for the ontogenesis of aggression directed toward parents.

Since boys are thought to be more physically aggressive than girls (Crick & Grotpeter, 1995; Zahn-Waxler, 1993; Zoccolillo, 1993), it is posited that the model that accounts for aggressive symptoms will better explain aggression toward parents for males. Further evidence for this model better explaining aggression toward parents in boys comes from the recent report that the robust stability of aggression across time observed in many research studies may only hold for males (Broidy et al., 2003). Additionally, one of the findings about continuity across relationships reported earlier in this section has only been found for males (Chase et al., 1998). Therefore, it may be that the model that accounts for aggressive symptoms may better explain aggression toward parents for adolescent males than for adolescent females.

As previously mentioned, this pathway is more likely when interpersonal risk occurs concurrently with neuropsychological deficits. This is because the combination of interpersonal risk and neuropsychological deficits often predict aggressive symptoms (Farrington, 2005; Loeber, Farrington, Stouthamer-Loeber, Moffitt, & Caspi, 1998; Lynam & Henry, 2001; Moffitt & Lynam, 1994). Several theories have been posited to explain how neuropsychological deficits may produce aggressive behaviors. One theory posited by Raine (2002) suggests that the social demands of adolescence may overload executive functions (i.e., neuropsychological functioning) including self-regulation and inhibition, and thereby lead to aggressive behavior. Other theorists have also argued that

executive functions are critical for socially competent behavior (Barkley, 2001; Blair, Zelazo, & Greenberg, 2005). Aggressive symptoms have been shown to relate to neuropsychological deficits such as cognitive impulsivity (Loeber et al., 1998; Oyserman & Saltz, 1993; Vitaro, Brendgen, Ladouceur, & Tremblay, 2001) and lower intelligence (Farrington, 2005; Loeber et al., 1998; Lynam & Henry, 2001; Moffitt & Lynam, 1994), which can be thought to relate to both inhibition and self-regulation. Each of these individual neuropsychological deficits has independently been shown to predict aggression. Therefore, in combination they would be even more likely to predict aggressive behaviors. Specifically, for the present study the combination of low IQ and high cognitive impulsivity is posited to be related to aggression directed toward parents.

#### The Present Study

The present study examined three potential models' ability to explain adolescent aggression directed toward parents. First, the present study attempted to replicate and extend the hypothesis that interpersonal risk within the parent-child relationship is related to adolescent aggression toward parents. Specifically, adolescents' perception of risk within the parent-child relationship as a predictor of their use of aggression towards their parents was used. Use of adolescent report, and thus adolescent perception, is consistent with methodology used in several previous studies (Brezina, 1999; Browne & Hamilton, 1998; Kratcoski, 1985; Langhinrichsen-Rohling & Neidig, 1995; Pagani et al., 2004).

Also, two additional types of predictive factors were tested in the present study. This expanded on previous work (McCloskey & Lichter, 2003; Pagani et al., 2004) by examining whether adolescent characteristics, including their symptom patterns and neuropsychological functioning, may also contribute to aggression toward parents.

Additionally, because these symptom patterns have been shown to differ by gender each of these models were examined by gender. The specific hypotheses tested are listed below.

*Hypothesis 1:*

Adolescent perception of risk within the parent-child relationship will be associated with the occurrence of adolescent aggression toward parents. Specifically, a model that includes the three risk factors identified in the literature, low perceived social support from family, decreased use of positive discipline strategies, and parental aggression toward the child as predictors of adolescent aggression toward parents will be tested. It was hypothesized that the greater the risk within the parent-child relationship that the teenager perceives, the more likely the adolescent will be to aggress towards their parents.

*Hypothesis 2:*

Adolescent aggression toward parents will be better explained when accounting for both adolescent perception of risk within the parent-child relationship and depressive symptoms than when accounting for interpersonal risk alone. It is also expected that this model will differ by gender such that this model better explains aggression toward parents for females than males.

*Hypothesis 3:*

Adolescent aggression toward parents will be better explained when accounting for adolescent perception of risk within the parent-child relationship, neuropsychological risk, and aggressive symptoms than when accounting for interpersonal risk alone. It is

also expected that this model will better explain aggression directed toward parents by males than females.

## Method

### *Participants*

The sample for this project came from a larger study that was conducted for the purpose of examining parental aggression toward the child and parenting readiness. One hundred and fifty one adolescents (76 males and 75 females) completed all the study interviews as part of this larger study and were used in the present study. This group of adolescents did not differ from the larger group on major demographic characteristics. The teenagers were solicited from a large youth agency in a northeastern urban area. The majority of the participants came from a youth diagnostic shelter setting with a smaller number coming from a specialized school, an after school program, and halfway house settings.

### *Procedure*

Data collection occurred over two sessions. Data collectors were trained interviewers (graduate and undergraduate students) who were blind to parent-child aggression history. Agency staff explained the study to parents and if they were interested in their teenager participating, then the teenager was approached to participate. Both parents and teens completed consent forms. Additionally, the parents completed a Child Behavior Checklist (Achenbach, 1991). Once consent forms were signed, adolescents participated in two interviews. Interviews with teens were conducted in such a way that interviewers were blind to parental aggression toward the child and adolescent aggression toward parents status until the end of both interviews (i.e., the interview about parental

aggression toward the child and adolescent aggression toward parents occurred at the end of the test battery). All measures were read to teens and they were given in an interview format during two different sessions. During the first session measures used in the present study were administered in the following order as part of the larger battery: a background demographic sheet, and a measure of cognitive reflectivity/impulsivity was administered. In the second interview the measure of perceived social support, the subscales of an intelligence test, and the self-report measure of conflict strategies were administered.

### *Measures*

*Demographic Background Sheet (Appendix A).* A background form was used to collect sociodemographic information on the sample. This form gathered information on the adolescents' age, race, attained educational level, and grade retention. Information on parents' age, marital status, attained educational level of parent, and household income was also collected from the adolescent. From this information a Hollingshead indicator of social class was created (Hollingshead, 1975).

*Matching Familiar Figures Test (MFFT; (Kagan, Rosman, Kay, Albert, & Phillips, 1964).* The MFFT was used to measure adolescent cognitive reflectivity/impulsivity. The MFFT consists of twelve test items where adolescents are asked to match a drawing, from six variants, to a standard drawing or familiar object (Egeland & Weinberg, 1976). For each test item, latency to the first response (recorded in seconds) and number of errors made (0-6) on each item were recorded. Responses were then summed across the twelve items to create a composite score. The MFFT latency and error composite scores are internally consistent with 14-year old children (Cronbach's  $\alpha=.93$  and  $\alpha=.62$ , respectively (Block, Gjerde, & Block, 1986)). Construct validity has

been demonstrated for adolescent boys. For example, MFFT error scores have been shown to be positively correlated with an “impulsive” personality as described by items on the California Child Q-Set (i.e., items such as go to pieces under stress, to overreact to minor frustrations, and to have rapid shifts in mood were characteristic of these boys) (Block et al., 1986). Similar construct validation using MFFT error scores has been found for girls. For this study, the correlation between MFFT latency and MFFT error was  $-.51$  ( $p < .001$ ) for boys and  $-.58$  ( $p < .001$ ) for girls. Because problems have been noted with traditional scoring, the present study used a composite “impulsivity” score (Salkind & Wright, 1977). This “impulsivity” score was calculated by computing standard scores for all subjects’ raw error and latency score. The standardized latency score was then subtracted from the standardized error score ( $Z_E - Z_L$ ). A large negative score indicates a child who was not impulsive, whereas a large positive number indicates a child who was very impulsive.

*The Perceived Social Support from Family Scale (PSS-Fa; (Procidano & Heller, 1983); Appendix B).* The PSS-Fa was used to measure the teenager’s perceived quality of the parent child relationship. The PSS-Fa consists of 20 questions such as “My family gives me the moral support I need”. Each item on the PSS-Fa was answered as either “yes”, or “no”. Answers of “yes” were scored as 1 point, whereas answers of “no” were scored as 0. Therefore, total scores on the PSS-Fa ranged from 0 (no perceived social support) to 20 (the maximum amount of perceived social support). The PSS-Fa has been shown to have high internal consistency (Cronbach's  $\alpha = .90$ ) with adults (Procidano & Heller, 1983). The PSS-Fa has shown both criterion validity by predicting symptomatology scores better than stressful life events and social network measures

(Procidano & Heller, 1983). For the present study, higher scores were taken as evidence of an adolescent perceiving social support from their family. For this study, the PSS-Fa had high internal consistency (Cronbach's  $\alpha=.91$ ). For exploratory analyses three PSS-Fa subscale scores which have been shown to have adequate validity were used: support given (.87), support received (.93), and family intimacy (.62) (Windle & Miller-Tutzauer, 1992). Each of these subscales has also been shown to have adequate six month test-retest reliability (Windle & Miller-Tutzauer, 1992).

*Wechsler Intelligence Scale for Children - Revised (WISC-R; (Wechsler, 1974)).*

The WISC-R is a standardized measure of intelligence. The WISC-R consists of twelve subtests. Two subtests (vocabulary and block design) of this standardized measure of intelligence were administered in the current study to provide an index of IQ. The vocabulary subtest correlates with the Verbal Subscale Score at .87, and the block design subtest correlates with the Performance Subscale Score at .82 (Wechsler, 1974). Each of these subtests was selected because they have the strongest correlation with their respective subscales (Performance and Verbal) across the whole standardization sample. Convergent validity has been established for both the performance and verbal subscales since they are both correlated with the Stanford-Binet (Form L-M) at .60 and .71 respectively. Both block design and vocabulary have been shown to have high reliability. Block design has been shown to have split-half reliability coefficients of .85 and vocabulary has been shown to have split-half reliability coefficients of .86 (Wechsler, 1974). For each adolescent, the two subscale standardized scores were used to produce pro-rated full scale IQ scores, which was used for the analyses in the present study.

*The Conflict Tactics Scale* – (CTS; (Straus, 1979); Appendix C). The CTS is a commonly used self-report measure in the family violence literature. The CTS consists of 19 items that form three subscales. Two of these subscales were used in the present study: reasoning and violence. The reasoning subscale (four items) was used to assess use of positive discipline strategies and the violence subscale (eight items) was used to assess both adolescent aggression toward parents perpetration and self-reported parental aggression directed toward the child. For the current study, three items about severe violence were omitted from the violence subscale at the request of the agency where the data was collected. Therefore, a modified version of the Conflict Tactics Scale (Straus, 1979) was used with the most extreme violence items (threatened with gun or knife; used a gun or knife; other – unspecified violent acts) dropped. Five violence items remained: 1) Pushed, grabbed, or shoved them, 2) Slapped them, 3) Kicked, bit, or hit them with a fist, 4) Hit (or tried to hit) them with something hard, and 5) Beat them up. All four reasoning items remained: 1) Tried to discuss the issue relatively calmly, 2) Did discuss the issue relatively calmly, 3) Got information to back up my/their side of things, and 4) Brought in or tried to bring in someone else to help settle the dispute.

Adolescents were asked if during conflicts they, their mother, or their father had ever engaged in each strategy. The number of reasoning items that an adolescent indicates their parents ever used in the past was tallied across mother-figures and father-figures, creating a range of scores from 0 to 8, and used to determine parental use of positive discipline strategies. The violence subscale was used to determine whether a parent had engaged in aggressive behaviors toward their child and whether or not the adolescent had perpetrated aggression toward parents. Specifically, a dichotomized

(yes,no) variable was created for parental aggression directed toward the adolescent using only violence items 3-5, so as to assess a more severe level of parental aggression.

Consistent with other studies on adolescent aggression toward parents (Cornell & Gelles, 1982; Ulman & Straus, 2003), endorsement of use of any of the 5 violence items toward a parent resulted in designating the adolescent as one who has aggressed toward parents, creating a dichotomized (yes,no) variable for adolescent aggression toward parents. This dichotomized variable was used for descriptive analyses and model testing.

For parent to adolescent items, coefficients of reliability have been found to range from .62 to .77, with the violence subscale having a coefficient of .62 and the reasoning subscale having a coefficient of .69 (Straus, 1979). For adolescent to parent items, coefficients of reliability have been found to range from .64 to .78, with the violence subscale having the highest coefficient of reliability (Straus, 1979). Additionally, evidence of construct and concurrent validity has been found (Straus, 1979).

*The Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983; Appendix D).* The CBCL is one of the most commonly used assessment tools for general psychopathology in children and adolescents. The CBCL consists of 118 specific behavioral items each scored on a 3-point scale. These 118 items create two broadband scores and 8 narrowband syndrome scores. Two of the narrowband syndrome scores, the anxious/depressed and aggressive behavior syndrome scores, were used to assess depressive and aggressive symptoms in the adolescents. Higher scores on each of these syndrome scores indicated the presence of more symptomatology. The anxious/depressed syndrome and the aggressive behaviors syndrome have been shown to have high one-week test-retest reliability of .86 and .91, respectively (Achenbach, 1991). Both the

anxious/depressed syndrome and the aggressive behaviors syndrome have demonstrated construct and criterion validity (Achenbach, 1991). Edelbrock and Costello (1988) have found that the aggressive syndrome scores was significantly related to the diagnosis of conduct disorder and that the anxious/depressed syndrome score was related to the diagnosis of major depression, thereby suggesting good construct validity for the CBCL.

### Results

Four sets of preliminary analyses were run to describe demographic characteristics of the sample, describe adolescents' aggression toward their parents, describe parents' aggression toward their adolescent, and determine whether covariates needed to be included when regression analyses were run to test the study's hypotheses. Two sets of hierarchical regression were then used to examine the study's three hypotheses. Although hypotheses one is examined in each set of regressions because interpersonal risk factors were entered on the first block, hypotheses two and three were examined in separate regressions by entering other variables on subsequent blocks. Finally, for each set of analyses, the entire sample was examined first, then to investigate gender differences in predictors analyses were run by gender.

#### *Descriptive analyses:*

First, to determine whether differences in demographic factors were present by gender and adolescent aggression toward parent status three MANOVAs (gender by aggression toward parents status) and six Chi-square tests were run. Comparisons on adolescent, mother, and father descriptive variables were run in three separate MANOVAs, respectively, because a number of the teenagers either did not have a father figure or were not able to report information about their father-figures (n=23) and a small

number did not have mother figures present in their life or could not report information for their mother-figures (n= 5) and so missing data varied among the groups. (The number of missing parental figures did not vary significantly across the four groups). These three MANOVAs did not reveal significant main effects for gender or aggression toward parent status or interactions (gender by aggression toward parents) on a) adolescents' age, adolescents' last grade completed and social class, b) mothers' age and mothers' last grade completed, and c) fathers' age and fathers' last grade completed (Table 1). Adolescents were also compared on adolescent race, grade retention, and parents' marital status using six Chi-square tests. Three Chi-square tests compared adolescents by gender on race, grade retention, and parents' marital status (Table 1); these analyses found that more boys than girls reported being "Hispanic" ( $\chi^2$  (3, N = 151) = 10.46,  $p < .05$ ). No statistically significant differences were found for grade retention and parents' marital status when compared by gender. Three additional Chi-square tests compared adolescents by aggression toward parent status on race, grade retention, and parents' marital status; these analyses found no significant differences in race, grade retention, and parents' marital status by aggression toward parents status. Further, there appears to be no interaction between gender and aggression toward parents status on race, grade retention, and parents' marital status (Table1).

*Describing Adolescents' Aggression toward Parents:*

A second set of preliminary analyses were run to better understand the nature of the aggression toward parents in the present sample in two ways: a) the presence of aggression toward parents (e.g., the rate in the sample) and, b) number of aggressive strategies adolescents have used. Although the previous section examined variables both

by gender and aggression toward parent status, for this section, because aggression toward parents is the variable of interest each of the analyses are examined by gender only.

First, a frequency count found that 47.7% of all adolescents in the present sample reported aggressing towards their parents at some point during their life. To examine differences in the presence of aggression toward parents by gender, a Chi-square test was run. This Chi-square test found that there was no difference by gender in whether an adolescent reported ever using an aggressive strategy toward their parent ( $\chi^2(1, N=151) = 1.11, p = ns$ ). Although a statistically significant difference was not found by gender in whether an adolescent reported ever aggressing toward a parent, a slightly greater percentage of girls report aggressing toward parents ( $n=39; 52\%$ ) than boys ( $n=33; 43.4\%$ ). Second, to examine the average number of strategies adolescents reported using toward their parents ever in their life, an independent samples T-test was run. This independent samples T-test found no difference between girls ( $M=1.05, SD=1.25$ ) and boys ( $M=.92, SD=1.39$ ) in the average number of strategies that they reported using against their parents ( $t(151)=-.61, p=ns$ ). (See Figure 4 for a frequency distribution of the number of strategies used by boys and girls.)

The above analyses were conducted to describe the nature of the adolescents' aggression toward parents. In sum, nearly half of the adolescents in the sample reported using some form of aggression toward their parents at some point in their life. Finally, although these analyses did not reveal a significant difference in aggression toward parents for boys and girls, hypotheses one, two, and three were examined separately by gender to ensure that potential differences in models by gender were not missed.

*Describing Parental Aggression toward the Child:*

A third set of preliminary analyses were run to describe severe parental aggression (e.g., kicked, bit, or hit them with a fist; hit (or tried to hit) them with something hard; and beat them up) toward the child in this study. This information will allow comparison of this sample with others in the literature on aggression toward parents. Similar to adolescents' aggression toward parents, parents' severe aggression toward their adolescents was examined by gender in two ways: a) the presence of severe aggression toward adolescents (e.g., the rate of parental aggression in the present study), and b) which parental figure(s) used severely aggressive strategies toward the adolescent.

*Presence of parental aggression toward the adolescent.* To examine the presence of mother-figures and father-figures' aggression toward adolescents two Chi-square tests were run by adolescents' gender (Table 3). The first Chi-square test which examined mother-figures' severe aggression toward adolescents found no statistically significant differences by adolescents' gender ( $\chi^2(2, N=151) = .40, p = .ns$ ). A similar percentage of girls (n=24; 32.9%) reported that their mother-figures had severely aggressed toward them at some point in their lifetime as boys (n=28; 37.8%). The second Chi-square test which examined father-figures aggression toward the adolescent also found no statistically significant difference by adolescents' gender ( $\chi^2(2, N=151) = .83, p = .ns$ ). Again, a similar percentage of girls (n=21; 31.8%) and boys (n=26; 39.4%) reported having experienced severe father-figure aggression toward them at some point in their lifetime.

*Which parental figure aggressed toward the adolescent?* To examine which parent figure(s) were using severely aggressive strategies toward the adolescent a Chi-

square test by gender was run on the variable that grouped adolescents as follows: neither parent, mother-figure only, father-figure only, or both mother- and father-figures aggressed toward the adolescent. This Chi-square test revealed no differences by adolescents' gender in who (neither parent, mother-figure only, father-figure only, or both parent-figures) the adolescents reported were aggressing toward them ( $\chi^2(3, N=151) = 1.37, p=.712$ ). (See Figure 5 for a frequency distribution.) Although no statistically significant differences were found by gender, it is noteworthy that a slightly greater percentage of boys ( $n=13; 17.1\%$ ) than girls ( $n=8; 10.7\%$ ) reported that both mother-figures and father-figures had used severely aggressive strategies toward them. In comparison, a slightly greater percentage of girls ( $n=16; 21.3\%$ ) than boys ( $n=14; 18.4\%$ ) reported that only their mother-figures used severely aggressive strategies toward them.

*Describing Predictor Variables and Covariate Analysis; Correlations between Demographic Factors, Interpersonal Risk Factors, Neuropsychological Risk Factors, and Symptom Patterns:*

To describe predictor variables two two-way (gender by aggression toward parent status) ANOVAs and three two-way (gender by aggression toward parent status) MANOVAs were run on the eight predictor variables (Table 4)<sup>1</sup>. Because data was missing differentially amongst variables severe mother-figure aggression and severe father-figure aggression were tested in two separate ANOVAs. Then three MANOVAs were run with the following groupings: a) parental reasoning and perceived social support

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<sup>1</sup> Table 4 reports interactions for each variable found in their respective analysis.

from family b) IQ and MFFT impulsivity and c) CBCL Depressive and Aggressive syndrome scores.

The two ANOVAs found no main effect for gender for mother-figure aggression ( $F(1,143) = .72, p=ns$ ) or father-figure aggression ( $F(1, 128)= 1.13, p=ns$ ). However, significant main effects were found for aggression toward parent status in the two ANOVAs that examined severe mother-figure aggression ( $F(1,143) = 6.18, p<.05$ ) and severe father-figure aggression ( $F(1, 128) = 7.41, p<.01$ ). Adolescents who reported that they had aggressed toward their parents reported more mother-figure ( $M=.45, SD=.50$ ) and father-figure aggression ( $M=.47, SD=.50$ ) than those who did not report aggressing toward their parents (mother-figure:  $M=.26, SD=.44$ ; father-figure  $M=.25, SD=.44$ ). These ANOVAs revealed no significant interactions between gender and aggression toward parent status for severe mother-figure aggression ( $F(1,143) = 1.34, p=ns$ ) or severe father-figure aggression ( $F(1,128) = 2.58,p=ns$ ).

No main effects for gender or aggression toward parents status were found in the three MANOVAs that examined parental reasoning and perceived social support ( $F(2, 146)= .89, p=ns$ ;  $F(2,146) = .73,p=ns$ ), IQ and cognitive impulsivity ( $F(2,132) = .55, p=ns$ ;  $F(2,132)=1.25,p=ns$ ), or CBCL depressive or aggressive syndrome scores ( $F(2,116) = .01, p=ns$ ;  $F(2,116) = .85,p=ns$ ). No significant interaction was found in the MANOVA that examined parental reasoning and perceived social support ( $F(2,146) = 1.55, p=ns$ ). However, consistent with the regression analyses findings reported below, a trend for interaction between gender and aggression toward parents status were found only in the MANOVAs which examined IQ and MFFT Impulsivity ( $F(2,132) = 2.74, p<.10$ ), and CBCL Depressive and Aggressive syndrome scores ( $F(2,116) = 2.37, p<.10$ ).

For the MANOVA which examined IQ and MFFT impulsivity, IQ was found to have a significant interaction ( $F(1,133)=5.50, p<.05$ ). Boys who reported aggressing toward parents had a higher IQ ( $M=98.71, SD=2.43$ ) than boys who did not report aggressing toward parents ( $M=90.95, SD=2.17$ ), whereas there was little difference between girls who reported aggressing toward parents ( $M=90.57, SD=2.29$ ) and girls who did not report aggressing toward parents ( $M=93.72, SD=2.40$ ). For the MANOVA which examined CBCL syndrome scores, the aggressive syndrome score was found to have a significant interaction ( $F(1,117) = 4.29, p<.05$ ). Girls who reported aggressing toward parents had higher aggressive syndrome t-scores ( $M=71.03, SD=2.36$ ) than girls who did not report aggressing toward parents ( $M=62.93, SD=2.48$ ), whereas there was little difference between boys who reported aggression toward parents ( $M=65.86, SD=2.48$ ) and those who did not report aggression toward parents ( $M=67.68, SD=2.25$ ).

In addition to describing variables in the present study, it was important to determine whether relationships existed amongst demographic, predictor, and outcome variables, and whether demographic variables should be included as covariates in further analyses. To determine relationships amongst demographic, predictor, and outcome variables in the whole sample Pearson correlations were run (Table 5; see Tables 6-7 for correlations by gender). These analyses revealed that some of the neuropsychological risk factors were significantly correlated with demographic variables. Maternal education and paternal education were both significantly positively correlated with the adolescent's IQ ( $r=.26, p<.01$  and  $.23, p<.05$ ). Lower social class was also found to be significantly related to IQ ( $r=-.20, p<.05$ ). However, these relationships with IQ are what would be expected given known relationships between IQ and education (Sattler, 2001). No other

significant relationships between demographic, predictor, and outcome variables emerged.

In sum, these analyses did not reveal any unexpected statistically significant relationships between predictor variables and demographic variables. Therefore, no demographic variables were included as covariates in further analyses.

*Testing Hypotheses One, Two, and Three:*

To test the three hypotheses posited by the present study two sets of hierarchical regressions were run. First, for each model hierarchical regressions were run for the whole sample (not examining gender). Then models were examined separately by gender. In these models the presence of aggression toward parents ever in an adolescent's lifetime was always the outcome variable. The first predictor variable in each regression was always interpersonal risk factors, and then predictor variables that were posited (see Figures 2 and 3) were then entered as a block(s). Entrance of variables into the models is described below.

*Hypotheses 1 & 2 for the sample as a whole: Do depressive symptoms matter?*

The first hierarchical regression tested whether depressive symptoms in combination with interpersonal risk predicted aggression toward parents (see Figure 2). For this model the first block included interpersonal risk factors, and the second block included depressive symptoms. When examining this model for the whole sample (Table 8), interpersonal risk significantly predicted aggression toward parents ( $R^2=.11$ ,  $p<.05$ ). Examination of individual predictors revealed that severe father-figure aggression is a significant predictor of adolescent aggression toward parents ( $\beta=.25$ ,  $p<.05$ ). A trend for mother-figure aggression to predict was also found ( $\beta=.16$ ,  $p<.10$ ). Entrance of depressive

symptoms did not significantly predict aggression toward parents ( $R^2\Delta (1, 98) = .00$ ,  $p=ns$ ).

The depressive symptoms model was then examined by gender to determine whether gender differences were present. For girls, a significant model did not emerge when interpersonal risk factors were entered into the model, or when depressive symptoms was added to the model (Table 9). However, examination of individual factors making up the interpersonal risk block revealed that severe mother-figure aggression is related to aggression toward parents ( $\beta=.30$ ,  $p<.05$ ). In comparison, when examining the model for boys (Table 10), a trend for the model of interpersonal risk factors to predict aggression toward parents was found ( $R^2=.17$ ,  $p<.10$ ). Examination of individual factors revealed that for boys only severe aggression by father-figures significantly predicted aggression toward parents ( $\beta=.40$ ,  $p<.01$ ). Entrance of depressive symptoms into the model did not significantly predict aggression toward parents for boys ( $R^2\Delta (1, 46) = .00$ ,  $p=ns$ ).

*Hypotheses 1 & 3 for the sample as a whole: Do neuropsychological factors and aggressive symptoms matter?* To examine whether aggressive symptoms in combination with interpersonal and neuropsychological risk (see Figure 3), predict aggression toward parents, hierarchical regression was run on the sample as a whole. Again as in analyses above, entered in the first block was interpersonal risk (with the same significant finding), neuropsychological risk was entered in the second block, and aggressive symptoms were entered on the third block (Table 11). Entrance of neuropsychological factors into the model did not significantly predict aggression toward parents ( $R^2\Delta (2, 89) = .00$ ,  $p=ns$ ) beyond interpersonal risk. Entrance of aggressive symptoms into the model

did significantly predict aggression toward parents beyond interpersonal risk ( $R^2\Delta (1, 88) = .06, p<.01$ ).

Unlike the regression run to examine hypotheses one and two, examination of this model for girls only (Table 12) revealed that entrance of interpersonal risk into the model significantly predicted aggression toward parents ( $R^2=.22, p<.05$ )<sup>2</sup>. For this block, only severe mother-figure aggression significantly predicted aggression toward parents ( $\beta=.44, p<.01$ ). When neuropsychological factors were entered into this model, this model became marginally significant ( $R^2\Delta (2, 42) = .08, p<.10$ ). In this model, there was a trend for parental reasoning to predict aggression toward parents ( $\beta= -.24, p<.10$ ) and full scale IQ significantly predicted aggression toward parents ( $\beta= -.33, p<.05$ ). Entrance of aggressive symptoms into the model significantly improved the models prediction of aggression toward parents ( $R^2\Delta (1, 41) = .08, p<.05$ ). For this final model, four variables significantly predict aggression toward parents: severe mother figure aggression ( $\beta= .42, p<.01$ ), parental reasoning ( $\beta= -.28, p<.05$ ), full scale IQ ( $\beta= -.31, p<.05$ ), and aggressive symptoms ( $\beta= .30, p<.05$ ).

Examination of this model for boys only, found that none of the entered variables significantly predicted aggression toward parents (Table 13)<sup>3</sup>. However, importantly, on

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<sup>2</sup> Although this block examines the same model as the analysis reported above for hypothesis 1 & 2, different results are found here because the number of participants included in this analysis is fewer ( $n=49$ ) than in the previous examination ( $n=52$ ).

<sup>3</sup> As with girls, the results for the interpersonal hypothesis changes because fewer boys ( $n=47$ ) are included in the hypothesis than what were used to examine hypotheses 1 and 2 ( $n=52$ ).

each block of the regression severe father-figure aggression was a significant predictor of aggression toward parents.

*Exploratory Analyses:*

Given the above models failed to find that perceived social support predicted aggression toward parents, several analyses were conducted to aid interpretation of the main findings. Scores on subscales of the perceived social support measure are examined by group (gender by aggression toward parents status) to determine if different aspects of social support may be important for perpetration of aggression toward parents.

*Examination of perceived social support.* Although the total perceived social support score did not significantly predict aggression toward parents, it is possible that one of the three factors (Windle & Miller-Tutzauer, 1992), support given, support received, and family intimacy may predict aggression toward parents. To examine this, the three factors of the perceived social support scale were first compared in a MANOVA with a 2 (gender) by 2 (aggression toward parent) factorial design (Table 14). This revealed a significant model for the interaction between gender and aggression toward parent status ( $F(3,145) = 3.33, p < .05$ ). Examination of individual factors shows a significant interaction for the family intimacy factor; for girls, those who aggress toward parents report a lower level of family intimacy ( $M=1.44, SD=1.17$ ) than those who do not report aggression toward parents ( $M=2.11, SD=.92$ ), for boys those who aggress toward parents report a lower level of family intimacy ( $M=1.53, SD=.93$ ) than those who do not ( $M=1.67, SD=1.14$ ).

## Discussion

The present study set out to expand the literature on adolescent aggression toward parents in three ways. First, the present study set out to determine whether adolescents' perception of risk and protective factors within the parent-child relationship would better predict aggression toward parents than simply examining exposure to parental aggression toward the adolescent alone. Second, in addition to risk and protective factors in the parent-child relationship, the present study aimed to examine individual difference factors such as neuropsychological factors and symptom patterns that may increase the likelihood of an adolescent aggressing toward their parents. Two models incorporating these factors were posited to account for aggression toward parents. Finally, the present study aimed to explore gender differences in predictors of aggression toward parents. Although findings from this study present mixed support for including indicators of both interpersonal risk and protective processes, along with individual difference factors as predictors of aggression toward parents, clear gender differences in their utility emerged.

### *Interpersonal Risk Predicting Aggression toward Parents*

For both boys and girls, only parental aggression was a significant predictor of aggression toward parents when examining only interpersonal risk factors (see Figure 1). Further, only aggression toward the adolescent by their same-sex parent-figure was predictive of aggression toward parents (e.g., mother-figure aggression predicted girls', and father-figure aggression predicted boys' aggression toward parents). Thus, a more nuanced version of the cycle of violence hypothesis than what has been explored in previous research does explain aggression toward parents. That is, adolescents' in the

present study may be modeling (and perhaps reciprocating) their same-sex parents' aggression.

The finding that adolescents may be modeling their same-sex parents' aggression is a unique contribution to the literature on adolescent aggression toward parents. Most studies which have examined adolescent aggression toward parents have collapsed both mother-figure and father-figure aggression into a single variable, which limits the interpretations that can be made from their findings. It may be that assessing mother-figure and father-figure aggression toward the child, separately, is a more ecologically valid assessment of aggression toward the child. That is, this type of assessment may more closely reflect the experience of children who have had their parent(s) aggress towards them. Support for the validity of assessing parental aggression separately by parent-figures comes from the fact, that the model which emerged, at least for girls, in the present study better explained aggression toward parents than the strongest findings which have previously been reported (e.g., Langrichsen-Rohling & Neidig's (1995) report of medium effect sizes for parental aggression on adolescent aggression toward parents, whereas if an effect size were to be computed from the present study's findings it would be a large effect size). Future studies should examine mother-figure and father-figure aggression toward the adolescent separately so as to maximize the interpretations which can be made.

Further, assessment of parental aggression toward the adolescent, by separate parent-figures may provide important information for treatment and prevention of aggression toward parents. These findings imply that adolescents may be responding to the social contingencies that their same-sex parent-figures present differently from their

opposite-sex parent figures and coercive processes may differentially escalate in same-sex parent-child dyads. Therefore, to treat and prevent aggression toward parents it would be important to improve the same-sex parent-child relationship. Further, it may be important to tailor parent-child treatment protocols (Forgatch & Patterson, 2005) to same-sex parent-child dyads to treat and prevent aggression toward parents.

Finally, although the present study was not able to support the hypothesis that incorporating factors indicative of both risk and protective processes within the parent-child relationship would better predict aggression toward parents than examining just parental aggression, rejecting this hypothesis may be premature. Given the nature of the present sample, and the overwhelming rate and severity of parental aggression adolescents in the present sample had experienced, it may not have been possible for these adolescents to appreciate the presence of positive conflict resolution strategies on the part of their parents. Or it may be that the parental aggression the child experienced was so severe that it could not be compensated for with positive strategies. That is, the magnitude of negative conflict resolution strategies that these adolescents experienced may overshadow any positive conflict resolution strategies that were present. Yet, in a sample where the negative conflict resolution strategies they have experienced are less severe, it may be that positive conflict resolution strategies are important. Therefore, it may that in a sample where less risk is present that this hypothesis may be support.

#### *Depressive Symptoms and Adolescent Aggression toward Parents*

The second hypothesis (see Figure 2) posited by the present study predicted that depressive symptoms would explain adolescent aggression toward parents beyond interpersonal risk. The only significant predictors that emerged in this model were

interpersonal risk factors, or more specifically, exposure to parental aggression as discussed above, and therefore the present study failed to support its second hypothesis for the entire sample. Similarly, this hypothesis was not supported when it was examined by gender.

The failure to find that depressive symptoms predicted aggression toward parents over and above interpersonal risk is in contrast to the findings of McCloskey and Lichter (2003), who report that depressed adolescents were twice as likely to aggress toward parents as compared to non-depressed adolescents. There are several reasons why there is a difference in findings. First, contrary to expected, gender differences in depressive symptoms did not emerge in the present study and the average score on the measure of depressive symptoms for all adolescents was in the at-risk range (see Table 4). So differences between gender and adolescents who had been exposed to interpersonal risk groups, the foundation of McCloskey and Lichter's (2003) finding, did not emerge as expected in the present study. Because of the nature of the backgrounds of the adolescents in the present study (i.e., having experienced substantial aggression toward them), it may be that all of these adolescents are experiencing elevated levels of depressive symptoms. Second, depressive symptoms were derived from parent report on a broadband behavioral rating scale. This broadband behavioral rating scale was not designed to specifically assess depressive symptoms, instead scores are computed from parents' reports of behaviors they have observed. Further, since it has been found that adolescents are better reporters of internalizing symptoms than their parents (Compas et al., 1997), depressive symptoms may not be accurately assessed in the present study. Therefore, McCloskey and Lichter's (2003) findings on depressive symptoms and

aggression toward parents may be closer to what would be expected in a community sample of teens exposed to aggression. (In fact, the rate of aggression toward parents that McCloskey & Lichter (2003) found is more similar to a rate expected in non-at-risk samples.) Given this, it may be important to test this model, in a less at risk sample before rejecting the importance of depressive symptoms in predicting aggression toward parents.

Nonetheless, if future studies fail to replicate the finding that depressive symptoms are predictive of adolescent aggression toward parents, then it may be that depressive symptoms are not important for predicting aggression toward parents. This may be because by adolescence the prominent features of depression for those who are clinically depressed are vegetative symptoms; these symptoms in turn may lead an adolescent to disengage from social interaction and confrontation. In childhood it is thought that irritability and anger are prominent symptoms of depression, whereas in adolescence, vegetative symptoms (e.g., hypersomnia and anhedonia) in combination with negative affect (e.g., sadness) become more salient (Hammen & Rudolph, 2003). Therefore, an adolescent with salient vegetative symptoms may be too lethargic to aggress toward their parents. However, no research has specifically examined which types of depressive symptoms are present in adolescents who aggress toward their parents; it is important for such an analysis to occur before drawing the aforementioned conclusion.

#### *Neuropsychological Factors, Aggressive Symptoms, and Aggression toward Parents*

Hypothesis three posited that neuropsychological factors and aggressive symptoms in combination would predict aggression toward parents over and above interpersonal risk factors (see Figure 3). When examining hypothesis three for the whole

sample, only mother-figure aggression and aggressive symptoms predicted aggression toward parents. Contrary to prediction, neuropsychological factors did not significantly predict aggression toward parents. However, as with hypotheses one and two, different significant predictors of aggression toward parents emerged when examining this model by gender. For girls, surprisingly, the model that incorporated neuropsychological factors and aggressive symptoms was able to significantly predict aggression toward parents above interpersonal risk. The model was not helpful in understanding boys' aggression toward parents.

*Hypothesis three for girls.* Contrary to what was expected in terms of predictors by gender, the findings of this model imply that in addition to exposure to parental aggression, neuropsychological factors and aggressive symptoms are important for predicting girls' aggression toward their parents. Specifically, when examining this model for girls, a final model emerged where the significant predictors of aggression toward parents were mother-figure aggression, number of parental reasoning strategies, IQ, and aggressive symptoms. Number of parental reasoning strategies and IQ had a negative relationship with aggression toward parents. However, mother-figure aggression and aggressive symptoms were positively related to aggression toward parents. Thus, consistent with Larzler's (1986) findings, both positive and negative conflict resolution strategies were important for adolescent girls' aggression toward parents. Further, this finding implies that there are factors which both increase and decrease the likelihood of aggressing toward a parent.

Yet, surprisingly, especially given that both positive and negative parental conflict resolution strategies were important in predicting aggression toward parents for girls,

adolescents' perception of social support did not significantly predict adolescent aggression toward parents for girls. Rather than abandoning the idea that perceived social support may predict aggression toward parents, and because the nature of support may matter, components of perceived social support (support given, support received, and family intimacy) were examined (Windle & Miller-Tutzauer, 1992). It was found that girls who aggressed toward their parents reported the lowest levels of support given and family intimacy. Since these two subscales reflect how much the adolescent perceives themselves to be valued within their family system and how comfortable the adolescent may feel with family members, respectively (Windle & Miller-Tutzauer, 1992), girls who aggressed toward parents likely do not feel valued by their family system, and may feel uncomfortable around their family. These feelings may be particularly predictive of aggression toward parents for adolescent girls who are thought to value the family system more than boys (Windle & Miller-Tutzauer, 1992). Thus, these analyses indicate that further examination of these factors of social support is warranted in future studies.

Despite the failure to find support for perceived social support as a predictor of aggression toward parents, the final model that did emerge better predicts aggression toward parents for girls than what has previously been found in the literature (e.g., Langrichsen-Rohling and Neidig's (1995) report of a medium effect size for girls) and adds an important predictive model for girls' aggression toward parents. Thus, this adds to the gravity of the three implications from this model of girls' aggression toward parents that are outlined below.

First, this model suggests that examining a wider range of predictors of aggression in girls is important. Because the present study suggests that for girls, mother-figure aggression is more important than father-figure aggression in predicting aggressive behaviors toward parents, it is important for other studies of girls' aggression to consider aggression toward girls by different parent-figures, rather than collapsing all aggression toward girls by parent-figures into a single variable. Further, knowing that a girl's mother-figure has aggressed toward her or that the girl is having ongoing severe conflict with her mother-figure may be relevant at earlier ages to the prevention of aggression toward parents and other antisocial behavior. That is, what may be regarded in clinical settings as family conflict may be an important indicator of girls' future aggressive behavior. This implication is consistent with other researchers' assertion that for girls different predictors of aggression may be present than for boys (Bierman, Bruschi, Domitrovich, Fang, & Miller-Johnson, 2004). Therefore, consistent with Bierman and colleagues' (Bierman et al., 2004) suggestion, it may be important to examine a broader spectrum of behaviors in early development to better predict girls' later aggression.

Second, the findings from the present study suggest that knowing about girls' aggression in one domain may predict her aggression in another domain and that continuing to examine girls' physical aggression is an important goal for the field of psychology. Specifically, the findings of the present study suggest that examining the targets of girls' physical aggression may be important. Therefore, as previous researchers have recommended (Zahn-Waxler, 1993), it may be particularly important to examine a wider range of externalizing behaviors in girls than in boys to understand their aggression. Further, although other researchers have begun to look at different types of

aggression believed to be more common and normative in girls, such as relational aggression (Crick, 1997; Crick & Grotpeter, 1995), it is important to continue to examine girls' physical aggression. That is, girls may be more likely to aggress in intimate relationships (i.e., the parent-child relationship and romantic relationships) than with individuals whom they know less well. Clearly, continuing to examine girls' physical aggression and developing models to explain their aggression is important. Further, it will be important for future studies to explore how girls' physical aggression toward parents relates to other types of aggression (e.g., relational aggression).

Third, this model for girls' aggression toward parents suggests that there are factors which may decrease the likelihood of a girl being aggressive and this implies that other factors should be examined in relation to aggression toward parents. Specifically, the more parental figures reasoned with the girl and the higher the girl's IQ, the less likely she was to aggress toward parents. Increased parental reasoning may decrease aggression toward parents because parents are perhaps modeling both positive behavioral strategies and cognitive processes for resolving conflict. That is, when parents use more reasoning strategies with their child, they may make less hostile attributions for their child. In turn, the child may make less hostile attributions about their parent. This notion is supported by the finding that mothers' and daughters' attributions exhibit a significant positive relationship (MacBrayer, Milich, & Hundley, 2003). Further, it may be that the higher a girl's IQ the more likely she is to be able to make less hostile attributions for her parents' behavior. This is supported by the fact that a meta-analysis of studies on hostile attribution for intent and aggressive behavior, notes that hostile attributions for intent and IQ have a complex, but overall negative relationship (Orobio de Castro, Veerman, Koops,

Bosch, & Monshouwer, 2002). Although one study may seem to contradict this implication because it found that social information processing, does not predict relational aggression in girls (Crain, Finch, & Foster, 2005), these mechanisms may predict girls' physical aggression towards their parents. Thus, directly exploring the importance of social information processing in predicting aggression toward parents for girls should occur and may contribute to an understanding of girls' aggression in a significant way.

*Hypothesis three for boys.* In comparison, the model including neuropsychological factors and aggressive symptoms failed to predict aggression toward parents in adolescent males. This is surprising since the posited model was based on factors which have previously been found to relate to adolescent males' aggression directed toward peers and dating partners in other studies. The failure to support this hypothesis suggests that a different conceptual model than those used to account for peer aggression and dating aggression may be required to account for males' aggression toward their parents.

Literature and research on childhood aggression that makes a distinction between proactive and reactive aggression (Crick & Dodge, 1996; Dodge & Coie, 1987; Dodge, Lochman, Harnish, Bates, & Pettit, 1997), could lead to a potential model for adolescent males' aggression toward their parents. Reactive aggression is a form of aggression that is characterized by hostility and impulsivity (Crick & Dodge, 1996) and appears to be a response to frustration (Dodge et al., 1997); this type of aggression has been found to relate to experiencing aggression from the parent (Dodge et al., 1997). Alternatively, proactive aggression is thought to be instrumental (Crick & Dodge, 1996) and more

likely driven by expectation of rewards (Dodge et al., 1997). Since the present study did not find a relationship between parental aggression toward the adolescent and aggressing toward the parent, it may be that aggression toward parents for adolescent males is a type of proactive aggression. That is, adolescent males who aggress toward their parents may see aggression as an effective strategy to resolve conflict with their parents and use aggression toward their parents to achieve desired rewards (e.g., use of the parents' car or money, or stopping the parent from monitoring them, etc.).

The present study provides some preliminary support for this idea. When comparing groups on the neuropsychological factors in the present study it was found that males who aggressed toward parents have higher IQs than males who do not aggress toward their parents (see Table 4). Although intelligence has not been found to be related to proactive aggression, it is possible to imagine that the higher a boy's IQ the more likely he is to perceive rewards that he could achieve when using aggression toward his parents. This may particularly be the case given that adolescent males have likely recently outgrown their mothers (and perhaps even their fathers) and realize that they may use their newly acquired size to intimidate their parents and subsequently achieve desired rewards. Although it is possible that adolescent males' aggression toward their parents is proactive aggression, this speculation clearly needs to be empirically examined.

#### *Limitations*

There are several limitations of the design and sample that may affect the interpretations of the findings of the present study. First, the data collected in this study was intended to examine adolescents at risk for maladaptive parenting. Because of this, the adolescents within this sample have substantial abuse histories (e.g., a significant

number of adolescents in this sample had substantiated reports of abuse with CYS).

Therefore, the results of this study may not generalize to a normative population of teens who do not have substantial abuse histories.

There are several characteristics of the sample that are important in the interpretation of the findings of the present study. First, a percentage of the adolescents in the sample had not lived with their parents within the year prior to participating in the study. (Because of the manner in which data was collected it was not possible to calculate the exact percentage for the prior year.) This clearly may have affected their reporting on some of the factors such as perceived social support from family. Second, given the nature of the agency that was collaborated with to collect this data, there may be differences in the types of adolescent males and females who are admitted to the agency. That is, the range of aggressive behaviors present for the adolescent males may be restricted given that more aggressive adolescent males in communities are often incarcerated or detained in juvenile detention centers, whereas it is not as likely that aggressive adolescent females will be incarcerated. Instead it may be that the boys in the present sample have clinical problems such as substance abuse or depression, as opposed to problems with externalizing behaviors.

In addition, the method used to collect the data presents several limitations to interpretation. First, all measures were self-report and therefore may be biased; that is some participants may not have accurately reported on these measures because they may have felt it was important to provide socially desirable responses. Second, the way the question about aggression toward parents was asked, does not allow analysis of whether the adolescent's aggression is directed toward their mother or father. Given that feminist

theory has been used by previous researchers (Ulman & Straus, 2003) to explain the phenomenon, and that researchers have found that mothers are more often the target of adolescents' aggression than fathers (Agnew & Huguley, 1989; Browne & Hamilton, 1998; Cornell & Gelles, 1982; Pagani et al., 2004; Ulman & Straus, 2003), this is a significant limitation of the present study. Finally, the data within the present study was not collected in a longitudinal fashion. Therefore, while the models of the present study purportedly predict aggression toward the parent, this prediction must be interpreted in a manner to help us build theory on adolescent aggression toward parents, rather than be taken as truly predictive models.

#### *Future Directions*

Although the present study provides important implications for research on adolescent aggression toward parents, the findings of the present study also indicate several future directions for research on adolescent aggression toward parents. Future research must address several questions that the present study has raised.

First, longitudinal data should be collected to determine casual relationships. The present study has examined the role neuropsychological factors and symptom patterns may play in producing aggression toward parents and found some support for these factors, especially for girls. However, the present study examines this question in a cross-sectional sample and has discussed the factors in the present sample as if the posited predictive factors preceded the outcome variable, namely the adolescents' aggression directed toward parents. It is important that future research examine whether the relationship found in the present study hold when the variables are assessed in a longitudinal design. If this relationship does not hold, this will have significant

implications for the models posited by the present study. That is, if adolescent aggression toward parents is found to precede the risk factors posited by the present study, then it may be important to determine different conceptual models of this type of aggression in adolescence.

Second, the findings would suggest the importance of closer examination of the parent-child relationship, such as observing interactions of these parent-child dyads, to better understand the processes that may occur in these relationships. For example, micro-coding parent-child interactions would allow researchers to better examine the concept of “counterbalancing” of positive and negative interactions within the parent-child relationship, which would inform the first hypothesis posited by the present study.

Third, the lack of findings in the present study, especially for boys, suggests that it may be important to examine other potential conceptual models and predictive factors. For example, previous literature indicates the importance of examining whether or not an adolescent has witnessed marital or domestic violence (Carlson, 1990; Cornell & Gelles, 1982; Ulman & Straus, 2003), as well as being exposed to parental aggression themselves. It may also be important to examine other types of violence and aggression that adolescents experience including community violence, peer aggression, and sibling aggression.

Finally, the method used to examine symptom patterns in the present study belies some of the complex cognitive processes that often lead to the presentation of these symptoms. Therefore, it may be that examining cognitive variables, as opposed to symptom patterns, would lead to a better explanation of aggression toward parents. Social-cognitive models have been used to examine other types of aggression including

mothers' aggressive behaviors toward their children (Azar, Nix, & Makin-Byrd, 2005; Azar & Weinzierl, 2005) and children's aggression toward peers (Crick & Dodge, 1994) and have met with success in explaining these other types of aggressive behavior. Therefore, it may be particularly fruitful for future studies to examine social-cognitive factors which may lead adolescents to aggress toward their parents.

## Appendix A

## Background Information

Name: \_\_\_\_\_ Date: \_\_\_\_\_ ID# : \_\_\_\_\_

Date of Birth: \_\_\_\_\_ Age: \_\_\_\_\_

Sex: Male (0) Female (1)

Education (Last grade completed): \_\_\_\_\_

Have you ever stayed back a year in school? Yes (1) No (0)  
If yes, how many times? \_\_\_\_\_

Race: W (1) Black (2) Hispanic (3) Other: \_\_\_\_\_

Are both your parents alive? Yes (1) No (0)  
If no, who is not? \_\_\_\_\_

How old were you when they died? \_\_\_\_\_

Parents present marital status: M (1) Div (2) Sep (3) Single (4)  
Divorced and rem (5) Living together (5) Other:  
\_\_\_\_\_If divorced or sep., how long ago was the sep.? \_\_\_\_\_  
If parents are remarried, how many times? \_\_\_\_\_

Mother's education level (last grade completed) : \_\_\_\_\_ Age: \_\_\_\_\_

Mother's occupation: \_\_\_\_\_  
Is mother presently employed? Yes (1) No (2)

Father's education level (last grade completed) : \_\_\_\_\_ Age: \_\_\_\_\_

Father's occupation: \_\_\_\_\_  
Is mother presently employed? Yes (1) No (2)

How many (step)brothers and (step)sisters do you have? What are their ages and sexes? List below:

What is your birth order? \_\_\_\_\_

What was your living arrangement before you were here? With parents (1)  
 with relatives (2) with friends (3) foster care (3) Other residential care (4)  
 Other: \_\_\_\_\_

Have you ever lived anywhere than with your parents? Yes (1) No (0)  
 If yes, find out where else and for how long (include the teenagers ages when living  
 elsewhere)? (Try to get as accurate a chronology as possible.)

If a teenager's last residence was not with parents, ask:

Do you have contact with your parents? Mo ( ) Fa ( )  
 Both ( ) Neither ( )

Do you have contact with your brothers and sisters? Yes (1) No (0)

Do you have contact with the rest of your family? Yes (1) No (0)

Have you ever had any problems with the law? Yes (1) No (0)  
 If yes, what for?

Have you ever been in any kind of counseling? Yes (1) No (0)  
 (note: check to see if they were at YOU, inc before)  
 If yes, find out what type of counseling (e.g. individual, group, family, etc.) ? How  
 long?

Have you ever run away from home? Yes (1) No (0)

If yes, how many times? \_\_\_\_\_ For how long each time (if over 5 times get  
 average amount of time)?

## Appendix B

## PSS-Fa

**DIRECTIONS:** The statements which follow refer to feelings and experiences which occur to most people at one time or another in their relationships with their families. For each statement there are three possible answers: Yes, No, Don't Know. Please circle the answer you choose for each item.

- |     |    |            |     |   |
|-----|----|------------|-----|---|
| Yes | No | Don't Know | 1.  | My family gives me the moral support I need   |
| Yes | No | Don't Know | 2.  | I get good ideas about how to do things or make things from my family   |
| Yes | No | Don't Know | 3.  | Most other people are closer to their family than I am  |
| Yes | No | Don't Know | 4.  | When I confide in the members of my family who are closest to me, I get the idea that it makes them uncomfortable |
| Yes | No | Don't Know | 5.  | My family enjoys hearing about what I think   |
| Yes | No | Don't Know | 6.  | Members of my family share many of my interests   |
| Yes | No | Don't Know | 7.  | Certain members of my family come to me when they have problems or need advice                                    |
| Yes | No | Don't Know | 8.  | I rely on my family for emotional support   |
| Yes | No | Don't Know | 9.  | There is a member of my family I could go to if I were just feeling down, without feeling funny about it later    |
| Yes | No | Don't Know | 10. | My family and I are very open about what we think about things  |
| Yes | No | Don't Know | 11. | My family is sensitive to my personal needs   |
| Yes | No | Don't Know | 12. | Members of my family come to me for emotional support   |
| Yes | No | Don't Know | 13. | Members of my family are good at helping me solve problems  |
| Yes | No | Don't Know | 14. | I have a deep sharing relationship with a number of members of my family  |
| Yes | No | Don't Know | 15. | Members of my family get good ideas about how to do things or make things from me                                 |

- |     |    |            |     |   |
|-----|----|------------|-----|---|
| Yes | No | Don't Know | 16. | When I confide in members of my family, it makes me uncomfortable   |
| Yes | No | Don't Know | 17. | Members of my family seek me out for companionship  |
| Yes | No | Don't Know | 18. | I think that my family feels that I'm good at helping them solve problems   |
| Yes | No | Don't Know | 19. | I don't have a relationship with a member of my family that is as close as other peoples' relationships with family members |
| Yes | No | Don't Know | 20. | I wish my family were much different  |

When you heard the word family in these questions, who were you thinking about?

### Appendix C Conflict Tactics Scale

One of the ways people learn to handle relationships is how relationships were handled in their families. In this last questionnaire, we're interested in finding out a little about this. No matter how well parents and their kids get along, there are times when they disagree on major decisions, get annoyed about something that a family member does or just have spats or fights because they're in a bad mood or tired for some other reason. They also use many different ways of trying to settle their differences. I want you to think about when you were with your parents and the disagreements you had. I'm going to read a list of some things that you and they might have done when you had a dispute or disagreement. I'd like you to tell me for each one whether it ever happened at any time between you and either of your parents (even when you were little) and who did it. Then I'd like you to think just about the last six months you were with your parents and tell me how often you did it in that six months. You can use this scale to tell me how often it happened (Hand them scale). Any questions? Remember if any of these questions bother you just let me know and we'll stop. OK

## SCALE

Has it ever happened between you and your parents? Who did it?

0 - No

1 - Yes

How often you did it in the last 6 months you were with your parents?

0 - NEVER

1 - ONCE

2 - TWICE

3 - 3 TO 5 TIMES

4 - 6 TO 10 TIMES

5 - 11 TO 20 TIMES

6 - MORE THAN 20 TIMES

How often your parents did it in the last 6 months you were together?

0 - NEVER

1 - ONCE

2 - TWICE

3 - 3 TO 5 TIMES

4 - 6 TO 10 TIMES

5 - 11 TO 20 TIMES

6 - MORE THAN 20 TIMES

Name: \_\_\_\_\_

		CTS					
Ever happen?	Did it	How often					
	The last 6 months	(1)	(2)	(3)	(4)	(5)	(6)
		teen	mother	father	teen	mother	father
a)	Tried to discuss the issue relatively calmly	___	___	___	___	___	___
b)	Did discuss the issue relatively calmly	___	___	___	___	___	___
c)	Got information to back up my/their side of things	___	___	___	___	___	___
d)	Brought in someone else to help settle things (or tried to)	___	___	___	___	___	___
e)	Argued heatedly but short of yelling	___	___	___	___	___	___
f)	Yelled and/or insulted	___	___	___	___	___	___
g)	Sulked and/or refused to talk about it	___	___	___	___	___	___
h)	Stomped out of the room	___	___	___	___	___	___
i)	Threw something (but not at them/you) or smashed something	___	___	___	___	___	___
j)	Threatened to hit or throw something at them/you	___	___	___	___	___	___
k)	Threw something at them/you	___	___	___	___	___	___
l)	Pushed, grabbed, or shoved them/you	___	___	___	___	___	___
m)	Slapped them/they slapped you	___	___	___	___	___	___
n)	Kicked, bit, or hit them/you with a fist (indicate which by circling)	___	___	___	___	___	___
o)	Hit (or tried to hit) them/you with something hard (what? _____)	___	___	___	___	___	___
p)	Beat them up/they beat you up	___	___	___	___	___	___

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Table 1

*Demographic Information by Gender and Aggression toward Parent Status (N=151)*

Variable	Boys		Girls	
	No Aggression toward parents N = 43 Mean (SD)	Aggression toward parents N = 33 Mean (SD)	No Aggression toward parents N = 36 Mean (SD)	Aggression toward parents N = 39 Mean (SD)
Child Age <sup>1</sup>	15.21 (1.48)	15.29 (1.21)	15.01 (1.54)	15.32 (1.17)
Child Grade <sup>2</sup>	7.83 (1.57)	8.16 (1.32)	8.00 (1.53)	8.11 (1.41)
Repeated Grade <sup>3,4</sup>				
	No	12	13	13
	Yes	31	23	26
Child Race <sup>5*,6</sup>				
	White	28	25	33
	Black	5	2	4
	Hispanic	9	4	2
	Other	1	2	0
Mothers' age (in Years) <sup>7</sup>	37.97 (6.18)	38.55 (5.31)	37.82 (5.25)	37.45 (4.09)
Mothers' Last grade completed <sup>8</sup>	11.75 (2.05)	12.84 (2.48)	12.26 (2.67)	12.13 (2.27)
Fathers' age (in years) <sup>9</sup>	40.94 (7.46)	44.04 (8.37)	41.42 (5.90)	41.69 (6.69)
Fathers' Last grade completed <sup>10</sup>	11.68 (3.48)	11.50 (2.89)	12.42 (2.15)	11.00 (2.19)
Parents Marital Status <sup>11,12</sup>				
	Married	9	9	10
	Divorced	14	10	9
	Separated	2	6	3
	Single	8	3	6
	Divorced & Remarried	4	1	8
	Living together	3	2	1
	Other	3	2	2
Hollingshead <sup>13</sup>	3.65 (1.05)	3.71 (0.78)	3.69 (0.95)	3.71 (0.98)

†  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$

$$^1 F(1, 141) = .25, p = .619$$

$$^2 F(1, 141) = .22, p = .638$$

$$^3 \chi^2(1, N=151) = .33, p = .562$$

$$^4 \chi^2(1, N=151) = .05, p = .818$$

$$^5 \chi^2(3, N=151) = 10.46, p < .05$$

$$^6 \chi^2(3, N=151) = 1.33, p = .722$$

$$^7 F(1, 139) = .29, p = .593$$

$$^8 F(1, 139) = 2.38, p = .125$$

$$^9 F(1, 118) = 1.22, p = .273$$

$$^{10} F(1, 118) = 1.60, p = .209$$

$$^{11} \chi^2(6, N=151) = 7.03, p = .319$$

$$^{12} \chi^2(6, N=151) = 5.62, p = .467$$

$$^{13} F(1, 141) = .02, p = .892$$

Table 2

*Adolescent Report of Aggression toward Parents by Gender (N=151)*

Variable		Total Sample	Boys (N=76)	Girls (N=75)
Aggression toward parents (ever) <sup>1</sup>	Present	72 (47.7%)	33 (43.4%)	39 (52.0%)
	Absent	79 (52.3%)	43 (56.6%)	36 (48.0%)

†  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$

<sup>1</sup>  $\chi^2(1, N=151) = 1.11, p = .291$

Table 3

*Adolescent Report of Parental Aggression toward them by Gender (N=151)*

Variable	Total Sample	Boys (N=76)	Girls (N=75)
Maternal Aggression (ever) <sup>1</sup>			
Absent	56 (38.1%)	27 (36.5%)	29 (39.7%)
Mild	39 (26.5%)	19 (25.7%)	20 (27.4%)
Severe	52 (35.4%)	28 (37.8%)	24 (32.9%)
Paternal Aggression (ever) <sup>2</sup>			
Absent	53 (40.2%)	25 (37.9%)	28 (42.4%)
Mild	32 (24.2%)	15 (22.7%)	17 (25.8%)
Severe	47 (35.6%)	26 (39.4%)	21 (31.8%)

†  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$

<sup>1</sup>  $\chi^2(2, N=151) = .40, p = .820$

<sup>2</sup>  $\chi^2(2, N=151) = .83, p = .661$

Table 4

*Means and Standard Deviations for Predictors by Gender and Aggression toward Parent status*

Variable	Boys		Girls	
	No Aggression toward parents Mean (SD) n	Aggression toward parents Mean (SD) n	No Aggression toward parents Mean (SD) n	Aggression toward parents Mean (SD) n
Severe Mother Aggression <sup>1</sup>	.33 (.48) n=42	.44 (.50) n=32	.18 (.39) n=34	.46 (.51) n=39
Severe Father Aggression <sup>2</sup>	.23 (.43) n=35	.58 (.50) n=31	.27 (.45) n=33	.36 (.49) n=33
Number of Reasoning Strategies used by Parents <sup>3</sup>	4.05 (1.98) n=43	4.39 (2.70) n=33	4.03 (2.06) n=36	3.56 (1.68) n=39
Perceived Social Support from Family <sup>4</sup>	11.21 (4.83) n=43	11.39 (5.75) n=33	11.94 (6.11) n=36	9.49 (6.32) n=39
Full Scale IQ <sup>5*</sup>	90.95 (15.35) n=39	98.71 (11.22) n=31	93.72 (11.22) n=32	90.57 (14.69) n=35
MFFT Impulsivity <sup>6</sup>	.23 (1.75) n=39	-.39 (1.62) n=31	.16 (1.44) n=32	-.09 (1.94) n=35
CBCL Anx/Dep T-score <sup>7</sup>	62.26 (12.56) n=34	62.79 (10.99) n=28	61.50 (11.13) n=28	63.19 (7.78) n=31
CBCL Aggressive T-score <sup>8*</sup>	67.68 (13.62) n=34	65.86 (10.11) n=28	62.93 (16.81) n=28	71.03 (11.06) n=31

<sup>†</sup>  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$

- <sup>1</sup>F(1, 143) = 1.34,  $p=.250$   
<sup>2</sup>F(1, 128) = 2.58,  $p=.111$   
<sup>3</sup> F(1, 147) = 1.38,  $p = .242$   
<sup>4</sup> F(1, 147) = 1.97,  $p = .162$   
<sup>5</sup> F(1, 133) = 5.50,  $p < .05$   
<sup>6</sup> F(1, 133) = .38,  $p = .537$   
<sup>7</sup> F(1, 117) = .09,  $p = .766$   
<sup>8</sup> F(1, 117) = 4.29,  $p < .05$

Table 5

*Intercorrelations between Demographic factors, Interpersonal Risk Factors, Neuropsychological Factors, and Symptom Patterns for Entire Sample (N=151)*

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. Adolescents' age	-	.79**	.31**	.13	.26**	.06	-.11	.09	.10	.10	-.11	.04	-.05	.07	-.13	.06
2. Adolescents' last grade completed		-	.27**	.15 <sup>†</sup>	.24**	.08	-.12	.05	-.06	.07	-.11	.11	-.04	.00	-.18 <sup>†</sup>	.08
3. Mothers' age			-	.15 <sup>†</sup>	.66**	.05	-.15 <sup>†</sup>	.09	.15 <sup>†</sup>	.05	-.09	.04	.07	-.08	-.01	-.02
4. Mothers' last grade completed				-	.02	.26**	-.62**	.14	.15 <sup>†</sup>	.12	-.16 <sup>†</sup>	.26**	-.02	.08	.06	.11
5. Fathers' age					-	.02	-.02	.16 <sup>†</sup>	.13	.10	-.06	-.06	.09	-.08	-.01	.06
6. Fathers' last grade completed						-	-.29**	-.05	-.05	.05	.02	.23*	-.01	-.09	-.02	-.15 <sup>†</sup>
7. Hollingshead							-	-.01	-.04	-.14 <sup>†</sup>	.07	-.20*	-.06	.01	-.08	.02
8. Severe Mother Aggression								-	.21*	.04	-.13	.16 <sup>†</sup>	-.15 <sup>†</sup>	.03	.05	.20*
9. Severe Father Aggression									-	.10	-.03	.18*	-.10	.26**	.03	.23**
10. Parent Reasoning										-	.09	.17 <sup>†</sup>	-.22**	-.00	.05	-.02
11. Social support from family											-	-.23**	.06	-.11	-.09	-.10
12. FS IQ												-	-.34**	.09	-.03	.08
13. MFFT Impulsivity													-	.11	.19*	-.16 <sup>†</sup>
14. CBCL Dep.														-	.44**	.05
15. CBCL Agg															-	.12
16. Adolescent Aggression																-

<sup>†</sup>  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$

Table 6

*Intercorrelations between Demographic factors, Interpersonal Risk Factors, Neuropsychological Factors, and Symptom Patterns for Girls (N=75)*

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. Adolescents' age	-	.85**	.32**	.14	.32**	.11	-.15	.08	.09	.20 <sup>†</sup>	-.25*	.16	-.04	.13	-.06	.09
2. Adolescents' last grade completed		-	.21 <sup>†</sup>	.16	.13	.06	-.11	.03	-.09	.18	-.24*	.19	-.09	.02	-.14	.03
3. Mothers' age			-	.15	.63**	.01	-.07	.23 <sup>†</sup>	.05	-.02	-.09	.02	.17	.11	.15	-.05
4. Mothers' last grade completed				-	.02	.37**	-.63**	.17	.05	.11	-.24*	.30*	.11	.08	.13	-.03
5. Fathers' age					-	.09	.04	.33**	.19	.06	-.01	-.07	.09	.03	.10	.00
6. Fathers' last grade completed						-	-.33**	-.13	-.10	.02	.19	.15	.15	-.31*	.05	-.30*
7. Hollingshead							-	-.13	-.02	-.12	.18	-.23 <sup>†</sup>	-.04	.04	-.20	.00
8. Severe Mother Aggression								-	.13	.05	-.25*	.14	-.03	.13	.27*	.30**
9. Severe Father Aggression									-	.11	.01	-.01	-.02	.33*	.02	.10
10. Parent Reasoning										-	.08	.00	-.20 <sup>†</sup>	-.00	.05	-.12
11. Social support from family											-	-.28*	.11	-.05	.05	-.20 <sup>†</sup>
12. FS IQ												-	-.36**	.02	-.11	-.12
13. MFFT Impulsivity													-	.10	.19	-.09
14. CBCL Dep.														-	.28*	.09
15. CBCL Agg															-	.28*
16. Adolescent Aggression																-

<sup>†</sup>  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$

Table 7

*Intercorrelations between Demographic factors, Interpersonal Risk Factors, Neuropsychological Factors, and Symptom Patterns for Boys (N=76)*

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. Adolescents' age	-	.72**	.31**	.12	.20	.02	-.07	.10	.11	-.00	.051	-.08	-.06	.03	-.21	.04
2. Adolescents' last grade completed		-	.32**	.13	.34**	.10	-.13	.07	-.02	-.02	.04	.04	.02	-.02	-.22 <sup>†</sup>	.13
3. Mothers' age			-	.15	.67**	.07	-.22 <sup>†</sup>	-.03	.21	.08	-.11	.04	-.02	-.19	-.15	.03
4. Mothers' last grade completed				-	.02	.18	-.60**	.11	.25*	.13	-.07	.22 <sup>†</sup>	-.14	.09	-.03	.26*
5. Fathers' age					-	-.02	-.08	.00	.08	.11	-.14	-.05	.09	-.16	-.10	.13
6. Fathers' last grade completed						-	-.26*	.02	-.02	.07	-.14	.31*	-.15	.06	-.08	-.04
7. Hollingshead							-	.11	-.10	-.17	-.06	-.18	-.07	-.01	.08	.03
8. Severe Mother Aggression								-	.28*	.02	.01	.17	-.26*	-.06	-.21	.11
9. Severe Father Aggression									-	.08	-.07	.33**	-.19	.21	.03	.36**
10. Parent Reasoning										-	.11	.26*	-.24*	-.00	.05	.08
11. Social support from family											-	-.20	.00	-.18	-.28*	.02
12. FS IQ												-	-.32**	.14	.06	.27*
13. MFFT Impulsivity													-	.12	.20	-.23*
14. CBCL Dep.														-	.62**	.02
15. CBCL Agg															-	-.08
16. Adolescent Aggression																-

<sup>†</sup>  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$

Table 8

*Hierarchical Regression including Interpersonal Risk Factors (mother-figure and father-figure severe aggression ever, parental reasoning, and perceived social support) and Depressive Symptoms for Entire Sample (N = 104)*

Variable	B	SE B	$\beta$
Step 1			
Mother-Figure Aggression	.18	.10	.16†
Father-Figure Aggression	.26	.10	.25*
Parental Reasoning	-.02	.02	-.07
Perceived Social Support	.01	.01	.07
Step 2			
Mother-Figure Aggression	.18	.10	.16†
Father-Figure Aggression	.27	.10	.26*
Parental Reasoning	-.02	.02	-.07
Perceived Social Support	.01	.01	.07
CBCL Anxious/Depressed	-.00	.00	-.02

*Note:*  $R^2 = .11$  for Step 1 ( $p < .05$ );  $\Delta R^2 = .00$  for Step 2 ( $p = ns$ ).

\* $p < .05$ ; \*\* $p < .01$ ; † $p < .10$

Table 9

*Hierarchical Regression including Interpersonal Risk Factors (mother-figure and father-figure severe aggression, parental reasoning, and perceived social support) and Depressive Symptoms for Girls (N = 52)*

	Variable	B	SE B	$\beta$
Step 1				
	Mother-Figure Aggression	.33	.15	.30*
	Father-Figure Aggression	.13	.15	.13
	Parental Reasoning	-.04	.04	-.15
	Perceived Social Support	.00	.01	.03
Step 2				
	Mother-Figure Aggression	.33	.15	.31*
	Father-Figure Aggression	.15	.16	.14
	Parental Reasoning	-.04	.04	-.16
	Perceived Social Support	.00	.01	.03
	CBCL Anxious/Depressed	-.00	.01	-.04

*Note:*  $R^2 = .14$  for Step 1 (p = ns);  $\Delta R^2 = .00$  for Step 2 (p = ns).

\* $p < .05$ ; \*\* $p < .01$ ; † $p < .10$

Table 10

*Hierarchical Regression including Interpersonal Risk Factors (mother-figure and father-figure severe aggression, parental reasoning, and perceived social support) and Depressive Symptoms for Boys (N = 52)*

	Variable	B	SE B	$\beta$
Step 1				
	Mother-Figure Aggression	.03	.14	.03
	Father-Figure Aggression	.40	.14	.40**
	Parental Reasoning	-.00	.03	-.01
	Perceived Social Support	.02	.01	.15
Step 2				
	Mother-Figure Aggression	.03	.15	.03
	Father-Figure Aggression	.40	.14	.40**
	Parental Reasoning	-.00	.03	-.01
	Perceived Social Support	.02	.01	.15
	CBCL Anxious/Depressed	-.00	.01	.00

*Note:*  $R^2 = .17$  for Step 1 ( $p < .10$ );  $\Delta R^2 = .00$  for Step 2 ( $p = ns$ ).

\*  $p < .05$ ; \*\*  $p < .01$ ; †  $p < .10$

Table 11

*Hierarchical Regression including Interpersonal Risk Factors (mother-figure and father-figure severe aggression, parental reasoning, and perceived social support), Neuropsychological Factors, and Aggressive Symptoms for Entire Sample (N = 96)*

	Variable	B	SE B	$\beta$
Step 1				
	Mother-Figure Aggression	.25	.11	.23*
	Father-Figure Aggression	.19	.11	.18†
	Parental Reasoning	-.03	.02	-.12
	Perceived Social Support	.01	.01	.06
Step 2				
	Mother-Figure Aggression	.25	.12	.23*
	Father-Figure Aggression	.20	.11	.19†
	Parental Reasoning	-.03	.02	-.13
	Perceived Social Support	.00	.01	.04
	Full Scale IQ	-.00	.00	-.08
	Impulsivity	-.02	.03	-.06
Step 3				
	Mother-Figure Aggression	.25	.11	.23*
	Father-Figure Aggression	.17	.10	.16
	Parental Reasoning	-.04	.02	-.16
	Perceived Social Support	.01	.01	.05
	Full Scale IQ	-.00	.00	-.07
	Impulsivity	-.03	.03	-.10
	CBCL Agg	.01	.00	.26**

Note:  $R^2 = .12$  for Step 1 ( $p < .05$ );  $\Delta R^2 = .01$  for Step 2 ( $p = ns$ );  $\Delta R^2 = .06$  for Step 3 ( $p < .01$ ).

\*  $p < .05$ ; \*\*  $p < .01$ ; †  $p < .10$

Table 12

*Hierarchical Regression including Interpersonal Risk Factors (mother-figure and father-figure severe aggression, parental reasoning, and perceived social support), Neuropsychological Factors, and Aggressive Symptoms for Girls (N = 49)*

	Variable	B	SE B	$\beta$
Step 1	Mother-Figure Aggression	.48	.16	.44**
	Father-Figure Aggression	.03	.15	.02
	Parental Reasoning	-.06	.04	-.21
	Perceived Social Support	.01	.01	.06
Step 2	Mother-Figure Aggression	.54	.15	.49**
	Father-Figure Aggression	-.01	.14	-.01
	Parental Reasoning	-.07	.04	-.24†
	Perceived Social Support	-.01	.01	-.06
	Full Scale IQ	-.01	.01	-.33*
	Impulsivity	-.01	.04	-.04
Step 3	Mother-Figure Aggression	.46	.15	.42**
	Father-Figure Aggression	-.03	.14	-.02
	Parental Reasoning	-.08	.04	-.28*
	Perceived Social Support	-.01	.01	-.08
	Full Scale IQ	-.01	.01	-.31*
	Impulsivity	-.03	.04	-.10
	CBCL Agg	.01	.00	.30*

Note:  $R^2 = .22$  for Step 1 ( $p < .05$ );  $\Delta R^2 = .08$  for Step 2 ( $p < .10$ );  $\Delta R^2 = .08$  for Step 3 ( $p < .05$ ).

\*  $p < .05$ ; \*\*  $p < .01$ ; †  $p < .10$

Table 13

*Hierarchical Regression including Interpersonal Risk Factors (mother-figure and father-figure severe aggression, parental reasoning, and perceived social support), Neuropsychological Factors, and Aggressive Symptoms for Boys (N = 47)*

	Variable	B	SE B	$\beta$
Step 1				
	Mother-Figure Aggression	.01	.16	.01
	Father-Figure Aggression	.38	.15	.37*
	Parental Reasoning	-.01	.03	-.04
	Perceived Social Support	.01	.02	.12
Step 2				
	Mother-Figure Aggression	-.02	.17	-.02
	Father-Figure Aggression	.36	.16	.36*
	Parental Reasoning	-.02	.03	-.07
	Perceived Social Support	.01	.02	.12
	Full Scale IQ	.00	.01	.08
	Impulsivity	-.04	.05	-.14
Step 3				
	Mother-Figure Aggression	.01	.17	.01
	Father-Figure Aggression	.35	.16	.34*
	Parental Reasoning	-.02	.03	-.09
	Perceived Social Support	.02	.02	.15
	Full Scale IQ	.00	.01	.07
	Impulsivity	-.04	.05	-.14
	CBCL Agg	.01	.01	.13

Note:  $R^2 = .15$  for Step 1 (p=ns);  $\Delta R^2 = .02$  for Step 2 (p =ns) ;  $\Delta R^2 = .01$  for Step 3 (p =ns).

\*  $p < .05$ ; \*\*  $p < .01$ ; †  $p < .10$

Table 14

*MANOVA of Perceived Social Support Subscales: Support Received, Support Given, and Family Intimacy (N=151)*

Variable	<u>Boys</u>		<u>Girls</u>	
	No Aggression toward parents N = 43 Mean (SD)	Aggression toward parents N = 33 Mean (SD)	No Aggression toward parents N = 36 Mean (SD)	Aggression toward parents N = 39 Mean (SD)
Support Received <sup>1</sup>	7.63 (3.25)	7.27 (3.89)	7.28 (3.97)	6.13 (4.29)
Support Given <sup>2†</sup>	2.05 (1.68)	2.45 (1.58)	2.56 (1.98)	1.92 (1.48)
Family Intimacy <sup>3*</sup>	1.53 (.93)	1.67 (1.14)	2.11 (.92)	1.44 (1.17)

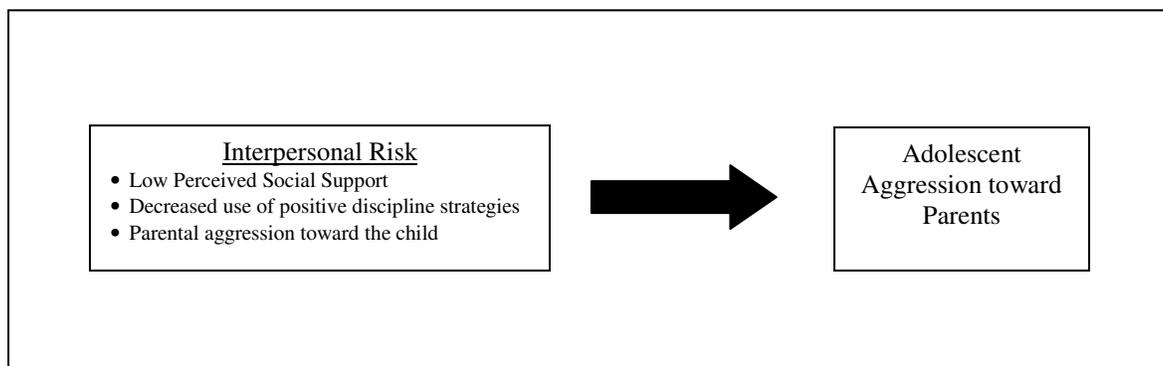
†  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$

<sup>1</sup>  $F(1, 147) = .40, p = .529$

<sup>2</sup>  $F(1, 147) = 3.56, p < .10$

<sup>3</sup>  $F(1, 147) = 5.62, p < .05$

Figure 1. Interpersonal Risk Factors Predicts Aggression toward Parents



*Figure 2.* Interpersonal Risk Factors and Depressive Symptoms Predict Aggression toward Parents

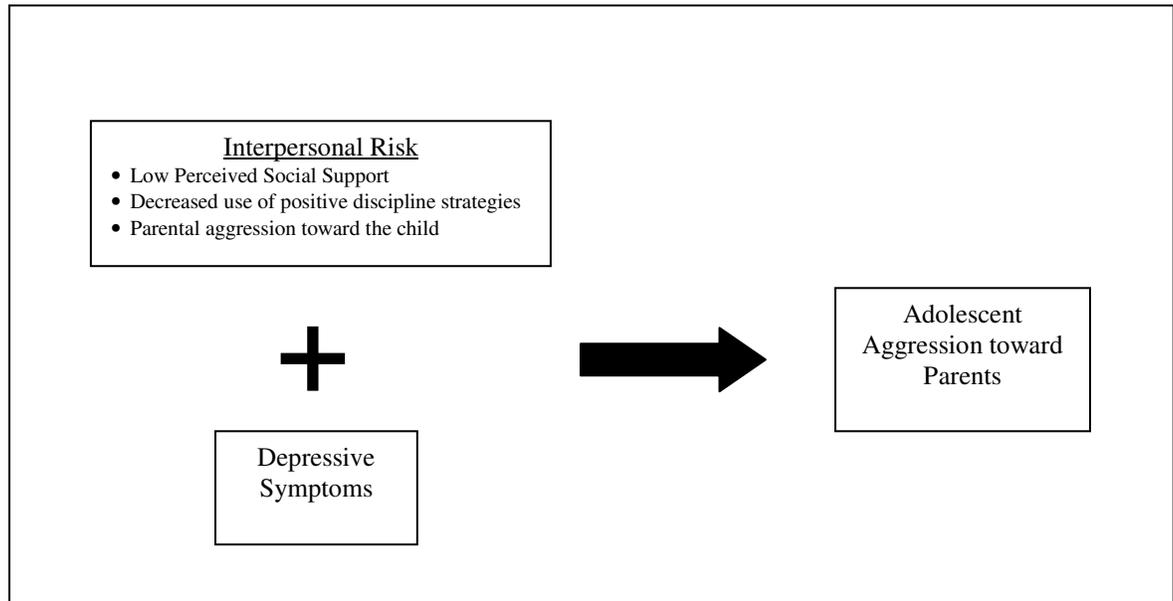


Figure 3. Interpersonal Risk Factors, Neuropsychological Factors, and Aggressive Symptoms Predict Aggression toward Parents

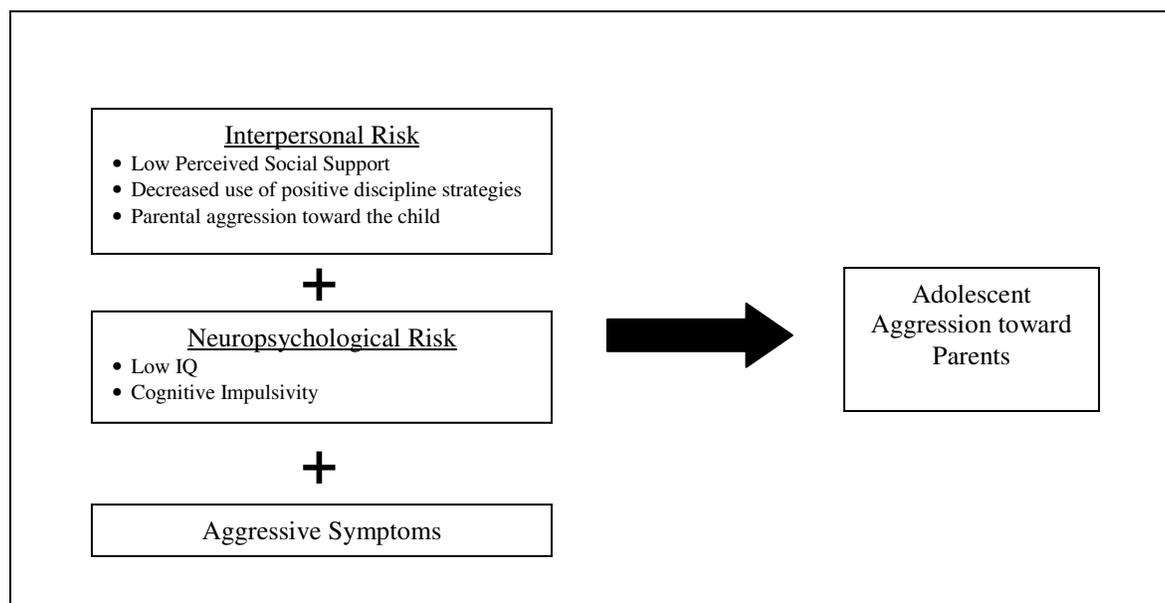


Figure 4. Number of Aggressive Strategies used by Adolescents Ever in their Lifetime by Gender (N = 151)

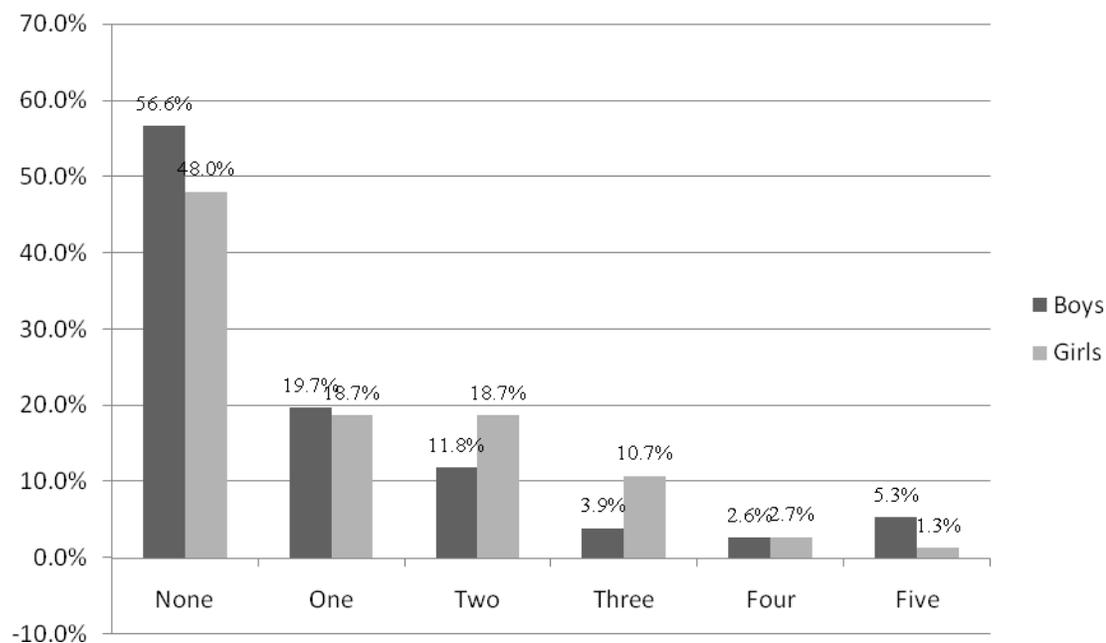


Figure 5. Adolescent Report of Parental Use of Severe Aggressive behaviors toward them by Gender (N = 151)

