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The Use of Relational, Social, and Overt Aggression in Overtly-Aggressive and Non-Overtly-Aggressive Females

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THE USE OF RELATIONAL, SOCIAL, AND OVERT AGGRESSION
IN OVERTLY-AGGRESSIVE AND NON-OVERTLY-AGGRESSIVE FEMALES

A Dissertation

Submitted to the School of Education

Department of Counseling, Psychology, and Special Education

Duquesne University

In partial fulfillment of the requirements for
the degree of Doctor of Philosophy

By

Leigh Ann Comstock

December 2009

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Leigh Ann Comstock

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SCHOOL OF EDUCATION

Department of Counseling, Psychology, and Special Education

Dissertation

Submitted in partial fulfillment of the requirements
for the degree
Doctor of Philosophy (Ph.D.)

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Presented by:

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B.S. Psychology, University of Pittsburgh, 2003
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THE USE OF RELATIONAL AGGRESSION, SOCIAL AGGRESSION, AND
OVERT AGGRESSION IN OVERTLY AGGRESSIVE AND NON-OVERTLY
AGGRESSIVE FEMALES

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ABSTRACT

THE USE OF RELATIONAL, SOCIAL, AND OVERT AGGRESSION IN OVERTLY-AGGRESSIVE AND NON-OVERTLY-AGGRESSIVE FEMALES

By

Leigh Ann Comstock

December 2009

Dissertation supervised by: Laura M. Crothers, Ph.D.

In this study, the researcher sought to examine whether differences existed in the use of relational, social, and overt aggression among previously-identified-overtly-aggressive and non-overtly-aggressive female adolescents. Specifically, explored were the relationships among types of aggression (overtly-aggressive and non-overtly-aggressive), age level (middle or high school), and cultural background/ethnicity (Caucasian or non-Caucasian), and the self-reported use of relational aggression, social aggression, and overt aggression. Results revealed that Caucasian, non-overtly-aggressive middle and high school girls use relational aggression more often than Caucasian, overtly-aggressive middle and high school girls, respectively. Similarly, Caucasian, non-overtly-aggressive middle school girls use social aggression more often than Caucasian, overtly-aggressive middle school girls. Additionally, non-Caucasian, non-overtly-

aggressive middle school females use social aggression significantly more often than non-Caucasian, overtly-aggressive middle school females. Finally, overtly-aggressive females use overt aggression more often than non-overtly-aggressive females, and non-Caucasian females use overt aggression more often than Caucasian females. Implications for these findings are presented.

DEDICATION

I dedicate my dissertation to my family who has provided me with countless hours of support and encouragement. I really appreciate everything you have done for me throughout this process.

ACKNOWLEDGEMENT

A special thank you to Dr. Crothers for chairing my dissertation, being available to answer all of my many questions, revising my work over and over again, and providing me with countless hours of support. Dr. Schreiber, your vast knowledge of statistics has been so helpful to me though out this process. Thank you for all of the time and effort that you put into my dissertation. Thank you also to Dr. Schmitt for serving on my dissertation committee and for all of your assistance.

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CHAPTER I

INTRODUCTION

The History of Aggression

In the animal kingdom, behaviors that have developed through evolution are theoretically related to the survival and propagation of different species. Evolutionary psychologists posit that many common forms of behavior exist because they have provided some type of competitive advantage, either in terms of intra-species or inter-species competition. In particular, aggression has several evolutionary advantages for animals, including providing nutrition and defense against predators. Thus, aggression appears to be a readily-used adaptive strategy for human beings as well as for primates (Kolbert & Crothers, 2003).

Among other intents, human beings use aggression to express their anger and frustrations. For most, aggression is a word with strong associations: to attack, confront with force, or make things happen (Hadley, 2003). Definitions of human aggression generally involve the intention to inflict harm upon others (Archer & Coyne, 2005). In childhood, aggression is a behavior that intentionally leads to injury of or damage to another individual or his or her property (Crowell, 1987). Moreover, researchers have delineated several different forms of aggression; overt aggression, which includes physical and verbal aggression, and relational aggression.

Much research has been conducted on overt aggression, including physical and verbal bullying, in recognition of its detrimental effects upon both aggressors and victims, with corresponding development of evidence-based intervention programs and techniques to reduce or remedy this common problem of childhood and adolescence. In

fact, there are school-wide programs that have been found to be successful in reducing physical and verbal bullying of children (e.g., Olweus' Anti-Bullying Program; Olweus, 1993); however, there have been fewer investigations of interventions and prevention programming designed to reduce or eradicate relational aggression (Crick, 1996).

While males and females are both capable of aggression, these behaviors are often differently displayed. Researchers have demonstrated that boys are typically more overtly-aggressive (Prinstein, Boergers, & Vernberg, 2001) and physically aggressive than girls (Bosacki, 2003; Nelson, Robinson, & Hart, 2005; Zimmer-Gembeck, Geiger, & Crick, 2005). Although the harmful effects of overt aggression (e.g., verbal or physical threats or damage to people or property) upon child development have been widely documented, relatively little attention has been paid to theories of aggression in girls (Crain, Finch, & Foster, 2005). Even though girls are just as likely to be aggressive as boys with peers, females are more likely to use a form of aggression that has been termed relational aggression (Bonica, Arnold, Fisher, Zeljo, & Yershova, 2003; Crick & Grotpeter, 1995; French, Jansen & Pidada, 2002).

Relational Aggression

Females are indeed as aggressive as males, but are less likely to use physical aggression in relationships, instead preferring to wield aggression in a social manner known as relational aggression. Relational aggression, which includes both social and indirect aggression, is intended to cause harm by using others, spreading rumors, gossiping, and excluding others from a group or ignoring them (Archer & Coyne, 2005). Additional examples of relationally-aggressive behaviors include using negative body language or facial expressions, sabotaging someone else's relationships, threatening to

end a relationship unless a friend agrees to a request (Simmons, 2002), making up stories about others so that peers will reject them, ignoring peers in order to hurt them, and excluding peers from the peer group (Crain et al., 2005). In instances of relational aggression, the perpetrator uses her relationship with the victim as a weapon (Simmons, 2002). Relational aggression is defined in terms of its endpoint, which is to manipulate or disrupt relationships and friendships (Archer & Coyne, 2005). An example of relational aggression is an adolescent girl withholding friendship from another unless she does what the other female demands of her.

Literature Review of Relational Aggression

Relational aggression is an important construct that needs to be studied independent of overt aggression since research has demonstrated that relational aggression is a separate construct from overt aggression. For example, Zimmer-Gembeck et al. (2005) found that boys who had the highest physical aggression scores in their study also had the highest relational aggression scores. However, girls did not experience the same correlation between the two types of aggression, suggesting a need for relational aggression to be studied in girls.

In another study, Crick, Casas, and Ku (1999) demonstrated that relational and physical forms of peer maltreatment were relatively distinct in preschoolers with the two forms of victimization loading on two separate factors and only moderately correlated. When the first extreme group of relationally-victimized preschoolers was compared with the second extreme group of physically-victimized preschoolers, little overlap between groups was present. Relational victimization accounted for a significant proportion of the

variation in adjustment scores beyond that accounted for by physical victimization (Crick et al., 1999).

If Crick and Nelson (2002) had focused solely on physical victimization by friends in their study, and excluded relational victimization, they would have failed to identify 70% of girls who experienced maltreatment by their friends. Thus, relational aggression appears to be relatively distinct from overt aggression, is significantly related to gender and social-psychological adjustment in meaningful ways (Crick & Grotpeter, 1995) and consequently needs to be studied separately.

Peer relations and relational aggression. Friendships represent an important element of childhood development. Relationships amongst children and their reputation and peer group status are important for social and emotional development (Zimmer-Gembeck et al., 2005). A review of the theoretical and research literature demonstrates that having few or no friends is a diagnostic criterion for several psychiatric disorders and is indicative of some disturbance in development (Reisman, 1985).

Female friendships (i.e., friendships among girls and women) are among the most important relationships that girls and women develop during their lifetimes (Crothers, Field, & Kolbert, 2005). As girls become adolescents their female friendships assume an increasing amount of importance, potentially assisting them with their adjustment and sense of well-being (Crothers et al., 2005). Girls' friendships intrigue many of those who have tried to understand the nature of their functioning and how they contribute to female psychological well-being and personal development (Field, Crothers, & Kolbert, 2006).

Some specific behaviors often place children at risk for poor peer relations and, as a result, lack of success or difficulties with peers can exacerbate problem behaviors or

undermine the child in developing prosocial behaviors (Zimmer-Gembeck et al., 2005). The contribution of peers to the development of antisocial behaviors has been demonstrated in the literature, with peers influencing the development of antisocial behavior through group rejection (Werner & Crick, 2004). Moreover, children who are actively rejected from their group of peers are likely to be deprived of opportunities for learning important social skills, for practicing these social skills, regulating their emotions and resolving conflicts (Werner & Crick, 2004).

Cross-sectional and longitudinal research has illustrated that relationally-aggressive girls and boys have maladaptive peer relations (Werner & Crick, 2004). Using relational aggression in friendships can contribute to poor outcomes including loss of friendships, fewer friendships, poor quality friendships or feelings of depression, poor adjustment, anxiety and loneliness associated with victimization. Not surprisingly, Crick and Grotpeter (1995) found that relational aggression is significantly related to maladjustment (e.g. depression, loneliness, social isolation). Their results also provided evidence that relationally-aggressive children were significantly more disliked than other children and feel unhappy and distressed about their peer relationships. This finding is stronger and more pervasive for girls than for boys, however. Adding to these findings is research conducted by Werner and Crick (2004), in which the primary goal was to examine the unique effects of peer rejection and friends' aggressiveness on child relational and physical aggression across the span of a year. Results revealed that higher initial levels of rejection and friends' relational aggression predicted increases in relational aggression among girls only. Hence, maladaptive peer relationship experiences

may partially account for increases and decreases in girls' use of relational aggression over time (Werner & Crick, 2004).

Additionally, research has revealed that friend victimization is related to social-psychological adjustment difficulties for both boys and girls (Crick & Grotpeter, 1996; Crick & Nelson, 2002). Children who are victimized tend to experience more social difficulties and internalizing and externalizing problems, such as depression, social anxiety, social avoidance and loneliness. As part of Crick and Grotpeter's (1996) study, the relationship between the victimization of children by relational aggression and social-psychological adjustment was evaluated. Results included the finding that both forms of victimization, overt and relational, provide unique information about depression, but only relational victimization provides unique information about social anxiety, social avoidance and depression.

Relational aggression and social information processing. The typical development of female friendships may be conflicted for some girls due to the idiosyncratic social information processing patterns they may possess. Research is indicative of aggressive children processing social cues differently than non-aggressive youngsters, which in turn leads to aggressive behavior. The premise of this research is that particular social information processing patterns contribute to and motivate children's engagement in aggressive acts (Crick & Werner, 1998). Aggressive children process social cues in ways that are likely to contribute to their behavioral difficulties. Therefore, aggressive children's friendships may be strained to the extent that misperception of social cues is present.

According to models of social information processing, children's social behavior is a function of sequential steps of processing including encoding of social cues, interpretation of social cues, clarification of goals, response access or construction, response decision, and behavioral enactment (Crick & Dodge, 1994, 1996). Skillful processing at each step is hypothesized to lead to competent performance within a situation and biased or deficient processing leads to deviant social behavior (Crick & Dodge, 1996). Two general social information processing patterns have been found to be characteristic of aggressive children. The first pattern involves processing at the interpretation step of social cues. The second pattern involves the response decision processing step, in which children evaluate possible behavioral responses to a social situation and make a decision for enactment (Crick & Dodge, 1996).

For children who interpret a peer's behavior as intentionally harmful to the self, aggression may serve as retaliation or defense against a peer (Crick & Dodge, 1996). This constitutes reactive aggression, which is an angry, defensive response to frustration or provocation (Crick & Dodge, 1996). For reactively-aggressive children, aggressive acts are motivated by attributions of hostility toward peers who are perceived as mean or threatening to the self (Crick & Dodge, 1996). Children who are relationally-aggressive may feel that another peer is threatening to their social status and, as a result, may reactively act in a relationally-aggressive manner towards that peer. An example is an adolescent female who may feel that a peer may steal her boyfriend from her. A relationally-aggressive response to the situation would be to start a rumor in response to the perceived injustice, while a physically aggressive response may be a physical assault.

In contrast to reactive aggression, proactive aggression is a deliberate behavior that is controlled by external reinforcement (i.e., it is a means for obtaining a desired goal; Crick & Dodge, 1994). Proactively-aggressive children are likely to view aggression as an effective and viable means for obtaining social goals that are instrumental in nature and relatively self enhancing (Crick & Dodge, 1996). An example of proactive relationally-aggressive behavior is intentional aggression used to enhance one's social status. A child may feel that she wants to be the most popular girl in her clique and thus desires to overthrow the current leader. A relationally-aggressive girl may spread unflattering gossip to try and dethrone the leader to demean the leader's social status. Conversely, a proactively physically-aggressive girl may physically harm the leader to prove to the group that she is tougher to gain leadership of the clique.

If the social information processing model is correct, children who are aggressive process social cues differently than those children who are not aggressive, whether the nature of the behavioral response is reactive or instrumental. It is known that adolescents attending regular education programs use relational aggression (Crick & Grotpeter, 1995; Roecker Phelps, 2001; Xie, Farmer & Cairns, 2003); therefore, they may process social cues in a hostile way. In keeping with social information processing theory, aggressive adolescents who attend alternative schools are likely to process social cues in a more hostile way than non-aggressive teens (Bhaumik & Kundu, 1983; Escobar-Chaves, Tortolero, Markham, Kelder, & Kapadia, 2002). Since aggressive adolescents tend to rate overt aggression more positively than non-aggressive peers, such adolescents may also express their aggression in a relationally-aggressive manner; however, this is merely speculative. Such girls may not only be overtly-aggressive, but also relationally-

aggressive. As for the examples previously given, the overtly-aggressive female may first create a rumor, but if this behavior does not achieve the desired effect, she may then engage in physical aggression. Overtly-aggressive females may not only use physical aggression in their friendships, but may also use relational aggression to achieve their desired goals. This presents an area of the relational aggression literature that has yet to be researched.

Relational aggression and cultural background/ethnicity. The relationship between relational aggression and ethnicity or cultural background has not been fully explored to date. Existing research has typically focused on samples of non-overtly-aggressive females and males of Caucasian ethnicity, and such research may not be applicable to children of other ethnicities and cultural backgrounds. Research investigators have rarely studied relational aggression in other ethnicities/cultural backgrounds or atypical populations. Adolescents other than typically-developing Caucasians may be using relational aggression or may be victims of relational aggression; therefore, it appears important that other populations are studied, particularly in the ever-developing pluralistic society of the United States.

Data exists to demonstrate that relational aggression manifests differently across races. For example, overt victimization has been found to be significantly associated with fear of negative evaluation, social avoidance, and depression in African American and Hispanic students; however, in at least one study, relational aggression was not significantly associated with any maladjustment index (Storch, Zelman, Sweeney, Danner, & Dove, 2002). These findings may differ from past research that has suggested relational victimization is positively related to depression, social anxiety and loneliness

(Crick & Bigbee, 1998; Crick et al., 1999; Crick & Grotpeter, 1996). Findings of such studies may not be indicative of relational aggression with diverse youngsters because relational victimization may have differential effects based on ethnicity or socioeconomic context. David and Kistner (2000) found African American elementary school children received more peer nominations for overt and relational aggression than Caucasian children in their sample. Crothers et al. (2005) discovered that ninth and tenth grade African American girls were more likely to identify with traditional masculine characteristics and report using relational aggression significantly less than white participants. These are important findings to consider because they suggest that relational aggression should be studied and compared in different ethnic populations. Research in this area would be helpful to understand the context of relational aggression across diverse groups in order to tailor interventions to the individual.

Relational aggression and age. Differences in age may play a role in a child's use of relational aggression. Data exists to suggest that gender differences in relational aggression depend on age. For example, Zimmer-Gembeck et al. (2005) found no gender differences in relational aggression amongst third graders, but by the sixth grade, girls in their sample were more relationally-aggressive than boys. Similarly, Bosacki (2003) found that teachers rated sixth grade girls higher than boys on measures of relational aggression; however, gender differences for relational aggression were not found in fourth and fifth grade students.

Crothers et al. (2005) examined the relationship between gender role identity and relational aggression. Results revealed that adolescent girls who identified with a more traditional feminine gender role were more likely to perceive themselves as using

relational aggression than those girls adhering to a non-traditional gender role. One explanation for this finding may be that age has an effect on the use of relational aggression due to traditional gender roles and that as females reach adolescence, they understand feminine gender roles better than elementary school girls and begin to use relational aggression more often to be in compliance with traditional gender roles. Other studies have found the use of relational aggression to increase with the beginning of adolescence. For example, Xie et al. (2003) found that the use of direct relational aggression increased from grades one to seven. Conflicts in grade seven, the beginning of adolescence, were more likely to involve direct relational aggression than conflicts in grades one and four. Different studies have yielded a variety of results in terms of the use of relational aggression at different ages. Further research is needed to clarify the relationship between relational aggression and age by examining the use of relational aggression in females at different ages. Correspondingly, prevention/intervention programs should be implemented to target children in age groups that are most likely to use relational aggression.

Problem Statement

The current study has contributed to the literature base in a number of ways. First, in conducting this study, differences in rates of relational and social aggression between overtly- aggressive and non-overtly-aggressive girls were established. Therefore, this study ultimately provided information clarifying whether relational and social aggression is of concern for these populations.

The construct of aggression in females has not been as widely studied as aggression in males (Crain et al., 2005). Although findings regarding the incidence of

relational aggression in males and females have been mixed, research has demonstrated that girls are more negatively affected by the behavior. Boys and girls both may be equal recipients of relationally-aggressive behaviors, but girls perceive it as more hurtful than boys (Yoon, Barton, & Taiariol, 2004). Rys and Bear (1997) found that among girls, peer rejection correlated more strongly with peer perceptions of relational aggression.

Therefore, the present study specifically targeted females.

Also, unknown is whether differences exist in relational and social aggression in accordance with individuals' cultural background/ethnicity. As discussed earlier, it is important to determine the relationship, if any, of ethnicity/cultural background and relational and social aggression. If a relationship does exist, more effective interventions can be created that are specifically tailored to decreasing the use of relational and social aggression in adolescents from diverse backgrounds. The current study also contributed to the literature by revealing differences in the use of relational and social aggression across cultural backgrounds/ethnicities and provided additional evidence for studies that have previously examined these issues.

Finally, this research contributed to the literature by examining differences in the use of relational and social aggression across childhood and adolescence. The current study has added to the extant literature by revealing differences in the use of relational aggression based on age, and has provided additional evidence for studies that have previously examined these issues.

Significance of the Problem

Relational and social aggression may be an important intervention area to target in overtly-aggressive girls in alternative schools because relational aggression has been

found to have negative socioemotional effects upon children, especially females, including depression, anxiety, poor peer relationships and poor social adjustment (Crick & Grotpeter, 1995; Crick & Nelson, 2002). It is not clear whether children experience these negative effects because these behaviors limit their access to peer relations, in the case of victims, or because their feelings of psychological distress lead them to engage in relational aggression, in the case of perpetrators (Crick & Grotpeter, 1995). Schools need to develop prevention and intervention programs in order to diminish the potential for children experiencing the negative socioemotional effects associated with relational aggression.

The current relational aggression research base is lacking in several areas that will be briefly discussed below, including overtly-aggressive girls' and individuals' from diverse cultural/ethnic backgrounds use of relational aggression. First, while relational aggression is a behavior that has been identified in females in regular education settings (Crick & Grotpeter, 1995), one population that has not been examined in the extant literature base are females identified as overtly-aggressive and correspondingly attending alternative school settings or living in residential group homes. Although overtly-aggressive females are likely to receive services targeting their overtly-aggressive behaviors, they may also require intervention or treatment in reducing relationally-aggressive behaviors, since there is the possibility that relationally-aggressive behaviors may be related or contribute to overtly-aggressive behaviors.

Research has shown that typical adolescents use relational aggression and it is important to target the use of relational aggression in this population to prevent the development of negative social psychological effects (Crick & Grotpeter, 1995; Crick &

Nelson, 2002). What has not been established in the literature is if relational aggression is a problem in overtly-aggressive females. For the purposes of this study, overtly-aggressive girls are considered those that have been placed in an alternative school due to demonstrable aggressive behaviors demonstrated in the regular education setting.

It may be important to target relational aggression in overtly-aggressive girls in alternative schools and group home settings, since these behaviors may have been overlooked or not considered to be a problem, considering the overt aggression that such students have already demonstrated. Intervention programs may be used to proactively target these behaviors in order to prevent children from using relationally-aggressive behaviors and to keep potential peers from developing social-psychological adjustment difficulties.

Further, as mentioned earlier, relational aggression has been primarily researched in Caucasian samples and there exists a need for research with individuals from diverse cultural backgrounds and ethnicities. Investigators have found differences in the use of relational aggression in Caucasian and African American samples, but such studies have been few and the differences in the use of relational aggression in individuals from various cultural backgrounds and ethnicities needs to be further examined and clarified. Another point of consideration is that if cultural background/ethnic differences exist in the use of relational aggression, prevention and intervention programs are needed that are specifically tailored to address such differences (e.g., *The Sisters of Nia: A Cultural Program for African American Girls*), designed to strengthen mutually positive relationships and decrease negative relationships African American girls have with their peers (Belgrave, Reed, Plybon, Butler, Allison, & Davis, 2004).

Research Questions and Hypotheses

Several research questions were investigated in the current study. The first research question for the current study is: What is the incidence of the use of relational aggression in an overtly-aggressive female adolescent sample?, with descriptive statistics used to analyze the data. Based upon the finding that overtly-aggressive girls use relational aggression in their relationships (Tiet, Wasserman, Loeber, McReynolds, & Miller, 2001), it was hypothesized that this group of females would use relational aggression at a rate commensurate with non-overtly-aggressive samples of adolescent females. Zahn-Waxler, Park, Essex, Slattery and Cole (2005) examined children's representations of conflict and distress situations at seven years of age as developmental precursors to relational aggression and found that overall, youth reports of relational aggression were associated with disruptive symptoms. Additionally, Prinstein et al. (2001) found that relational aggression was related to externalizing behaviors drawn from the Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD) criteria in adolescents in grades 9-12.

Similarly, the second research question is: What is the incidence of the use of relational aggression in a non-overtly-aggressive female adolescent sample? Based upon past research that has shown that females in typical schools use relational aggression, it was hypothesized that this group of females would use relational aggression at least at a rate commensurate with overtly-aggressive females.

Several main effect research questions regarding relational aggression were investigated as well. The third research question is: Does the use of relational aggression by overtly-aggressive females statistically significantly exceed that of non-overtly

aggressive females? It was hypothesized that girls in a regular education setting would use relational aggression to a greater degree than overtly-aggressive girls, since there is research suggesting that girls tend to use relational aggression in lieu of overt physical or verbal aggression (Crick & Grotpeter, 1995; Crick & Nelson, 2002). Since overtly-aggressive females tend to use physical and verbal aggression to express their feelings of anger and frustration, it is hypothesized that they will rely less often upon the use of relational aggression in their relationships.

The fourth research question is: Are there differences in the use of relational aggression depending upon the age of the participant? Based upon the literature that seems to demonstrate that around middle school age, girls start to use relational aggression more often than younger children, it was hypothesized that girls in grades 7-9 would use relationally-aggressive behaviors to a greater degree than girls in grades 10-12. In further explanation, it is likely that during grades 7-9 is the time in a girl's life when she is jockeying for the best position in her social hierarchy. As children progress through grade school and into middle and high school, the incidence of relational aggression increases and is thought to peak in adolescence (Tiet et al., 2001; Xie et al., 2003).

The fifth research question is: Does the incidence of relational aggression differ among girls by ethnicity or cultural background? This is a main effect research question. It was hypothesized that African American girls would be less relationally-aggressive than Caucasian girls. Based upon the fact that the previous literature has been completed with primarily European American samples, it was hypothesized that African American students as a whole would be less relationally-aggressive than Caucasian students. For example, Crothers et al. (2005) found in their study that ninth and tenth grade girls of

color reported using relational aggression significantly less than did white participants.

The following four interaction questions related to relational aggression were investigated: (a) Do differences exist in the use of relational aggression depending upon the age of the participant and her aggression group?, (b) Do differences exist in the use of relational aggression depending on the participant's ethnicity/cultural background and her aggression group?, (c) Do differences exist in the use of relational aggression depending on the participant's ethnicity/cultural background and her age?, and (d) Do differences exist in the use of relational aggression depending on a participant's ethnicity/cultural background, aggression group and age?

The tenth and eleventh research questions regarding social aggression were the following: What is the incidence of the use of social aggression in an overtly-aggressive female adolescent sample? and What is the incidence of the use of social aggression in a non-overtly-aggressive female adolescent sample?

Several main effect research questions regarding social aggression were also investigated. Accordingly, the twelfth research question is: Do girls not identified as being overtly-aggressive use social aggression more often than overtly-aggressive females? It was hypothesized that girls in a regular education setting would use social aggression to a greater degree than overtly-aggressive girls, since there is research suggesting that girls not identified as overtly-aggressive are more likely to use social aggression in conflicts with other females than physical aggression (Xie, Cairns & Cairns, 2002). Since overtly-aggressive females tend to use physical and verbal aggression to express their feelings of anger and frustration, it was hypothesized that they would rely less often upon the use of social aggression in their relationships.

The thirteenth research question is: Are there differences in the use of social aggression depending upon the age of the participant? It was hypothesized that girls in grades 7-9 would use social aggression to a greater degree than girls in grades 10-12. Similar to the hypothesis made regarding potential age differences in the use of relational aggression, the extant literature base suggests that middle school age-girls start to use relational aggression more often than younger children, it was hypothesized that girls in grades 7-9 would use socially-aggressive behaviors to a greater degree than girls in grades 10-12.

The fourteenth research question is: Do differences exist in the use of social aggression among in accordance with their ethnicity/cultural background? It was hypothesized that African American girls would be less socially-aggressive than Caucasian girls. Since most of the previous literature has been completed with primarily European American samples, it was hypothesized that African American students as a whole would be less socially-aggressive than Caucasian students (as suggested by findings in the Crothers et al. [2005] study).

The following four interaction questions related to social aggression were investigated: (a) Do differences exist in the use of social aggression depending upon the age of the participant and her aggression group?, (b) Do differences exist in the use of social aggression depending on the participant's ethnicity/cultural background and her aggression group?, (c) Do differences exist in the use of social aggression depending on the participant's ethnicity/cultural background and her age?, and (d) Do differences exist in the use of social aggression depending on a participant's ethnicity/cultural background, aggression group and age?

The nineteenth and twentieth research questions regarding overt aggression were the following: What is the incidence of the use of overt aggression in an overtly-aggressive female adolescent sample? and What is the incidence of the use of overt aggression in a non-overtly-aggressive female adolescent sample?

Several main effect research questions regarding overt aggression were investigated. The twenty-first research question is: Are there differences in the use of overt aggression between non-overtly-aggressive females in comparison to overtly-aggressive females? It was hypothesized that girls identified as being overtly-aggressive would use more overt aggression than non-identified girls. It is likely that girls who have already been identified as overtly-aggressive would use such behavior to a greater degree than girls who have not received this identification.

The twenty-second research question is: Are there differences in the use of overt aggression depending upon the age of the participant? It was hypothesized that girls in grades 7-9 would use overt aggression to a greater degree than girls in grades 10-12, since demonstrations of overt aggression tend to decrease as students age (Crick & Dodge, 1994, 1996).

The twenty-third research question is: Do differences exist in the use of overt aggression among girls by their ethnicity/cultural background? It was hypothesized that African American girls would use overt aggression to a greater degree than Caucasian girls as a result of literature demonstrating racial/ethnic differences in the use of direct physical and verbal aggression (McLaughlin, Hilt, & Nolen-Hoeksema, 2007).

The following four interaction questions related to overt aggression were investigated: (a) Do differences exist in the use of overt aggression depending upon the

age of the participant and her aggression group?, (b) Do differences exist in the use of overt aggression depending on the participant's ethnicity/cultural background and her aggression group?, (c) Do differences exist in the use of overt aggression depending on the participant's ethnicity/cultural background and her age?, and (d) Do differences exist in the use of overt aggression depending on a participant's ethnicity/cultural background, aggression group and age?

Summary

One population that has not been studied in the relational aggression literature to date is girls who have already been identified as overtly aggressive. Additionally, the relationship between relational aggression and ethnicity or cultural background has not been fully explored to date as well as the relationship between relational aggression and age. Therefore, the present study will investigate whether differences exist in the use of relational, social, and overt aggression amongst overtly-aggressive and non-overtly-aggressive female adolescents. Specifically, the variables of aggression group (overtly-aggressive and non-overtly-aggressive), age level (middle or high school), and cultural background/ethnicity (Caucasian or non-Caucasian) in the self-reported use of relational aggression, social aggression, and overt aggression will be examined.

CHAPTER II

LITERATURE REVIEW

Chloe found out that Alisa had been making up lies about her and telling her secrets to the popular girls. Chloe said she felt “really bad. It was like if you write in a diary, and someone reads it and they tell their friends what was in it and they tell their friends.” When you’ve trusted someone that way, it hurts a lot. Chloe was afraid to say anything about it, she said, because “most of the friends I had come from her. If I lost her, I lost the rest” (Simmons, 2002, p. 169).

Human beings, males and females alike, display a wide range of emotions that differentiate them from other species, including happiness, sadness, and anger. Males and females have used aggression throughout history to convey their anger and frustrations. Definitions of human aggression generally involve the intention to inflict harm upon others (Archer & Coyne, 2005) and include forceful, attacking behavior, either constructively self-assertive and self-protective, or destructively hostile to others or to oneself (Guralnik, 1985). Aggression is a word with strong associations: to attack, confront with force, or make things happen (Hadley, 2003). Several different forms of aggression exist, including overt aggression, which includes physical and verbal aggression, as well as relational aggression, both of which will subsequently be defined.

Overt Aggression

Overt aggression, including both physical and verbal aggression, implies the perpetration of hurtful acts upon another person. Physical demonstrations are among the most notable types of overt aggression, and among peers, occurs when physical damage or physical intimidation serves as the vehicle of harm towards others (Crick & Nelson,

2002); for example, punching or kicking another person with whom we are angry. Physical aggression is usually defined as an act performed by a person who intends to physically harm another person (Estrem, 2005). Until recently, psychological research has primarily been focused upon physical aggression (Rys & Bear, 1997). However, researchers have also noted that another form of overt aggression, verbal aggression, can be just as harmful as is physical aggression. Xie, Farmer, and Cairns (2003) define verbal aggression as hostile actions whereby damage is achieved by the direct use of words. Verbal aggression includes verbal insulting, humiliating, verbal threatening, name calling, yelling and arguing (Xie et al., 2003).

Males and females are both capable of overt aggression, but these behaviors are manifested differently. Researchers have demonstrated that boys are typically more physically aggressive than girls (Bosacki, 2003; Nelson, Robinson, & Hart, 2005; Zimmer-Gembeck, Geiger, & Crick, 2005) in both Caucasian and African American samples (Fitzpatrick, 1997). However, young girls and boys are likely to exhibit similar rates of physical aggression, with girls demonstrating fewer episodes of physical aggression as they age (Xie et al., 2003).

Researchers have also posited that boys are not only more physically aggressive, but they are also more likely to be the victims of physical victimization. The most common type of victimization amongst boys is physical victimization (Crick & Nelson, 2002), which involves the child being the frequent target of peers' physically aggressive acts (Crick, Grotpeter, & Bigbee, 2002). In a study of 474 third through sixth grade children, Crick and Grotpeter (1996) found that boys self-reported more overt aggressive victimization than girls. However, these researchers did suggest that their conclusions

would be more generalizable if multiple informants, such as teachers, peers and parents, were used in addition to self-reports.

Males are not only more physically aggressive and more physically victimized, but they are also thought to be more overtly aggressive, which includes the combination of both physical and verbal aggression, than females. As part of Crick and Grotpeter's (1995) study, they assessed gender differences for overt aggression in a sample of 491 children from third to sixth grade. In this study, boys were significantly more overtly aggressive than girls and were more likely to be represented in the extreme group of overtly-aggressive children in their study. Similarly, Zahn-Waxler, Park, Essex, Slattery, and Cole (2005) used the *Children's Peer Relations Scale* (Crick & Grotpeter, 1995), which provides an assessment of six aspects of children's perceptions of their peer interactions, including perceived peer acceptance, isolation from peers, negative affect, engagement in caring acts, overt aggression and relational aggression, to examine gender differences in overt aggression in their sample of 54 male and female adolescents, finding that girls in their study were less likely to report overt aggression.

Furthermore, Roecker Phelps (2001) completed a study in which she investigated children's responses for coping with overt aggression in a sample of 491 children using the *Social Experience Questionnaire (SEQ)* (Crick & Grotpeter, 1996), concluding that boys in grades three through six reported a greater frequency of overt aggression. A criticism of this finding is that the *SEQ* (Crick & Grotpeter, 1996) claims to measure overt victimization; however, the factor analysis completed for the measure revealed that the verbal aggression item loaded on both overt and relational victimization scales and

had to be dropped. As a result, it appears that the *SEQ* actually only measures physical victimization.

Although males are more generally physically- and overtly-aggressive than females, and the harmful effects of overt aggression (e.g., verbal or physical threats or damage to people or property) on child development have been widely documented, relatively little attention has been paid to theories of aggression in girls (Crain, Finch, & Foster, 2005). In fact, girls are just as likely to be aggressive as boys with peers, but instead use a form of aggression called relational aggression.

Relational Aggression

Girls learn that a safe way to attack someone else is behind her back, so that she will not know who started the attack. On the one hand, this policy dooms girls and women to behavior such as gossip and shunning, which cannot be ritualistically resolved. On the other hand, it also allows girls and women to fight without physically hurting each other (Chesler, 2001).

Aggression in girls is less visible, no less intense but often expressed socially, and frequently denied while being perceived as catty rather than effective (Hadley, 2003). Females are indeed aggressive, but in a social manner known as relational aggression. Relational, social, or indirect aggression is intended to cause harm by using others, spreading rumors, gossiping, and excluding others from the group or ignoring them (Archer & Coyne, 2005). Social aggression will be discussed in further detail later on in the literature review. Other relationally-aggressive behaviors include using negative body language or facial expressions, sabotaging someone else's relationships or threatening to end a relationship unless a friend agrees to a request (Simmons, 2002). The perpetrator

uses her relationship with the victim as a weapon (Simmons, 2002); relational aggression is defined in terms of its endpoint, which is to manipulate or disrupt relationships and friendships (Archer & Coyne, 2005).

Relationally-aggressive behaviors include making up stories about others so that peers will reject them, ignoring peers in order to hurt them, and excluding peers from the peer group (Crain et al., 2005). An example is an adolescent girl withholding friendship from another unless she does what the other female demands of her. Relational aggression is a problem that affects students of all ages, both genders, and multiple ethnicities, and because of its harmful effects, needs to be examined further. To date, researchers have assessed relational aggression and physical aggression primarily through teacher ratings and peer nominations (McEvoy, Estrem, Rodriguez, & Olson, 2003).

Many researchers have studied the construct of relational aggression. In their work, they give examples of or describe relationally-aggressive behaviors and their purposes; however, a definition of relational aggression has not been clearly established. For example, Crick and Grotpeter (1995) describe relational aggression as harming others through purposeful manipulation and damage of their peer relationships. In academic and popular literature, relational aggression is frequently characterized as the intent to harm another through the exploitation of a relationship (Remillard & Lamb, 2005). Remillard and Lamb (2005) provide examples of relationally-aggressive acts that include sarcastic verbal comments, speaking to another in a cold or hostile tone of voice, ignoring, staring, gossiping, spreading rumors, and “mean” facial expressions and exclusion, all of which are acts aimed to damage the target’s social status or self-esteem. A need in the relational aggression literature is a clear definition of the construct. In the following section,

research regarding the constructs of relational and overt aggression will be reviewed to determine if they are different and worth studying separately.

Relational Aggression as a Separate Construct from Overt Aggression

Researchers have demonstrated that relational aggression is a separate construct than overt aggression, with evidence from the research literature including samples spanning from preschool to middle school. Studies have also been completed that suggest that “friend” physical and relational victimization are separate constructs, as well. However, there is some research that does not support this claim. Studies supporting and negating the separate constructs of physical and relational aggression will be subsequently discussed.

In 1995, Crick and Grotpeter found evidence for the validity of a relational form of aggression in their objective to assess the degree to which overt aggression differs from relational aggression. To that end, a three-item peer nomination scale was created to assess the social behaviors of relational aggression, overt aggression, prosocial behaviors and isolation. Factor loadings for all of the subscales were relatively high as were Cronbach’s alpha scores, which demonstrated that the scales were highly reliable. Based upon children’s peer nomination scores, children were classified into aggression groups. Results of this study revealed that relational aggression appears to be relatively distinct from overt aggression and is significantly related to gender and to social-psychological adjustment in meaningful ways (Crick & Grotpeter, 1995). A moderate association between the two constructs existed, which is what was expected for two constructs that are hypothesized to be different forms of the same general behavior. Hence, Crick and

Grottpeter (1995) suggested that relational aggression is a related, but distinct construct that is independent of overt aggression.

Zimmer-Gembeck et al. (2005) completed a three-year study designed to investigate gender differences in associations between peer status and children's behavior over a transition to middle school for 458 children. Peer nomination procedures taken from Crick's research (1997) were used to assess for relational and physical aggression with specific subscales developed for each. Zimmer-Gembeck et al. (2005) found that boys who had the highest physical aggression scores also had the highest relational aggression scores, but noted that girls did not experience the same correlation between the two types of aggression. This finding demonstrates the importance of studying aggression and gender with separate assessments of physical and relational aggression (Zimmer-Gembeck et al., 2005).

Crick, Casas, and Ku (1999) demonstrated that relational and physical forms of peer maltreatment were relatively distinct in preschoolers in their study designed to assess relational and physical peer victimization among 129 three- to five-year olds using a teacher rating measure of peer victimization called the *Preschool Peer Victimization Measure*, a teacher report developed for this study, as well as the *Preschool Social Behavior Scale – Teacher Form* (Crick, Casas, & Mosher, 1997) that assessed relational aggression, physical aggression and prosocial behaviors. Teacher reports were used instead of peer nominations because they were believed to be more valid than peer reports for a preschool age-group. Results of the factor analysis and correlational analyses indicated that relational and physical forms of peer maltreatment were relatively distinct; the two forms of victimization loaded on two separate factors and were shown to

be only moderately correlated. When the extreme groups of relationally- and physically-victimized preschoolers were compared, relatively little overlap between the groups resulted, only thirteen percent. Also, relational victimization accounted for a significant proportion of the variation in adjustment scores beyond that which accounted for by physical victimization. Results provide evidence of the importance of studying both physical victimization and relational victimization in the lives of young children because the findings imply that maltreatment by age-mates starts much earlier than in middle childhood. Limitations of the study include lack of observational data that would have provided validation for the teacher report measure, the lack of multiple informants, a larger number of participants and a longer time interval than the one-month time period used.

Finally, Crick and Nelson (2002) completed a study of 496 third to sixth grade children to provide an initial evaluation of gender differences in friend relational and physical victimization. Physical victimization was defined as involving the child being the target of peers' physically-aggressive acts and relational victimization was defined as involving the child being the target of peers' relationally-aggressive acts. The Friend Relational and Physical Aggression subscales of the *Friendship Qualities Measure Self-Report* (Grotperter & Crick, 1996) were used to assess for friend relational and physical victimization. Crick and Nelson (2002) reported that if they had focused solely upon friend physical victimization, with the exclusion of friend relational victimization, they would have failed to identify the majority of girls who experienced maltreatment by their friends, by more than 70%. A limitation of the study is that it looked at mutually chosen,

dyadic relationships; therefore, the results are not descriptive of relational aggression within peer groups.

However, there is literature that exists that has not found relational and overt aggression to be separate constructs. Crain et al. (2005) revealed contradictory findings to the studies previously reviewed, by completing two studies that examined the correlation between overt and relational aggression in fourth through sixth grade girls using a peer nomination instrument. Overt and relational aggression was found to be highly correlated and could not be separated into separate constructs. Crain et al. (2005) gave several reasons why their results may be different from other studies, including the fact that their sample included only girls and other studies have included boys and girls; they allowed for unlimited peer nominations whereas past studies only allowed for three peer nominations; and finally, previous studies have controlled for the effects of overt aggression and have distinguished between highly aggressive children and non-aggressive children, whereas their study did not.

As mentioned earlier, Crick and Grotpeter (1995) claimed to have found evidence for relational aggression being a distinct but related construct to overt aggression; however, there are questions regarding the findings of this research. One criticism of this finding is that during the factor analysis conducted on the peer nomination instrument to assess whether relational aggression would emerge as a separate factor, two items had to be dropped. One of these items is of interest: “tells mean lies or rumors about a person to make other kids not like the person,” and cross-loaded on both relational aggression and overt aggression. Researchers often include telling lies and rumors as part of their description of relational aggression; however, the results of Crick and Grotpeter’s (1995)

factor analysis reveal that a commonly-included behavior in the description of relational aggression is also considered by children as an overtly-aggressive behavior.

In summary, despite some conflicting evidence, the preponderance of research has yielded information that suggests that relational and overt aggression are separate constructs; therefore, relational aggression will be studied as a separate construct in the present study.

Social Aggression

Social aggression as described by Xie, Farmer & Cairns (2002) refers to actions whereby interpersonal damage is achieved by nonconfrontational and largely-concealed methods that employ the social community. The impetus for social conflict may include a difference of opinion between girls, competition to earn social status or obtain a particular dating partner, or conscious or unconscious angst associated with one's social value or self-worth (Field, Kolbert, Crothers, & Hughes, 2009). Socially-aggressive attacks are not direct and their effectiveness largely depends on the use of social networks (Xie, Cairns, et al., 2002).

Examples of social aggression include social ostracism, rumors, gossip and character defamation (Xie, Cairns, et al., 2002). Social aggression encompasses both overt and covert behaviors, and includes nonverbal aggressive behaviors like ignoring someone or making mean faces at them (Brendgen, Dionne, Girard, Boivin, Vitaro, & Pérusse, 2005). Nonverbal behaviors play an important part in social aggression, serving functions like conveying dislike and excluding individuals from peer groups (Shute, Owens, & Slee, 2002). These behaviors are often subtle and are used in ways that enable offenders to protest their innocence (Shute et al., 2002).

In an integrated review by Archer and Coyne (2005), it was concluded that relational and social aggression are much more similar than they are different. For example, behaviors like gossiping and ignoring have both been included in descriptions of relational and social aggression in the literature (Archer & Coyne, 2005). Coyne, Archer, and Eslea (2006) found support for an integration of the terms, as they are more similar than distinct when compared to physical or verbal aggression. Furthermore, these researchers propose using a system that acknowledges the similarities in the terms in order to focus on how to combat these forms of aggression. The preponderance of research suggests that relational aggression and social aggression are virtually the same constructs; however, recent research completed by Crothers, Schreiber, Field, and Kolbert (2009) suggest that relational and social aggression are different constructs. The focus of the following literature review will be on relational aggression; however, social aggression will be studied as well.

Measurement Limitations

Before reviewing the relational aggression literature, a brief overview of the current measures used and their limitations needs to be examined. Different forms of measures have been used to assess relational aggression including observations, nominations, and rating scales completed by individuals (self-report), peers, and teachers. Researchers have assessed relational aggression and physical aggression primarily with teacher ratings and peer nominations (McEvoy et al., 2003).

Throughout this review, measures used to assess for relational aggression will be discussed; however, there are some weaknesses that exist regarding some of the current methods. One example is that the literature has not always demonstrated consistency

amongst raters of aggression, which are typically teachers and peers. McEvoy et al. (2003) compared three methods for assessing relational aggression and physical aggression, which included a teacher rating scale, a peer nomination measure, and a direct observation measure. Teachers, peers, and observers were found to agree more often about occurrences of physical aggression than about occurrences of relational aggression. Also, all three groups agreed more often about girls' relational aggression and boys' physical aggression than about girls' physical aggression and boys' relational aggression. The teachers and peers tended to agree about which students displayed the most physical aggression but agreed less about which students displayed the most relational aggression. These findings demonstrated intermethod agreement between teacher rankings and peer nominations and between teacher rankings and observer scores of physical aggression by boys. McEvoy et al. (2003) suggest that physical aggression is more salient and easier to identify and that teachers and peers think differently about what is relational aggression.

Moreover, a weakness of rating scales and peer nominations is that teachers and peers do not always agree on what constitutes the use of relational aggression. This may be due to the fact that teachers and students may both possess different ideas about what relational aggression is or the possibility that teachers may not always see students acting in a relationally-aggressive manner towards their peers due to the many duties of their position. The inconsistency of these measures should be considered when making a determination of whether children are using relational aggression or not. Regardless, these measures seem to be the best way to measure relational aggression until more efficient measures are created.

Another method used in the literature, which will also be used in the current study is a self questionnaire. Self reporting techniques provide useful information in providing the researcher with firsthand information about the aggressor, the aggressor's milieu, and numerous aggressive behaviors, as well as opportunities for informed evaluation of a child's overall psychological well being (Crothers et al., 2007). Criticisms regarding self report measures exist including children claiming to be extremely victimized when teachers and peers do not perceive this victimization occurring (Perry, Kusel, & Perry, 1988) or children underestimating their actual behavior in the interest of maintaining social desirability (Pellegrini & Bartini, 2000).

A Review of the Literature Regarding Relational Aggression

The following literature review will focus on relational aggression. Literature regarding social information processing and relational aggression and gender differences, gender roles, age differences, typical samples, and contexts in which it is studied will be reviewed. The effect of relational aggression upon friendships, social status of the participants of relational aggression and psychosocial adjustment as it relates to relational aggression will also be discussed. An additional topic that will be presented is the relation between relational aggression and delinquent behavior. Finally, the present study will be discussed including its purpose, research questions and hypotheses.

Social Information Processing and Relational Aggression

In order to better understand children's use of overt and relational aggression, the discussion will now turn to how children think about the social cues they receive from their peers. To comprehend relational aggression, the ways aggressive children process social information needs to be understood. Some of the relational aggression literature

has demonstrated that aggressive children process social cues differently than their nonaggressive peers, which in turn leads to aggressive behavior. Crick and Werner (1998) proposed that when attempting to inflict harm on peers (i.e., aggressing), children do so in ways that best thwart or damage the goals that are valued by their respective gender peer groups. The premise of this research is that particular social information processing patterns contribute to and motivate children's engagement in aggressive acts (Crick & Werner, 1998). The social information processing model research has demonstrated that aggressive children process social cues in ways that are likely to contribute to their behavioral difficulties. Topics for this section include social information processing steps and their functions, social information processing patterns characteristic of aggressive children, reactive and proactive aggression and research that supports and challenges the social information processing model.

According to models of social information processing, children's social behavior is a function of sequential steps of processing, including encoding of social cues, interpretation of social cues, clarification of goals, response access or construction, response decision, and behavioral enactment (Crick & Dodge, 1994, 1996). The first step of processing is to encode relevant information from the many cues in any environmental stimulus through selective attention and focus on a subset of cues (Dodge & Crick, 1990). Failure to encode relevant cues increases the likelihood of a deviant response (Dodge & Crick, 1990). After the cues are encoded, they are mentally represented in long-term memory and are given meaning, which often involves the interpretation of another person's intention and attributions about the causes of the stimulus (Dodge & Crick, 1990). The child must next access one or more possible behavioral responses from their

long-term memory through processes of associative networks and other access rules (Dodge & Crick, 1990). As a result of the associative networks and other access rules, responses that are strongly associated with specific mental representations of stimuli or are easily accessible because they hold a place at the top of the memory bin (Dodge & Crick, 1990). The next step is a response decision in which the child applies rules of response evaluation to decide whether an accessed response is above a threshold of acceptability for enactment and may include strategy evaluation, evaluation of instrumental and interpersonal outcomes and evaluation of personal efficacy for enactment (Dodge & Crick, 1990). The last step, enactment, is the step in which the child uses protocols and scripts to transform his or her selected response into verbal and motor behaviors (Dodge & Crick, 1990). Skillful processing at each step is hypothesized to lead to competent performance within a situation and biased or deficient processing leads to deviant social behavior (Crick & Dodge, 1996). Two general social information processing patterns have been found to be characteristic of aggressive children which are the first pattern that involves processing at the interpretation step of social cues of the model and the second pattern which involves the response decision processing step where children evaluate possible behavioral responses to a social situation (Crick & Dodge, 1996).

For children who interpret a peer's behavior as intentionally harmful to the self, aggression may serve as a retaliation or defense against a peer (Crick & Dodge, 1996). This is reactive aggression. Reactive aggression is an angry, defensive response to frustration or provocation (Crick & Dodge, 1996). Crick and Dodge (1996) found that reactively-aggressive fifth and sixth grade students in their sample attributed hostile

intent to peer provocateurs more frequently than non-aggressive peers, but third and fourth graders did not. For reactively-aggressive children, aggressive acts are motivated by attributions of hostility toward peers, who are perceived as mean or threatening to the self (Crick & Dodge, 1996).

Proactive aggression is a deliberate behavior that is controlled by external reinforcement, (i.e., it is a means for obtaining a desired goal; Crick & Dodge, 1994). Proactively-aggressive children are likely to view aggression as an effective and viable means for obtaining social goals that are instrumental in nature and relatively self enhancing (Crick & Dodge, 1996). Crick and Dodge (1996) provide evidence that proactively-aggressive children exhibit cognitive patterns at step three, clarification of goals, of processing that are likely to contribute to the use of aggressive behavior during peer interaction.

Crick and Werner (1998) completed a study to understand the second step of the social information processing model proposed by Crick and Dodge (1996). This second step is called response decision process and involves a social decision-making task in which children evaluate possible alternative responses to a specific social situation and select their most favorable response to act out. A strength of the study was its' large sample size that included 1,166 third through sixth grade children. A peer nomination instrument developed in past research by Crick and Grotpeter (1995) was used to identify overtly-aggressive, relationally-aggressive and nonaggressive children and a hypothetical-situation instrument adapted from past research and consisting of six stories was used to assess children's patterns of social information processing. Specifically, children's instrumental and relational outcome expectations, feelings of self-efficacy,

response decisions and response evaluations were assessed. Results revealed that overtly-aggressive children of both genders evaluated overtly-aggressive behaviors in relatively positive ways in contexts that included instrumental provocations. Relationally-aggressive girls and boys exhibited identical response decision processes. Additionally, overtly-aggressive girls evaluated overtly-aggressive behaviors in relatively positive ways in relational conflict situations and relationally-aggressive boys did the same for relationally-aggressive behaviors in instrumental conflict situations. Crick and Werner (1998) suggest that children who engage in gender non-normative aggression exhibit processing biases in contexts that have been shown to be related to the form of aggression they exhibit and also for those contexts that have been shown to be more salient for children of their gender. Relationally-aggressive girls did not exhibit response decision biases in the study. Additionally, boys evaluated overt aggression more positively than girls and girls evaluated relational aggression more positively than boys (Crick & Werner, 1998).

Crick et al. (2002) completed a study that evaluated the intent attributions and feelings of emotional distress of relationally- and physically-aggressive children in response to instrumental and relational provocation contexts. Two studies were completed with samples of 127 and 535 children using peer nomination measures by Crick (1997) to assess for aggression. This instrument, developed in previous research, assesses intent attributions using ten situations with the intent of the provocateur being ambiguous. Additionally, another procedure, also developed in previous research (Crick, 1995), requires children to respond to two questions about the situations described to assess children's feelings of distress. Findings for both studies were that both groups of

relationally- and physically-aggressive children exhibited hostile attributional biases. These biases were demonstrated to be specific to relational provocation situations for relationally-aggressive children and in instrumental provocation contexts for physically-aggressive children (Crick et al., 2002).

If the social information processing model is correct, then children who are aggressive process social cues differently than those children who are not aggressive. It is known that adolescents in typical schools use relational aggression (Crick & Grotpeter, 1995; Roecker Phelps, 2001; Xie et al. 2003); therefore, such students may process social cues in a hostile way. Adolescents in alternative schools and adolescents who are juvenile delinquents are typically demonstrably aggressive (Bhaumik & Kundu, 1983; Escobar-Chaves, Tortolero, Markham, Kelder, & Kapadia, 2002) and according to social information processing, they process social cues in a hostile way. The literature has demonstrated that such adolescents tend to rate overt aggression positively. What remains unknown is whether such adolescents also express their aggression through relationally-aggressive means.

Despite the utility of the social information processing model, some research has been completed that challenges its relevance in explaining relationally-aggressive behavior. Crain et al. (2005) completed research to extend past studies that were limited in their generalizability due to: 1) inconsistencies in gender differences, 2) samples specifically focusing on boys, and 3) studies that had not examined all of the social information processing steps as presented by Crick and Dodge (1996). Two studies were completed to examine whether social information processing variables predict relational aggression in girls by examining the full range of social information processing steps. In

both studies, results revealed that social-cognitive variables failed to relate significantly to peer nominations of relational aggression in predicted ways; thereby challenging the relevance of the social information processing model for girls. The first study found that hostile attribution biases, social goals, outcomes expectancies for relational aggression, and the likelihood of relational aggression were unrelated to relational aggression in girls' peer groups.

The second study also found hostile attribution biases to be uncorrelated with relational aggression. Although several studies have previously shown the relevance of this model, Crain et al. (2005) questioned its significance. Crain et al. (2005) suggests that differences in their study may be due to several reasons, which include: 1) other studies have used only boys in their sample, 2) studies by Crick and colleagues asked children to nominate up to three peers whereas Crain et al. allowed for unlimited nominations, and 3) the Crick studies used a different measure to assess for hostile attributions whereas the Crain et al. investigation used a new measure for assessing social information processing which was based on others' measures and interviews.

Gender Differences in Relational Aggression

As described in the previous section, differences exist for males and females in terms of social information processing. Do differences also exist between males and females in terms of the use of relational aggression? As mentioned earlier, differences exist between males and females for the use of overt aggression. Similarly, differences have also been reported in the literature regarding the prevalence of relational aggression in males and females. Some studies have found that girls are more relationally-aggressive, others have found males to be more relationally-aggressive, and still other

studies have not found a gender difference. Research even exists that has found gender differences in terms of relational aggression after participants have read comic books with aggressive situations. The gender difference literature will be subsequently presented and discussed.

Several research studies have demonstrated that females are more likely to be relationally-aggressive than males. One objective of Crick and Grotpeter's (1995) study was to assess for gender differences in relational aggression in a sample of 491 children. Findings revealed that girls, grades three through six, as a group were more significantly more relationally-aggressive than boys. Also, when relatively extreme groups of aggressive and non-aggressive children were identified, girls were more likely than boys to be represented in the relationally-aggressive group. Crick and Grotpeter (1995) propose that girls tend to express aggression in relational forms because the goals boys have in peer relations are based on physical dominance while girls are more concerned with interpersonal issues and popularity. This study was important because it provided evidence that the degree of aggressiveness exhibited by girls has been underestimated in prior studies that found that boys were more aggressive without assessing aggression relevant to girls' peer groups.

A finding of Xie et al.'s (2003) study was that conflicts among girls were more likely to involve direct relational aggression than conflicts among boys. Preschool girls have also been found to be more relationally-aggressive than preschool boys (Bonica, Arnold, Fisher, Zeljo, & Yershova, 2003; Nelson et al., 2005). Girls have even been found to be more relationally-aggressive than boys in samples from other countries. French, Jansen, and Pidada (2002) took descriptions of disliked peers and coded them for

references to relational aggression in a sample of 120 Indonesian and 104 American children in fifth and eighth grade and found that girls in both countries described their peers as engaging in relational aggression more frequently than the boys.

In a comprehensive literature review, Crick et al. (2002) found that studies of physical victimization have demonstrated the targets to be mainly boys, but that relational victimization is more likely to involve the girls as victims. Crick and Nelson (2002) noted that girls were more relationally than physically victimized by their friends and that relational victimization was particularly related to girls.

Some studies have not found gender differences between males and females in the use of relational aggression (Stauffacher & DeHart, 2005; Zahn-Waxler et al., 2005). For example, Stauffacher and DeHart (2005) completed a study that examined the use of relational aggression by four-year-olds and their siblings and friends in semi-structured free play sessions. The child's friend was selected based on the criteria of being a frequent playmate of the child's, the same age, and the same gender as the child. Acts of relational aggression were assessed through observation and were coded based on definitions and examples from the literature. No overarching differences were found between boys' and girls' frequency of relational aggression. Limitations suggested by Stauffacher and DeHart (2005) include the low statistical power of the study due to a small sample, short observation sessions, the low incidence of relationally-aggressive behaviors, and the presence of observers in the room. Additionally, the use of only one friend seems to be a weakness of the study due to the fact that it only gives an idea of whether the child is relationally-aggressive with a single friend.

A lack of gender differences has also been demonstrated in terms of relational victimization. Another objective of Crick and Grotpeter's (1996) study was to assess the relation between gender and victimization. This study is important because it was designed as a first attempt to address the issue of the victims of relational aggression. Crick and Grotpeter (1996) used a self-report measure called the *Social Experience Questionnaire (SEQ)* that they developed to assess children's relational and overt victimization. The *SEQ* is a thirteen-item measure with good internal reliability and three subscales, which include prosocial behavior, relational aggression and overt aggression. Results revealed that girls were just as likely as the boys to report being relationally victimized. A limitation is that only self-reports were given and teacher, peer and parent reports were not collected, which could have provided additional useful information regarding relational victimization. In another study, Roecker Phelps (2001) found that girls and boys, grades three through six, did not differ in their reports of relational aggression on the *SEQ* (Crick & Grotpeter, 1996).

Rys and Bear (1997) completed a study that was an initial replication and extension of Crick and Grotpeter's (1995) investigation to determine if gender differences for relational aggression existed in a sample of 131 third graders and 135 sixth graders. Rys and Bear (1997) failed to find significant gender differences in mean scores in relational aggression, but gender differences in both peer and teacher-based measures of relational aggression clearly emerged when children were classified as aggressive using Crick and Grotpeter's (1995) method of classification. Boys were rarely high in relational aggression without also being high in overt aggression; in contrast, there were girls in the sample, especially in grade six, who evidenced high relational

aggression with little overt aggression (Rys & Bear, 1997). Most of the children in their study who were classified as either overtly-aggressive or combined overtly/relationally-aggressive were boys and most classified as relationally-aggressive were girls. Rys and Bear (1997) suggest that the lack of significant gender differences should be interpreted with caution due to the fact that the large number of boys in the sample who were both relationally and overtly-aggressive inflated the mean for boys' relational aggression.

Some studies have found that overall, boys are more overtly- and relationally-aggressive than girls (Henington, Hughes, Cavell, & Thompson, 1998; Zimmer-Gembeck et al., 2005) even for children at different ages. McEvoy et al. (2003) found that preschool boys were rated as more physically aggressive and preschool girls as more relationally aggressive, but overall, preschool boys were more relationally- and physically-aggressive than girls. David and Kistner (2000) discovered that males were more overtly- and relationally-aggressive than females amongst third, fourth, and fifth grade students. Similar findings have been observed in other countries. Tomada and Schneider (1997) found that boys were more overtly and relationally aggressive than girls in a sample of Italian elementary school children, ages eight to ten.

Gender differences in relational and physical aggression have also been found to exist even after participants have read comic books. Kirsh and Olczak (2002) examined the effects of reading extremely violent comic books versus nonviolent comic books on the interpretation of overt and relational ambiguous provocation situations in a sample of 249 introductory psychology students. Results revealed that males responded more negatively to the overt scenarios and females responded more negatively to the relational scenarios.

This body of research demonstrates that boys and girls both use relational aggression, though it is unclear as to whether boys or girls are more relationally-aggressive or are more relationally victimized. Possible reasons for these gender differences will be discussed in subsequent sections.

Gender Roles and Relational Aggression

Gender role identity also has an effect on the use of relational aggression. Crothers, Field, and Kolbert (2005) examined the relationship between gender role identity and relational aggression in a sample of 52 girls with a mean age of 15 years. The instruments used were the *BEM Sex Role Inventory* (Bem, 1981) and the *Relational Aggression Scale (RAS)* designed by Crothers and Field. Also, focus group interviews were conducted with additional probing questions based on participants' responses. Results revealed that adolescent girls in the study who identified with a more traditional feminine gender role were more likely to perceive themselves as using relational aggression than those girls with a non-traditional gender role. Crothers et al. (2005) suggests that the use of more indirect forms of conflict management seem to allow adolescent females to pursue power and assert control in relationships and yet still meet the prevailing adult expectations that girls are not supposed to contribute to conflict or have wants and needs within a relationship that would result in emotional intensity and confrontation. Perhaps age has an effect on the use of relational aggression due to traditional gender roles. As females reach adolescence they understand feminine gender roles better than elementary school females and begin to use relational aggression more often to be in compliance with traditional gender roles.

Other studies have found the use of relational aggression to increase with the beginning of adolescence. For example, another finding in Xie et al.'s (2003) study was that the use of direct relational aggression increased from grades one to seven. Conflicts in grade seven, the beginning of adolescence, were more likely to involve direct relational aggression than conflicts in grades one and four. As children progress through grade school and into middle and high school, the incidence of relational aggression increases and is thought to peak in adolescence (Tiet, Wasserman, Loeber, McReynolds, & Miller, 2001).

Age, Gender, and Relational Aggression

As just mentioned, age seems to have an effect on the use of relational aggression because some studies have found that gender differences in relational aggression depend on age. For example, Zimmer-Gembeck et al. (2005) did not find gender differences in relational aggression amongst third graders, but by the sixth grade, girls were more relationally aggressive than boys. Bosacki (2003) found that teachers rated sixth grade girls higher than boys on relational aggression; however, gender differences for relational aggression were not found for the fourth or fifth grade levels. As previously mentioned, Xie et al. (2003) found that low levels of social and direct relational aggression were reported at the first and fourth grade and then reached modest levels in the seventh grade among inner city African-American youth. Differences in studies may be due to age differences in samples.

Age and gender differences also exist for the expression or masking of aggression. Underwood, Coie, and Herbsman (1992) examined the development of and the relation between the use of display rules for anger and aggressiveness as rated by

school peers in a sample of 141 third, fifth and seventh grade students who gave hypothetical responses to videotaped, anger-provoking vignettes in two social contexts, peer and adult (teacher), that were adapted from a version of a video task developed by Dodge (1986). Results revealed that masking of facial expressions of anger increased with age, but only with teachers as opposed to peers. The 8-year-olds were significantly less likely to mask their anger towards adults than the 10-year old-group or the 12-year-olds. This may partially explain why younger girls in some cases have the same amount or less relational aggression as boys but as the girls get older they become more relationally aggressive. Girls reported masking of facial expressions more than boys, which may also explain why girls use relational aggression more than boys. Girls may mask their observable outward aggression, but they likely still have the feelings of anger. One hypothesis is since girls need to express their angry feelings in some way, they use relational aggression, which is less observable than overt aggression.

Relational Aggression in Non-Typical Samples

Thus far, gender, gender roles and age have been discussed in terms of relational aggression in typical samples of children. Even though the research has mainly focused on typical samples of children, evidence exists that typical children are not the only ones who use relational aggression. For example, evidence exists that girls with attention-deficit/hyperactivity disorder (ADHD) use relational aggression (Zalecki & Hinshaw, 2004); however, there is little to no evidence about the use of relational aggression in adolescents attending alternative schools who may also be categorized as juvenile delinquent. Also, most of the research completed on relational aggression has used Caucasian samples and has excluded other ethnicities and cultural backgrounds.

Zalecki and Hinshaw (2004) completed a study that evaluated the use of relational aggression in children with ADHD and found that girls with ADHD were more relationally aggressive than typical, comparison girls. Females with comorbid disruptive behavior disorders and internalizing disorders were included in the sample. Adolescents who have been placed in alternative schools, and may also be juvenile delinquent, are often diagnosed with ADHD or other disruptive behavior disorders. This is an important finding, which may provide minimal evidence that children attending alternative schools, and may also be adjudicated delinquent, may be more relationally aggressive than typical children.

Research has shown that adolescents who are juvenile delinquents are more likely to be overtly aggressive than adolescents who are not delinquent. Bhaumik and Kundu (1983) completed a study to examine the personality of delinquent boys in a sample of 50 delinquents using the *Thematic Apperception Test (TAT; Murray, 1943)*. Results revealed that significantly more aggression and frustration were found in the delinquent group than in the non-delinquent participants. Hämäläinen and Pulkkinen (1995) completed a study that explored the precursors of criminality by the age of 32 in Finland. Peer nomination and teacher ratings were administered when the members of the sample were ages 8 and 14. Results demonstrated that a group of convicted men were more aggressive than men who had not been aggressive, while criminal women were higher in bullying-type aggression than non-criminal women. The literature reviewed on relational aggression is lacking in describing the rates of relational aggression in juvenile delinquent children and does not compare rates of relational aggression in typical children and delinquent

children. Comparisons of rates of relational aggression between typical and delinquent children have not yet been explored in the extant literature.

Research has revealed that adolescents who have been placed in alternative schools are more likely to be overtly aggressive than adolescents who are not placed in alternative schools. Escobar-Chaves et al. (2002) reported in their study, the purpose of which was to describe violent behavior and aggression among youth attending alternative schools, that the mean self-reported aggressive behavior for their sample of 494 students was 11.8 incidents of aggressive acts per student per week. Aggression was also found to be strongly related to weapon carrying and fighting. Research has demonstrated that these adolescents are overtly aggressive, but has not examined whether overtly-aggressive adolescents who have been placed in alternative schools use relational aggression and if they are more relationally aggressive than typical adolescents.

Relational Aggression in Non-White Samples

Other populations have been excluded from the relational aggression literature as well. Most existing studies regarding victims of peer aggression have been conducted largely with European American, middle class samples. There are few studies that exist that have examined aggression in non-white samples. Storch, Zelman, Sweeney, Danner, and Dove (2002) examined the relationship between overt and relational victimization and internalizing disorders in 75 African American and Hispanic elementary-aged students. Overt victimization was found to be significantly associated with fear of negative evaluation, social avoidance and depression, while relational aggression was not significantly associated with any maladjustment index. Storch et al. (2002) suggest that their findings differ from past findings that have found that relational victimization has

been positively related to depression, social anxiety and loneliness (Crick & Bigbee, 1998; Crick et al., 1999; Crick & Grotpeter, 1996). These differences may be attributed to either a lack of statistical power necessary to produce significant results or possibly because relational victimization has differential effects based on ethnicity or socioeconomic context (Storch et al., 2002). This is an important finding because it suggests that relational aggression should be studied and compared in different ethnic populations.

An adolescent's ethnicity may play a role in whether or not he/she uses relational aggression or is a victim of it. David and Kistner (2000) found African American elementary school children received more peer nominations for overt and relational aggression than Caucasian children. African American children were more likely to overestimate their peer status and children who overestimate their peer acceptance are more likely to be nominated by their peers as aggressive. Crothers et al. (2005) found that ninth and tenth grade girls of color were more likely to identify with traditional masculine characteristics and report using relational aggression significantly less than white participants. Children of different races, other than white, have also been found to use overt and relational aggression and experience different outcomes for this behavior than Caucasian children (David & Kistner, 2000; Storch et al., 2002).

The research completed examining relational aggression has typically focused on samples of typical females and males of Caucasian ethnicity. These samples have usually not included adolescents with behavior problems, placed in alternative schools, diagnosed with Oppositional Defiant Disorder (ODD) or Conduct Disorder (CD), or have been labeled as juvenile delinquents. Thus, not much is known about the relationally-

aggressive behavior in atypical or non-White children. Adolescents other than typically-developing Caucasians may be using relational aggression or may be victims of relational aggression; therefore, it appears important that other populations are studied.

Contexts in Which Relational Aggression is Studied

Not only are there populations that have not been studied in the relational aggression literature, there are also contexts in which relational aggression has not been examined. An existing gap in the relational aggression research pointed out by Yoon, Barton, and Taiariol (2004) is that the relational aggression literature is lacking a comprehensive understanding of relational aggression in developmental and environmental contexts such as with peers, with family members, and in the school environment. Since there is a need for an understanding of relational aggression in different environments, in the present study, the use of relational aggression will be examined in adolescents in a typical school, several alternative schools, a charter school, a private school for children with behavior disorders and a residential group home. In all of these settings, it is hypothesized that children and adolescents may be using relational aggression to some extent in their relationships.

Social Contexts and Relational Aggression

Friendships. In order to understand relational aggression, it is important to consider the context in which such behaviors are demonstrated: within children's and adolescents' friendships. In early childhood, friendships help with the acquisition and refinement of socioemotional skills and provide a pattern for relationships throughout the lifespan (Crosnoe, 2000). In interacting with friends, children learn the skills of cooperation and perspective-taking, and also satisfy their increasing desire for intimacy

(Rubin, Bukowski, & Parker, 1998). Friendships also seem to assist with children's cognitive development by promoting the support and interaction necessary to enhance children's cognitive processes (Kutnick & Kington, 2005).

By middle childhood, friendships comprise an important source of social support, with youngsters' thoughts and feelings being discussed more often with friends than with family members. Children develop complex forms of moral reasoning as they use their experiences in caring about someone else and trying to comprehend others' feelings, needs, and problems to develop empathic understanding (Dunn, 2004; Laursen & Mooney, 2005).

As children enter adolescence, they spend more time with peers, try on new identities and roles, and seek out approval from friends, who serve as both models and mirrors (Crosnoe, 2000). One of the most important aspects of an adolescent girl's life is her standing amongst her peers (Coyne et al., 2006), which is usually established at school. Although relationships amongst children and adolescents, their reputation, and peer group status are important for their social and emotional development, girls' friendships also become the barometer of their social status (Zimmer-Gembeck et al., 2005).

Some specific behaviors often place children at risk for poor peer relations and as a result successes or problems with peers can exacerbate problem behaviors or undermine the child developing prosocial behaviors (Zimmer-Gembeck et al., 2005). One of these behaviors is relational aggression, used by both females and males in their friendships. Cross sectional and longitudinal research has demonstrated that relationally-aggressive girls and boys tend to have maladaptive peer relations (Werner & Crick, 2004). Using

relational aggression in friendships can result in numerous poor outcomes including the loss of friendships, fewer friendships, poor quality friendships or feelings of depression, as well as anxiety and loneliness associated with victimization. Topics discussed in this next section include the use of relational aggression and number of friendships, social outcomes, gender differences and social acceptance.

Conflicting evidence in the literature exists regarding whether relationally-aggressive children have many friendships, have few friendships, or don't have any friendships at all. Burr, Ostrov, Jansen, Cullerton-Sen, and Crick (2005) explored the association between relationally-aggressive behavior and the number of same sex and opposite sex mutual friendships that both boys and girls have during early childhood. One hundred and one preschool children were assessed in the fall semester of the school year and assessed again 4-6 months later. Results revealed that the majority of relationally-aggressive children did have mutual friendships (Burr et al., 2005). These authors suggest that being relationally aggressive does not prohibit young children from forming mutual friendships; therefore, being relationally aggressive in preschool does not keep children from having friends.

Burr et al. (2005) also found that during the fall, boys who were more relationally aggressive had fewer concurrent mutual friendships and in contrast for girls, an association between the number of mutual friendships and relationally aggressive behavior did not exist. Burr et al. (2005) suggest that at an early point in the school year, it may be that boys who are engaging in gender non-normative forms of aggression, like relational aggression, are less attractive to peers as friendship partners. By the spring assessment period, a gender difference in relational aggression relative to the number of

mutual friendships that children held did not exist (Burr et al., 2005). This may be due to the fact that children know each other well by the end of the school year, have established mutual friendships and the social stigma for relationally aggressive boys may have diminished (Burr et al., 2005).

Burr et al.'s (2005) study also revealed that the number of mutual friendships at the start of the school year significantly predicted an increase in relationally-aggressive behavior at the end of the school year, particularly for girls. Burr et al. (2005) suggests that, for girls, friendships formed early on in the school year may serve as either a developmental context or catalyst for increased relational aggression later on in the school year. Another finding was that girls' number of friendships that remained stable over the course of the school year was significantly associated with increased levels of relational aggression during the fall and spring. By putting demands on their friends, young children may be attempting to have their friends choose their relationship over other desirable outcomes (Burr et al., 2005). This study demonstrated that differences in time, gender and number exist in relationally-aggressive children's friendships.

In contrast to the Burr et al. (2005) study, Johnson and Foster (2005) had different results in their study, revealing that kindergarten children who were more relationally aggressive were less liked at the beginning of the study and were less liked by peers two months later. Also, the relationally-aggressive kindergarten students had fewer stable relationships in comparison to the non-relationally-aggressive kindergarten students at time one. The difference between the studies may be attributed to age. The students in Johnson and Foster's study were in kindergarten and the students in Burr et al.'s (2005)

study were in preschool. The two studies provide conflicting evidence regarding whether relationally-aggressive children have friendships and if their friendships are stable.

Rys and Bear (1997) investigated the relationship between three behaviors: physical aggression, relational aggression, and prosocial behaviors, and three social outcomes: peer rejection, acceptance, and reciprocal friendships in 131 third grade and 135 sixth grade students. Among boys, peer rejection was most clearly linked to peer perceptions of overt aggression and among girls, rejection correlated more strongly with peer perceptions of relational aggression (Rys & Bear, 1997). In this study, aggressive behaviors were linked more consistently with rejection than with acceptance and friendships, but the aggressive boys and girls who were rejected by the majority of peers did have a few friends. Rys and Bear (1997) suggest that their findings indicate that relational aggression, especially among girls, is a construct that should be considered for inclusion in the development and use of measures intended to link peer rejection and social behavior. These results suggest that the use of aggression has an effect on peer rejection and number of friendships. Interestingly, the results of Rys and Bear's (1997) study agree with the results of Johnson and Foster's study but conflict with that of Burr et al. (2005).

Gender differences also exist in terms of peer relations and relational aggression. For example, Zimmer-Gembeck et al. (2005) completed a three year study with 491 children that examined the association between children's relations with peers including social preferences and impact and their behaviors, including physical aggression, relational, aggression and prosocial behaviors spanning a transition to middle school. Results demonstrated that children's aggressive and prosocial behaviors predicted future

peer relations; specifically, girls' relational aggression, not physical aggression, predicted social preference and impact three years later. These findings suggest that girls' relational aggression emerges and affects their peer status, while boys' aggression may be more an outcome of their peer status and associated experiences with peers (Zimmer-Gembeck et al., 2005). For girls, it seems important that the use of relational aggression should be diminished early on because of its' negative effect on their peer status.

Research has also demonstrated that children who overestimate their peer acceptance are more likely to be nominated by their peers as aggressive (David & Kistner, 2000). David and Kistner (2000) demonstrated a positive association between biased self-perceptions and aggression. African-American children were more likely to overestimate their peer acceptance than were Caucasian children in their sample. The conclusion of this study is that children who are aggressive may perceive that they are well-liked by peers but in reality are not.

These studies demonstrate that a gap in the relational aggression literature exists regarding whether children who use relational aggression have many friendships. Some studies have found that children who are relationally aggressive have more friendships and others have found that they have fewer than peers who do not engage in relationally-aggressive behavior. The research does seem to suggest that relationally-aggressive children tend to have at least one friendship. While relationally-aggressive children appear to have at least some friends, their use of relational aggression in their friendships then leads to maladaptive peer relations, which then render these children vulnerable to negative outcomes, such as peer rejection or poor social adjustment. Moreover, the use of

relational aggression in friendships may have an effect on the number of friends a child has, the quality of their relationships with friends, or the stability of their friendships.

However, it is important to recognize that the research just reviewed on friendships used children in typical schools in their samples. As previously mentioned, relational aggression has not been studied in contexts like alternative schools or residential group homes. The possibility exists that the use of relational aggression in populations of adolescents in alternative school settings or group homes may have differential effects on friendships, and thus needs to be explored.

Social status. Children's relationships developed at school or in their neighborhood often determine their peer group status. Relationships amongst children and their reputation and peer group status are important for social and emotional development (Zimmer-Gembeck et al., 2005). Research has been completed that examines the use of aggression and children's social status. For example, Rose, Swenson, and Carlson (2004) investigated whether being disliked by peers exacerbates the negative effects of aggression on friendship and whether being perceived as popular by peers mitigates these damaging effects in a sample of 607 third, fifth, seventh, and ninth grade students. This research is a valuable addition to the extant literature base because of its contribution to the understanding of the friendships of aggressive youth by considering the roles of being disliked and of being perceived as popular. The researchers used a peer nomination measure and an adapted version of the *Friendship Quality Questionnaire* (FQQ; Parker & Asher, 1993) to assess the quality of their sample's best friendships. Relational aggression was found to be associated with having conflictual friendships for youth who were disliked but not for youth who were perceived as popular. Also, it was

found that similarity between friends was found in terms of how aggressive youth were as well as in terms of how disliked they were and how popular they were perceived to be. Rose, Swenson, & Carlson (2004) suggest that relationally-aggressive youth may foster positive friendship qualities in their friendships because they need their friends to help them aggress. For example, relationally-aggressive youth may need assistance in spreading rumors or excluding others from the peer group.

Aggression also has an effect on popularity in high school students. For example, Cillessen and Mayeux (2004) examined developmental changes in the associations among physical and relational aggression and sociometric perceived popularity based on peer nominations in children ages 10-14. Relational aggression was found to be increasingly predictive of perceived popularity but decreasingly predictive of liking. Furthermore the use of physical aggression was predictive of being increasingly less disliked but decreasingly predictive of perceived popularity. In explanation, these students may be popular, but they are not actually *liked*. The effect of relational aggression on perceived popularity was especially strong for girls. Cillessen's and Mayeux's (2004) findings suggest that although physical aggression is increasingly less censured in the peer group, relational aggression is increasingly reinforced.

Nelson et al. (2005) completed a study to examine whether high sociometric status was associated with relational aggression as early as preschool. The researchers used a common peer nomination rating for their study with teachers and peers as raters and four categories, including: popular (receiving many like nominations), rejected (receiving many dislike nominations), controversial (receiving many like and dislike nominations), neglected (receiving few like or dislike nominations) and average

(preschoolers who did not meet the criteria for the other groups). Popular and controversial children were nominated more often than sociable or average children, while rejected children were considered less sociable than their average counterparts. Neglected children were nominated less for relational aggression than average children while controversial children were nominated more often for relational aggression than average children (Nelson et al., 2005). Across peer and teacher ratings, sociability and relational aggression were modestly correlated for girls, suggesting that preschool-age children do not perceive relational aggression and sociable behavior to be as incompatible as they do physical aggression and social behavior, at least in the case of girls (Nelson et al., 2005).

These studies indicate that children begin using relational aggression as early as preschool and continue to do so all the way into high school. Relational aggression has an effect on a child's sociometric status as early as preschool and extends into high school. In summary, these studies have demonstrated conflicting evidence on the use of relational aggression in friendships and the social status of relationally-aggressive children.

Adjustment. Aggressive behavior among children has long been recognized as a major risk factor for subsequent developmental maladjustment, both for the perpetrators and victims (Brendgen et al., 2005). Specifically, relational aggression has been shown to have a negative impact upon adjustment in children. Topics subsequently discussed in this section include the significance of positive peer treatment, relational aggression's impact on social adjustment, relational aggression's impact on its' victims and the relationship between relational aggression and social-psychological adjustment.

Crick and Grotpeter (1996) provided evidence for the significance of positive peer treatment. They used the *Asher and Wheeler Loneliness Scale (WLS; Asher & Wheeler, 1985)* to assess for loneliness, the *Children's Depression Inventory (CDI; Kovacs, 1985)* to assess for depression, the *Social Anxiety Scale (SAS; Franke & Hymel, 1984)* to assess for social anxiety and avoidance, and a peer sociometric to assess children's peer status. Their analysis of the relation between peer treatment and social-psychological adjustment demonstrated that the lack of prosocial treatment by peers significantly predicted adjustment difficulties beyond that which could be accounted for by victimization alone (Crick & Grotpeter, 1996). Their findings suggest that children's social adjustment may depend upon the degree to which they receive helpful, caring responses from peers, in addition to the degree to which they successfully avoid aggressive overtures.

Relational aggression has been shown to have a negative impact on social adjustment. Crick and Grotpeter (1995) found that relationally-aggressive children were significantly more disliked than other children. In their study, the peer status groups who exhibited the highest level of relational aggression were the most rejected and controversial groups. Relational aggression was found to be significantly related to social maladjustment (i.e., peer nominations of rejection and self reports of poor peer acceptance). This study provides evidence that relational aggression is significantly related to maladjustment (e.g., depression, loneliness, social isolation) and that relationally-aggressive children feel unhappy and distressed about their peer relationships. This finding is stronger and more pervasive for girls than for boys.

By studying relational aggression, the negative impact relationally-aggressive acts have upon victims can be determined. Another objective of Crick and Nelson's (2002)

study was to determine whether friend victimization is associated with significant social-psychological adjustment problems for children. Friend victimization was found to be related to social-psychological adjustment difficulties for both boys and girls (Crick & Nelson, 2002). Thus, these children who are victimized seem to experience more social difficulties and internalizing and externalizing problems.

As part of Crick and Grotpeter's (1996) study, the relation between the victimization of children by relational aggression and social-psychological adjustment, like depression, social anxiety, social avoidance, and loneliness, was evaluated. Victimization by peers was found to be significantly related to social-psychological adjustment difficulties. This study demonstrates that relational aggression has a negative effect on peers that is separate from overt aggression. The results also show that while both forms of victimization provide unique information about depression, only relational victimization provides unique information about social anxiety, social avoidance and depression. These adjustment problems are rather specific to relationship or social contexts (Crick & Grotpeter, 1996); therefore, it is important to study both physical and relational aggression to help victims with their specific problems in relation to the type of aggression they are experiencing.

The literature has demonstrated that it is important to prevent children from using relational aggression in friendships in order to keep victims from developing social-psychological difficulties. Xie et al. (2003) investigated forms of aggression in a sample of 489 African-American students in grades one, four and seven using narrative reports of peer conflicts. School authorities were found to be more likely to intervene with overt forms of aggression (i.e., physical and verbal) than subtle forms of aggression (i.e., social

and direct relational). What we know about the impact of the use of relational aggression on children's psycho-social adjustment should guide future practices in schools to intervene not only in physically aggressive acts but also for relationally-aggressive acts. It is suggested that effective intervention and the prevention of school violence cannot be divorced from school peer social context and a careful consideration of multiple forms of aggression (Xie et al., 2003).

When developing prevention or intervention programs to target aggression in adolescent friendships, it is important to know which groups of students may be vulnerable to engaging in aggressive behaviors. Staff working with adolescents who are prone to using relational aggression can create prevention programs to target these behaviors early on to prevent children from using relationally-aggressive behaviors and to keep potential peers from developing social-psychological adjustment difficulties. These students can be taught how to decrease the use of relational aggression in their relationships through intervention activities in the school environment.

Aggression and Delinquent Behavior

A child's relationships, social status, and adjustment can be affected by their own or their peer group's delinquent behavior. The discussion will now change to the topic of delinquent behavior, since the present study proposes to examine relational aggression in delinquent children. Thus, the literature pertaining to aggression and delinquent behavior will now be reviewed.

Physical aggression has been shown to be a predictor of later delinquent behavior. Relational aggression may also be a predictor of juvenile delinquent behaviors due to its stability over time and the role of peers. Children with an early onset of antisocial,

disruptive behaviors are likely to show a maladaptive developmental course with problems that continue or worsen as they become more entrenched in a youngster's behavioral repertoire over time (Zahn-Waxler et al., 2005). Topics discussed in this section include the stability of relational aggression, precursors to relational aggression, peers contribution to antisocial behaviors and communication behaviors of juvenile delinquent females.

The stability of relational aggression has been explored in the psychological literature. Zimmer-Gembeck et al.'s (2005) study demonstrated that children's early social behavior, including relational aggression, and reputations established with classmates tends to stay with children into early adolescence even after they have switched schools and classrooms. Moderate three-year stability in physical aggression, relational aggression, and prosocial behavior was found.

Zahn-Waxler et al. (2005) examined children's representations of conflict and distress situations at seven years as developmental precursors to relational aggression, overt aggression, and psychiatric symptoms into early adolescence at four time points. The original sample of children consisted of 82 and at time four, 54 children remained. The *Children's Peer Relations Scale (CPRS)* developed by Crick and Grotpeter (1995) was used to assess both relational and overt aggression, while a psychiatric interview called the Diagnostic Interview Schedule for Children (*DISC*; Reich, Welner, & Herjanic, 1991) was administered to the youth and the youth's mother. Overall, youth reports of relational aggression were associated with disruptive symptoms. Girls who demonstrated infrequent prosocial concerns and heightened sadness were the most likely to demonstrate relational aggression in adolescence. Also, when hostile, antisocial themes

were prominent in the play of young girls, by adolescence they also displayed more relational aggression, overt aggression, and disruptive symptoms (Zahn-Waxler et al., 2005).

Part of Tiet et al.'s (2001) study was to assess for the use of relational aggression in a sample of 80 at-risk girls using the *Indicators of Conduct Problems (ICP)*; Loeber, Farrington, Stouthamer-Loeber, & Van Kammen, 1998) maternal report items. Results revealed that these girls did use relational aggression; therefore, this study may provide some evidence that girls who are juvenile delinquents or are in alternative schools may use relational aggression.

The contribution of peers to the development of antisocial behaviors has been demonstrated in the literature (Werner & Crick, 2004). Peers have been shown to influence the development of antisocial behavior through group rejection (Werner & Crick, 2004). Children who are actively rejected from their group of peers are likely to be deprived of opportunities in learning important social skills, for practicing these social skills, regulating emotions and resolving conflicts (Werner & Crick, 2004).

Werner and Crick (2004) completed a study whose primary goal was to examine the unique effects of peer rejection and friends' aggressiveness on child relational and physical aggression across the span of a year in a sample of 959 children in second through fourth grades. The *Children's Social Behavior Scale – Peer Report (CSBS-PR)*; Crick, 1997) was used, which is a peer nomination instrument that includes four subscales designed to measure relational aggression, physical aggression, verbal aggression and prosocial behavior in two waves, near the end of the fall semester and the fall of the following school year. The *CSBS-PR* included one item that assesses for peer

rejection in which a child nominates three classmates they like the least. Identification of friendships was completed by asking children to nominate their three best friends in the classroom and were considered reciprocated if the nominations were reciprocated by other children. Both types of peer relationship experiences, physically- or relationally-aggressive peers, predicted future relational and physical aggression. Rejected children children whose friends were highly relationally aggressive at the initial assessment of the study became increasingly relationally aggressive over time. At the same time, the same number of children who demonstrated marked increases for relational aggression also showed decreases in relational aggression use. This study demonstrated that maladaptive peer relationship experiences may partially account for increases and decreases in girls' use of relational aggression over time (Werner & Crick, 2004). Girls who befriended relationally-aggressive peers at the initial assessment demonstrated higher levels of relational aggression in the span of a year than the girls who did not befriend relationally-aggressive peers. These findings suggest that peer relationships may play an important role in the development of relational aggression for girls, whereas maladaptive peer experiences seem to be equally important for the development of physical aggression in both genders (Werner & Crick, 2004). A limitation of the study was that friendship nominations for the study were limited to classmates and did not include children in other classes.

Sanger, Creswell, Schaffart, Engelbert, and Opfer (2000) examined the communication behaviors of female juvenile delinquents in a correctional facility qualitatively through the use of individually tape-recorded interviews. The majority of the females, aged 14 to 18, knew how to positively communicate and also communicated

through negative, aggressive behaviors. The participants' comments suggested that violence was an alternative means to communicate. Even though the girls knew how to communicate positively, they did not always choose to do so. A limitation of this study was that the sample only included nine girls. However, an implication of this research is that girls who are juvenile delinquent may choose to be overtly aggressive or relationally aggressive instead of using positive communication skills.

Summary

From the literature we know that children may be aggressive in physical, verbal and relational ways. Aggressive children may process social cues in different ways than children who are not typically aggressive. The use of relational aggression has an effect on the number of friendship a child has, their quality of friendships, and their social status. The use of relational aggression also has a negative effect on victims' psychosocial adjustment.

Gender differences also exist for the use of aggression. Males have been found to be more overtly aggressive than females, but it is unclear whether males or females are more relationally aggressive. The current study will specifically focus on females due to the fact that aggression in females has not been as widely studied as aggression in males. Although the findings of whether males or females are more relationally aggressive are conflicting, research has demonstrated that girls are more negatively affected by such behaviors (Coyne et al., 2006; Yoon et al., 2004). Rys and Bear (1997) found that among girls, peer rejection correlated more strongly with peer perceptions of relational aggression. Finally, while we know that delinquent adolescent girls and adolescent girls placed in alternative schools are overtly aggressive, we do not know whether these

females also engage in relationally-aggressive behaviors. Therefore, the present study will specifically target females.

Purpose

The present study will examine if non-overtly-aggressive adolescent girls or overtly-aggressive girls (those girls who attend alternative schools and may also be delinquent) are more likely to be relationally-aggressive in their relationships. Overtly-aggressive girls include those that have been placed in an alternative school or group home setting due to acting out behaviors in the regular education setting or home environment including overtly-aggressive behaviors or that have been adjudicated delinquent by the legal system for committing a crime and are living in a group home or attending an alternative school. Many overtly-aggressive girls are diagnosed with ODD or CD.

While relationally-aggressive behaviors have been found in non-overtly-aggressive females, it is presently unknown if relational aggression is also a problem in overtly-aggressive females. If it is found that overtly-aggressive females also engage in relationally-aggressive behaviors, then preventative interventions can be created to help this population.

The present study is going to utilize a sample of Caucasian and non-Caucasian females to determine differences in relational aggression across cultural background/ethnicities. As discussed in an earlier section, it is important to determine the relationship, if any, of cultural background/ethnicity upon relationally-aggressive behaviors so that effective interventions can be developed to target this behavior in diverse groups of adolescent females.

CHAPTER III

METHOD

The study provides an investigation of the use of relational, social and overt aggression in female adolescents, previously identified as being overtly-aggressive and non-overtly-aggressive, of various ethnicities and ages, in the mid-Atlantic United States.

The specific research questions guiding this investigation are listed in Table 1.

Table 1

Research Questions by Dependent Variable

Dependent Variable	Research Question
Relational Aggression	<ol style="list-style-type: none">1. What is the incidence of the use of relational aggression in an overtly aggressive female adolescent sample?2. What is the incidence of the use of relational aggression in a non-overtly-aggressive female adolescent sample?3. Does the use of relational aggression by overtly-aggressive females statistically significantly exceed that of non-overtly-aggressive females?4. Are there differences in the use of relational aggression depending upon the age of the participant?5. Does the incidence of relational aggression differ among girls by ethnicity or cultural background?6. Do differences exist in the use of relational aggression depending upon the age of the participant and her aggression group?

Table 1 (continued)

Dependent Variable	Research Question
	7. Do differences exist in the use of relational aggression depending on the participant's ethnicity/cultural background and her aggression group?
	8. Do differences exist in the use of relational aggression depending on the participant's ethnicity/cultural background and her aggression group?
	9. Do differences exist in the use of relational aggression depending on a participant's ethnicity/cultural background, aggression group and age?
Social Aggression	10. What is the incidence of the use of social aggression in an overtly aggressive female adolescent sample?
	11. What is the incidence of the use of social aggression in a non-overtly aggressive female adolescent sample?
	12. Do girls not identified as being overtly-aggressive use social aggression more often than overtly-aggressive females?
	13. Are there differences in the use of social aggression depending upon the age of the participant?
	14. Do differences exist in the use of social aggression among girls in accordance with their ethnicity/cultural background?
	15. Do differences exist in the use of social aggression depending upon the age of the participant and her aggression group?

Table 1 (continued)

Dependent Variable	Research Question
	16. Do differences exist in the use of social aggression depending on the participant's ethnicity/cultural background and her aggression group?
	17. Do differences exist in the use of social aggression depending on the participant's ethnicity/cultural background and her age?
	18. Do differences exist in the use of social aggression depending on the participant's ethnicity/cultural background, aggression group, and age?
Overt Aggression	19. What is the incidence of the use of overt aggression in an overtly-aggressive female adolescent sample?
	20. What is the incidence of the use of overt aggression in a non-overtly-aggressive female adolescent sample?
	21. Are there differences in the use of overt aggression between non overtly-aggressive females in comparison to overtly-aggressive females?
	22. Are there differences in the use of overt aggression depending upon the age of the participant?
	23. Do differences exist in the use of overt aggression among girls by their ethnicity/cultural background?
	24. Do differences exist in the use of overt aggression depending upon the age of the participant and her aggression group?
	25. Do differences exist in the use of overt aggression depending on the participant's ethnicity/cultural background and aggression group?

Table 1 (continued)

Dependent Variable	Research Question
	26. Do differences exist in the use of overt aggression depending on the participant's ethnicity/cultural background and her age?
	27. Do differences exist in the use of overt aggression depending on a participant's ethnicity/cultural background, aggression group and age?

The following chapter describes the methods that were used for the current study. Included in this section are a description of the research design, study participants, power analyses, the measure that was used for the study, procedures, and statistical analyses.

Research Design

A survey instrument was used for the current study as a part of a quasi-experimental research design. The independent variables in the study are overt aggression, with the levels of identified and non-identified, age, and cultural background/ethnicity. The dependent variables in the study are the self-reported use of relational aggression, social aggression and overt aggression.

Relationally-aggressive behaviors include friendship withholding, exclusion from a group, rumor spreading, ignoring friends, sabotaging relationships or threatening to end friendships if requests are not met. The purpose of relationally-aggressive behavior is to harm peers in an indirect manner. Furthermore, the purpose of social aggression is to harm another individual through the social manipulation of peer relations through overt, covert or nonverbal aggressive behaviors (Brendgen, Dionne, Girard, Boivin, Vitaro, &

Pérusse, 2005). Socially-aggressive behaviors include gossiping, social exclusion, isolation, or alienation, writing notes or talking about someone, and stealing friends or romantic partners (Crothers, Field, & Kolbert, 2005). Overt aggression is the perpetration of harmful acts upon another person, including physical or verbal aggression, or the destruction of another person's property. Examples of these various types of aggression are reported in Table 2.

Table 2

Examples of Aggressive Behavior

Type of Aggression	Examples of the Behavior
Verbal Aggression	Name calling, verbal insults, humiliating, yelling, arguing
Physical Aggression	Physical damage, physical intimidation, punching, hitting, kicking
Relational Aggression	Friendship withholding, spreading rumors, excluding peers from a group, ignoring peers, sabotaging relationships, negative body language or facial expressions
Social Aggression	Gossiping, social exclusion, isolation, alienation, writing notes or talking about someone, stealing friends or romantic partners
Overt Aggression	Verbal aggression, physical aggression, destruction of property

Participants

A convenience sample was used for the following study, with females being selected from eight sites in the mid-Atlantic United States, including a regular education private high school and middle school, a group home, three alternative schools, an approved private school for children who demonstrate emotional and behavioral challenges, and a private, academic school for children at-risk for school failure. The participants were categorized in one of two groups, overtly-aggressive and non-overtly-aggressive. The overtly-aggressive group was comprised of female students in a group home, three alternative schools within the same organization, an approved private school for children who demonstrate emotional and behavioral challenges, and a private academic school that educates youth at-risk for school failure. The non-overtly-aggressive group was comprised of the students from the regular education high school and middle school. The information is summarized below in Table 3. The ethnicities of participants included the following: Caucasian or Non-Caucasian. The age range for the participants was females in the seventh through twelfth grade.

Table 3

Description of Recruited Participants by Aggression Group

Aggression Group	Participants
Non-overtly-aggressive girls	Girls in grades 7-8 from a regular education middle school (one site)
	Girls in grades 9-12 from a regular education high school (one site)

Table 3 (continued)

Aggression Group	Participants
Overtly-aggressive girls	<p>Girls in grades 7-12 from two alternative school sites within the same organization (two sites)</p> <p>Girls in grades 7-12 from an alternative school (one site)</p> <p>Girls in grades 7-12 from an approved private school for children who demonstrate emotional and behavioral challenges (one site)</p> <p>Girls in grades 7-12 who attend a private academic school for children at-risk for school failure (one site)</p> <p>Girls in grades 7-12 who live in a group home (one site)</p>

In order to determine appropriate sample size to detect group differences through the statistical procedure of factorial ANOVA, a power analysis was conducted using the statistical computer program G*Power, Version 2 (Erdfelder, Faul, & Buchner, 1996). An alpha level of .05, a power of .80 and a medium effect size of .25 were selected to use in the G* Power program for the f-test. In large samples (approximately 100 participants per group), power tends to be adequate at >.70 to excellent at >.90 (Stevens, 1999). A power of .80 indicates that there is an 80% probability of rejecting the null hypothesis when the alternative hypothesis is true.

A review of the relational aggression literature revealed effect sizes ranging from -.06 to .79 in studies comparing the use of relational aggression in males and females. Very few effect sizes have been published in the relational aggression literature; therefore, they were reviewed for the current study. Given the fact that the studies' effect sizes vary from small to large, a medium effect size was selected. The alpha level was set at .05 given that the effect sizes varied including small and medium effect sizes in the literature, indicating that it may be more difficult to detect statistical differences between groups. This demonstrates that there is a 5% chance of rejecting the null hypothesis when it is actually true. A total of eight groups were entered in the program since the statistical design being used is a 2 x 2 x 2 factorial ANOVA. After the power, effect size, the alpha level, and the number of groups were entered into the program, the calculate option was selected. It was determined that a total of 240 participants were needed with 30 females required to complete surveys for each of the eight groups to comprise an adequate sample size.

Consequently, participants in the typical sample were 77 female adolescents ($n = 42$ in grades 7-8, 48% Caucasian, 52% non-Caucasian; $n = 32$ in grades 9-12, 100% Caucasian) from a middle and high school in a manufacturing city in the mid-Atlantic United States. Participants in the overtly-aggressive sample consisted of five female adolescents from a group home dedicated to caring and healing abused, neglected and troubled children, grades 7-12. These girls reside in a residential setting that is a therapeutic, group living program focusing on individualized treatment planning addressing family issues, skill development and preparation for family reunification or a move to a less-restrictive environment with permanency planning as a major focus. The

females are referred to the program from County Child Protection Services or Juvenile Court and attend an alternative school.

Additional participants in the overtly-aggressive sample were solicited from five school sites in manufacturing cities in the mid-Atlantic United States. Participants from an alternative, private school were three female adolescents in grades 7-12. This school educates children daily from 22 school districts who have had a history of difficulty learning and disruptive behavior in their former schools.

Participants from two alternative schools in different locations that are ran by the same organization included 17 female adolescents in grades 7-12. These schools provide specialized, highly structured learning environments to students with behavioral difficulties in grades 1-12.

Participants from an approved private school included three female adolescents in grades 7-12. This school provides services to children who are emotionally and behaviorally challenged, specializing in meeting their individual educational and mental health challenges.

Participants from the private, academic school for children at-risk for school failure were twelve, female adolescents in grades 7-12. This school is a private school with a special education program integrated into the classroom in order to properly provide exceptional educational, emotional and behavioral support.

Overall, there were 40 female adolescents in the overtly-aggressive group that represented multiple ethnic backgrounds including, 35% Caucasian and 65% other ethnic background.

Measure

The instrument that was used to assess relational aggression is the *Young Adult Social Behavior Scale (YASB)*, developed by Crothers, Schreiber, Field, and Kolbert (2009). In order to enhance the readability of this measure, it was modified by altering the language in the instrument to reflect an elementary-school reading level (a copy of the modified instrument can be found in Appendix A).

Although self-report measures may be vulnerable to individuals' tendencies to underestimate negative qualities about themselves, there are at least six studies (see Archer & Coyne, 2005), which have used self-report measures with adolescent or young adult populations as an alternative to peer nomination. Moreover, Rose, Swenson, and Waller (2004) state that alternative forms of measuring relational aggression are needed to make "finer distinctions in the assessment of aggression" (p. 386).

The authors created the *YASB* for the purpose of measuring self-reported behaviors, both healthy and maladaptive, that are used in friendships or relationships. Initially, the scale was created by listening to adolescent females of secondary-school-age describing behaviors associated with peer conflict during previously conducted qualitative research, and developing items corresponding to these depicted behaviors (Crothers et al., 2005). Since relational aggression may encompass a range of emotionally hurtful behaviors, the authors then refined the 14 items that comprise the *YASB* based upon a definition of relational aggression that includes both socially-aggressive and direct relationally-aggressive behaviors, as well as including a number of items representing healthy social skills.

Socially aggressive behaviors include gossiping, social exclusion, isolation, or alienation, writing notes or talking about someone, and stealing friends or romantic partners. Direct relationally-aggressive behaviors, defined as the use of confrontational strategies to achieve interpersonal damage, including not talking to or hanging around with someone, deliberately ignoring someone, threatening to withdraw emotional support or friendship, and excluding someone from a group by informing them they are not welcome (Xie, Farmer, & Cairns, 2002). Finally, before using the instrument in this study, items of the *YASB* were assessed for readability and relevance by several young adolescents, to ensure that the instrument would be appropriate for use with secondary school students.

Confirmatory factor analyses supports that the *YASB* measures three internally consistent constructs, direct relationally-aggressive behaviors, socially-aggressive behaviors, and interpersonally-mature behaviors. Statistical analysis was completed with EQS 6.1 Multivariate Software, treating the data as ordered categorical and using a polychoric correlation matrix with robust standard errors (Lee, Poon, & Bentler, 1995). Results indicate that the model had a Satorra-Bentler Corrected Chi-Square value of 110.79 with 71 degrees of freedom, and RMSEA of .029 (CI = .018-.039), CFI of .97 and TLI (NNFI) of .96, which indicate a good fit of the data to the theorized model according to traditionally accepted cutoff values of Hu and Bentler (1999) and more recent cutoff values suggested by Sivo, Fan, Witta, and Willse (2006).

Procedure

Although data were gathered at several sites, the following describes the general data collection procedures, with exceptions noted as necessary. First, the investigator met

with an administrator at each school location and the group home in order to explain the purpose and procedures of the study. Then, approximately a week before the data collection commenced, all female students gathered to view a presentation about the study. The girls in attendance were informed about the purpose and requirements of the study and were invited to participate. All female students who signified an interest in participating were given a packet regarding the study, including a letter to their parents (see Appendix B) and parental consent (see Appendix C) and participant assent (see Appendix D) forms. The general language used to invite students to participate is reflected in Appendix E. Forms distributed to schools inviting students to participate in the study and confirming participation can be found in Appendix F and Appendix G, respectively.

These students were also informed that their consent form would be placed in a drawing for a gift card to *Best Buy* in the amount of either \$25.00 or \$50.00 if they decided to participate in the study, and returned their parental consent and participant assent forms. Girls were then asked to review the information with their parents, have their parents sign the consent forms, and sign the assent forms if they decided to participate in the research investigation. In the case of the first alternative school, the director provided permission for all interested girls to participate in the study and signed consent forms since the girls were in placement and he had signing rights for them. At all study locations, the consent and assent forms were signed and returned in an enclosed envelope to the study's site designee, who kept all consent and assent forms in a sealed envelope in a locked desk drawer or closet in his or her office to maintain confidentiality.

The investigator met with all of the girls the following week who returned their consent and assent forms, and were again briefed about the confidentiality procedures of the study. The investigator presented the female students with the directions for completing the instrument, provided the girls with a copy of the instrument and a writing utensil. The study's participants were instructed to raise their hands if they had any questions about the instrument. The girls were asked the following demographic questions on the *YASB*: 1) What is your race? and 2) What is your age?. The female students then completed the *YASB*, which took approximately 5-10 minutes. The researcher collected the surveys from the participants and kept them in a sealed envelope to maintain confidentiality.

Data Analysis

Several research questions were investigated in the current study. The first research question for the study is: What is the incidence of the use of relational aggression in an overtly-aggressive female adolescent sample?, with descriptive statistics used to analyze the data. Based upon the finding that at-risk girls use relational aggression (Tiet, Wasserman, Loeber, McReynolds, & Miller, 2001), it was hypothesized that this group of females would use relational aggression at a rate commensurate with non-overtly-aggressive samples of adolescent females. Additional research evidence for this hypothesis is Prinstein and colleagues' (2001) finding that relational aggression was related to externalizing behaviors drawn from the Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD) criteria in adolescents in grades 9-12. As mentioned earlier, many of these overtly-aggressive females hold one or both of these diagnoses or would meet the criteria for one or both of these diagnoses if assessed.

Similarly, the second research question is: What is the incidence of the use of relational aggression in a non-overtly-aggressive female adolescent sample? Descriptive statistics were used to analyze the data. Based upon past research that has shown that females in typical schools use relational aggression (Crick & Grotpeter, 1995, Crick & Nelson, 2002), it was hypothesized that this group of females would use relational aggression at least at a rate commensurate with overtly-aggressive females.

The third research question is: Does the use of relational aggression by overtly-aggressive females statistically significantly exceed that of non-overtly aggressive females? This is a main effect research question. It was hypothesized that girls in a regular education setting would use relational aggression to a greater degree than overtly-aggressive girls, since there is research suggesting that girls tend to use relational aggression in lieu of overt physical or verbal aggression (Crick & Grotpeter, 1995; Crick & Nelson, 2002). Since overtly-aggressive females tend to use physical and verbal aggression to express their feelings of anger and frustration, it is hypothesized that they will rely less often upon the use of relational aggression in their relationships. For this question, the statistical procedure used was *t*-test. The assumptions of normality, homogeneity of variance and independent observations were tested and an alpha level of .05 was used to determine statistical significance.

The fourth research question is: Are there differences in the use of relational aggression depending upon the age of the participant? This is a main effect research question. Based upon the literature that seems to demonstrate that around middle school age, girls start to use relational aggression at an increased rate, it was hypothesized that girls in grades 7-9 would use relationally-aggressive behaviors to a greater degree than

girls in grades 10-12. As children progress through grade school and into middle and high school, the incidence of relational aggression increases and is thought to peak in adolescence (Tiet et al., 2001; Xie, Farmer, & Cairns, 2003). The statistical procedure used to analyze this data was a *t*-test. The assumptions of normality, homogeneity of variance and independent observations were tested, with an alpha level of .05 to determine statistical significance.

The fifth research question is: Does the incidence of relational aggression differ among girls by ethnicity or cultural background? This is a main effect research question. It was hypothesized that African American girls would be less relationally-aggressive than Caucasian girls. Based upon the fact that the previous literature has been completed with primarily European American samples, it was hypothesized that African American students as a whole will be less relationally-aggressive than Caucasian students. Additionally, the existing research suggests that non-Caucasian girls may use relational aggression less than Caucasian girls. For example, Crothers et al. (2005) found in their study that ninth and tenth grade girls of color reported using relational aggression significantly less than did white participants. The statistical procedure used was a *t*-test. The assumptions of normality, homogeneity of variance and independent observations were tested. An alpha level of .05 was used to determine statistical significance.

The following four interaction questions related to relational aggression were investigated: 1) Do differences exist in the use of relational aggression depending upon the age of the participant and her aggression group?, 2) Do differences exist in the use of relational aggression depending on the participant's ethnicity/cultural background and her aggression group?, 3) Do differences exist in the use of relational aggression depending

on the participant's ethnicity/cultural background and her age?, and 4) Do differences exist in the use of relational aggression depending on a participant's ethnicity/cultural background, aggression group and age? The statistical procedure used to investigate these questions is factorial ANOVA. The assumptions of normality, homogeneity of variance and independent observations were tested and an alpha level of .05 was used to determine statistical significance.

The tenth and eleventh research questions were the following: What is the incidence of the use of social aggression in an overtly-aggressive female adolescent sample? and What is the incidence of the use of social aggression in a non-overtly-aggressive female adolescent sample?, with descriptive statistics used to analyze the data.

The twelfth research question is: Do girls not identified as being overtly aggressive use social aggression more often than overtly-aggressive females? This is a main effect research question. It was hypothesized that girls in a regular education setting would use social aggression to a greater degree than overtly-aggressive girls. Research has already demonstrated that girls in regular education settings use social aggression (Shute, Owens, & Slee, 2002). Additionally, there is research suggesting that girls not identified as overtly-aggressive are more likely to use social aggression in conflicts with other females than physical aggression (Xie, Cairns, & Cairns, 2002). Since overtly-aggressive females tend to use physical and verbal aggression to express their feelings of anger and frustration, it was hypothesized that they would rely less often upon the use of social aggression in their relationships. The preponderance of research suggests that relational aggression and social aggression are virtually the same constructs; however, recent research completed by Crothers et al. (2009) suggest that relational and social

aggression are different constructs. The results of this study will be helpful to further this line of research. In order to analyze the data from this question, the statistical procedure used was a *t*-test. The assumptions of normality, homogeneity of variance and independent observations were tested. An alpha level of .05 was used to determine statistical significance.

The thirteenth research question is: Are there differences in the use of social aggression depending upon the age of the participant? This is a main effect research question. It was hypothesized that girls in grades 7-9 would use social aggression to a greater degree than girls in grades 10-12. Xie, Farmer, et al. (2002) found that more socially-aggressive strategies were used in grade 7 than in grade 4 in children from school in suburban and rural areas of the mid-Atlantic United States. Additionally, this researcher found that low levels of social aggression were reported at the first and fourth grade and then reached modest levels in the seventh grade among inner city African-American youth (Xie et al., 2003). The statistical procedure used was a *t*-test. The assumptions of normality, homogeneity of variance and independent observations were tested. An alpha level of .05 was used to determine statistical significance.

The fourteenth research question is: Do differences exist in the use of social aggression among girls in accordance with their ethnicity/cultural background? This is a main effect research question. It was hypothesized that African American girls would be less socially aggressive than Caucasian girls. For example, Xie et al. (2003) found higher levels of physical aggression and lower levels of social aggression in female-female conflicts among inner city African-American youth. The statistical procedure used was a *t*-test. The assumptions of normality, homogeneity of variance and independent

observations were tested. An alpha level of .05 was used to determine statistical significance.

The following four interaction questions related to social aggression were investigated: 1) Do differences exist in the use of social aggression depending upon the age of the participant and her aggression group?, 2) Do differences exist in the use of social aggression depending on the participant's ethnicity/cultural background and her aggression group?, 3) Do differences exist in the use of social aggression depending on the participant's ethnicity/cultural background and her age?, and 4) Do differences exist in the use of social aggression depending on a participant's ethnicity/cultural background, aggression group and age? The statistical procedure used to investigate these questions was a factorial ANOVA. The assumptions of normality, homogeneity of variance and independent observations were tested and an alpha level of .05 was used to determine statistical significance.

The nineteenth and twentieth research questions were the following: What is the incidence of the use of overt aggression in an overtly-aggressive female adolescent sample? and What is the incidence of the use of overt aggression in a non-overtly-aggressive female adolescent sample?, with descriptive statistics used to analyze the data.

The twenty-first research question is: Are there differences in the use of overt aggression between non-overtly-aggressive females in comparison to overtly-aggressive females? This is a main effect research question. It was hypothesized that girls identified as being overtly aggressive would use more overt aggression than non-identified girls. Research demonstrates that adolescents in alternative schools use overt aggression. For example, alternative school students reported a mean of 11.8 incidents of aggressive acts

per student in Escobar-Chaves, Tortolero, Markham, Kelder, and Kapadia (2002) study. These girls have already been identified as overtly-aggressive; therefore, it makes sense that they would use it to a greater degree than girls who have not received this identification. The statistical procedure used will be *t*-test. The assumptions of normality, homogeneity of variance and independent observations will be tested. An alpha level of .05 will be used to determine statistical significance.

The twenty-second research question is: Are there differences in the use of overt aggression depending upon the age of the participant? This is a main effect research question. It is hypothesized that girls in grades 7-9 would use overt aggression to a greater degree than girls in grades 10-12. In Xie et al.'s (2003) study, it was discovered that the overall use of physical aggression in conflicts showed a decrease from grades one to seven. Cairns, Cairns, Neckerman, Ferguson, and Gariépy (1989) found that participants in adolescence were rated as being less aggressive than they were in middle childhood in their study. The results of Lee, Baillargeon, Vermunt, Wu, and Tremblay's (2007) study demonstrated a decreasing trend in the prevalence of physical aggression with age for Canadian girls. Already in seventh grade, children are using physical aggression less than they were in elementary school and will probably continue to use it less and less as they reach high school. The statistical procedure used will be *t*-test. The assumptions of normality, homogeneity of variance and independent observations will be tested. An alpha level of .05 will be used to determine statistical significance.

The twenty-third research question is: Do differences exist in the use of overt aggression among girls by their ethnicity/cultural background? This is a main effect research question. It is hypothesized that African American girls would use overt

aggression to a greater degree than Caucasian girls. For example, Xie et al. (2003) found higher levels of physical aggression and lower levels of social aggression in female-female conflicts among inner city African-American youth. The statistical procedure used was a t-test. The assumptions of normality, homogeneity of variance and independent observations will be tested. An alpha level of .05 will be used to determine statistical significance.

The following four interaction questions related to overt aggression will be investigated: 1) Do differences exist in the use of overt aggression depending upon the age of the participant and her aggression group?, 2) Do differences exist in the use of overt aggression depending on the participant's ethnicity/cultural background and her aggression group?, 3) Do differences exist in the use of overt aggression depending on the participant's ethnicity/cultural background and her age?, and 4) Do differences exist in the use of overt aggression depending on a participant's ethnicity/cultural background, aggression group and age? The statistical procedure used to investigate these questions is factorial ANOVA. The assumptions of normality, homogeneity of variance and independent observations were tested and an alpha level of .05 was used to determine statistical significance.

If students did not answer every question or skip a question on the *YASB*, the researcher either deleted the case if there weren't enough participants in the study for adequate power or a mean substitution was used.

Threats to Validity

Several threats to the validity of the study exist. A threat to the internal validity of this study is selection, in that differences between the participants in the groups may

result in outcomes that are varied because of the composition of the groups. The overtly-aggressive sample is expected to be somewhat heterogeneous due to variability in the education and residence of the participants (some of the females live in group homes, attend alternative schools, have been identified as juvenile delinquents, or have not been adjudicated). Another threat to the internal validity of the study is experimenter effects. It is possible that the way the researcher presents the study information and the questionnaire to the females may differ between the two groups based on the researcher's prior knowledge of the groups. This may result in the participants' responses being influenced based on the researcher's expectations for each group. Another threat to the internal validity of the study is treatment replications since the survey will be presented to the girls at different times at different schools.

Further, a threat to the external validity of the study is the extent to which the results can be generalized to other people. Since a convenience sample was utilized, the results of this research may not be applicable to other populations of adolescent females. Another threat to the external validity of the study is that the participants may falsify their responses in order to appear non-relationally, -socially or -overtly-aggressive.

Summary

Overall, the current study investigated whether differences exist in the use of relational, social, and overt aggression amongst overtly-aggressive and non-overtly-aggressive female adolescents. The variables of aggression group (overtly-aggressive and non-overtly-aggressive), age level (middle or high school), and cultural background/ethnicity (Caucasian or non-Caucasian) in the self-reported use of relational aggression, social aggression, and overt aggression were examined. Study participants

included females selected from eight sites in the mid-Atlantic United States, including a regular education private high school and middle school, a group home, three alternative schools, an approved private school for children who demonstrate emotional and behavioral challenges, and a private, academic school for children at-risk for school failure. Threats to the validity of the study included selection, experimenter effects, and the extent to which the result can be generalized.

CHAPTER IV

RESULTS

The results section is organized in the following manner. Each of the research questions related to relational aggression, social aggression, and overt aggression is stated and then the results of each research question, in turn, are presented. Subsequently, tables presenting the research questions, hypotheses, and research findings are supplied, and finally, a paragraph is included in summarizing this chapter.

Initially, a factorial ANOVA had been planned for use in answering each of the research questions; however, the sample size was insufficient to permit the use of this statistical procedure. Consequently, *t*-tests were used to answer several of the research questions. The use of a Bonferroni correction method was attempted (changing the alpha level from .05 to .008) in order to avoid the chance of making a Type I error. After reviewing these values, very few differences were observed (thus negating the possibility of Type I error); consequently, these Bonferroni values were not used. Overall, due to the small sample size, differences between groups were not able to be detected and the null hypothesis was accepted for the majority of the research questions.

Relational Aggression

Incidence

In this study, the first research question examined was: What is the incidence of the use of relational aggression in an overtly-aggressive female adolescent sample? The overall mean use of relational aggression in the overtly-aggressive sample was 9.13, and mean responses ranged from 5 to 25. In the second research question, the incidence of the use of relational aggression in a non-overtly-aggressive female adolescent sample was

determined to be 10.07. Regarding this variable, means ranged from a minimum of 5 to 25.

Main Effects

Aggression group. The third research question examined whether the use of relational aggression by overtly-aggressive females statistically significantly exceeded that of non-overtly-aggressive females. In order to answer this research question with the collected data, a *t*-test was used. Prior to executing the *t*-test, the tests of assumptions were examined and answered. The assumptions, normality and homogeneity of variance, are investigated to determine whether or not a violation of either has a serious effect on type I and type II error rates (Stevens, 1999).

First, the test of normality was examined to determine if the observations were normally distributed on the relational aggression dependent variable. This was accomplished using the Shapiro Wilk's test, which was statistically significant for non-overtly-aggressive girls ($p = .00$). This indicates a violation of this assumption, which suggests that the data is not normally distributed. According to Stevens (1999), the *F* statistic is robust with respect to the normality assumption; therefore, the data should be interpreted regardless of the assumption violation. Since *t* and *F* are related (an ANOVA of two groups will give you essentially the same *t*-test results), the *t* statistic should also be robust to the normality assumption (J. B. Schreiber, personal communication, September 17, 2009). This assumption, however, was not violated for the overtly-aggressive female sample ($p = .07$), indicating that the data was normally distributed on the relational aggression dependent variable for this group. Second, the assumption of homogeneity of variance was examined to determine if the population variances for the

two groups were equal. This was accomplished using Levene's test and was not statistically significant. ($p = .07$). Third, the test of independent observation was considered. This assumption was not statistically significant since all the observations are independent of each other. Each of the participant's responses was not dependent upon that of another participant. In conclusion, the main effect question is not statistically significant ($p = .06$, $\eta^2 = .03$), indicating that there is no statistically significant difference between the overtly-aggressive and non-overtly-aggressive females' use of relational aggression in this sample; however, the p -value was approaching significance. This suggests that with greater power in the study, statistical differences may have been detected.

Age. The fourth research question, Are there differences in the use of relational aggression depending upon the age of the participant?, required the girls to be grouped dichotomously as either middle school-aged girls or high school-aged girls due to the small sample size. If the sample size were larger, girls would have been grouped by their age in years. In order to answer this research question with the collected data, a t -test was utilized. Prior to executing the analysis, the tests of assumptions were examined and answered. First, the test of normality was reviewed using the Shapiro Wilk's test and was statistically significant for middle school girls ($p = .00$) and high school girls ($p = .02$), indicating a violation of this assumption. According to Stevens (1999), the F statistic is robust with respect to the normality assumption, which means that the level of significance set by the examiner is very close to the actual level of significance (Stevens, 1999). Based on these findings, the data can be interpreted normally. Second, the assumption of homogeneity of variance was examined using Levene's test and was

statistically significant ($p = .04$), indicating a violation of this assumption. Since this assumption was violated, the Welch test was used. The value of the Welch test was $p = .230$, which was not statistically significant. Therefore, the data can be interpreted normally regardless of the assumption violation. Third, the test of independent observation was considered and was not statistically significant, since all the observations are independent of each other. In summary, the main effect question is not statistically significant ($p = .23$, $\eta^2 = .01$), indicating that there is no statistically significant difference in middle and high school girls' use of relational aggression.

Ethnicity/cultural background. The fifth research question examined was whether the incidence of relational aggression differs among girls by ethnicity or cultural background. For this question, girls were divided into one of two groups, Caucasian or non-Caucasian, again because the small sample size did not permit a more precise ethnic/cultural background differentiation. In order to answer this research question with the collected data, a t -test was used. The tests of assumptions were examined and answered prior to the execution of the statistical analysis. First, the test of normality was examined using the Shapiro Wilk's test and was statistically significant for Caucasian girls ($p = .00$), indicating a violation of this assumption. However, this assumption was not violated for non-Caucasian females ($p = .17$). According to Stevens (1999), the F statistic is robust with respect to the normality assumption; therefore, the violation of the assumption will not have an effect on the interpretation of the data. Second, the assumption of homogeneity of variance was examined using Levene's test and was not statistically significant ($p = .079$). Third, the test of independent observation was examined and was not statistically significant. All the observations are independent of

each other. This main effect question is statistically significant ($p = .00$, $\eta^2 = .069$), indicating that there is a statistically significant difference between Caucasian girls' and non-Caucasian girls' use of relational aggression in this sample. In this study, Caucasian females demonstrated higher levels of relational aggression.

Interactions

Age and aggression group. The sixth research question posed was whether differences exist in the use of relational aggression depending upon the age of the participant and her aggression group. In answering this research question with the collected data, a factorial ANOVA was used. The assumption of homogeneity of variance was examined using Levene's test and is statistically significant ($p = .02$), indicating a violation of this assumption. The Levene test is robust in the face of departures from normality; therefore, the data can be interpreted normally. ANOVA is robust for small and even moderate departures from homogeneity of variance (Box, 1954). It is customary that the ratio of largest to smallest group variances should be 3:1 or less, while Moore (1995) suggests the more lenient standard of 4:1 (as cited in Garson, 2009). The test of independent observation was examined and was not significant. All of the observations are independent of each other, meaning that each participant's response was her own response and was not dependent on anyone else's responses. This interaction question is not statistically significant ($p = .58$, $\eta^2 = .00$), indicating that differences in scores between the levels of the age variable are the same across all levels of the aggression group variable. Girls' use of relational aggression did not differ statistically significantly by their age group or aggression group.

Ethnicity/cultural background and aggression group. In the seventh research question, the examiner sought to identify whether differences exist in the use of relational aggression depending on the participant's ethnicity/cultural background and her aggression group. For this research question, the statistical procedure factorial ANOVA was used. The assumption of homogeneity of variance was examined using Levene's test and is not statistically significant ($p = .24$). The test of independent observation was examined and was not significant. Furthermore, this interaction question is not statistically significant ($p = .26$, $\eta^2 = .00$), indicating that differences in scores between the levels of the ethnicity/cultural background variable are the same across all levels of the aggression group variable. Therefore, there are no statistically significant differences between groups with respect to aggression group and ethnicity/cultural background.

Ethnicity/cultural background and age. The eighth research question proposed was: Do differences exist in the use of relational aggression depending on the participant's ethnicity/cultural background and her age? A factorial ANOVA was used to answer this research question with the collected data. The assumption of homogeneity of variance was examined using Levene's test and is statistically significant ($p = .03$). The Levene's test is robust in the face of departures from normality, which indicates that the data can still be interpreted without making any statistical alterations. ANOVA is robust for small and even moderate departures from homogeneity of variance (Box, 1954), and it is customary that the ratio of largest to smallest group variances should be 3:1 or less. However, Moore (1995) suggests the use of the more lenient standard of 4:1 (as cited in Garson, 2009). The test of independent observation was examined and was not statistically significant. Finally, this interaction question is not statistically significant

($p = .47$, $\eta^2 = .01$), indicating that differences in scores between the levels of the ethnicity/cultural background variable are the same across all levels of the age variable. Therefore, there are no statistically significant differences between groups with respect to age group and ethnicity/cultural background.

Ethnicity/cultural background, aggression group, and age. The ninth research question asked by the researcher was whether differences exist in the use of relational aggression depending on a participant's ethnicity/cultural background, aggression group and age. In order to investigate this research question with the collected data, the statistical procedure, factorial ANOVA, was utilized. The assumption of homogeneity of variance was examined using Levene's test and is statistically significant ($p = .04$), indicating unequal population variances between the two groups. According to Stevens (1999), the F statistic is robust with respect to the normality assumption, indicating that the data can still be interpreted without altering the data. The test of independent observation was examined and was not statistically significant. Results reveal that Caucasian, non-overtly-aggressive middle school girls use relational aggression ($M = 10.28$) more often than Caucasian, overtly-aggressive middle school girls ($M = 9.33$). However, there are no differences in the use of relational aggression between non-Caucasian, non-overtly-aggressive middle school females ($M = 8.30$) and non-Caucasian, overtly-aggressive middle school females ($M = 8.64$). In the Caucasian high school group, non-overtly-aggressive females use relational aggression ($M = 10.406$) significantly more often than overtly-aggressive females ($M = 9.88$). A comparison is unable to be made in the non-Caucasian high school group, since the mean of the non-

overtly-aggressive females was unable to be calculated due to the small sample size of this group.

Summary

The results of the research questions pertaining to relational aggression are summarized below in Table 4.

Table 4

Summary of Results – Relational Aggression

Research Question	Hypotheses	<i>p</i>
Main Effects		
Aggression Group	H ₀ : $M_1 = M_2$, H ₁ : $M_1 \neq M_2$.06
Age	H ₀ : $M_1 = M_2$, H ₁ : $M_1 \neq M_2$.23
Ethnicity	H ₀ : $M_1 = M_2$, H ₁ : $M_1 \neq M_2$.00*
Interactions		
Age, Aggression Group	H ₀ : $M_1 = M_2 = M_3 = M_4$ H ₁ : at least one mean is different	.58
Ethnicity, Aggression Group	H ₀ : $M_1 = M_2 = M_3 = M_4$ H ₁ : at least one mean is different	.26
Ethnicity, Age	H ₀ : $M_1 = M_2 = M_3 = M_4$ H ₁ : at least one mean is different	.47
Ethnicity, Aggression Group, Age	H ₀ : $M_1 = M_2 = M_3 = M_4 = M_5 = M_6$ -- H ₁ : at least one mean is different	--

Note. *M* = mean; H₀ = null hypothesis; H₁ = alternative hypothesis. * denotes significance at the .05 level;

-- denotes that *p* could not be calculated due to small sample size.

Overall, the results of these research questions revealed several non-significant findings: 1) between overtly-aggressive and non-overtly-aggressive females' use of relational aggression; 2) between middle and high school girls' use of relational aggression; 3) between middle school, non-Caucasian, non-overtly-aggressive females and middle school, non-Caucasian, overtly-aggressive females' use of relational aggression; 4) by girls' age group and aggression group; 5) by their ethnicity/cultural background and aggression group; or 6) by their ethnicity/cultural background and age group. However, Caucasian females demonstrated higher levels of relational aggression than non-Caucasian females. Additionally, Caucasian, non-overtly-aggressive middle school girls reported using relational aggression more often than Caucasian, overtly-aggressive middle school girls. Finally, in the Caucasian high school group, non-overtly-aggressive females were found to use relational aggression significantly more often than overtly-aggressive females.

Social Aggression

Incidence

Similar to the questions asked regarding relational aggression, the following questions were also examined: What is the incidence of the use of social aggression in an overtly-aggressive female adolescent sample? and What is the incidence of the use of social aggression in a non-overtly-aggressive female adolescent sample?, with responses ranging from a minimum of 5 to a maximum of 25. The overall mean use of social aggression in the overtly-aggressive sample was 16.15 and was 16.29 for the non-overtly-aggressive sample.

Main Effects

Aggression group. In the twelfth research question, the examiner asked whether girls not identified as being overtly-aggressive use social aggression more often than overtly-aggressive females. In order to answer this research question with the collected data, a *t*-test was used. Prior to the statistical analysis, the tests of assumptions were investigated and answered. First, the test of normality was examined using the Shapiro Wilk's test and was statistically significant for non-overtly-aggressive and overtly-aggressive girls ($p = .00$), indicating a violation of this assumption. According to Stevens (1999), the *F* statistic is robust with respect to the normality assumption, indicating that the data should be interpreted normally regardless of the assumption violation. Next, the assumption of homogeneity of variance was considered using Levene's test and was not statistically significant ($p = .20$). Third, the test of independent observation was examined and was not statistically significant. In summary, this main effect question is not statistically significant ($p = .83$, $\eta^2 = .00$), indicating that there is no statistically significant difference between the non-overtly-aggressive and overtly-aggressive females' use of social aggression.

Age. In the thirteenth research question, the researcher asked whether there are differences in the use of social aggression depending upon the age of the participant. A *t*-test was used to answer this research question with the collected data, beginning with the tests of assumptions. The test of normality was investigated using the Shapiro Wilk's test and was statistically significant for middle school girls ($p = .00$) and high school girls ($p = .000$), indicating a violation of this assumption. According to Stevens (1999), the *F* statistic is robust with respect to the normality assumption, signifying that the data can be

interpreted normally. Second, the assumption of homogeneity of variance was examined using Levene's test and was not statistically significant ($p = .35$). Lastly, the test of independent observation was examined and was not statistically significant. This main effect question is not statistically significant ($p = .44$, $\eta^2 = .01$), indicating that there is no difference in middle and high school girls' use of social aggression.

Ethnicity/cultural background. The fourteenth research question proposed is whether differences exist in the use of social aggression among girls in accordance with their ethnicity/cultural background. In order to answer this research question with the collected data, a t -test was selected. Prior to the analysis, the tests of assumptions were investigated and answered. First, the test of normality was examined using the Shapiro Wilk's test and was statistically significant for Caucasian girls ($p = .00$) and for non-Caucasian girls ($p = .01$), indicating a violation of this assumption. According to Stevens (1999), the F statistic is robust with respect to the normality assumption, indicating that the data can continue to be interpreted even though the assumption was violated. The next assumption reviewed was the assumption of homogeneity of variance using Levene's test, and was not statistically significant ($p = .36$). The last assumption examined was the test of independent observation and was not statistically significant. This main effect question is not statistically significant ($p = .30$, $\eta^2 = .01$), indicating that there is no statistically significant difference between Caucasian girls' and non-Caucasian females' use of social aggression.

Interactions

Age and aggression group. The fifteenth research question examined was the following: Do differences exist in the use of social aggression depending upon the age of

the participant and her aggression group? In order to answer this research question with the collected data, a factorial ANOVA was used. The assumption of homogeneity of variance was examined using Levene's test and is not statistically significant ($p = .62$). The test of independent observation was examined and was not significant. Finally, this interaction question is not statistically significant ($p = .12$, $\eta^2 = .02$), indicating that differences in scores between the levels of the age variable are the same across all levels of the aggression group variable. There are no statistically differences in the use of social aggression in terms of girls' age and aggression group.

Ethnicity/cultural background and aggression group. The sixteenth research question examined was whether differences exist in the use of social aggression depending on the participant's ethnicity/cultural background and her aggression group. For this research question, the statistical procedure factorial ANOVA was used. The assumption of homogeneity of variance was examined using Levene's test and was not statistically significant ($p = .34$). The test of independent observation was also examined and was not significant. This interaction question is not statistically significant ($p = .46$, $\eta^2 = .01$), indicating that differences in scores between the levels of the ethnicity/cultural background variable are the same across all levels of the aggression group variable. In this sample, there are no statistically significant differences in the use of social aggression in terms of participants' aggression group and ethnicity/cultural background.

Ethnicity/cultural background and age. The researcher also examined potential differences in the use of social aggression depending on the participant's ethnicity/cultural background and her age. A factorial ANOVA was used to answer this research question with the collected data. The assumption of homogeneity of variance

was considered using Levene's test and is not statistically significant ($p = .34$), while the test of independent observation was examined and also was not statistically significant. This interaction question is not statistically significant ($p = .46$, $\eta^2 = .02$), revealing that differences in scores between the levels of the ethnicity/cultural background variable are the same across all levels of the age variable. In summary, no statistically significant differences were found in this sample's use of social aggression in terms of girls' age and ethnicity/cultural background.

Ethnicity/cultural background, aggression group, and age. The eighteenth research question posed by the examiner was whether differences exist in the use of social aggression depending on a participant's ethnicity/cultural background, aggression group, and age. A factorial ANOVA was used to answer this research question with the collected data. The assumption of homogeneity of variance was considered using Levene's test and is not statistically significant ($p = .54$). The test of independent observation was also examined and was not statistically significant. Results reveal that Caucasian, non-overtly-aggressive, middle school girls use social aggression ($M = 16.72$) significantly more often than Caucasian, overtly-aggressive middle school girls ($M = 15.00$). Non-Caucasian, non-overtly-aggressive middle school females use social aggression ($M = 15.40$) significantly more often than non-Caucasian, overtly-aggressive middle school females ($M = 14.82$). However, there were no differences in the use of social aggression by Caucasian, high-school-age, overtly-aggressive females ($M = 16.13$) and by Caucasian, high-school-age, non-overtly-aggressive females ($M = 16.29$). A comparison is unable to be made in the non-Caucasian high school group, since the mean

of the overtly-aggressive females was unable to be calculated due to the small sample size of this group.

Summary

The results of the research questions pertaining to social aggression are summarized below in Table 5.

Table 5

Summary of Results – Social Aggression

Research Question	Hypotheses	<i>p</i>
Main Effects		
Aggression Group	H ₀ : $M_1 = M_2$, H ₁ : $M_1 \neq M_2$.83
Age	H ₀ : $M_1 = M_2$, H ₁ : $M_1 \neq M_2$.44
Ethnicity	H ₀ : $M_1 = M_2$, H ₁ : $M_1 \neq M_2$.30
Interactions		
Age, Aggression Group	H ₀ : $M_1 = M_2 = M_3 = M_4$ H ₁ : at least one mean is different	.12
Ethnicity, Aggression Group	H ₀ : $M_1 = M_2 = M_3 = M_4$ H ₁ : at least one mean is different	.46
Ethnicity, Age	H ₀ : $M_1 = M_2 = M_3 = M_4$ H ₁ : at least one mean is different	.46
Ethnicity, Aggression Group, Age	H ₀ : $M_1 = M_2 = M_3 = M_4 = M_5 = M_6$ -- H ₁ : at least one mean is different	--

Note. *M* = mean; H₀ = null hypothesis; H₁ = alternative hypothesis. * denotes significance at the .05 level;

-- denotes that *p* could not be calculated due to small sample size.

Overall, in this sample, there were no statistically significant differences between 1) non-overtly-aggressive and overtly-aggressive females' use of social aggression; 2) middle and high school girls' use of social aggression; 3) Caucasian and non-Caucasian girls' use of social aggression; and 4) Caucasian, high school overtly-aggressive and non-overtly-aggressive females' use of social aggression. Further, females' use of social aggression did not differ statistically significantly by their age group and aggression group, their ethnicity/cultural background and aggression group, or by their ethnicity/cultural background and age group. However, results of this study revealed that Caucasian, non-overtly-aggressive middle school girls use social aggression significantly more often than Caucasian, overtly-aggressive middle school girls. Additionally, non-Caucasian, non-overtly-aggressive middle school females use social aggression significantly more often than non-Caucasian, overtly-aggressive middle school females in this sample.

Overt Aggression

For the overt aggression variable research questions, the square root of aggression variable was created and used instead of the aggression variable to improve normality due to an otherwise skewed distribution. A skewed distribution occurs when scores tend to cluster toward one end of the scale (Gravetter & Wallnau, 2004). If the normality of the distribution had not been altered using the square root of the aggression variable, a possible Type I error could have occurred or the non-normal distribution may have had a negative effect upon power (Stevens, 1999).

Incidence

As was in the queries regarding relational and social aggression, the following questions were also examined: What is the incidence of the use of overt aggression in an overtly-aggressive female adolescent sample? and What is the incidence of the use of overt aggression in a non-overtly-aggressive female adolescent sample?, with responses ranging from a minimum of 5 to a maximum of 20; however, overall reported means are less due to the square root of the variable being utilized. The overall mean use of overt aggression in the overtly-aggressive sample was determined to be 2.32 and was 1.75 for the non-overtly-aggressive sample.

Main Effects

Aggression group. The twenty-first research question posed was whether there were any differences in the use of overt aggression between non-overtly-aggressive females in comparison to overtly-aggressive females. In order to answer this research question with the collected data, a *t*-test was used. However, before the *t*-test was calculated, the tests of assumptions were examined and answered. First, the test of normality was examined using the Shapiro Wilk's test and was statistically significant for non-overtly-aggressive ($p = .00$) and overtly-aggressive girls ($p = .04$), indicating a violation of this assumption. According to Stevens (1999), the *F* statistic is robust with respect to the normality assumption, allowing the data to be interpreted regardless of the assumption violation. Second, the assumption of homogeneity of variance was examined using Levene's test and was not statistically significant. ($p = .16$). Third, the test of independent observation was examined and was not statistically significant. This main effect question is statistically significant ($p = .00$, $\eta^2 = .16$), indicating that the overtly-

aggressive females in this sample reported using overt aggression to a greater degree than the non-overtly-aggressive females.

Age. The twenty-second research question investigated is: Are there differences in the use of overt aggression depending upon the age of the participant? In order to answer this research question with the collected data, a *t*-test was used; however, the tests of assumptions were examined and answered prior to the use of the *t*-test. The test of normality was examined using the Shapiro Wilk's test and was statistically significant for middle school girls ($p = .01$) and high school girls ($p = .00$), signifying a violation of this assumption. According to Stevens (1999), the *F* statistic is robust with respect to the normality assumption, indicating that the data can be interpreted. Next, the assumption of homogeneity of variance was examined using Levene's test and was not statistically significant ($p = .22$). Lastly, the test of independent observation was reviewed and was not statistically significant since all the observations are independent of each other. This main effect question is not statistically significant ($p = .62, \eta^2 = .01$), revealing that there is no difference between middle and high school girls' use of overt aggression in this sample.

Ethnicity/cultural background. The twenty-third research question posed was whether differences exist in the use of overt aggression among girls by their ethnicity/cultural background. In order to answer this research question with the collected data, a *t*-test was utilized. The tests of assumptions were investigated and answered prior to the analysis. First, the test of normality was examined using the Shapiro Wilk's test and was statistically significant for Caucasian girls only ($p = .00$), demonstrating a violation of this assumption. According to Stevens (1999), the *F* statistic is robust with

respect to the normality assumption, indicating that the data can be interpreted regardless of the assumption violation. The next assumption examined was the assumption of homogeneity of variance using Levene's test and was not statistically significant ($p = .54$). Finally, the test of independent observation was examined and was not statistically significant. This main effect question is statistically significant ($p = .01$, $\eta^2 = .04$), illustrating that there is a statistically significant difference in Caucasian girls' and non-Caucasian girls' use of overt aggression. In this sample, non-Caucasian girls report using overt aggression more often than Caucasian females.

Interactions

Age and aggression group. The twenty-fourth research question examined was: Do differences exist in the use of overt aggression depending upon the age of the participant and her aggression group? In order to answer this research question with the collected data, a factorial ANOVA was used. The assumption of homogeneity of variance was examined using Levene's test and is not statistically significant ($p = .17$). The test of independent observation was also investigated and was not significant. This interaction question is not statistically significant ($p = .89$, $\eta^2 = .00$), indicating that differences in scores between the levels of the age variable are the same across all levels of the aggression group variable. Thus, females in middle and high school, both overtly-aggressive and non-overtly-aggressive, reported using overt aggression equally.

Ethnicity/cultural background and aggression group. The twenty-fifth research question posed by the researcher concerned whether differences exist in the use of overt aggression depending on the participant's ethnicity/cultural background and her aggression group. A factorial ANOVA was selected to answer this research question

utilizing the data collected. The assumption of homogeneity of variance was examined using Levene's test and is not statistically significant ($p = .48$), while the test of independent observation was examined and also is not significant. This interaction question is not statistically significant ($p = .22$, $\eta^2 = .01$), indicating that differences in scores between the levels of the ethnicity/cultural background variable are the same across all levels of the aggression group variable. No statistically significant differences were found in self-reported overt aggression in terms of females' ethnicity/cultural background and aggression group.

Ethnicity/cultural background and age. The twenty-sixth research question examined was: Do differences exist in the use of overt aggression depending on the participant's ethnicity/cultural background and her age? The statistical procedure factorial ANOVA was chosen to answer this research question. The assumption of homogeneity of variance was reviewed using Levene's test and is not statistically significant ($p = .25$). Similarly, the test of independent observation was examined and is not statistically significant. This interaction question is not statistically significant ($p = .47$, $\eta^2 = .01$), indicating that differences in scores between the levels of the ethnicity/cultural background variable are the same across all levels of the age variable. No statistically significant differences were found in self-reported overt aggression in terms of females' age (middle school vs. high school) and ethnicity/cultural background.

Ethnicity/cultural background, aggression group, and age. In the twenty-seventh question of this study, the researcher asked whether differences exist in the use of overt aggression depending on a participant's ethnicity/cultural background, aggression group and age. A factorial ANOVA was also selected to answer this research question. The

assumption of homogeneity of variance was considered using Levene’s test and is not statistically significant ($p = .39$). Additionally, the test of independent observation was examined and was not statistically significant. Results reveal that Caucasian, non-overtly-aggressive middle school girls use overt aggression ($M = 1.72$) less than Caucasian, overtly-aggressive middle school girls ($M = 2.39$). Furthermore, non-Caucasian, non-overtly-aggressive middle school females use overt aggression ($M = 1.96$) less than non-Caucasian, overtly-aggressive middle school females ($M = 2.16$). Finally, in the Caucasian high school group, non-overtly-aggressive females ($M = 1.71$) used overt aggression less than overtly-aggressive females ($M = 2.36$). A comparison is unable to be made in the non-Caucasian high school group, since the mean of the non-identified females was unable to be calculated due to the small sample size for this group.

Summary

The results of the research questions pertaining to overt aggression are summarized below in Table 6.

Table 6

Summary of Results – Overt Aggression

Research Question	Hypotheses	<i>p</i>
Main Effects		
Aggression Group	$H_0: M_1 = M_2, H_1: M_1 \neq M_2$.00*
Age	$H_0: M_1 = M_2, H_1: M_1 \neq M_2$.62
Ethnicity	$H_0: M_1 = M_2, H_1: M_1 \neq M_2$.01*

Table 6 (continued)

Research Question	Hypotheses	<i>p</i>
Interactions		
Age, Aggression Group	H ₀ : $M_1 = M_2 = M_3 = M_4$ H ₁ : at least one mean is different	.89
Ethnicity, Aggression Group	H ₀ : $M_1 = M_2 = M_3 = M_4$ H ₁ : at least one mean is different	.22
Ethnicity, Age	H ₀ : $M_1 = M_2 = M_3 = M_4$ H ₁ : at least one mean is different	.47
Ethnicity, Aggression Group, Age	H ₀ : $M_1 = M_2 = M_3 = M_4 = M_5 = M_6$ -- H ₁ : at least one mean in different	--

Note. *M* = mean; H₀ = null hypothesis; H₁ = alternative hypothesis. * denotes significance at the .05 level; -- denotes that *p* could not be calculated due to small sample size.

In research questions of overt aggression, no statistically significant difference were found between middle and high school girls' use of overt aggression, and girls' use of overt aggression did not differ statistically significantly by their age group and aggression group, their ethnicity/cultural background and aggression group, or by their ethnicity/cultural background and age group. However, results revealed that in this sample, overtly-aggressive females and non-Caucasian females reported using overt aggression to a greater degree than non-overtly-aggressive females and Caucasian females, respectively. Additionally, in this study, Caucasian, non-overtly-aggressive middle school girls use overt aggression less than Caucasian, overtly-aggressive middle school girls. Similarly, non-Caucasian, non-overtly-aggressive middle school females use

overt aggression less than non-Caucasian, overtly-aggressive middle school females.

Similarly, in the Caucasian high school group, non-overtly-aggressive females used overt aggression less than overtly-aggressive females.

Overall Summary of Significant Findings

In conclusion, the overall statistically significant findings in this research are as follows:

1. Caucasian females demonstrated higher levels of relational aggression than non-Caucasian females.
2. Caucasian, non-overtly-aggressive middle school girls use relational aggression more often than Caucasian, overtly-aggressive middle school girls.
3. Caucasian, non-overtly-aggressive high school girls use relational aggression more often than Caucasian, overtly-aggressive high school girls.
4. Caucasian, non-overtly-aggressive middle school girls use social aggression more often than Caucasian, overtly-aggressive middle school girls.
5. Non-Caucasian, non-overtly-aggressive middle school females use social aggression significantly more often than non-Caucasian, overtly-aggressive middle school females.
6. Overtly-aggressive females use overt aggression more often than non-overtly-aggressive females.
7. Non-Caucasian females use overt aggression more often than Caucasian females.

CHAPTER V

DISCUSSION

In this section, implications of the results of Chapter IV are discussed. Significant findings are compared to those in past research. Also, recommendations for future research and limitations are presented.

Conclusions

Relational Aggression

Overall, there was no statistically significant difference between this sample of overtly-aggressive and non-overtly-aggressive girls' use of relational aggression. The extant literature base on relational aggression was lacking in describing the rates of relational aggression in overtly-aggressive children, and specifically was devoid of comparisons of the rates of relational aggression in overtly-aggressive and non-overtly-aggressive female adolescents. Although there were no differences between the groups in the current study, females in both groups did admit some use of relational aggression, which suggests that such behaviors should be targeted for intervention in both populations. The finding that non-overtly-aggressive female adolescents in this sample use relational aggression is consistent with results from Crick and Grotpeter (1995) and Crick and Nelson (2002) that have demonstrated that adolescent females use relational aggression in their friendships. Similarly, the finding that overtly-aggressive females also use relational aggression in their relationships is commensurate with results from Tiet, Wasserman, Loeber, McReynolds, and Miller (2001), who found, through maternal report, that girls at-risk for conduct problems use relational aggression.

In the sample surveyed in this study, statistically significant differences did not exist between middle school and high school girls' use of relational aggression. This finding differs from past research studies that have found variability in the use of relational aggression depending on age, although these investigations focused on younger students. For example, Xie, Farmer, and Cairns (2003) demonstrated that the use of direct relational aggression increased from grades one to seven. Although there were no differences between the middle and high school groups' use of relational aggression in the current study, both age groups of females did endorse using some relationally-aggressive behaviors, suggesting that middle and high school girls may benefit from relational aggression interventions. Surprisingly, the use of relational aggression in middle and high school females was much less when compared with a group of college females from another study (Crothers, Schreiber, Field, & Kolbert, 2009). One reason for this difference may be due to the significant differences between the two sample sizes (current sample $N = 117$; college sample $N = 657$). The small sample size in the current study may have compromised the researcher's ability to detect group differences whereas in the college sample study there was more power due to the large sample size and differences were detected in the use of aggression across groups.

Statistically significant differences were found in Caucasian girls' and non-Caucasian girls' use of relational aggression. Caucasian females used relational aggression significantly more often than non-Caucasian females in this sample. This research finding is consistent with a study conducted by Crothers, Field, and Kolbert (2005), who found that ninth and tenth grade girls of color were more likely to identify with traditional masculine characteristics and report using relational aggression

significantly less than white participants. This finding may suggest that relational aggression intervention programs need to be tailored to meet the unique needs of girls of various cultural/ethnic backgrounds. In the future, it is recommended that additional research be conducted with a larger sample size to further investigate the role of ethnicity/cultural background in the use of relational aggression in females.

Overall, all of these findings are important not only in providing information to educators to use in designing and implementing relational aggression interventions, but also in adding to the extant literature base regarding relational aggression prevalence rates in diverse populations.

Social Aggression

As was the case in the prevalence of relationally-aggressive behavior, there was no statistically significant difference between overtly-aggressive and non-overtly-aggressive girls' use of social aggression in this study. Although there were no differences between the groups in the current study, both groups did identify using social aggression in their relationships, which suggests that socially-aggressive behaviors should be targeted for intervention in the future in both populations.

Similar to the findings regarding this sample's use of relational aggression, statistically significant differences were not found in middle school and high school girls' use of social aggression. In contrast, past research studies have found differences in the use of social aggression depending on age, although such investigations have focused on younger children. For example, Xie, Farmer, & Cairns (2002) found that more socially-aggressive strategies were used in grade seven than in grade four in children from schools in suburban and rural areas of the mid-Atlantic United States.

Interestingly, unlike the findings in the use of relational aggression, statistically significant differences in social aggression did not exist among girls in terms of their ethnic/cultural background. Although previous research had suggested that relational aggression and social aggression are the same constructs (Archer & Coyne, 2005; Coyne, Archer & Eslea, 2006), recent research completed by Crothers et al. (2009) suggest that relational and social aggression are, in fact, different. The current study's finding of a statistically significant difference between Caucasian females' and non-Caucasian females' use of relational aggression, but no such difference in social aggression, add further evidence to the separation of the constructs of relational and social aggression. Future research should be completed to determine why these differences exist between relational and social aggression in terms of ethnicity/cultural background but not in terms of aggression group. Also, it is recommended that additional research be conducted with a larger sample size to further investigate the variable of ethnicity/cultural background in the use of social aggression.

Overt Aggression

Overall, there was a statistically significant difference between this sample's overtly-aggressive and non-overtly-aggressive girls' use of overt aggression. Not surprisingly, in this study, overtly-aggressive girls self-reported using overt aggression more often than non-overtly-aggressive females. Past research demonstrates that adolescents in alternative schools use overt aggression in their relationships. For example, Escobar-Chaves, Tortolero, Markham, Kelder, and Kapadia (2002) reported that students attending an alternative school (a non-traditional school for children with challenging behaviors, such as overt aggression) demonstrated a mean of 11.8 incidents

of aggressive acts per student per week in comparison to rates of aggressive behavior in typical schools, which occur roughly in 26 to 28 per 100,000 students per year (Nash, 2006). In the current study, many of the females in the overtly-aggressive group attended alternative schools. Considering the results of this study in conjunction with the findings of the Escobar-Chaves et al. (2002) investigation, it would logically follow to target the behaviors of overt aggression for intervention in overtly-aggressive females, such as those who attend alternative schools.

Since in this study, the non-overtly-aggressive girls were found to use relational and social aggression in their relationships, it follows that these females were found to use typical forms of aggression (e.g., overt aggression) less often, because such behaviors are not needed to achieve their goals. Researchers such as Crick and Grotpeter (1995) and Crick and Nelson (2002) have also found that females attending typical schools use relational aggression in their friendships. The results of this study suggest that interventions for non-overtly-aggressive females should focus primarily upon the behaviors of relational and social aggression, whereas interventions for overtly-aggressive females should likely focus upon overtly-aggressive behaviors, with some attention paid also to relationally- and socially-aggressive behaviors.

As was the case with relational and social aggression, no statistically significant differences were found in middle school and high school girls' use of overt aggression. In contrast, past research studies have found differences in the use of overt aggression depending on age. For example, in Xie et al.'s (2003) study, it was discovered that the overall use of physical aggression in conflicts decreased from grades one to seven. Cairns, Cairns, Neckerman, Ferguson, and Gariépy (1989) found that participants in

adolescence were rated as being less physically aggressive than they were in middle childhood. Similarly, the results of the Lee, Baillargeon, Vermunt, Wu, and Tremblay (2007) study demonstrated a decreasing trend in the prevalence of physical aggression with age for Canadian girls. Although there were no differences between the middle and high school groups' use of overt aggression in the current study, both age groups of females did report using overt aggression (middle school $M = 1.91$ and high school $M = 1.97$), which suggests that such behaviors occur throughout the age range. Because of the harmful nature of overt aggression, it would follow that schools should target overtly-aggressive behaviors for intervention in females not only during middle school, but also throughout high school.

In this study, statistically significant differences existed in Caucasian girls' and non-Caucasian girls' use of overt aggression, with non-Caucasian females reporting using overt aggression more often. Similarly, Xie et al. (2003) found higher levels of physical aggression and lower levels of social aggression in female-female conflicts among inner city African-American youth. One note of caution, however, concerns the difference between the numbers of participants in each of the groups. In this study, 75 Caucasian females participated, while only 31 females of other ethnicities or cultural backgrounds reported on their aggressive behaviors, which may have yielded skewed results.

Overall, the findings for overt aggression differed from those of relational and social aggression in terms of aggression group. When examining relational and social aggression, statistical significance was unable to be detected between the overtly-aggressive and non-overtly-aggressive groups, but this was not the case for overt aggression. Since overt aggression is more widely known and studied and can be more

easily seen and heard, girls may be more self-aware that they engage in these kinds of acts. In contrast, relational and social aggression are more covert behaviors, and as a result, may be less easily identified or studied. Thus, girls may not be as conscious of or as willing to disclose their relationally- and socially-aggressive actions. Although overt aggression has historically been targeted in various intervention programs, the results of this study reveal that it continues to occur. These findings suggest that overt aggression interventions should possibly be reviewed and restructured to more effectively target this kind of behavior. All of these findings regarding overt aggression are important not only in providing information to clinicians regarding the necessity of maintaining and perhaps increasing overt aggression intervention supports for females but also in providing new information regarding the prevalence rates for adolescent females' overtly-aggressive behaviors.

Limitations

A limitation to the internal validity of this study is selection, in that differences between the participants in the groups may have affected the outcomes of the study because of the varied composition of the groups. The overtly-aggressive sample was somewhat heterogeneous due to variability in the education and residence of the participants (e.g., participants may have lived in group homes, attended alternative schools, or been identified as juvenile delinquents.)

A limitation to the study in terms of external validity is the extent to which the results can be generalized to other populations. Since a convenience sample was utilized in this study, the results of this research may not be applicable to other populations of adolescent females. For example, the non-overtly-aggressive sample of females was

comprised of students from Catholic schools. As a result, the non-overtly-aggressive females in this sample may not have been representative of all non-overtly-aggressive females. Another threat to external validity is that the participants' responses may have been susceptible to issues of social desirability and adjusted to appear non-relationally, non-socially or non-overtly-aggressive. The *YASB* may not be sensitive to issues of social desirability, and may need to be altered to address this issue. In the future, it may be helpful to compare teachers' or parents' reports of overtly-aggressive-females' relationally-, socially-, and overtly-aggressive behavior to that of the self-reports completed by the target population. Such methodology may yield a more accurate portrayal of these females' behaviors.

Another limitation in terms of the statistical validity of the study was the sample size. Prior to collecting data for the current study, it was determined that a total of 240 participants were needed (e.g., 30 females in each of the eight groups) to complete surveys in order to comprise an adequate sample size; however, the current study only had a total of 117 participants who completed the surveys. Furthermore, there were fewer females who completed the surveys in the overtly-aggressive group ($n = 40$) than in the non-overtly-aggressive group ($n = 77$). Also, each of the groups did not have 30 females; for example, the Caucasian, overtly-aggressive middle school group only had three participants in it. Overall, the insufficient sample size in the current study may have compromised the researcher's ability to detect group differences. In the original study of the *YASB* in which the questionnaire detected differences in relationally-aggressive behaviors, the sample size was very large, containing approximately 657 participants. In the current study, the sample size was 117 participants, and differences were not detected

between some of the groups. There was not as much power in the current study as there was in the original study, which did detect differences between groups. It may be hypothesized that more power was needed for the current study to discern any small differences in the use of aggression across groups.

Another limitation of the study was changes that were made to the questionnaire. The original wording of the questionnaire had to be altered to render it age-appropriate for the current sample. This change may have also had some indeterminate effects upon the results.

Selection bias was another limitation of the study. In the current study, participants were those who returned their parental permission slip, with the exception of one site where the director of the school signed permission slips for all interested females. Females who are more likely not to turn in parental permission slips were not included. Therefore, all types of overtly aggressive females were not adequately represented, which may have had an effect on the internal validity of the study.

Summary

In conclusion, this study has provided several important research findings. In this sample, no statistically significant differences were found in overtly- and non-overtly-aggressive girls' as well as middle and high school girls' use of relational aggression; however, all of the groups did report using relational aggression to some extent. Notably, Caucasian females reported using relational aggression more often than non-Caucasian females.

Similarly, in this study, there were no statistically significant differences with respect to the females' aggression group, grade level, or their ethnicity/cultural

background in their use of social aggression. However, as was the case with relational aggression, participants in this study did report using some socially-aggressive behaviors.

Finally, statistically significant differences were not found in this sample of middle and high school girls' use of overt aggression; however, they did occur between aggression group and by ethnicity/cultural background. Specifically, overtly-aggressive-females were found to use overt aggression more often than non-overtly-aggressive-girls. Also, non-Caucasian females reported using overt aggression to a greater extent than Caucasian females.

Although the current study has many limitations, it has provided future direction regarding relational and social aggression interventions for girls of different ages, ethnicities, cultural backgrounds, and aggression groups. Specifically, interventions need be designed to target relationally-aggressive behaviors in Caucasian, non-overtly-aggressive and overtly- aggressive girls as well as in middle and high school-aged females. Interventions also need to be implemented to diminish socially-aggressive behaviors in non-overtly-aggressive and overtly- aggressive female students as well as in middle and high school-aged girls. Overall, this study suggests that interventions for non-overtly-aggressive females should focus primarily upon the behaviors of relational and social aggression, whereas interventions for overtly-aggressive females should likely focus upon relationally-aggressive, socially-aggressive, and overtly-aggressive behaviors.

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8. I argue with people in front of others to embarrass them.					
9. I criticize my friends.					
10. It is okay for my friend to like something if I don't.					
11. I don't invite my friends to things when I am mad at them.					
12. I have tried to take someone else's best friend.					
13. When I am mad at someone, I tell them I won't be their friend unless I get my way.					
14. Making up with friends when we are mad makes people better friends.					
15. When I am mad at someone, I call them mean names.					
16. I yell at people when I disagree with them.					
17. It is okay to hit a friend when you are angry at them.					
18. I break people's belongings when I am frustrated with them.					

Appendix B

Parent Letter

Dear Parent:

My name is Leigh Ann Camic. I am a doctoral student in the School Psychology Program at Duquesne University. I visited your daughter's school today and talked with her about possibly participating in a research study that I am conducting about a form of female bullying called relational aggression. Relational aggression includes behaviors like spreading rumors, withholding friendships, gossiping, excluding friends from a group, ignoring friends, threatening to end friendships all to try and cause harm.

I have enclosed assent and consent forms for you review that provide information about the study. If you give your child permission to participate in the study, please sign the enclosed consent form and have your child sign the enclosed assent form. Please have your child return the forms in the envelope to the school secretary.

Thank you for your time.

Sincerely,

Leigh Ann Camic, M.S.Ed.
Doctoral Candidate
Duquesne University

Appendix C

Parental Consent Form



DUQUESNE UNIVERSITY

600 FORBES AVENUE ♦ PITTSBURGH, PA 15282

CONSENT FOR MY CHILD'S PARTICIPATION

- TITLE:** The use of relational aggression in overtly aggressive and non-overtly aggressive adolescent females.
- INVESTIGATOR:** Leigh Ann Camic, M.S. Ed.
810 Arlington Avenue
Port Vue, PA 15133
412-977-1476
lacamic@hotmail.com
- ADVISOR: (if applicable:)** Laura M. Crothers, D.Ed., NCSP
Department of Counseling, Psychology & Special Education
412-396-1409
- SOURCE OF SUPPORT:** This study is being performed as partial fulfillment of the requirements for the doctoral degree in School Psychology at Duquesne University.
- PURPOSE:** Your child is being asked to participate in a research project that seeks to investigate the incidence of female bullying in adolescent girls. In this study, your child will be asked to complete the Young Adult Social Behavior Scale, which will take approximately ten minutes of her time. This is the only request that will be made of your child.
- RISKS AND BENEFITS:** Minimal risks exist in participating for your child, including possibly experiencing unpleasant feelings when she reflects upon the female bullying she may have experienced or displayed. However, these

risks are not believed to exceed those that would normally arise from participation in daily activities. This research should provide valuable information regarding the use of female bullying behaviors in adolescents.

COMPENSATION:

Students who participate in the study will have their name placed in a drawing to win a \$25.00 or \$50.00 gift card to Best Buy. After all females have completed their surveys, their consent forms will be placed in a drawing. The researcher will select two winners. Participation in the project will require no monetary cost to you.

CONFIDENTIALITY:

Your child's name will never appear on any survey or research instruments. Information regarding your child will be completely anonymous. All written materials and consent forms will be stored in a locked file in the researcher's home. Your daughter's response(s) will only appear in statistical data summaries. All materials will be destroyed at the completion of the research.

RIGHT TO WITHDRAW:

Your daughter is under no obligation to participate in this study. You are free to withdraw your consent for her to participate at any time.

SUMMARY OF RESULTS:

A summary of the results of this research will be supplied to you, at no cost, upon request.

VOLUNTARY CONSENT:

I have read the above statements and understand what is being requested of my child. I also understand that my daughter's participation is voluntary and that she is free to withdraw her consent at any time, for any reason. On these terms, I certify that I am willing to allow my daughter to participate in this research project.

I understand that should I have any further questions about my child's participation in this study, I may call this researcher, Leigh Ann Camic (412-977-1476), Dr. Laura Crothers (412-396-1409) or Dr. Paul Richer, Chair of the Duquesne University Institutional Review Board 412-396-6326).

Parent's Signature

Date

Researcher's Signature

Date

Appendix D

Student Assent Form



DUQUESNE UNIVERSITY

600 FORBES AVENUE ♦ PITTSBURGH, PA 15282

ASSENT TO PARTICIPATE IN A RESEARCH STUDY

- TITLE:** The use of relational aggression in overtly aggressive and non-overtly aggressive adolescent females.
- INVESTIGATOR:** Leigh Ann Camic, M.S. Ed.
810 Arlington Avenue
Port Vue, PA 15133
412-977-1476
lacamic@hotmail.com
- ADVISOR: (if applicable:)** Laura M. Crothers, D.Ed., NCSP
Department of Counseling, Psychology & Special Education
412-396-1409
- SOURCE OF SUPPORT:** This study is being performed as partial fulfillment of the requirements for the doctoral degree in School Psychology at Duquesne University.
- PURPOSE:** You are being asked to participate in a research project that seeks to investigate the incidence of female bullying in adolescent girls. In this study, you will be asked to complete the Young Adult Social Behavior Scale, which will take approximately ten minutes of your time. This is the only request that will be made of you.
- RISKS AND BENEFITS:** Minimal risks exist in participating for you, including possibly experiencing unpleasant feelings when you reflect upon the female bullying you may have experienced or displayed. However, these

risks are not believed to exceed those that would normally arise from participation in daily activities. This research should provide valuable information regarding the use of female bullying behaviors in adolescents.

COMPENSATION:

Students who participate in the study will have their name placed in a drawing to win a \$25.00 or \$50.00 gift card to Best Buy. After all females have completed their surveys, their consent forms will be placed in a drawing. The researcher will select two winners. Participation in the project will require no monetary cost to you.

CONFIDENTIALITY:

Your name will never appear on any survey or research instruments. Information regarding you will be completely anonymous. All written materials and consent forms will be stored in a locked file in the researcher's home. Your response(s) will only appear in statistical data summaries. All materials will be destroyed at the completion of the research.

RIGHT TO WITHDRAW:

You are under no obligation to participate in this study. You are free to withdraw your consent to participate at any time.

SUMMARY OF RESULTS:

A summary of the results of this research will be supplied to you, at no cost, upon request.

VOLUNTARY CONSENT:

I have read the above statements and understand what is being requested of me. I also understand that my participation is voluntary and that I am free to withdraw my consent at any time, for any reason. On these terms, I certify that I am willing to participate in this research project.

I understand that should I have any further questions about my participation in this study, I may call this researcher, Leigh Ann Camic (412-977-1476), Dr. Laura Crothers (412-396-1409) or Dr. Paul Richer, Chair of the Duquesne University Institutional Review Board 412-396-6326).

Participant's Signature

Date

Researcher's Signature

Date

Appendix E

Student Invitation

Language of the Invitation Made By the Researcher to Students:

Hi. My name is Leigh Ann Camic. I am a graduate student at Duquesne University. I have been given permission by your principal to see if you are interested in participating in a research study about a type of female bullying called relational aggression. Such bullying includes behaviors like spreading rumors, withholding friendships, gossiping, excluding friends from a group, ignoring friends, threatening to end friendships, and the like.

You will be asked to complete a questionnaire with 18 questions. These questions are about relationally aggressive behaviors that you may have displayed or experienced. You are not required to participate in the study. If you do participate, your answers will be anonymous. This means that no one will know which questionnaire is yours. You will not be required to write your name on your questionnaire.

If you decide to participate in the study, your name will be placed in a drawing for a \$25.00 or a \$50.00 gift certificate to Best Buy. The two names will be selected at random among the participants and you will be notified if you have won one of the gift certificates.

If you are interested in participating, I will need you to sign an assent form. Your parents will also have to sign a form stating that they allow you to complete the questionnaire. You will be given a packet with forms for you and your parents to sign. Please take the packets home and discuss them with your parents. Once you and your parents have signed the forms, please return them to the school in the enclosed envelope. Remember, you and your parents only have to sign the forms if you want to be a part of the study.

Thank you for your participation.

Sincerely,

Leigh Ann Camic, M.S.Ed.
Doctoral Student at Duquesne University

Appendix F

School Invitation Letter

Date

School Director

Name of School

School Address

Dear *School Director*,

Currently, I am working on my dissertation investigating the problem of a form of bullying, relational aggression, which as you may know, continues to be a pervasive problem in school systems around the country. Relationally aggressive behaviors include gossiping, friendship withholding, exclusion from a group, rumor spreading, ignoring friends, sabotaging relationships or threatening to end friendships if requests aren't met. The purpose of relationally aggressive behaviors is to harm peers in an indirect manner. Research has been demonstrative of bullying threatening children's psychological development as well as their ability to learn and succeed in the classroom. Relational aggression has been shown to have negative socio-emotional effects on children, especially females, including depression and anxiety.

I have been granted permission to study this topic by the Duquesne University Institutional Review Board for the Protection of Human Subjects.

Consequently, I am writing this letter to seek your consent for a study to be conducted investigating the use of relational aggression in overtly aggressive and non-identified females. Specifically, I wish to investigate the following research questions: 1) What is the incidence of the use of relational aggression in an overtly aggressive female adolescent sample?; 2) Do non-identified girls use relational aggression more often than overtly aggressive females?; and 3) Is there a difference in race for relational aggression use? Overtly aggressive females will be defined as those who are attending alternative schools, in behavior support classrooms or have been adjudicated delinquent by the juvenile justice system. Non-identified girls are those females who are attending a regular school district.

I am requesting permission to discuss the purpose of the study and distribute consent forms to female students in behavior support classrooms in grades 7-12. In exchange for female student's participation in the study, I will be placing student's names in a drawing for two gift cards to Best Buy in the amounts of \$25.00 and \$50.00. I will be giving each interested student a packet of information with a letter to her parent informing him or her about the purpose of the study, a consent form for the student's parent to sign, an assent form for the student to sign and a self-addressed, stamped envelope to return the consent and assent forms to me. Once consent forms have been collected, I will be administering

a survey to the students called the Young Adult Social Behavior Scale (YASB), which is attached. This questionnaire has 18 questions and should take students approximately ten minutes to complete. In order to ensure student anonymity, students' names will not be recorded on the YASB measures. The consents and YASB forms will be kept separately to maintain the confidentiality of the information on the YASB and informed consent.

I appreciate you reviewing this proposal for research to be conducted at *School Name* and I've enclosed a letter for you to sign if you agree to allow this research study to be completed. I have also attached sample copies of the consent forms that I will be requesting that the parents and students sign. If you have any questions or concerns, please feel free to email me at: lacamic@hotmail.com or call me at 412-977-1476.

Sincerely,

Leigh Ann Camic, M.S.Ed.
School Psychology Ph.D. Candidate
Duquesne University

Appendix G

School Response Letter

Date

Ms. Leigh Ann Camic
School Psychology Ph.D. Candidate
810 Arlington Avenue
Port Vue, PA 15133

Dear Ms. Camic:

In response to your letter, I am writing to indicate my approval of the proposed study investigating the use of relational aggression in female adolescents. I understand that you will be asking female students to complete surveys.

Sincerely,

School Director Name
School Name
School Address