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Philadelphia College of Osteopathic Medicine

Department of Psychology

EXPLORATORY FACTOR ANALYSIS OF A RELATIONAL AGGRESSION SELF-REPORT

By Kimberly S. Carlson

Submitted in Partial Fulfillment of the Requirements for the Degree of

Doctor of Psychology

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PHILADELPHIA COLLEGE OF OSTEOPATHIC MEDICINE
DEPARTMENT OF PSYCHOLOGY

Dissertation Approval

This is to certify that the thesis presented to us by Kimberly S. Carlson on the 2nd day of June, 2009, in partial fulfillment of the requirements for the degree of Doctor of Psychology, has been examined and is acceptable in both scholarship and literary quality.

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This accomplishment would not have been possible without the loving support of my family, especially Robert W. Barker II.

In loving memory of my grandfather,

Leroy E. Carlson Sr. (October 22, 1915- January 24, 2009).

Abstract

Relational aggression (RA) represents a distinct form of bullying and refers to behaviors that harm others through damaging their friendships, their inclusion in social groups, and their feelings of acceptance. RA has been recognized as a significant problem, which has psychosocial and academic consequences for perpetrators, victims and bystanders. This study evaluated a self-report inventory that examined RA in 219 females ages 10 through 18 from Central Pennsylvania. Inter-item correlations revealed that none of the scale's items were highly correlated and therefore repetitive. An Exploratory Factor Analysis (EFA) with an oblique rotation was used to identify the factors within the Girls Relationship Scale. Two factors were revealed with a "lenient" alpha greater than .70, representing the factors of "Relationships" and "Substance Abuse." A Pearson Correlational analysis found a significant negative relationship between the Age and the Substance Abuse factor (Pearson Correlation= -.166, p=.001), indicating the fact that older girls were more likely to endorse the willingness to smoke cigarettes or use drugs or alcohol if meant being accepted by other girls. A significant correlation was also found between the Age and the Total Scale score (Pearson Correlation= .495, p=.001), indicating that older girls were more likely to answer questions in a more self-assured and knowledgeable manner, or in the desired direction. An ANOVA revealed significant differences between the roles involved in relational aggression including the "bully", "victim", "bystander" or "other", and the "Relationships" factor (p=.002) and between the roles and the Total Scale score (p=.001). Post hoc tests to examine the significant differences further could not be

performed, however, because of missing data caused by subjects not answering every question. Lack of significance was found between places and situations in which girls think that they have more problems with their relationships and their ethnic heritage and the factor and Total scale scores.

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CHAPTER ONE: INTRODUCTION

Statement of the Problem

Bullying has been recognized as a significant problem in American schools. Relational aggression (RA) represents a distinct form of bullying and refers to behaviors that harm others through damaging their friendships, their inclusion in social groups, and their feelings of acceptance (Crick & Grotpeter, 1995; Crick & Werner, 1999; Dellasega, 2005; Dellasega & Nixon, 2003). RA appears to be more common in young women, and seems to peak in the middle school years when girls seek affiliation and acceptance from their peers as they begin to develop an identity separate from their families (Dellasega, 2005; Dellasega & Nixon, 2003; Moretti, Holland, & McKay, 2001; Pipher, 2002; Yoon, Barton, Taiariol, 2004). RA, however, is significantly associated with social and psychological maladjustment during all phases of development including childhood, adolescence, and young adulthood (Crick & Werner, 1999, Dellasega, 2005; Dellasega & Nixon, 2003). Research confirms that the victims, perpetrators, and witnesses of relational aggression suffer serious social, emotional, and academic consequences (Limber, 2002; Nansel et al., 2001; Nansel, Overpeck, Haynie, Ruan, & Scheidt, 2003).

These serious consequences of relational aggression have made it a topic of interest to the general public, and RA has received much media attention over the past decade. Hollywood films such as *Mean Girls* (2004) and books such as *Surviving Ophelia* (Dellasega, 2001), *Girl Wars* (Dellasega, 2003), *Mean Girls Grown Up* (Dellasega, 2005), *Odd Girl Out* (Simmons, 2002), *Queen Bees & Wannabees* (Wiseman, 2002) have brought relational aggression into the limelight. Relational aggression has been the topic

of numerous talk shows, such as *Oprah* and *Dr. Phil,* as the public struggles to better understand and deal with this issue.

The school shootings that began in the mid-1990's in the United States may reflect the most deadly outcomes of relational aggression. Following these tragic events, many states have either drafted new legislation or expanded existing legislation to address bullying in the schools (Limber & Small, 2003; Perkins, 2006). Legislation in many states includes reporting requirements, disciplinary procedures, and school safety plans. Legislation also encourages schools to implement bullying prevention or intervention programs (Limber & Small, 2003). Unfortunately, many of the bullying prevention programs are relatively new, and very few of these programs have had careful evaluations conducted on them (Olweus, Limber & Mihalie, 1999). Also, most programs address the more overt, physical forms of bullying.

Because of the greater understanding of the harmful and escalating effects of RA (Moretti, Holland, & McKay, 2001), there is the need to develop effective interventions (Yoon, Barton, & Taiariol, 2004). A measure of relational aggression is essential to determine whether or not the interventions are successful in reaching the desired outcomes. At present, research on relational aggression has used measures of physical aggression which included a few items related to relational aggression or multi-method, multi-informant methods including observations of behavior, peer interviews or peer nominations, and teacher report. Measures of bullying which include only a few items related to RA are not practical and do not provide a comprehensive assessment of relational aggression. Although a multi-method, multi-informant approach to assessment might be ideal for research, it is time consuming and costly. The utilization of such an

approach is not reasonable for schools or community organizations who would like to assess relational aggression, either to examine their cultures or measure the effectiveness of an intervention.

Purpose of the Study

Research on relational aggression is in the early stages (Werner & Nixon, 2005). Work is currently being done to understand the mechanisms that contribute to the development, maintenance, and exacerbation of RA. Given the serious consequences of RA, it is critical to identify appropriate methods for assessing RA so that effective research-based prevention and intervention programs can be developed. Without an instrument that can measure RA, it may be difficult to evaluate the effectiveness of such programs. The purpose of this study is to evaluate a self-report inventory called the Girls Relationship Scale which examines RA in middle school students.

Overview of the Literature Review

This study will describe bullying and its prevalence within schools with specific focus on the definition of relational aggression as a type of bullying. The theoretical construct of relational aggression is examined from a social-cognitive, gender, and developmental perspective. Research confirming the serious and negative consequences for the victim, the perpetrator, and the witnesses of relational aggression are explored. Although interventions are being developed to address RA, research lacks a valid measure to evaluate effectiveness. Such a measure would also allow for the development

of research-based prevention and intervention programs to reduce incidence of relational aggression.

CHAPTER TWO: LITERATURE REVIEW

Definition and Prevalence of Bullying

Bullying is being recognized as a significant problem affecting schools today (Nansel et al., 2001). Although the definition of bullying varies from state to state, researchers describe bullying as aggressive behavior that is a) intended to cause physical or psychological distress or harm; b) involves an imbalance of power between the perpetrator and the victim, and c) is repeated over time (Limber, 2002; Nansel et al., 2001; Olweus, 1993). Bullying includes physical actions, body language, words, and social exclusion (Limber & Small, 2003; Dellasega, 2005; Dellasega & Nixon, 2003). Although bullying may be enacted as a direct, open attack against a victim, bullying is frequently subtle or indirect in nature (Crick & Werner, 1999, Dellasega, 2005; Dellasega & Nixon, 2003; Limber, 2002; Olweus, 1993), often making it difficult to detect.

Research demonstrates that approximately one in four students do not feel safe in school and that the same number of American students experience bullying (The Ophelia Project, n.d.; National Education Association, 2001). The National Education Association (2001) cites that in the United States, 160,000 children miss school each day because of the fear of being bullied by their classmates. A study by Nansel et al. (2001) reported that approximately 30% of American school students are directly involved in bullying within a school semester. A project of the Urban Student Achievement Task Force of the National School Board Association's Council of Urban Boards of Education surveyed 32,000 students in 108 city schools. They found that approximately 25% of students said that they were bullied during the school day and 50% of students said they saw others being bullied at least once a month (Perkins, 2003). Research by Hoover and Oliver

(1996) estimated that approximately 15% of students are "severely traumatized or distressed" by encounters with bullies. Furthermore, verbal bullying is the most frequent form of bullying experienced by both boys and girls (Nasel et al., 2001).

The project of the Urban Student Achievement Task Force of the National School Board Association's Council of Urban Boards of Education also found that half of elementary school students believed that teachers could stop bullying; however, that number dropped by 50% for students in high school. This study also found a cultural difference. Almost half of the African-American respondents did not believe that teachers could stop bullying; this is in comparison with a quarter of the Caucasian respondents (Perkins, 2003). These statistics indicated that bullying is a significant problem in American schools, as reported by students.

Definition of Relational Aggression

RA is distinct form of bullying that involves harming others through damaging their friendships, damaging their inclusion in social groups, and damaging their feelings of acceptance (Crick & Grotpeter, 1995; Crick & Werner, 1999; Dellasega, 2005; Dellasega & Nixon, 2003). RA can be direct or indirect. Direct RA behaviors defined as the use of confrontational strategies to damage social relationships, include deliberately ignoring someone, threatening to withdraw friendship or support, and excluding someone from a group by telling him or her that he or she is not welcome (Xie, Swift, Cairns & Cairns, 2002). Indirect behaviors are behaviors that attempt to damage someone's relationships but do not involve direct interaction with that person. Such behaviors include gossiping, starting rumors, and stealing friends or romantic partners (Crothers, Field, & Kolbert,

2005). Because of its often subtle nature, RA can be difficult for adults to detect and therefore RA often goes unnoticed and without intervention.

Social-Cognitive Basis

Social Information Processing

The work of Crick and Dodge (1994) has applied the social information-processing (SIP) model to understand relational aggression. The SIP model has been used extensively to study highly aggressive children (Eccles, Wigfield, & Byrnes, 2003). The SIP model suggests that children go through a series of steps during social interactions which begins with encoding specific cues and ends with the resulting behavior. The SIP model posits that children encode and interpret social cues, clarify their goals for the social interaction, access possible behavioral responses based on their prior experiences, choose a response from a pool of possible choices, then engage in the response (Crick & Dodge, 1994).

According to this model, Crick and Dodge (1994) posit the idea that children who exhibit relationally aggressive behavior tend to interpret ambiguous behavior as hostile threats to their social status. Goals of relationally aggressive behavior revolve around protecting one's self-interest, dominating peers, and seeking retaliation. Responding with a relational act rather than with an act of physical aggression also attempts to meet the goal of avoiding trouble and maintaining positive relationships with the larger peer group. Youth who utilize RA seek revenge or control, but are concerned with "avoiding detection and possibly damaging their own reputation in the larger peer group" (Delveaux & Daniels, 2000).

Werner and Nixon (2005) stress the importance of latent knowledge structures related to SIP and children's aggressive behavior. Latent knowledge structures house a database of stored information. This database is hypothesized to represent the cross-situational and distal knowledge generated by experienced. This stored knowledge affects SIP and resulting behavior by serving as a lens through which one views the environment, biasing the processing of specific information, and serving as a menu of behavioral responses. Such knowledge structures represent the normative beliefs about aggression which determine whether or not aggression used as a legitimate behavioral response.

A study by Werner and Nixon (1995) supported the positive effects of normative beliefs about the legitimacy of aggression on self-report incidents of aggressive behaviors. Those who believed aggression, relational or physical, was an appropriate response reported more aggressive behavior in comparison with those who believed that aggression was not an acceptable response. Furthermore, they found these relationships specific to the type of aggression. Zelli, Dodge, Lochman, and Laird (1999) also found support for this theory. Their investigation demonstrated the fact that stronger beliefs supporting the legitimacy of aggression predicted more deviant SIP.

Viewed in the context of RA, children who believe aggression is acceptable may be more likely to encode negative emotional cues in the environment, interpret those cues as intentionally hostile, and access aggressive retaliatory responses from memory (Werner & Nixon, 1995). Crick and Werner (1998) and Werner and Nixon (2004) did find that girls who believed RA was an appropriate response reported more aggressive behavior. This suggests that relationally aggressive behavior is characteristic of girls who process information in a manner that sees merit in using relationships to dominate others with the

goal of maintaining one's status and relationships within her peer group (Werner & Nixon, 2005).

Intervention studies have found that changes in children's normative beliefs about aggression and maladaptive social information processing patterns lead to decreases in relational aggression (Conduct Problems Prevention Research Group, 1999; Hudley, Britsch, Wakefield, Smith, Demorat, & Cho, 1998; Hudley & Graham, 1995). This research provides additional support for the effects of normative beliefs on relational aggression. Unfortunately, most research in this area has focused on overt forms of aggression among boys. As noted previously, Werner and Nixon (1995) found that the relationship between normative beliefs and resulting aggression was specific to the form of aggression being assessed. Therefore, the ability to generalize to covert forms of aggression which includes females is tentative and requires further exploration (Werner & Nixon, 1995).

Social Skills

A study by Crick, Casas, and Mosher (2001) found that relational aggression was significantly related to low levels of prosocial behavior in preschool children. These authors suggest that lack of social skills may be related to the use of relational aggression in young children.

In contrast to the social deficits model, other research suggests that children who engage in relational aggression might actually be advanced in some aspects of their social knowledge. Kaukiainen et al. (1999) found a significant positive correlation between

social intelligence and indirect aggression and an almost zero correlation with overt forms of aggression.

Sutton, Smith and Swettenham (1999) administered a test of perspective-taking to "ringleader bullies", "follower bullies", and victims, including children who defended themselves. They found that "ringleader bullies" ages 7 to 10 scored higher on tests of perspective-taking then did any of the other categories of children. The "ringleader bullies" were essentially best at understanding mental states, beliefs, and emotions of others, suggesting that this particular group of aggressive children may be advanced in some elements of their social development.

Andreou (2006) had similar findings in his investigation of social intelligence and relational aggression, using a sample of Greek children, grades 4th to 6th. He found that that social awareness, or predicting the feelings and reactions of peers and understanding social cues, predicted relational aggression.

Research on the social-cognitive aspect of relational aggression may reflect a developmental component. The research of Kaukiainen et al. (1999), Sutton, Smith and Swettenham (1999), and Andreou (2006) suggest that relational aggression in older elementary school students and adolescents may involve a sophisticated understanding of social relationships and perspective-taking. This is in contrast to relational aggression in preschool children, which may reflect a lack of social skills (Crick, Casas, & Mosher, 1997; Kaukiainen et al., 1999).

Cultural Differences

Although little research has been done in the area of cultural differences related to relational aggression, certain cultural factors may prove to be especially important. Socialization practices, values, and coping skills of different cultures may have an effect on the prevalence of relational aggression as well as on the consequences. For example, cultural norms that emphasize competitiveness, individualism, and personal retribution for perceived wrong doings may be particularly at risk for relational aggression (Merrell, Buchanan, & Tran, 2006).

Crothers, Field, and Kolbert (2005) hypothesize that African-American girls may experience familial socialization practices that proactively prepare them for dealing with oppression, prejudice, and discrimination. Crothers, Field and Kolbert assert that this may translate into African-American females being less negatively affected by RA behaviors, as well as being more direct and overt when dealing with conflict. These authors found in their 2005 study, that African-American girls did report using significantly less relational aggression, and were more likely to identify with traditional masculine characteristics, such as direct confrontation and self-expression. The authors recognize that because of the small number of African-Americans in this homogeneous sample, these results may not be representative of all African-American females.

Belgrave, Reed, Plybon, Butler, Allison, and Davis (2004) investigated a cultural intervention for increasing cultural values and beliefs in urban, African-American girls in early adolescence to reduce relational aggression. Their intervention targeted increasing ethnic identification and an androgynous gender role. Ethnic identification involved increasing a sense of belonging including the perceptions, behaviors, and feelings one has

because of being an African-American as well as involvement in the cultural and social practices of that group. Developing androgynous gender role identification involved fostering the traditionally masculine role such as characteristics of assertiveness, self-confidence, and non-conformity. African-American girls are traditionally socialized within their culture to exhibit both feminine and masculine sex role characteristics, so the further development of androgynous gender role characteristic is considered afro-centric (Belgrave, Chase-Vaughn, Gray, Addison, Cherry, 2000). This study found significant increases in ethnic identity and moderately significant increases in androgynous gender roles, and revealed decreases in relational aggression as a result of this intervention. These authors conclude that increases in cultural variables are protective variables as related to relational aggression in urban, African-American adolescent girls.

Bear, Manning and Shiomi (2006) investigated the cross-cultural differences given by children in the United States and Japan for refraining from aggressive behaviors. Although American mothers are noted for using “coercive methods” to manage their children’s behaviors, Japanese mothers are more likely to use indirect and psychological behaviors, including moral reasoning. Moral reasoning appeals to the child’s goals and encourages the child to consider the effect of his or her behavior on others. Japanese mothers are likely to have high expectations with regards to the treatment of others, and use strategies which may induce empathy, guilt, anxiety and shame while disciplining their children rather than the use of external punishment and rewards, with the goal of instilling the value of ethical behavior (Bear, Manning & Shiomi, 2006; Yamada, 2004). In contrast, American mothers are more likely to emphasize their authority and utilize rewards, punishment, and anger to exert control (Masataka, 2002). Rothbaum, Pott,

Azuma, Miyake & Weisz (2000) also found that American mothers are more likely to view noncompliance and questioning of authority as acceptable representative of one's individuality.

This preliminary research tends to suggest that there may be more than one way to reduce relationally aggressive behavior. Culturally-specific interventions may be most successful and are likely to be supported by the girl's family and by socio-cultural contexts. Such support may further enhance the efficacy of such interventions and may possibly provide more long lasting effects.

Gender Basis

Research conducted over the previous decade suggests that females are just as likely to be aggressive towards their peers as boys; however, the aggression may be displayed differently (Conway, 2005; Moretti, Holland, & McKay, 2001). A study by Crick, Casas, and Mosher (2001) found that even in preschool, girls are significantly more relationally aggressive as compared with boys.

There is strong research on female development to support a developmental basis for a gender difference in how children aggress against peers. Relational theory posits that interpersonal connections and peer acceptance are essential for healthy social and psychological development of females. Relationships help females develop a positive sense of self and become essential elements of their identity, especially during adolescence as they individuate from their families (Belgrave, Reed, Plybon, Butler, Allison, & Davis, 2004; Crothers, Field, & Kolbert, 2005; Dellasega & Nixon, 2003; Gilligan, 1982).

In the words of Christina Robb (2006)

> Woman care. Men are fair. Women feel responsible. Men manage rights. Women know who might get hurt and how to avoid hurting as much as possible, because caring for people and leaving people in a condition to growth and thrive is important to them. (p. 26)

Even as infants, girls show more empathy and stronger tendencies for affiliation than do boys (Michenbaum report, n.d.). Friendships with other females are among the most important relationships that females will develop over their lifetimes (Crothers, Field, & Kolbert, 2005). It is hypothesized that girls who are insecure or who have a negative self-concept may engage in negative interpersonal behavior in an attempt to satisfy their own relational needs (Moretti, Holland, & McKay, 2001; Talbot, 2002). In an attempt to leverage their strong need for connections against each other, girls, and adolescent girls in particular, may engage in behaviors such as gossiping, verbal insults, social exclusion, and threats to withdraw friendship (Talbot, 2002).

Moretti, Holland, and McKay (2001) investigated the role of self and other self-representations as predictors of aggressive violence. They found that girls who hold a negative view of themselves and who believe peers view them negatively attempt to manipulate the social environment with the goal of punishing those who wronged them and ensuring loyalty from those who might. Self-confidence and self-efficacy tends to decline with age in girls during early adolescence (Eccles, J., Wigfield, A., Byrnes, J., 2003; Michenbaum report). Moretti, Holland, and McKay (2001) hypothesize that during this time period, girls may view themselves as inadequate so they seek to control peer

relationships to achieve social success. Moretti, Holland, and McKay (2001) acknowledge that because their sample consisted of adolescents referred for behavior problems related to aggression and violence, the results may not generalize to the general population of girls. Because this sample did not include boys, it cannot be generalized to this population either.

Gender Role Identity

Other researchers suggest that girls use social intelligence rather than physical aggression to solve conflict and meet their need for dominance because of gender-role identity (Crothers, Field, & Kolbert, 2005). Socialization gives girls different rules for emotional expression (Conway, 2005; Eccles, Wigfield, & Byrnes, 2003). The traditional female gender identity restricts the expression of anger and aggression (Michenbaum report, n.d.). Girls are expected to be kind, helpful, passive, focused on others, and maintain peaceful relationships with others. Girls tend to mask negative emotions because of their concern about the potential negative impact of their expressions of anger or aggression towards others (Conway, 2005; Crothers, Field, & Kolbert, 2005). Because direct and overt expressions are not consistent with the traditional female gender identity and because girls are more frequently disliked by their peers for the display of physical aggression, girls may use more manipulative and covert means to express anger, resolve conflict and establish dominance (Conway, 2005; Crothers, Field, & Kolbert, 2005; Hatch & Forgays, 2001). Furthermore, boys are more likely to aggress against others with whom they are not intimately associated, but girls tend to express this aggression in close relationships, rather than in the community at large (Michenbaum report, n.d.).

A study by Crothers, Field, and Kolbert (2005) also investigated the relationship between gender role identity and relational aggression. They found that females who identified with the more traditional feminine gender role were more likely to report using relational aggression than adolescent girls who identified with a nontraditional gender role. This study may support the theory that females may demonstrate relationally aggressive behaviors more often than males because of socialization and traditional female gender role identity. This study also reported that adolescent females believed that their female peers were more likely to use relational aggression as compared with male peers, and that such behaviors are effective ways to gain social status and harm the status of others. The authors also note that because their sample consisted of predominately White adolescents from a mid-Atlantic state, these results may not generalize to the population at large (Crothers, Field, & Kolbert, 2005).

A study by Crick, Casas, and Mosher (1997) further supports the influence of gender identity on aggression. This study demonstrated that physical aggression in preschool boys was significantly related to high levels of peer acceptance, but they did not find this to be true of females. These authors suggest that is consistent with previous research indicating that peers view aggression among boys more favorably because of gender-role stereotypes. This research may also support the notion that the subtle and often unobservable nature of relational aggression may allow children to avoid the negative consequences, such as the negative perceptions by peers, often associated with physical aggression.

Gender Goals

Crick (1995) offered a gender-sensitive conceptualization of aggression stating that girls tend to evaluate relationally aggressive responses to peer conflicts more positively than boys, who are more highly oriented towards physically aggression (Crick & Werner, 1998; Werner & Nixon, 2004). According to this model, children will engage in the type of aggression that will most effectively obstruct the goals of their peers. Boys tend to emphasize the instrumentality of aggression and physical dominance over others. This is often to accomplish the goal of getting something, whether it is one's own way or a particular item. Girl's goals are more highly focused on relationships, popularity, and security within one's social group. Covert forms of aggression or aggressing by damaging relationships are best at frustrating the goals of other girls and at meeting one's own social and emotional needs (Moretti, Holland, & McKay, 2001). Other studies have supported the view that relational aggression is similar across genders or that it occurs more frequently among boys (Galen & Underwood, 1997; Goldstein, Tisak & Boxer, 2002; Henington, Hughes, Cavell, & Thompson, 1998; Roecker-Phelps, 2001; Xie, Farmer & Cairns, 2003). Skara, Pokhrel, Weiner, Sun, Dent and Sussman (2008) gathered self-reported longitudinal data from 2064 high school students by a pre- and post-test to examine several hypotheses including the assumption that males would engage more frequently in physical aggression than females who would engage more frequently in relational aggression. Their results indicated that males reported to engage more frequently in physical aggression than females; however, females and males reported engaging in similar rates of relational aggression.

Because RA is still a fairly new topic of research, the data on gender differences is mixed. However, regardless of which gender uses relational aggression more frequently, the more consistent finding is that girls experience RA as more harmful and suffer greater social and emotional consequences than boys (Paquette & Underwood, 1999; Yoon et al, 2004). Paquette and Underwood (1999) found that both girls and boys reported incidences of RA made them feel worse about themselves than incidences of physical aggression; however, girls reported feeling more seriously hurt by it. Furthermore, the frequency of experiencing RA was tied to negative feelings of self-worth for girls more often than for boys. These findings seem to support the fact that both boys and girls experience RA, but the negative effects may be more pronounced for girls.

Developmental Basis

Although relational aggression is most often associated with early adolescence, these behaviors are evident beginning as early as preschool and often extending into adulthood (Crick, Casas, & Mosher, 1997; Crick & Werner, 1999; Dellasega, 2005; Dellasega & Nixon, 2003). The earliest study of RA was conducted in 1969 by Feshbach with preschool children. Feshbach created two peer groups to observe both direct and indirect forms of aggression related to group-entry behavior. Direct aggression included verbal and physical aggression and indirect aggression included rejection and social exclusion. Feshbach found that girls tended to demonstrate more indirect methods of aggression. Despite the early identification of overt and covert forms of aggression, research in this area did not continue until the late 1990's.

As noted previously, gender differences in aggression become increasingly apparent in early childhood. Rates of aggressive behavior peak around the age of 3 and appear to be similar for both boys and girls. Gender-specific styles of aggression begin to emerge around the age of 4. It appears that in response to social pressures there is a decline in the physical aggression of girls (Conway, 2005; Crothers, Field, & Kolbert, 2005; Hatch & Forgays, 2001; Michenbaum report, n.d.). By middle childhood, although rates of aggression are comparable, girls use more covert, relational acts (Crick & Grotpeter, 1995; Crick & Werner, 1998; Moretti, Holland, McKay, 2001). Gender-specific styles of aggression remain robust and stable through middle childhood and then decrease in late adolescence or early adulthood (McHale, Dariotis, & Kauh, 2003; Michenbaum report, n.d.).

A study by Galen and Underwood (1997) investigated the perceptions of RA as related to age. They found that on both ends of their age distribution, 4th and 10th grades, physical aggression was seen as more hurtful. Towards the middle of their age distribution, which represented the middle school grades, relational aggression was seen as more hurtful.

Relational aggression may be more prevalent and harmful during the middle school years because of the developmental milestones experienced during this developmental period (Yoon et al., 2004). As adolescents begin to individuate and develop a sense of self separate from their parents, peer relationships and social standing take on greater significance. In addition, their social relationships become more emotionally close and intimate (Dellasega, 2005; Dellasega & Nixon, 2003; Pipher, 2002; Yoon et al., 2004). Social status and acceptance from same-sex and opposite-sex peers become important

elements of self-identity (Belgrave, Reed, Plybon, Butler, Allison, & Davis, 2004, Yoon, et al., 2004).

At the same time that relationships and social standing are becoming increasingly important, girls' self-confidence and self-efficacy tends to be declining (Michenbaum report, n.d.). Moretti, Holland, and McKay (2001) hypothesize that during this time period, girls may view themselves as inadequate. In an effort to meet their relational needs, girls may seek to control and manipulate peer relationships to achieve social success. In addition, advances in social cognition that take place during the middle school years appear to play a role in RA behaviors. Adolescence brings an enhanced understanding of social situations, including a better understanding of the emotions and motives of others, and of interpreting non verbal behavior (Eccles, Wigfield, & Byrnes, 2003). This allows adolescents to perceive better, the manipulative and harmful methods of interacting which can lead to the demonstration of more sophisticated methods of RA (Sutton, Smith, & Swettenham, 1999).

Consequences of RA

RA is significantly associated with academic, social, and psychological maladjustment during childhood and adolescence (Crick, Casas, & Mosher, 1997; Crick & Werner, 1998, Dellasega, 2005; Dellasega & Nixon, 2003). A study by Buhs, Ladd, & Herald (2006) found that different forms of chronic peer maltreatment resulted in different types of disengagement from learning. Peer rejection, relative to the other types of peer relationships, appears to be one of the strongest predictors of lack of academic readiness and achievement. Children who are chronically rejected become disengaged

from classroom participation and learning. This is likely to be a result of exclusion by their peers as well as by their own withdrawal in an attempt to limit their maltreatment (Buhs et al., 2006).

Buhs, Ladd, and Herald (2006) found that chronic peer exclusion, as compared with chronic peer abuse, was the stronger predictor of a decrease in classroom participation and decelerated academic progress. Children less well liked in kindergarten were at greater risk of maltreatment across subsequent grades, and demonstrated classroom disengagement and decelerated academic progress in middle school. Peer abuse resulted in school avoidance, but with less deceleration in academic progress. The authors suggest that chronic exclusion by peers had a greater effect on academic progress by alienating the youth from learning. This may have sent the message to the excluded children that they were not important members of the class, causing them to withdraw from classroom activities and the educational process. In summary, the data from this investigation suggests that exclusion from a peer group which may not appear as harmful as other more physical forms of abuse may be particularly detrimental to academic achievement. It should also be noted that children who are bystanders to bullying at school are likely to suffer from a less secure learning environment; they fear that they may become the next targets, and often see that adults are unwilling or unable to intervene (Banks, 2000). The National Education Association (2003) reported that "bullying creates a climate of fear and disrespect in schools and has a negative impact on student learning.

Research by Skara, Pokhrel, Weiner, Sun, Dent and Sussman (2008) investigated the longitudinal relationship between relational aggression and later drug use as moderated by gender. After controlling for physical aggression, baseline drug use, and demographic

variables, relational aggression was found to predict cigarette use and marijuana use for females but not for males. Relational aggression was also found to predict later alcohol and hard drug use equally across gender. These authors conclude that such findings suggest that both physical and relational forms of aggression are predictive of subsequent drug use and have important implications for violence and drug use prevention intervention efforts.

Research confirms that bullying among youth poses serious consequences both for victims and for bullies (Limber, 2002; Nansel et al., 2001; Nansel, Overpeck, Haynie, Ruan, & Scheidt, 2003). Victims of RA often demonstrate internalizing or externalizing problems, which also interfere with learning. Experiencing RA may be a strong risk factor for future delinquency, crime, substance abuse, eating disorders, depression, anxiety, low self-esteem, and physical aggression (Casey-Cannon, Hayward, & Gowen, 2001; Crick & Grotpeter, 1995; Dellasega & Nixon, 2003; Ladd & Ladd, 2001). For example, Crick and Grotpeter (1995) found that victims of relational aggression report significantly higher levels of depression and of anxiety than peers.

The initiators of relational aggression also experience negative consequences. Research shows that initiators of relational aggression are more socially and emotionally maladjusted. An investigation by Prinstein, Boergers, and Vernberg (2001) showed that girls who were relationally aggressive were more likely to experience externalizing symptoms associated with oppositional defiant and conduct disorders. Crick and Grotpeter (1995) found that relationally aggressive children lacked prosocial behavior and were more likely to be disliked by peers. In addition, these children reported higher levels of loneliness and depression. Michenbaum (n.d.) states that aggressive girls tend to

have more academic difficulties and less connectedness to school than non-aggressive girls.

The school shootings that began in the mid-1990's in the United States may reflect the most deadly outcome of relational aggression. A 2002 Safe Schools Initiative report by the U.S. Secret Service cites that "two-thirds of perpetrators in recent school shooting incidents described feeling persecuted, bullied or threatened by their peers." A study done by the Journal of the American Medical Association (2001) reported to support the link between bullying victimization and violent behavior. Students who perpetrated homicides in schools were more than twice as likely to have been bullied by peers (Anderson, Kaufman, Simon, Barrios, Paulozzi, & Ryan et al., 2001). In fact, bullying is cited as a major contributing factor in the Columbine High School shooting incident (U.S. Department of Justice, 2001).

Lack of Empirically Supported Measures

There does not appear to be a self-report measure of relational aggression that is empirically supported. Most bullying programs and measures tend to focus on the physical and overt forms of bullying. Research on relational aggression has used measures of bullying which have some items related to relational aggression, observations of behavior, peer interviews or peer nominations, and teacher report.

A study by Crothers, Field, and Kohlbert (2005) used a one-item, self-report, Likert scale instrument called the Relational Aggression Scale (RAS) which was designed by the first and second authors. The content validity was the only psychometric examined and was addressed by reviewing the body of literature on relational aggression. I propose

that relational aggression is a multi-faceted construct that is not adequately measured by one item.

A study by French, Jansen, and Pidada (2002) which examined relational aggression cross-culturally, used interviews with a coding system that they developed based on the Crick et al. (1999) categorization of physical, verbal, and relational aggression. Interviews are time consuming and expensive to conduct. I also propose that youth may not be as forthcoming during an interview as they may be with answering questions in writing.

Crick and Grotpeter (1995) assessed relational aggression in third through sixth-grade girls by constructing and using a peer-nominated instrument. This instrument consisted of 19 items; five of the items assessed relational aggression. Crick, Casas, and Mosher (1997) also developed a peer-nominated measure of aggression for use with preschool children called the preschool Social Behavior Scale – Peer Form. This measure consisted of 17 items, 6 of which measured overt aggression and 7 of which measured relational aggression. Both studies used principal components factor analysis with varimax rotation, which supported the hypothesis that relational aggression is a different form of the general construct of aggression and therefore a distinct construct. Both studies also demonstrated reliability using Chronbach's alpha of alpha=.83 to .71 respectively. Although these measures appear valid and reliable, they also are more time consuming and therefore more expensive than a self-report measure which may limit their utility.

Other studies such as the longitudinal study of relational and physical aggression in preschool used several methods of measurement including observations, peer interviews, and teacher ratings (Crick, Ostrov, Burr, Cullerton-Sen, Jansen-Yeh, & Ralson, 2006).

Although a multi-informant and multi-method approach to measurement might be ideal for research, this involves a great deal of time and is costly. Therefore schools or community organizations, who would like to assess relational aggression, either to examine their cultures or to measure the effectiveness of an intervention, may not find it reasonable to utilize such an approach.

Huesmann and Guerra (1997) developed and utilized a scale assessing normative beliefs about aggression called the Normative Beliefs about Aggression Scale (NOBAGS) as a self-report measure for elementary aged children. They found that normative beliefs about aggression correlated with actual aggressive behavior, but less so for girls. This measure did not include questions related to relational aggression, a distinct form of bullying, which I hypothesize might also have led to a correlation between beliefs and actual behaviors for girls.

Given the serious consequences of RA, it is critical to identify an appropriate method for assessing RA so that effective empirically-based prevention and intervention programs can be developed. The self-report instrument that I am evaluating would be a fast and inexpensive way to measure relational aggression and can be used in clinical, in educational, and in community settings. Because relational aggression is a covert form of aggression designed to avoid detection, it is likely that adults may not always be aware of the occurrences or of the extent of this behavior. This lends further credence to a self-report format.

Summary

Because of the greater understanding of the harmful and escalating effects of RA (Moretti, Holland, & McKay, 2001), there is the need to develop effective interventions (Yoon, Barton, & Taiariol, 2004). A measure of relational aggression is essential to determine whether or not the interventions are successful in reaching the desired outcomes. Research to date on relational aggression has used measures of physical aggression which included a few items related to relational aggression or multi-method, multi-informant methods including observations of behavior, peer interviews or peer nominations, and teacher report. Measures of physical aggression which include only a few items related to RA, are not practical, and do not provide a comprehensive assessment of relational aggression. Although a multi-method, multi-informant approach to assessment might be ideal for research, it is time consuming and costly. Schools or other community organizations, who would like to assess relational aggression, either to examine their culture or measure the effectiveness of an intervention, may not find it reasonable to utilize such an approach. Cheryl Dellasega, Ph.D., an expert who has done extensive research, writing, and program development around the topic of relational aggression, has developed a self-report inventory used as a pre- and post-test following her Club and Camp Ophelia ™ programming, called the Girls Relationship Scale. The 25 items on this scale are a result of a content analysis by Dr. Dellasega, based on her extensive research on the topic of relational aggression and her work with female adolescents. Additionally, 13 of the 25 items have been phrased using reverse wording to prevent a response set bias. The factor structure of this inventory, however, has not been examined.

Purpose of the Study

Research on relational aggression is in the early stages (Werner & Nixon, 2005). Work is currently being done to understand the mechanisms that contribute to the development, maintenance and exacerbation of RA. Given the serious consequences of RA, it is critical to identify appropriate methods for assessing RA so that effective, empirically-based prevention and intervention programs can be developed. Without an instrument that can measure RA, it may be difficult to evaluate the effectiveness of such programs. The purpose of this study is to examine the factor structure of a self-report survey developed by Cheryl Dellasega, Ph.D., founder of Club and Camp Ophelia ™. This study will also examine the clinical utility of this instrument in identifying the protective factors associated with relational aggression.

CHAPTER THREE: RESEARCH QUESTIONS AND RELATED HYPOTHESES

Research Questions and Hypotheses

Research Question

Will the instrument demonstrate a stable factor structure and internal consistency allowing for clinical utility?

Hypothesis 1

The instrument will have a stable factor structure in the domains of attitudes and behaviors.

Hypothesis 2

The factor structure of the instrument will account for most of the variability in the construct.

Hypothesis 3

The instrument will identify two protective factors associated with relational aggression; the factors of "beliefs" and "behavior."

Justification of Hypotheses and Related Research to Hypotheses 1 & 2

The goal of scale construction is to maximize validity (Clark & Watson, 1995). Factor analysis summarizes patterns of correlations among a set of variables (Cone & Foster, 2006). Factor analysis methods are used most frequently when the target construct is conceptualized as multidimensional; therefore, subscales were desired (Clark &

Watson, 1995.) Exploratory factor analyses, in particular, are conducted to determine the factor structure that best fits the data, and is the most appropriate in the initial stages of test construction (Cone & Foster, 2006).

The Girls Relationship Scale self-report's twenty-five items are likely to represent more than one factor related to relational aggression. Factor analysis can be used to identify those factors. To begin analysis of the data, intercorrelations of the items will be examined to determine if any items are highly correlated and possibly repetitive. If intercorrelations are found to be over .90, one of the items will be removed from the scale. An exploratory factor analysis (EFA) will then be used to discover the factor structure of the measure. An oblique rotation will be used in an attempt to achieve simple structure, allowing the factors to be correlated. The factor structure will then be examined and the factors will be named if the hypothesized factors are not applicable. The communality of the factors will be explored to ensure adequacy, and specific items will be discussed.

Justification of Hypothesis 3

The factors of "beliefs" and "behavior" are supported by the research, specifically through the social information-processing (SIP) model, as a way to understand relational aggression. Research has shown the effects of normative beliefs related to the legitimacy of relational aggression, one's self concept, and gender role identification on self-reported incidents of such behavior. Based on these theories, the hypothesized factor of "beliefs" relates to the beliefs that girls have about the legitimacy of relational aggression, the views that girls have of themselves and of their abilities to navigate their

social lives, their gender role identities, as well as their interpretations of their social environments. The hypothesized factor representing "behavior" relates to assertive behaviors which help girls manage their relationships and solve problems. If such factors are confirmed with regard to the self-report instrument, this instrument can be used to assess the culture for organizations such as school, clubs, or camps, as well as to monitor interventions that directly target relational aggression.

Summary of Related Research to Hypothesis 3

RA is a distinct form of bullying that involves harming others through damaging their friendships, their inclusion in social groups, and their feelings of acceptance (Crick & Grotpeter, 1995; Crick & Werner, 1999; Dellasega, 2005; Dellasega & Nixon, 2003). Crick and Dodge's (1994) social information processing (SIP) model posits that children who exhibit relationally aggressive behavior tend to interpret ambiguous behavior as hostile threats to their social status. Moretti, Holland, and McKay (2001) investigated the role of self and other representations as predictors of aggressive violence. They found that girls who hold a negative view of themselves and who believe peers view them negatively attempt to manipulate the social environment with the goal of punishing those who wronged them and ensuring loyalty from those who might. A potential protective factor or area for intervention might help children make more realistic interpretations of their environments and gain skills to manage their relationships more successfully.

Crick (1995) identified a gender-sensitive model of aggression which recognizes the social-emotional development of girls. Girls, who are more highly focused on relationships, popularity, and social status, tend to use relational goals to damage others'

security within the social group and further their own social standing (Moretty, Holland, & McKay, 2001). A study by Crothers, Field, and Kolbert (2005) found that females who identified with the more traditional feminine gender role were more likely to report using relational aggression than adolescent girls who identified with a nontraditional gender role. Because direct and overt expressions are not consistent with the traditional female gender identity and because girls are more frequently disliked by their peers for the display of physical aggression, girls may use more manipulative and covert means to express anger, resolve conflict and establish dominance (Conway, 2005; Crothers, Field, & Kolbert, 2005; Hatch & Forgays, 2001.) Interventions which challenge the stereotypes of the female and help girls develop more assertive, nontraditional behaviors may give girls more adaptive ways to manage their relationships and solve problems.

Based on these theories, the hypothesized factor of "beliefs" relates to the views that girls have of themselves and of their abilities to navigate their social lives as well as their interpretations of their social environments. The hypothesized factor representing "behavior" relates to assertive behaviors which help girls manage their relationships and solve problems. If such factors are confirmed with regard to the self-report instrument, this instrument can be used to assess the culture for organizations such as school, clubs, or camps, as well as to monitor interventions that directly target relational aggression.

CHAPTER FOUR: METHODOLOGY

Design

This study is a retrospective analysis of existing data belonging to Cheryl Dellasega, Ph.D., founder of Club and Camp Ophelia ™. This data is from the Girls Relationship Scale self-report completed by girls participating in Club and Camp Ophelia ™ from 2004 through 2007.

To begin analysis of the data, intercorrelations of the items will be examined to determine if any items are highly correlated and possible repetitive. If intercorrelations are found to be over .90, one of the items will be removed from the scale.

An exploratory factor analysis (EFA) will be used to discover the factor structure of the measure and examine its internal reliability. EFA allows the computer to identify linear factors which explain the theoretical maximum amount of common variance in a correlational matrix (Bryant & Yarnold, 2004), which will determine the underlying factor model that best fits the data. It is hypothesized that a simple structure will occur, with most items having a large loading on one factor with small loadings on the other factor(s). After the initial solution is obtained, the loadings are rotated. Rotation is a way of maximizing high loadings and minimizing low loadings so that the simplest possible structure is achieved. An oblique rotation will be used in an attempt to achieve simple structure, allowing the factors to be correlated.

The factor structure and pattern coefficients will then be examined and the factors will be named if the hypothesized factors are not applicable. The communality of the factors will be explored to ensure adequacy, and specific items will be discussed.

Correlations or analysis of variance (ANOVA) will be used to explore the relationship between demographic items and the identified factors.

Review of the Girls Relationship Scale self-report is hypothesized to have two factors. The first factor will be named “Beliefs” because it is believed to represent girls’ perceptions of themselves and their abilities, their perceptions of others as well as their perceived knowledge related to relational aggression and safety supports. The following items are hypothesized to compose the “Beliefs” factor:

1. I feel good about myself
2. I believe most girls are nice underneath, even if they don't act it
3. Girls in my school seem nicer than girls at other schools
4. I know what relational aggression is
5. I feel confident in my ability to be a good friend to other girls
6. Having an older girl as a mentor is helpful to me
7. Feeling safe with other girls is important to me
8. I know what to do when another girl hurts me
9. I think I am able to communicate well with other girls
10. I wish I knew how to change my relationship behaviors
11. I know where to go for help with my relationships at school
12. I wish I had more friends or different friends
13. I enjoy the opportunity to be with other girls at my school
14. I trust other girls

The second factor hypothesized to be identified by the Girls Relationship Scale is the factor which will be named "Behavior." This factor is hypothesized to include items relative to behaviors related to the consequences of relational aggression including fear of going to school and of aggressive behaviors. This factor is hypothesized to include the following items:

1. Sometimes, I am afraid to go to school and see other girls
2. If another girl is constantly mean to you, it is okay to defend yourself physically (hit, shove, etc.)
3. If the girl hurts you it's okay to hurt her back
4. If the girl is mean to me, I am usually mean back to her
5. If you see someone else getting hurt, it's best not to get involved
6. I have trouble concentrating in school because I am upset about my relationships with other girls
7. I think about staying home because I am upset about my relationships with other girls
8. Other girls upset me so much I would like to leave school
9. I have a hard time coping with the way girls treat me
10. If it meant I would be accepted by other girls, I would smoke cigarettes
11. If it meant I would be accepted by other girls, I would use alcohol or drugs

Participants

Archival data for 219 females from central Pennsylvania who voluntarily participated either in a Club or in Camp Ophelia ™ between the years of 2004 and 2007

will be analyzed. Club and Camp Ophelia ™ are trademarked, arts-based intervention programs designed by Cheryl Dellasega, Ph.D. to educate girls about relational aggression and help them develop healthy relationship skills. Clubs meet after school for 90 minutes, one time per week, for approximately 10 to 12 weeks. Camps run for 5 full days during the summer. There are no costs associated with this programming for girls who participate.

Participants range in age from 10 through 18 years-old, with four participants at 10 years of age, 48 participants at 11 years of age, 83 participants at 12 years of age, 54 participants at 13 years of age, 13 participants at 14 year of age, four participants at 15 years of age, three participants at 16 years of age, seven participants at 17 years of age, and three participants at 18 years of age. Their grades in school are as follows: one participant is in 3rd grade, two are in 5th grade, 64 are in 6th grade, 93 are in 7th grade, 41 are in 8th grade, three are in 9th grade, one is in 10th grade, eight are in 11th grade, five are in 12th grade, and one participant did not identify her grade. The females were asked to identify their ethnicity; 122 are Caucasian; 18 are African-American; eight are Latina; two are Asian; 22 describe themselves as Multi-racial; six describe themselves as "Other", and 41 did not indicate an ethnicity.

Setting

Club and Camp Ophelia ™ took place in school buildings or community settings in central Pennsylvania.

Procedure

The self-report was given to girls by the Club or Camp Coordinator during the first day of their participation either in a Club or in Camp Ophelia ™ experience. Girls were informed that their self-reports were anonymous and were asked to not write their names on the instruments. The self-reports also contained the sentence "You do not need to give your name."

The cover sheet attached to the self-report requested demographic and background information. Girls were asked their birth dates, ages, grades, and ethnic heritages. Girls were also asked questions about how often they had witnessed, been victimized by, or used RA in the previous week either through their personal interactions, use of the computer, or use of cell phone or "texting." Girls were also asked which role they find themselves in most often, the bully, victim, bystander, or none of these roles. Girls were asked how many times in the previous week that they had felt physically sick or depressed because of their relationships with other girls and if they thought that girls had more problems with their relationships in school, out of school, on athletic teams, or in all areas equally.

The self-report contained 25 questions designed to measure attitudes, knowledge, and behaviors related to relational aggression. After reading each statement, girls were asked to select a response of a) strongly disagree, b) disagree, c) not sure, d) agree, or e) strongly agree. Finally, girls were asked what made them want to come to the Club or Camp Ophelia ™. After the self-reports were completed, the Club or Camp Coordinator collected and delivered the self-reports to Cheryl Dellasega, Ph.D., founder of Club and Camp Ophelia ™.

CHAPTER FIVE: RESULTS

Statistical Analysis

Sample Demographics

Archival data for 219 females from central Pennsylvania who voluntarily participated either in a Club or in Camp Ophelia ™ between the years of 2004 and 2007 were analyzed. Club and Camp Ophelia ™ are trademarked, arts-based intervention programs designed by Cheryl Dellasega, Ph.D. to educate girls about relational aggression and to help them develop healthy relationship skills. Participants ranged in age from 10 through 18 years-old, with four participants at 10 years of age, 48 participants at 11 years of age, 83 participants at 12 years of age, 54 participants at 13 years of age, 13 participants at 14 year of age, four participants at 15 years of age, three participants at 16 years of age, seven participants at 17 years of age, and three participants at 18 years of age. Their grades in school are as follows: one participant was in 3rd grade; two were in 5th grade; 64 were in 6th grade; 93 were in 7th grade; 41 were in 8th grade; three were in 9th grade; one was in 10th grade; eight were in 11th grade; five were in 12th grade, and one participant did not identify her grade. The females were asked to identify their ethnicities: 122 were Caucasian; 18 were African-American; eight were Latina; two were Asian; 22 described themselves as Multi-racial; six described themselves as “Other”, and 41 did not indicate an ethnicity.

Inter-item Correlations

To begin the statistic analysis of the Girls Relationship Scale, inter-item correlations were examined to determine if any of the scale’s items were highly correlated and

therefore repetitive. After careful examination, one of the items would likely have been removed for inter-item correlations above .90; however, no such correlations were found on this scale.

Table 1

Factor Analysis

	Initial Eigenvalues		
Factors	Total	% of Variance	Cumulative %
1	3.473	13.893	13.893
2	2.447	9.788	23.680
3	1.922	7.687	31.367
4	1.374	5.496	36.863
5	1.313	5.250	42.114
6	1.248	4.993	47.107
7	1.178	4.713	51. 820
8	1.096	4.384	56.204
9	1.050	4.202	60.406
10	.954	3.818	64.223
11	.910	3.640	67.863
12	.854	3.417	71.280
13	.782	3.126	74.407
14	.752	3.008	77.414
15	.720	2.879	80.293
16	.690	2.759	83.052
17	.662	2.648	85.700
18	.603	2.412	88.112
19	.582	2.328	90.440
20	.542	2.168	92.608
21	.467	1.868	94.476
22	.437	1.747	96.223
23	.384	1.536	97.759
24	.355	1.422	99.181
25	.205	.819	100.00

Exploratory Factor Analysis

An Exploratory Factor Analysis (EFA) with an oblique rotation was used to identify the factors within the Girls Relationship Scale. Nine factors were identified with eigenvalues greater than 1.0. Stevens (1992) states that the significance of the factor loading depends on the sample size and produced a table of critical values against which the loadings can be compared. For a sample size greater than 200, he recommends a loading greater than .364, which was used in this study. Twelve items loaded on Factor 1 including "I feel good about myself"; "I enjoy the opportunity to be with other girls"; "If another girl is constantly mean to you, it is okay to defend yourself physically"; "Sometimes, I am afraid to go to school and see other girls"; "I know where to go for help with my relationships at school"; "I feel confident of my ability to be a good friend to other girls"; "Feeling safe with other girls is important to me"; "I think I am able to communicate well with other girls"; "I have trouble concentrating in school because I am upset about my relationships with other girls"; "I think about staying home because I am upset about my relationships with other girls"; "Other girls upset me so much I would like to leave school" and "I have a hard time coping with the way girls treat me." Factor two included the items "If another girl is constantly mean to you, it is okay to defend yourself physically"; "Having an older girl as a mentor is helpful to me"; "If a girl hurts you, it's okay to hurt her back"; "I think about staying home because I am upset about my relationships with other girls"; "Other girls upset me so much I would like to leave school" and "I have a hard time coping with the way girls treat me." Factor three included the items of "I know where to go for help with my relationships at school"; "If it meant I would be accepted by other girls, I would smoke cigarettes," and

"If it meant I would be accepted by other girls, I would use alcohol or drugs." Four items loaded on Factor four including "I know what relational aggression is"; "If another girl is constantly mean to you, it is okay to defend yourself physically"; "I wish I knew how to change my relationship behaviors" and "I feel confident of my ability to be a good friend to other girls." The two items of "I wish I had more friends or different friends" and "I know what relational aggression is" loaded on Factor five, and the items of "I feel good about myself"; "I believe most girls are nice underneath, even if they don't act it" and "If you see someone else getting hurt, it's best not to get involved" loaded on Factor six. The four items of "I trust other girls"; "I enjoy the opportunity to be with other girls at my school"; "Girls at my school seem nicer than girls at other schools" and "If you see someone else getting hurt, it's best not to get involved" loaded on Factor seven. The highest loading on Factor eight was .363 and was represented by the item, "I feel confident of my ability to be a good friend to other girls." The two items of "I know what relational aggression is" and "I wish I knew how to change my relationship behaviors" loaded on Factor nine. Based on the Screeplot identifying three factors with eigenvalues greater than 1.5 and the reduction in Chronbach's alpha for every factor thereafter, a second factor analysis was completed forcing three factors.

Table 2

Rotated Component Matrix

	Factors		
	1	2	3
Good	.429		
Nice	.296	.136	-.218
Trust	.316	.165	.113
Friend	.229	-.343	
Mean	.182	.303	.244
Enjoy	.455	.346	-.227
GSchool		-.190	
RA	.224	-.258	-.287
Defend	.369	.411	-.104
Change	.177	-.244	
Afraid	.520	-.294	-.126
Help	.431		-.439
To Do	.351	-.162	-.176
Abil	.448	.142	-.170
Mentor	.333	.416	-.220
Safe	.524	.273	-.228
Comm	.492	-.123	-.256
Hurtbk	.195	.588	
Involve		-.278	
Conc	.546	-.266	.275
StHome	.507	-.402	.338
Leave	.469	-.399	.347
Cope	.381	-.526	
Smoke	.331	.345	.676
Alcohol	.316	.353	.666

Homogeneity of Factors

Chronbach's alpha, which is a measure of the average correlation among the items, was examined on each of the three factors to explore the homogeneity of the item content. Factor one produced an alpha of .7078, Factor two produced an alpha of .41, and Factor three produced an alpha of .42. By convention, a lenient cut-off of .60 is common in exploratory research; however, an alpha of at least .70 or higher is required to retain an item in an "adequate" scale. Therefore, an item analysis was completed to refine the factors and increase the factors' homogeneity. The item analysis revealed that removing the items of "If another girl is constantly mean to you, it is okay to defend yourself physically" from Factor one increases the alpha to .7126. Removing the item of "If a girl hurts you, it's okay to hurt her back" from Factor two resulted in an alpha of .4519, representing a low correlation between the items loading on this factor. Because subjects responded less consistently on these items, this factor does not have an alpha level appropriate for continued inclusion on the scale, and likely has limited clinical utility. Finally, removing the item of "I know where to go for help with my relationships at school" from Factor three resulted in an alpha of .8550.

Removing these identified items from the three factors resulted in the Factor one containing the items of "I feel good about myself"; "I enjoy the opportunity to be with other girls"; "Sometimes, I am afraid to go to school and see other girls"; "I know where to go for help with my relationships at school"; "I feel confident of my ability to be a good friend to other girls"; "Feeling safe with other girls is important to me"; "I think I am able to communicate well with other girls"; "I have trouble concentrating in school because I am upset about my relationships with other girls"; "I think about

staying home because I am upset about my relationships with other girls"; "Other girls upset me so much I would like to leave school" and "I have a hard time coping with the way girls treat me"; these will be identified as the factor of "Relationships."

Factor two which includes the items of "If it meant I would be accepted by other girls, I would smoke cigarettes" and "If it meant I would be accepted by other girls, I would use alcohol or drugs" will be identified as the "Substance Abuse" factor.

Correlations

Next, the relationship between selected demographic information and the two identified factors as well as the Total Scale score on the Girls Relationship Scale was explored. To examine, initially, the relationship between Age and the factor and Total Scale scores, a Pearson Correlational analysis was completed. A significant negative relationship was found between Age and the Substance Abuse factor (Pearson Correlation= -.166, p=.001). With age, the girls were more likely to endorse the willingness to smoke cigarettes or use drugs or alcohol if meant being accepted by other girls. A significant correlation was also found between Age and The Total Scale score (Pearson Correlation= .495, p=.001), indicating that older girls were more likely to answer questions in a more self-assured and knowledgeable manner, or in the desired direction.

Next the demographic item asking girls to identify their roles within relational aggression was explored using an analysis of variance (ANOVA). This demographic items asked respondents, "Are you most often? A. The bully, who is aggressive to other girls; B. The victim, who gets hurt by other girls; C. The bystander, who watches as

other girls get hurt but does nothing or D. None of these." If respondents circled more than one option, their responses were coded as "More than one role." ANOVA revealed significant differences between the roles and the "Relationships" factor (p=.002) and between the roles and the Total Scale score (p=.001). Post hoc tests to examine the significant differences further could not be performed, however, because of missing data caused by subjects not answering every question.

Respondents were also asked "Do you think girls have more problems with their relationships with each other ? A. In school; B. Out of school; C. On athletic teams; or D. All are equal." If a respondent circled more than one response it was coded as "More than one response circled." ANOVA showed a lack of significance between this demographic variable and the factor and Total Scale scores.

Last, the demographic of "What is your ethnic heritage?" was explored using the categories of "White," "African-American," "Latina," "Asian," "Bi-racial," or "Other." No significant relationship was found between ethnicity and the factor or Total Scale scores.

CHAPTER SIX: DISCUSSION

Discussion

Inter-item correlations revealed that there were not any items that were repetitive on the Girls Relationship Scale. Through a factor analysis, two factors, namely "Relationships" and "Substance Abuse" were identified. Removing one item from the factors of "Relationships" and "Substance Abuse" following an item analysis, resulted in acceptable Chronbach's alpha scores of .7126 and .8550 respectively. Factor one was named "Relationships" because it pertains to a girl's ability to manage her relationships with other girls confidently. This factor contains the items of "I have trouble concentrating in school because I am upset about my relationships with other girls" (.546); "Feeling safe with other girls is important to me" (.524); "Sometimes, I am afraid to go to school and see other girls" (.520); "I think about staying home because I am upset about my relationships with other girls" (.507); "I think I am able to communicate well with other girls" (.492); "Other girls upset me so much I would like to leave school" (.469); "I enjoy the opportunity to be with other girls" (.455); "I feel confident of my ability to be a good friend to other girls" (.448); "I know where to go for help with my relationships at school" (.431); "I feel good about myself" (.429); "I have a hard time coping with the way girls treat me" (.381) and" If another girl is constantly mean to you, it is okay to defend yourself physically (hit, shove, etc.)" (.369); these are listed in order of their loading on this factor. Such items specifically reflect a girl's confidence in herself with regard to her ability to be a good friend, the ability to communicate well with other girls, and the ability to cope with the way she is treated by other girls including where to find help regarding relationship problems when

needed. It is worth noting that such confidence is likely to be a result of social, communication, and coping skills, representing targets for intervention related to RA. It should be noted that examining the items in order of the way in which they load onto this factor reveals that one's need to be able to concentrate and feel safe at school on a daily basis loaded most strongly, as opposed to items representing the ability to communicate, to be a good friend, to feel good about oneself and to know where to get help for relationships at school.

Factor two, "Substance Abuse" is related to the reported willingness to smoke cigarettes or use drugs or alcohol in order to be accepted by other girls. This factor includes the items of "If it meant I would be accepted by other girls, I would smoke cigarettes" (.676) and "If it meant I would be accepted by other girls, I would use alcohol or drugs" (.666).

A Pearson Correlational analysis revealed a significant negative relationship between the demographic variable of Age and the Substance Abuse factor. The older the girls were, the more likely they were to endorse willingness to smoke cigarettes or use drugs or alcohol if meant being accepted by other girls. A significant correlation was also found between Age and the Total Scale score, indicating that older girls were more likely to answer questions in a more self-assured and knowledgeable manner, or in the desired direction. It appears as though older girls presented as more self-assured and knowledgeable about RA; however, they also were willing to engage in substance abuse if it meant being accepted by other girls. This is an interesting finding and is an area for future research.

A significant relationship was also found between one's role with regard to relational aggression and the Relationship factor and the Total Scale score; however, post hoc testing could not be performed because of missing data.

Non-significant relationships were found between subjects' reports about where they think girls have more problems in their relationships with each other and about ethnicity as related to factor and Total Scales scores.

Recommendations

Because of the high number of factors identified and low Chronbach's alpha on all but the two identified factor, it is recommended that the items of this scale be reconsidered, having items deleted based on the statistical analysis described previously and added based on the literature review. Because the factors that emerge depend largely on the kind of data collected or the variables that were included in the analysis, having an item content that fully represents the construct of relational aggression is critical.

Furthermore, the "not sure" Likert scale response was given in 1085 of the 5475 responses on the Girls Relationship Scale, representing 19.8% of the responses. Because approximately 20% of the responses were non-committal or neutral in nature, it is recommended that a forced choice format be included on future versions of this scale. Some researchers believe, however, that a neutral rating should be given because, in fact, some respondents might feel truly neutral about a topic. Presenting such respondents with a scale that does not have such a neutral rating might introduce a response bias either in a positive or in a negative direction by forcing those who are truly non-committal to respond differently. On the other hand, a study by Albaum, Roster, Yu and Rogers (2007)

found that such a rating scale tends to underestimate extreme view points and is subject to a central tendency form-related error. Although the research is mixed, the underlying theme is that the researcher should pick a format that best fits their needs. Because this scale was used with an adolescent population and because, in this sample approximately 20% of the responses were neutral in nature, a forced choice is recommended. Because the purpose of this scale is to explore a girl's experience related to relational aggression, a forced-choice format may actually provide more information and therefore greater clinical utility. Relative to future research, it should be noted that using a forced choice format could elicit a different factor structure.

It is also recommended that the last two items of the scale representing substance abuse be separated so that they do not fall in order, to avoid a possible response bias.

Limitations of the Study

The factors that emerged from the Girls Relationship Scale were based on the data collected or the items included on this scale. Factor one, "Relationships," contains the items of "I feel good about myself"; "I enjoy the opportunity to be with other girls"; "Sometimes, I am afraid to go to school and see other girls"; "I know where to go for help with my relationships at school"; "I feel confident of my ability to be a good friend to other girls"; "Feeling safe with other girls is important to me"; "I think I am able to communicate well with other girls"; "I have trouble concentrating in school because I am upset about my relationships with other girls"; "I think about staying home because I am upset about my relationships with other girls"; "Other girls upset me so much I would like to leave school" and "I have a hard time coping with the way girls treat me." Factor

two, “Substance Abuse,” includes the items of “If it meant I would be accepted by other girls, I would smoke cigarettes” and “If it meant I would be accepted by other girls, I would use alcohol or drugs.” Because there were many items on the scale whose loadings did not indicate a homogeneous relationship with the other factor items, and many factors did not have an alpha level high enough to be retained in the scale, it is possible that the construct of relational aggression was not fully represented.

Because relational aggression is a fairly new concept, assessing the validity of the Girls Relationship Scale is complicated by the fact that no other empirically validated scales exist to allow for concurrent validity. Although content analysis has proved a useful beginning to the development of the Girls Relationship Scale, a more empirical approach to the further development of this instrument may be warranted as the next step to explore this multidimensional construct fully. To begin, item development could be continued using the literature review conducted for the purpose of this study. Questions that could be added might, for example, relate to traditional female role identification and of great importance, to specific behaviors indicative of relational aggression. Examples of such items include, “I purposely exclude others from my group”; “I switch friends frequently to make sure I’m with the “in crowd” and “I gossip about other girls to make others like them less.”

Kline (2005) recommends assessing face, content, and construct validity during instrument development. Face validity might be assessed by having the measure reviewed by a group of middle school students, or by the target audience. Another key to test development is to examine how the construct relates to a normative sample before using the instrument to assess the population of interest. Therefore, rather than using a

convenience sample, such as adolescents who voluntarily participate for a program targeting healthy relationships, a sample that more accurately represents the general population is recommended. For example, all students in a middle school would be a preferable sample, although these would be more difficult to secure. Next, the inventory might be sent to three to five experts in the field of psychology who focus on aggressive behaviors, in order to assess content. The agreement of experts on items believed to measure relational aggression would increase construct validity. Exploratory factor analysis will also be important, in order to continue to refine the instrument and support construct validity.

Clinical utility is also compromised by the fact that no males were included in this study and the ages of the females that were included represented only ages 10 through 18. Including males and children of elementary school age would offer a developmental perspective on relational aggression and could further the knowledge related to this construct. The participants represented in this study were voluntary participants who participated in a Club or in Camp Ophelia ™ activity, which is focused on improving relationships with other girls; it was a convenient sample which is not representative of the population.

Future Directions

It is important to continue to refine the Girls Relationship Scale to make available an empirically validated scale designed to measure relational aggression. Such a scale will allow for clinical settings, schools and communities to assess relational aggression and the efficacy of prevention and intervention measures. Research on the topic of relational

aggression is in the early stages and there is much to be learned. Specific recommendations specifically include further investigation of the possible developmental trajectories both of males and of females, which are likely distinctively different. The areas of culture, specifically how relational aggression may manifest differently within cultures as well as building intervention programs around the promotion of cultural strengths will be important areas of research.

Conclusion

It appears that relational aggression is a complex construct that follows a developmental trajectory and is particularly harmful to females during the middle school years. This study also found that as girls got older, they presented as more highly self-assured in their abilities to navigate their social environments and were more highly knowledgeable about relational aggression. They also indicated, however, willingness to smoke cigarettes or use drugs or alcohol if meant being accepted by other girls; this is a finding that requires further exploration.

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