

EXAMINING DIFFERENT FORMS OF PEER AGGRESSION AND VICTIMIZATION  
AND THEIR RELATIONS WITH SOCIAL, PSYCHOLOGICAL, AND SCHOOL  
FUNCTIONING

By

JENNIFER E. ROSADO MUNOZ

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To my parents and husband

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Abstract of Dissertation Presented to the Graduate School  
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Jennifer E. Rosado Muñoz

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Peer victimization is a prominent occurrence amongst youth. Previously, peer victimization was generally confined to school premises. Due to technological advances and frequent use of cell phones and internet by adolescents, peer victimization now defies school boundaries, with some evidence indicating an increase in the prevalence rates of cyber victimization. Peer victimization in all forms can result in psychosocial and academic consequences. Youth who are victims of aggression are more likely to be depressed, anxious, have poorer social functioning, and have a lower grade point average compared to youth who are not victimized. Further, perpetrators are also more likely to have poorer social functioning, poorer school attendance, receive suspensions and referrals, and have lower grade point averages than non-aggressive peers.

Gathering information from multiple sources, such as students and teachers, is beneficial in determining youths' aggression and victim status. This study gathered information from self and teacher report to address areas in need of further attention in the literature, particularly with regards to cyber aggression and victimization. Prevalence

of traditional aggression and victimization was higher compared to cyber aggression and victimization, consistent with findings in the literature, with little unique cyber peer victimization. While youth reports of traditional and cyber aggression and victimization did not predict social functioning, reports of both traditional and cyber victimization predicted anxiety symptoms. Moreover, cyber aggression were significantly related to school functioning as measured by GPA and total number of suspensions and referrals combined, while traditional victimization and was significantly related to GPA.

These results indicate that youth who experience traditional and cyber victimization are more likely to experience increased anxiety, as well as poorer school functioning, therefore, anxiety and school functioning should be addressed when schools are contemplating implementation of peer aggression prevention and intervention efforts. Findings from this study, indicate a higher prevalence of traditional aggression and victimization, as well as significant overlap between these constructs, suggesting that academic environments should continue to put forth effort to counteract traditional bullying as this type of aggression continues to be more prevalent.

## CHAPTER 1 INTRODUCTION

Peer aggression and victimization are significant concerns among youth. According to research, these behaviors occur across cultural and socioeconomic groups. Prevalence of peer aggression in prior research ranges from 4 to 36%, with victimization rates ranging from 9 to 32% from mostly urban and suburban schools, as well as from a cross-national survey including youth from over 30 countries in grades four through twelve (O'Brennan, Bradshaw, & Sawyer, 2009, Rodkin & Berger, 2008; Spriggs, Iannotti, Nansel, & Haynie, 2007). Peer aggression and victimization are most prevalent within the middle school environment, with one study of youth from urban (58%), suburban (28%), and rural (15%) environments in Maryland schools reporting approximately 37.9% of middle school students being involved in frequent peer victimization (O'Brennan et al., 2009). Another study focusing on a suburban middle school population reported 21.6% of youth bullied others within the past month and 3.8% indicated bullying others within the past week (Branson & Cornell, 2009). Examining bullying by ethnicity in one study revealed 10.8% and 12.1% of Caucasians, as well as 16.6% and 11.7% of African Americans and 15.4% and 13.6% of Hispanic youth reported physically bullying others and experiencing victimization, respectively (Wang, Iannotti, & Nansel, 2009). Moreover, regarding verbal bullying, 35.9% and 36.6% Caucasian, 45.9% and 35.7% African American, and 36.5% and 37.1% of Hispanic youth reported verbal bullying and victimization, respectively. Lastly, 28% and 42.5% Caucasian, 29.8% and 36.5% African American, and 25.7% and 40.2% of Hispanic youth reported relational aggression and victimization, respectively.

There is a subset of research focusing on youth who report both engaging in bullying and being a victim of bullying (often referred to as bully-victims). According to Wang, Iannotti, & Nansel (2009) who examined bullying and victimization in a nationally representative sample of over 7500 adolescents (grades 6-10) from all over the United States, 5.1% of their sample endorsed both physically bullying others and being a victim of physical bullying; being a physical bully-victim was more likely for males (7.2%) than females (3.2%). In addition, 20.3% of the sample endorsed verbally bullying others and being a victim of verbal bullying (22.6% male & 18.2% female), while 16.7% of the sample reported engaging in relational bullying, as well as experiencing relational victimization (15.4% males and 18% females).

Peer aggression has typically taken the form of physically, verbally, and relationally aggressive behaviors. Within the past ten years, due to the advancement of technology, peer aggression has become a more multifaceted condition. Aggression and victimization now occur by electronic and internet means as well. Therefore, cyber aggression is currently a significant concern for youth. According to the literature, the prevalence of cyber aggression in some studies rivals the rates of traditional (i.e., physical, verbal, and relational) aggression. Currently, studies involving middle school students from the southern United States, as well as a cross-national study involving grades 6 through 10 found the prevalence of cyber aggression ranges from 4% to 35%, with cyber victimization rates ranging from 5% to 14% (Dempsey, Sulkowski, Nichols, Storch, 2009; Hinduja & Patchin, 2008; Kowalski & Limber, 2007; Sourander, Klomek, Ikonen, Lindroos, Luntamo, & Koskelainen, et al., 2010; Williams & Guerra, 2007; Wang, Iannotti, & Nansel, 2009). Particularly, one study focusing on middle school

students (grades 6-8) indicated 3.6% of students engaged in cyber bullying and 15.1% reported cyber victimization (Kowalski & Limber, 2007). Some researchers have argued that the prevalence has increased since 2004, where Ybarra and Mitchell (2004) found that 19% of their population sample reported engaging in cyber aggression and 4% reported being victimized online. Cyber bullies who also experience cyber victimization were found to range from 4.5% to 9.5% of student samples (Kowalski & Limber, 2007; Wang et al., 2009). According to the Wang et al. (2009) study, after surveying over 7,000 adolescents in grades 6 through 10 from all over the United States, 4.5% of the sample qualified for a classification of both cyber bully and victim; the percentage was similar for males (4.9%) and females (4.2%).

Lower rates of reported cyber aggression and victimization in some studies compared to traditional aggression and victimization rates could be due to a variety of reasons. According to Olweus (2012), the prevalence of cyber aggression and victimization is actually quite low, which could relate to the degree of overlap between traditional aggression and cyber aggression. Despite availability of electronic media most youth continue to engage in more traditional forms of aggression. Further, using a lower-bound minimum of at least twice a month could eliminate youth who have cyber aggressed or experienced victimization that may have just occurred once (Olweus, 2012). Lastly, cyber bullying measures widely vary within the literature, which could impact the prevalence rates.

Peer victimization in all forms negatively impacts psychosocial functioning (Spriggs et al., 2007). Adverse outcomes occur both for those who aggress and for those who are the victims of aggression. Substance use, suicide, depression, anxiety,

and school impairment are negative outcomes cited within the literature with these outcomes affecting youth into adulthood (Beran & Li, 2005; Hawker & Boulton, 2000; Mitchell, Ybarra, & Finkelhor, 2007). Although peer aggression and victimization have been widely studied, and research in the more recent area of cyber aggression is growing, there are areas in need of further attention. Many studies in the literature have defined a cutoff point where teasing turns into peer aggression, however, few studies have examined the impact of peer aggression as a continuous variable (Craig, 1998; Storch, Brassard, & Masia-Warner, 2003; Peskin, Tortolero, & Markham, 2006; Rodkin & Berger, 2008). Further, few studies have examined multiple informants as a source of information in measuring traditional aggression and victimization.

With regards to cyber aggression, the means used to assess cyber aggression and victimization varies and often only a few questions are used to assess cyber behavior. Measurement of the behaviors with more comprehensive questionnaires would be helpful, particularly for examining gender differences and relationships between these behaviors and youth functioning. Finally, while adverse outcomes in the domains of social functioning, anxiety, and academic and school functioning have been more widely examined for traditional forms of aggression and victimization, the relationship between cyber aggression and victimization and these domains is in need of further study. These areas were the focus of this study.

### **Peer Aggression and Victimization**

According to Olweus (1993), the definition of bullying incorporates three important components: 1) unwanted aggressive behavior 2) repeated behavior over an extended period of time and 3) a power differential between the aggressor and victim. Bullying is a more severe and chronic form of peer aggression. The construct of peer

aggression has been defined as harmful behaviors repeatedly directed towards another youth through the use of physical, verbal, or relational aggression (Crick & Grotpeter, 1996; Rys & Bear, 1997). Notably, due to overlap in definitions both terms are used interchangeably within the literature, blurring the boundary between peer aggression and bullying. For the purpose of this study, the term peer aggression will be used as it denotes a continuum of less frequent teasing to more frequent and severe bullying.

Noticeably lacking from the definition of bullying is motivation. While there is a definition of the factors that comprise bullying there is a definite lack of understanding of why particular youth engage in bullying. According to Rigby (2012), children ranging in age from 8 to 18 endorsed the following reasons for bullying: I was annoyed, retribution, for enjoyment, others were also bullying, the victims were weak, to demonstrate how tough I was, and to acquire money or items. Overall, minimal attention has been given to understanding and elucidating the specific reasons why youth bully others (Rigby, 2012). Factors that may play a role in bullying include moral disengagement, identified within Bandura's (1986, 1992, 1999) social cognitive theory, which is a cognitive process where an individual rationalizes his/her aggression (Pornari & Wood, 2010). Also, social information processing theory by Crick and Dodge (1994) stated that there are deficits in the processing of social information in aggressive individuals (Pornari & Wood, 2010). Even though motivation for bullying is not within the scope of this study, further understanding motivation for bullying behaviors could potentially impact interventions in schools.

Peer aggression is comprised of two broad subtypes, overt and indirect aggression (Berger, 2007; Kuppens, Grietens, Onghena, & Michiels, 2009; Nixon, 2001;

Pornari & Wood, 2010). Physical, behavioral, and verbal behaviors are encompassed within the definition of overt aggression. Hitting, pushing, and kicking are examples of physical aggression, stealing a lunch constitutes behavioral aggression, and threatening to beat someone up, name calling, and yelling comprise verbal aggression (Kuppens et al., 2009; Pornari & Wood, 2010). Indirect aggression is a more subtle form of aggression, which is also known as relational aggression, social aggression, or psychological aggression (Kumpulainen, Rasanen, Henttonen, Almquist, Kresanov, Linna, et al., 1998; Storch et al., 2003). Due to its subtle nature, relational aggression is often more difficult to detect. Within the literature relational aggression has been defined as behavior intended to harm peer relationships or threaten to damage relationships (Craig, 1998; Crick & Grotpeter, 1996). Relational aggression involves spitefully spreading negative comments or rumors and socially excluding others with the intent to harm the relationships of others, create feelings of rejection, threaten to end friendships, and exclude others from groups (Kuppens et al., 2009).

Estimations from research indicate that 1 in 10 youth are chronically victimized by peers (Tokunaga, 2010). This research indicated that reasons for peer victimization vary and mostly depend on individual characteristics, peer group dynamics, and the climate of the school. Youth who are perceived as being inadequately prepared to defend themselves are more likely to experience traditional peer aggression. Developing a reputation as being physically incapable, being known for acquiescing to the demands of peers, or being rejected by the peer cohort increases the likelihood that a youth will be victimized (Hodges, Malone, & Perry, 1997; Olweus, 1993; Schwartz, Dodge, & Coie, 1993). Socially incompetent peers are also at increased risk for being

victimized. Further, socially withdrawn behavior, such as shyness, also increases the likelihood that a youth will be victimized (Cook, Williams, & Guerra, 2010).

**Cyber Aggression and Victimization.** In addition to traditional peer aggression, cyber aggression is another form of aggression that has developed within the last 20 years. Within the literature cyber aggression is known by many terms, such as cyber-bullying, electronic bullying, and online social cruelty (Pornari & Wood, 2010; Kowalski & Limber, 2007). Just as there are multiple terms for the construct, there are multiple definitions available. To illustrate, cyber aggression has been defined as a purposeful, aggressive act that a group or individual repeatedly engages in, via electronic means, against an individual who is unable to defend himself or herself easily (Smith, Mahdavi, Carvalho, Fisher, Russell, & Tippett, 2008). Further, the construct has also been defined as aggressive and repeated information being delivered through electronic format for the intended purpose of harming others (Dooley, Pyzalski, & Cross, 2009). For the purpose of the current research study, the definitions will be combined. Cyber aggression will be defined as an intentional aggressive act via electronic format used for the sole intent of harming others (Smith et al., 2008; Dooley et al., 2009). This construct encompasses the use of mobile phones and internet based communications as mediums for relational and verbal aggression as physical aggression cannot occur through these media.

The increasing availability of cell phones, with the majority of phones currently coming equipped with internet capability, allows for easy internet access (Mishna, Saini, & Solomon, 2009; Pornari & Wood, 2010). Up to 97% of adolescents ages 12-18 use the internet (Kowalski & Limber, 2007). The high prevalence of internet use indicates that the majority of youth are vulnerable to victimization through electronic means. This

advancement of technology has altered the way individuals communicate in a social context. In addition to direct, face-to-face interaction, people communicate via e-mail, blogs, social networking sites, instant messaging, chat rooms, text messages, and webcams (Mishna et al., 2009). All of these communication styles can occur in the palm of your hand allowing for negative social interactions to become more pervasive.

There is some question as to whether traditional aggression and cyber aggression are similarly overlapping constructs or contain unique characteristics with some overlap. Existing literature appears to support both claims. On the one hand, cyber aggression has been characterized by some researchers as a mere extension of traditional peer aggression with minimal unique qualities (Erdur-Baker, 2010; Li, 2005; Li, 2006; Olweus, 2012; Raskauskas & Stoltz, 2007). One study found overlap rates between traditional and cyber aggression to range from 88% to 93%, indicating small percentages of youth who experience cyber aggression in the absence of other types of peer aggression (Olweus, 2012). Conversely, one study found some overlap between the two constructs, but noted that the similarities between the two constructs were small with the study ultimately supporting each construct being comprised of distinct characteristics (Erdur-Baker, 2010). Furthering the support of traditional and cyber aggression being distinct factors, Dempsey, Sulkowski, Nichols, and Storch, (2009) illustrated through confirmatory factor analysis that cyber victimization is a separate factor apart from overt and relational aggression. Notably, there was a weak relationship between all aggression types. Additionally, cyber aggression accounted for adverse outcomes, such as social anxiety, above and beyond traditional means of peer aggression. Supporting it as an independent factor containing unique components,

Green (2006) proposed three criteria delineating the factors associated with traditional peer aggression that cyber aggression violates: peer aggression being relegated mostly to school environments, the victims being aware of who is bullying them, and there being a power differential between the bully and victim.

The availability of electronic media has increased the prevalence of peer aggression occurring outside of school boundaries. Peer aggression is no longer solely relegated to the school yard. Additionally, many youth have constant access to electronic media, thus distinguishing it from traditional peer aggression, as traditional peer aggression is generally contained to specific contexts (e.g., the school lunchroom, playground, etc.). Instead, cyber aggression allows for victimization to follow the child throughout the day whether they are at school or elsewhere. To illustrate, Mishna, Saini, and Solomon (2009) found that youth described how they are now subject to peer aggression within the confines of their home where before they perceived themselves to be safe. In the same study, children described feeling particularly invaded when dealing with peer aggression within their home environment. Thus, due to advances in technology, victimization can occur all day for some students making it virtually inescapable.

Anonymity is another way in which cyber aggression differs from traditional peer aggression. Cyber aggression can occur anonymously. Youth are able to create pseudo social networking accounts, text peers, and write anonymously on blogs in order to victimize peers. Anonymity allows youth to engage in behaviors they would not otherwise engage in since fear of repercussions is minimal (Mishna et al., 2009). Conversely, while there is anonymity with some cyber aggression, in other instances it

is quite obvious who is aggressing. For example, many youth make no attempt at hiding their identity on social networking sites when engaging in cyber aggression (Mishna et al., 2009). Thus, youth can choose to be identified as aggressors online or they can easily choose to remain anonymous when engaging in cyber aggression.

Cyber aggression also differs from traditional aggression as often there is a lack of power differential between bullies and victims when online. In more traditional forms of peer aggression the perpetrator generally has either more physical or social power over the victim. Online, this power differential between aggressor and victim tends to be non-existent. Anonymity can allow those who perceive themselves to be weaker in person to be on equal footing in cyberspace. The victim can turn into the aggressor with the touch of a button. While a power differential has been indicated to exist in cyberspace, it is typically associated with computer knowledge instead of physical and social power (Patchin & Hinduja, 2006).

Via the internet and cell phone, verbal and relational aggression occurs in many forms. Spreading rumors, name calling, and circulating compromising photographs and/or videos are ways that an individual can be victimized (Slonje & Smith, 2008). Cyber aggression can also occur in the form of coercion, where youth, especially males, can peer pressure females into exposing themselves over web cams or taking inappropriate pictures on their cell phones and sending them via text message (Mishna et al., 2009). This coercion can come in the form of black mail. For example, females from one study indicated that if they did not expose themselves to a male peer, that peer threatened to reveal their secrets (Mishna et al., 2009). Further, youth sometimes provide friends with their passwords to internet sites, allowing peers to masquerade as

friends and aggress on others from someone else's social networking site. Peers who pose as other peers can also victimize the person they are imitating by posting hurtful or embarrassing content in the form of comments or pictures (Mishna et al., 2009).

Youth who engage in, or are victims of, traditional aggression are significantly more likely to engage in cyber aggression (Pornari & Wood, 2010). Cyber aggression is a format allowing youth who are victims of traditional aggression to retaliate as the internet provides a buffer between perpetrator and victim, whereas a victim is less likely to retaliate when face to face with their aggressor when traditional peer aggression occurs, especially if the victimization is through physical means.

### **Gender Differences in Peer Aggression and Victimization**

General models of aggressive behaviors tend to be linked to gender, with physical and overt aggression being the most widely researched (Spieker, Campbell, Vandergrift, Pierce, Cauffman, Susman, & Roisman, 2012). When attempting to understand the experiences of aggressors and victims in traditional and cyber aggression, gender is an important factor to consider. To facilitate the understanding of the role gender plays in peer aggression and victimization, gender disparities have been examined by researchers within the field. The majority of research attention has focused on physical (overt) aggression, thus more is known about the gender disparities (Spieker et al., 2012). Overall, when examining overt forms of traditional aggression such as physical aggression, males are more often the culprits and recipients of this type of aggression while victims include both males and females (Erdur-Baker, 2010; Rodkin & Berger, 2008). As toddlers, males exhibit more physical aggression compared to females when examining typically developing children, with decreased aggression occurring around the age of three (Tremblay, Japel, Perusse, McDuff, Boivin, Zoccolillo

et al., 1999). Risk factors such as low socioeconomic status, increased maternal symptoms of depression, and decreased maternal warmth predict increased and consistent physical aggression (Spieker et al., 2012). Persistent physical aggression could lead to decreased social functioning and rejection by normative peers, further exacerbating aggressive behaviors as these youth have not developed appropriate means of interacting with peers (Spieker et al., 2012).

Theoretically, research lacks understanding of the developmental process regarding relationally aggressive behaviors (Spieker et al. 2012). Evidence, dating back to the 1920s traditionally characterized females as perpetrators of relational aggression, as well as victims, with current researcher continuing to support this viewpoint (Archer, 2004; Craig, 1998; Pornari & Wood, 2010). While some research continues to provide evidence that females are more likely to engage in and experience relational aggression and victimization, understanding how this gender difference occurs is less well known and researched. Preliminary data emerged suggesting high maternal control, low maternal empathy, and maternal negative affect were associated with the development of relational aggression in preschool age males and females (Brown, Arnold, Dobbs, & Doctoroff, 2007; Casas, Weigel, Crick, Ostrov, Woods, Jansen Yeh et al., 2006; Curtner-Smith, Culp, Culp, Scheib, Owen, Tilley et al., 2006). Focusing specifically on females, evidence indicated maternal callousness and low maternal sensitivity placed females at risk for relational aggression, but not males (Spieker, 2010). Craig (1998) postulated that females have a greater likelihood of engaging in relational forms of aggression as the importance of peer relationships is more consistent with their social goals. Similarly, Crick et al. (1999) suggests that girls tend to become more troubled

when relationship difficulties occur. Relational aggression, which could be characterized as reactive, defensive, or proactive, could potentially disrupt social relationships and enhance social status, thus perpetuating the cycle (Marini, Dane, Bosacki, YLC-CURA, 2006; Spieker, 2012).

Inconsistent findings regarding gender discrepancies in cyber aggression behaviors predominate within the literature (Erdur-Baker, 2010; Sourander et al., 2010). Considering the nature of cyber aggression, as well as the potential social ramifications of being victimized, females are the lead contenders to be characterized as cyber aggressors. Cyber aggression is similar to relational aggression as the victim is being bullied in an indirect manner. Additionally, the aggression is occurring within the social realm as others are often privy to the victimization online. Research pertaining to relational aggression indicates females are more likely to be perpetrators, thus it would follow that they might also engage in more cyber aggression than males. Supporting this viewpoint, females have been shown to be perpetrators of cyber aggression, and to be victimized, more than males (Kowalski & Limber, 2007; Marini et al., 2006). Dempsey et al. (2009) also noted that a larger proportion of females in their sample reported being cyber victimized. However, according to the results from this study the noted relationship between cyber victimization and gender was weak.

While some evidence indicates gender disparities, other studies have failed to identify gender differences in perpetrators and victims of traditional and cyber aggression (Patchin & Hinduja, 2006). One study found no gender differences for all overt, relational, and cyber victimization (Pornari & Wood, 2010). Notably, cyber aggression and victimization was assessed via only six questions total in this study.

Another study found no significant differences between gender groups for relational victimization, indicating that both genders were victimized equally (Storch et al., 2003). Given discrepancies in findings, further research is needed with regards to gender differences in cyber aggression and victimization.

### **Consequences of Aggression and Victimization**

Peer victimization can negatively impact a child's overall well being and has been linked to multiple adverse outcomes, including both externalizing and internalizing difficulties. To illustrate, aggression and victimization has been shown to be associated with substance use, youth violence, physical health symptoms, delinquency, poor academic functioning, poor school attendance, low self-worth, psychosocial difficulties, anxiety (generalized and social), and depression (Hawker & Boulton, 2000; Kumpulainen et al., 1998; Spriggs et al., 2007). Similar to traditional forms of bullying, youth who were bullied online also reported experiencing anxiety, depression, substance use, and difficulty concentrating in school (Beran & Li, 2005; Mitchell et al., 2007).

In addition to acute symptoms of psychosocial distress and internalizing difficulties, those who bully and are bullied are also at risk of experiencing long term psychosocial and psychological difficulties later in life (Nijmeijer, Minderaa, Buitelaar, Mulligan, Hartman, & Hoestra, 2008). For example, loneliness, depressed mood, suicidal behavior, criminal behavior, and anxiety, especially social anxiety in adulthood, are difficulties victimized adults and adults who were bullies have experienced (Gladstone, Barker, & Malhi, 2006; Klomek, Sourander, Niemela, Kumpulainen, Piha, Tamminen, et al., 2009).

As the present study will focus on social functioning, anxiety, and school functioning as they are related to traditional peer aggression and victimization, as well as cyber aggression and victimization, research in these specific areas will be highlighted below. It should be noted that in research on these three areas of functioning, it is not always possible to disentangle whether peer aggression and victimization are precursors to poor functioning in these areas, or whether poor functioning in these areas predisposes a child to being a bully or victim, as many studies are not able to directly examine causality due to the methodologies employed.

### **Social Functioning**

Social functioning is negatively impacted in aggressive and victimized youth. Engaging in bullying behaviors as well as being victimized impacts youth's friendships and peer interactions, thus impacting overall social competence. Social competence is defined as the ability to successfully carry out social interactions and maintain interpersonal relationships, as well as being able to express and construe various forms of communication (Larson, Whitton, Hauser, & Allen, 2007; Ford, 1982). Social functioning is the behavioral component of social competence; it is the observable part of social behavior (Nixon, 2001). Prosocial behaviors, such as sharing and being kind, comprise good social functioning, which in turn tends to generate friendships. Friendships are comprised of two individuals who jointly participate in the development and maintenance of the friendship allowing for peers to learn cooperation, conflict resolution, and negotiation, as well as contributing to the overall adjustment of youth (Hoza, 2007; Newcomb, Bukowski, & Bagwell, 1999; Greco & Morris, 2005). These skills allow youth to carry out appropriate social interactions and navigate the social realm of life. Further, appropriately developed psychosocial functioning in children is

associated with positive outcomes as adults and decreases a youth's risk for adverse outcomes (Renk & Phares, 2004). Thus, social functioning is an important aspect of the development and maintenance of a child's well-being (Normand, Schneider, & Robaey, 2007).

In contrast, a lack of friendships can be detrimental to a child's psychosocial and psychological health (Greco & Morris, 2005). To illustrate, having difficulties with peers is predictive of future delinquency, substance use, school dropout, academic difficulties, and psychopathology (Hoza, Mrug, Gerdes, Hinshaw, Bukowski, Gold, et al., 2005; Normand et al., 2007). Thus, peer acceptance and rejection both have a qualitative impact on a youth's functioning. The focus of this study will be on peer rejection via peer victimization.

Victimized youth are characterized as having poor social relationships with peers (O'Brennan, Bradshaw, & Sawyer, 2009; Spriggs et al., 2007). These youth tend to have fewer friends and are often more rejected than youth who are not victimized (Spriggs et al., 2007; Nijmeijer et al., 2008). In turn, youth who experience psychosocial difficulties are more likely to be unpopular and rejected or victimized by peers (Dill, Verberg, Fonagy, Twemlow & Gamm, 2004; Hodges, Boivin, Vitaro, & Bukowski, 1999). The lack, or poor quality of, peer interactions provides a barrier to these youth learning and developing prosocial skills; these youth are likely to lack the appropriate skills necessary to develop positive peer relationships.

Youth who bully others are also likely to lack the prosocial skills necessary to develop appropriate social relationships (Smokowski & Kopasz, 2005). Unpopular and disliked youth are more likely to be entering into friendships with other rejected peers,

such as antisocial peers or peers who are more likely to engage in criminal behavior (Normand et al., 2007). Two studies found that amongst middle school youth, bullies, and those who were both bullies and victims, were less likely to indicate that friendships were important (Dempsey et al., 2009; O'Brennan et al., 2009). However, peer relationships in one of these studies were assessed with two questions via self-report. While some aggressive youth may lack prosocial skills and have few friends, not all aggressive youth are unpopular or disliked. To illustrate, there are youth who have high social standing, such as athletes, who can be popular although they engage in aggressive behavior. A general reason for this is due to the social power athletes have. Athletes tend to be leaders and considered attractive, thus they hold social sway and can pressure others into doing things (Rodkin & Berger, 2008). These researchers noted that people who are wealthy, attractive, and hold positions of leadership are more likely to hold positions of power, even in the school setting. Students who fit into these categories may be deemed as popular even though they may not be excessively liked by others. Thus, aggressive students may be able to achieve a high social status and attain popularity (Rodkin & Berger, 2008).

There is a dearth of information regarding the social risk factors associated with cyber aggression. One study examining these factors was conducted in Finland. According to this study, being a victim of cyber aggression, as well as being a combined cyber bully and a cyber victim was predictive of difficulties with peers and emotional problems such as depression, anxiety, and loneliness (Sourander et al., 2010). Thus, further research is needed regarding the relationships between cyber aggression/victimization and youth social functioning.

## **Internalizing Problems**

Anxiety is an adverse outcome associated with peer aggression. Moderate levels of anxiety and depression were found in a school sample of victims of traditional bullying (Bond, Carlin, Thomas, Rubin, & Patton, 2001; Gladstone et al., 2006; Sourander et al., 2000). In another study of adolescents ages 13 to 16, Storch, Brassard, and Masia-Warner (2003) found that overt and relational victimization were associated with significant fear of being evaluated negatively by others, somatic symptoms, and avoidance of social situations. Moreover, the study indicated that multiple victimization experiences increased youths' symptoms of social anxiety. In particular, relational victimization is the form of aggression that is most associated with symptoms of social anxiety. Taken together, these findings indicate that youth who experience direct and relational victimization are at risk for experiencing significant psychosocial difficulties. Peer victimization may also be related to anxiety in adulthood. In one study utilizing a clinical population of adults, it was found that being bullied in childhood was significantly related to high levels of anxiety (Bond et al., 2001). However, the participants were adults recalling events that occurred in their childhood, which is subject to bias. In line with research on traditional peer victimization, research has also found that cyber victimization was associated with social anxiety (Dempsey et al., 2009).

Even when studies control for social functioning and socioeconomic factors, repeated victimization has been significantly connected to self-reported symptoms of anxiety (Bond et al., 2001). Specifically, victims of verbal and relational peer aggression reported higher levels of anxiety (Craig, 1998). Research in this area has additionally shown an increasing trend where students' report of internalizing problems increased as

they aged; high school bullies and victims were more likely to endorse internalizing difficulties than those in middle and elementary school (O'Brennan et al., 2009).

Research is lacking regarding the causality between peer victimization and anxiety. Thus, it is undetermined if the relationship is bidirectional or if either variable precedes the other. Further, there are several vulnerability factors associated with the development of anxiety, exacerbating the difficulty in determining whether experiencing peer victimization is a causal factor in the development of anxiety. To illustrate, familial factors play a role in the onset of anxiety. Youth whose parent or parents have a specific type of anxiety disorder are three to five times more likely to develop an anxiety disorder compared to youth whose parents do not have an anxiety disorder (Merikangas, 2005). Further, there are temperament and personality factors such as behavioral inhibition, which is an increased psychological response when faced with novel input from the environment, that precede the development of anxiety (Merikangas, 2005). Thus, genetic factors and temperament, as well as environmental exposures such as parenting and exposure to life stressors, also play a role in the development of anxiety (Merikangas, 2005). Environmental exposures pertaining to life stressors will be central to this study. Life stressors include peer victimization, which can be classified as an experience that threatens the perceived well-being of others.

Lack of peer acceptance has been associated with social anxiety. Children who are disliked or rejected by peers are at risk for the developmental of emotional and behavioral difficulties (Greco & Morris, 2005). Disliked or rejected children could potentially become withdrawn and decrease their social interactions exacerbating their poor social functioning and increasing their anxiety in social situations. Conversely,

these children could attempt to increase their social interactions in inappropriate ways causing further rejection and victimization (Greco & Morris, 2005). When conceptualized as a life stressor, peer victimization may play a role in the onset of anxiety symptoms and anxiety disorders.

Assessing for anxiety varies widely within the peer victimization literature, with self-report being the predominant method of assessment. However, the type of self-report measure used varies. Several studies within the literature assess internalizing symptoms with questions generated by the researchers instead of a standardized measure. To illustrate, several studies measured anxiety via three and four question measures (O'Brennan et al., 2009; Dempsey et al., 2009). Other studies solely focus on social anxiety, versus the anxiety spectrum (Dempsey et al., 2009; Storch et al., 2003). Thus, the inclusion of more comprehensive measures of anxiety symptoms would help further research in this area.

### **School Impairment**

Poor social functioning, as seen in aggressors and victims, negatively affects academic functioning. It is hypothesized that peer victimization could increase anxiety, interrupt concentration within the classroom, and interfere with youth acquiring and retaining information (Nansel, Overpeck, Pilla, Ruan, Simons-Morton, & Scheidt, 2001; Sharp, 1995). Further, rejected and victimized children in the classroom tend to have a poorer academic self-concept and are more likely to rely on teachers for assistance on class work compared to children with normal social functioning (Flook, Repetti, & Ullman, 2005; Mercer & DeRosier, 2008). Victimized youth also tend to avoid attending school, which results in increased absences and diminished opportunities to develop

academic abilities within the classroom (DeRosier, Kupersmidt, & Patterson, 1994; Eaton, Kann, Kinchen, Shanklin, Ross, & Hawkins et al., 2008).

In addition to victimized youth demonstrating poorer academic functioning compared to non-victimized and socially accepted peers, aggressors are also more likely to exhibit poorer academic functioning than their nonaggressive peers (Hinshaw, 1992). Overall underachievement, lower grade point average, and school failure of aggressive youth could be partly attributed to increased conflict with teachers and school personal (DeRosier & Lloyd, 2010). Aggression tends to disrupt classrooms resulting in disciplinary action (Coie & Dodge, 1998). Youth who are disruptive in the classroom and who have received school suspensions, have decreased opportunities to build academic skills and can fall further behind (DeRosier & Lloyd, 2010). Therefore, diminished academic functioning has been linked to both aggressor and victim status. One study assessing the academic performance of minority youth indicated that poor academic functioning for Caucasians and Hispanics was associated with bully, bully-victim, and victim status (Spriggs et al., 2007). Conversely, for African American youth, research indicated that negative school factors were not associated with peer aggression behaviors (Spriggs et al., 2007). Another study using a multi-culturally diverse sample found a significant association between poor school functioning and perpetration of traditional aggression, such that those who were nominated as aggressors, by peers as well as self-report, were more likely to receive behavioral referrals in school (Branson & Cornell, 2009). Further, the researchers indicated that those who were nominated by peers as aggressive were more likely to receive detentions and suspensions, as well as have poorer academic functioning. Cyber

aggression and victimization and its relationship to academic and school functioning were not a focus of this study.

Cyber aggressors and victims of cyber aggression have been found to experience more school impairment, such as more often skipping school, receiving detentions or suspensions, and being found with a weapon on school premises (Ybarra, Diener-West, & Leaf, 2007). The prevalence of delinquency is significantly higher in youth who report experiencing online peer victimization, which can further exacerbate poor academic functioning (Mitchell et al., 2007), as behaviors such as skipping school and getting into trouble at school can negatively impact overall academic performance. Overall, relatively fewer studies in this area examine the relationship of peer victimization and peer aggression, especially cyber victimization and aggression, to measures of academic functioning. Additionally, it is difficult to determine a directional relationship between poor academic functioning and peer victimization as there is a lack of longitudinal research determining causality. Thus, further research on these relationships would be beneficial.

### **Measurement Issues in Studies of Peer Aggression/Victimization and Psychosocial Functioning**

Self-report is widely used to assess self-concept, social functioning, psychological functioning, and bully and victimization status. There are several benefits to self-report questionnaires when studying peer victimization, such as youth are better equipped to discuss their victimization status than other informants since they are the ones being victimized (Ladd & Kochenderfer-Ladd, 2002). Thus, self-report may provide a more accurate reflection of a youth's functioning. Numerous studies assess victimization and aggression status, as well as social functioning and anxiety, via self-

report measures. Although the use of self-report measures in peer victimization research has been shown to be valid, there are drawbacks to this type of measurement.

Disadvantages of self-report measures pertain to factors that decrease the validity of the report. To illustrate, youth differ in their interpretation of aggressive behavior as well as their willingness to identify themselves as a bully and or victim (Ladd & Kochenderfer-Ladd, 2002). Youth may be reluctant to nominate themselves as perpetrators of peer aggression due to the social stigma associated with these behaviors or may underreport victimization status (Branson & Cornell, 2009; Griffin & Gross, 2004). For example, in one study it was found that only 15 of the 416 students in the sample reported themselves to be perpetrators of peer aggression even though 77 youths were nominated by peers as perpetrators (Cornell & Brockenbrough, 2004). In addition to under-reporting aggressive behaviors, youth may also “exaggerate” their aggressive behavior on self-report surveys (Branson & Cornell, 2009).

Cyber aggression has also been measured through self-report. However, self-report measures assessing cyber aggression and victimization also have a number of limitations. There appear to be some cyber events that tend to occur as a single event, such as exposure to a personally embarrassing photo or video that can be extremely distressing to an individual and spread rapidly to a larger group of youth (Olweus, 2012). However, the definition of cyber bullying in some studies traditionally involves experiencing at least two events, thus potentially misclassifying a group of youth who have cyber aggressed or who have experienced cyber aggression at least once in a particularly harmful way (Olweus, 2012). In addition to a potentially poor criterion limit of cyber aggression, there are few established measures of cyber aggression. Given the

lack of established measures in this area, some researchers have devised their own measures for their studies (Kowalski & Limber, 2007; Pornari & Wood, 2010). The devised measures vary in length and specificity of items, but generally tend to be brief, creating another problem which is the use of limited items to assess the construct. For example, one study used a questionnaire comprised of three items assessing cyber aggression and three items assessing cyber victimization (Pornari & Wood, 2010). In another study examining relations between cyber aggression/victimization and psychosocial and psychological adverse outcomes, only four self-report questions were used to assess cyber victimization (Dempsey et al., 2009).

Drawbacks to self-report have been dealt with by including multiple informants when assessing peer aggression and victimization, as well as social functioning. A popular method is utilizing peer reports as an alternate source of information. Higher rates of concordance among multiple informants are anticipated when informants are reporting behaviors occurring in a context where they are able to directly observe the behaviors (Achenbach, McConaughy, & Howell, 1982). To illustrate, higher agreement between teachers and students is expected when teachers are describing students' school functioning and social status as teachers offer a unique perspective in that they can observe children interacting with their peers (Achenbach et al., 1982; Ladd & Kochenderfer-Ladd, 2002). Lesser agreement among informants is expected when parents are reporting about their child's behaviors within the school setting. One study assessing the correlation between self and peer report found that as peers age the multi informant approach became more reliable, providing support for the use of multiple informants when available (Ladd & Kochenderfer-Ladd, 2002). Measuring social

functioning through a multi-informant approach allows unique pieces of information to be obtained regarding peer functioning. The various informants provide overlapping and independent information regarding peer rejection (Ladd & Kochenderfer-Ladd, 2002). Self-report measures allow researchers an inside view of how the child perceives him or herself, while other informants provide information on how the child is viewed by others, as well as how the child is functioning within a certain domain.

In order to account for the varying perspectives, some researchers have used self and peer reports in combination to identify a student's social status and which students are bullied and victimized (Branson & Cornell, 2009; Graham, Bellmore, & Juvonen, et al., 2003). Branson and Cornell (2009) compared the utility of self-report versus peer report surveys. While this study assessed peer aggression and victimization, as well as school climate, academic functioning, teacher tolerance, and depression, only traditional peer aggression and victimization were the focus. Peer nominations for traditional peer aggression correlated moderately with disciplinary infractions, detentions, suspensions, and lower grade point average while self-reported bullying correlated with aggressive attitudes, disciplinary referrals, suspensions, and GPA (Branson & Cornell, 2009; Cornell & Brockenbrough, 2004). When the magnitude of the correlations was compared, self-report measures had a higher association with aggressive attitudes, while disciplinary referrals were more correlated with peer report than self-report.

Despite the potential benefits of using peer reports, use of peer report was ultimately not feasible within the current study. Although peer reports are considered the gold standard, research indicates that self report provides valuable information when

assessing a student's school functioning. For the current study, in order to incorporate a multiple perspective viewpoint, teacher report of social functioning as well as aggression and victimization status, was used in conjunction with self-report. Teacher report is commonly used in conjunction with peer report within the literature to assess aggressive behavior and social functioning (DeRosier & Lloyd, 2010; Kumpulainen et al., 1998; Kuppens et al., 2009; Ladd & Kochenderfer-Ladd, 2002). Kuppens et al. (2009) noted that teacher reports of physical and verbal aggression were stable across time (two years), while reports of relational aggression were not as stable over time. Relational aggression is more difficult to detect than overt aggression, therefore these findings appear consistent with the research presented on this topic. While teacher reports for some behaviors may not be stable over time, one study indicated a significantly greater response agreement between teachers and peers compared to parent and peer, mother and father, and teacher and parent informants (Renk & Phares, 2004). Further, this study indicated that teacher and peer measures would have greater concordance when the measures are completed within the academic environment.

### **Aims and Hypotheses**

While prior research in this area has shown links between peer aggression/victimization and poorer student social, psychological, and school functioning, fewer studies have examined both traditional and cyber forms of peer aggression/victimization in the same study with regards to how these constructs relate to multiple domains of student functioning. Moreover, there are several areas in the literature on cyber aggression/victimization that could use further attention. First, measuring cyber aggression and victimization with more comprehensive measures would be helpful, as prior studies have often measured these constructs with just a few

items. Second, there are discrepancies regarding gender differences in cyber aggression and victimization, thus further examination of gender differences is needed, particularly with more comprehensive measures. Similarly, further examination of the relationships between cyber aggression/victimization and youth social and school functioning are needed, as research is sparse in these areas. Another area in need of further research is the relationship of both traditional and cyber victimization to youth anxiety. While prior studies have shown links between different forms of peer victimization and anxiety, fewer studies have used comprehensive and standardized measures of anxiety, particularly in the area of cyber victimization. Lastly, this study focused specifically on gathering information from students in a rural area, as the majority of studies focus on urban and suburban populations.

### **Aim One**

The first aim of this study measured traditional aggression via self and teacher report and victimization within the population via self-report, as well as cyber peer aggression and victimization through self-report. Additionally, gender differences within the population for both traditional and cyber victimization and aggression were assessed.

**Hypothesis 1a.** Consistent with prevalence rates in the literature, it was expected that females would more often report being perpetrators of relational aggression with male reports dominating in physical aggression. Further, it was expected that on teacher report measures, more females would be nominated as perpetrators of relational aggression with more males being nominated as physical aggressors.

**Hypothesis 1b.** It was expected that males would more likely endorse being the victims of physical aggression by peers and females would endorse being the victims of relationally aggressive behaviors. Further, it was expected that on teacher report measures, more females would be nominated as victims of relational aggression with more males being nominated as victims of physical aggression.

**Hypothesis 1c.** In addition, as cyber aggression shares some features of traditional relational aggression, it was hypothesized that females would report perpetrating more cyber aggression when compared to males.

### **Aim Two**

The second aim of this study examined relationships between youth social functioning, as measured by self and teacher report, and traditional and cyber peer aggression and victimization as measured by self-report.

**Hypothesis 2a.** It was hypothesized that greater self-reported aggressive behaviors (traditional and cyber) would be significantly associated with lower social functioning composite scores, derived from self and teacher report.

**Hypothesis 2b.** It was hypothesized that greater self-reported peer victimization (traditional and cyber) would be significantly associated with lower social functioning composite scores, derived from self and teacher report.

### **Aim Three**

The third aim of this study examined how traditional and cyber victimization were related to anxiety using a standardized measure encompassing a wide range of anxiety symptoms (Multidimensional Anxiety Scale for Children, MASC), as existing research has indicated a positive relationship between anxiety and victimization.

**Hypothesis 3a.** It was hypothesized that greater self-reported traditional victimization would be significantly positively associated with greater self-reported symptoms from the Anxiety Disorders Index, as well as total Physical Symptoms of Anxiety and total Social Anxiety from the MASC.

**Hypothesis 3b.** It was also hypothesized that greater self-reported experiences of cyber victimization would be significantly positively associated with greater self-reported symptoms from the Anxiety Disorders Index scale, as well as total Physical Symptoms of Anxiety and total Social Anxiety from the MASC.

**Hypothesis 3c.** Extant literature has established a moderating effect of gender between peer victimization and anxiety such that females report more symptoms of anxiety than males. Therefore, it was hypothesized that gender would moderate the relationship between peer victimization and the anxiety variables such that the relationship between peer victimization and the anxiety variables would be stronger for females than males.

#### **Aim Four**

There is a dearth of research focusing on the association between cyber aggression/victimization and academic functioning, school absences, suspensions, and disciplinary infractions. Thus, the fourth aim of this study assessed the relationship between self-reported traditional and cyber peer victimization and aggression and school functioning as measured by self-reported GPA and number of suspensions and referrals.

**Hypothesis 4a.** Research supports that overtly aggressive youth tend to demonstrate lower achievement compared to nonaggressive peers (DeRosier & Lloyd).

Thus, it was hypothesized that greater self-reported physical peer aggression would be significantly associated with poorer school functioning.

**Hypothesis 4b.** As cyber aggression is more relational in nature, it was hypothesized that self-reported cyber aggression would not be significantly related to measures of school functioning.

**Hypothesis 4c.** It was hypothesized that greater self-reported traditional and cyber victimization would be significantly associated with poorer school functioning as measured by GPA, but would not be significantly associated with number of suspensions and referrals.

## CHAPTER 2 METHODS

### **Participants**

Students enrolled in grades seventh and eighth were recruited from a public middle school in the Columbia County School District, a rural county in North Central Florida, to participate in the study. There were no exclusionary criteria; the children of parents who provided active consent were eligible to participate in the study. A total of 693 seventh and eighth graders were eligible to participate in this study based on numbers from class rosters obtained from the school just prior to the study. Consent forms were provided for each classroom in the seventh and eighth grades. Out of 693 eligible students, 274 students (39.5%) returned consent forms. Out of the 274 consent forms returned, 241 (88% consent rate) of them indicated consent to participate in the study (137 seventh and 104 eighth graders), while 33 of the returned forms declined to participate in the study (19 seventh graders and 14 eighth graders). Of the 241 whose parents provided consent to participate, 185 students participated on the day of the survey; reasons that consented students did not participate were primarily due to being absent on the day of survey administration (it was right after a holiday weekend), although a few declined assent for the study. Specific numbers could not be calculated in each of these categories, as the researchers did not ask teachers to consistently note how many consented students in their class were absent or declined assent. Seventh and eighth grade teachers were also recruited to participate in the survey. Thirty teachers were eligible to participate. Of those teachers eligible, 19 teachers (63.3%) actually participated the day of the survey. Several classrooms did not have a teacher

participate due to a substitute teacher being in the classroom on the day of survey administration.

## **Measures**

### **Demographic Information**

Demographic information pertaining to grade placement, ethnicity, grades, suspensions, referrals, and a student's living situation (e.g., adults in the home) was collected for each student (see Appendix A for demographic form). The demographic form was the second sheet in each packet, behind the assent form, and was completed prior to the completion of the other study measures. Please refer to Table 2-1 for the demographic information for this study.

### **Self-Report of Social Functioning**

The Piers-Harris Children's Self-Concept Scale-Second Edition (Piers-Harris 2) was developed by Ellen V. Piers and Dale B. Harris, assessing youths' (ages 7-18) self-perception of their behaviors and attitudes (Piers & Herzberg, 2002). Youth are asked to endorse yes or no to statements such as "I am smart." The Piers-Harris 2 has a total of sixty items that evaluate a youth's self-concept in six domains. Domain scale scores and a total scale score can be derived from the measure by converting the raw scores into T-scores on the profile sheet the measure provides. The domain scales within the measure include: Behavioral Adjustment, Intellectual and School Status, Physical Appearance and Attributes, Freedom from Anxiety, Popularity, and Happiness and Satisfaction. The Popularity scale was the focus of this study. The Popularity scale of the Piers-Harris 2 reveals the youth's perception of his or her social functioning, thus it was the best scale within the measure to obtain the youth's evaluation of how he or she is performing socially (Piers & Herzberg, 2002). The mean T-Score for the Popularity

scale for the southern region of the United States is 50.7. Please refer to Table 2-2 for the mean T-scores and standard deviations for the current sample.

The Piers-Harris 2 is a culturally diverse measure with its psychometric properties being tested with significant ethnic populations such as African Americans and Hispanics (Piers & Herzberg, 2002). Alpha coefficients for the domain scales range from .60 to .84, and the Total Self-Concept scale coefficients range from .89 to .93, indicating a moderate to strong internal consistency (Piers & Herzberg, 2002). The Popularity domain scale alpha's for students 11 to 16 range from .78 to .80. For the current study, the alpha coefficient for the Popularity scale was .82, which is similar to the alpha range stated in the manual. While test-retest reliability coefficients are available for the original Piers-Harris measure, this data is not available for the second edition.

### **Anxiety**

The Multidimensional Anxiety Scale for Children (MASC) was developed by John March in 1997 and was used in this study to measure youth report of anxiety (March, Parker, Sullivan, Stallings, & Conners, 1997). The MASC is a 39 item self-report measure assessing anxiety symptoms on a likert scale (0=*never true about me*, 1=*rarely true about me*, 2=*sometimes true about me*, 3=*often true about me*) in children eight to nineteen years of age. This measure consists of four scales and three indexes, which have been identified through factor analyses: Physical Symptoms of Anxiety scale (12 items), Social Anxiety scale (9 items), Harm Avoidance scale (9 items), Separation/Panic scale (9 items), Anxiety Disorders Index, Total Anxiety Index, and Inconsistency Index. Three of the six anxiety scales (Physical Symptoms scale, Social Anxiety scale, and Anxiety Disorders Index) were used for the purposes of this study.

These scales were selected for specific reasons. The Physical Symptoms scale was chosen as it measures symptoms such as feeling dizzy or sick to your stomach, which are common anxiety symptoms youth often endorse experiencing. The Social Anxiety scale, which assesses worries regarding public performance and being humiliated, are also symptoms frequently reported by youth. Additionally, symptoms of social anxiety might logically be associated with experiences of peer victimization. Lastly, the Anxiety Disorders Index was chosen, as high scores on this scale differentiated youth who would meet criteria for an anxiety disorder, based on their responses, from youth who would not meet criteria.

The MASC is a culturally diverse measure with its psychometric properties being tested in countries such as Taiwan and Iceland. According to a community based sample of children, the Cronbach's alpha for the subscales of the measure range from .73 to .89, indicating a moderate to strong internal consistency (Baldwin & Dadds, 2007). Additionally, this research indicated that the measure has good test-retest reliability with average correlation coefficients for a three-week and three-month period of .79 and .93 respectively. Further, the MASC is moderately correlated with the Revised Children's Manifest Anxiety Scale (RCMAS). There is a gender discrepancy on all the subscales indicating that females endorse greater anxiety on all scales and indexes compared to males (Baldwin & Dadds, 2007), thus there are separate gender norms.

Within the current study, the alpha coefficients were similar to previous studies with the exception of the Anxiety Disorders Index, indicating that the subscales from the measure performed as expected with regards to the total Social Anxiety and the total

Physical Symptoms of Anxiety scales within this sample. The Cronbach's alpha was .87 for the total Physical Symptoms of Anxiety scale, .86 for the Social Anxiety scale, and .67 for the Anxiety Disorders Index.

### **Self-Report of Peer Aggression and Victimization**

The Adolescent Peer Relations Instrument (APRI) was developed by Robert Parada, Ph.D. at the University of Western Sydney to assess youths' (ages twelve to seventeen) self-perception of their behaviors within bullying and victimization domains. Youth are asked to endorse a response on a six-point likert scale ranging from 1) *never* to 6) *everyday*. The APRI is a thirty-six item questionnaire that evaluates three types of peer aggression and victimization (physical, social, and verbal). Six subscale and two total scale scores can be derived from the measure by summing the items for each subscale and total score. The subscales (six items each) within the measure include Physical, Social, and Verbal Bullying as well as Physical, Social, and Verbal Victimization (hereafter referred to as physical, social, and verbal aggression, and physical, social, and verbal victimization), and the total scores are total Bully and total Victim. Youth who endorse a score of eighteen for either of the bullying or victimization total scores are interpreted as never having experienced bullying or engaged in bullying others. The APRI has been correlated with constructs of youth functioning such as depression, anger management, and self-concept. In particular, it was noted that verbal and social victimization are factors most associated with depression, aggressors are most associated with externalized anger, and both aggressors and victims lack good self-concepts (Marsh, Nagengast, Morin, Parada, Craven, & Hamilton, 2011).

Strong alpha coefficients were indicated for this measure, with high internal consistency for the subscales ranging from 0.81 to 0.89 when used with upper

elementary students and 0.82 to 0.93 for an adolescent population (Finger, Yeung, Craven, Parada, & Newey, 2008; March, et al., 2011). The total Bully and total Victim score derived from the measure have a Cronbach's alpha of 0.93 and 0.94, respectively, in prior studies. For the current study the Cronbach's alpha coefficients for the total Bully and total Victim scale were .94 and .97 respectively. Alpha coefficients for the subscales in this study were: physical aggression scale .82, social aggression scale .90, verbal aggression scale .89, physical victimization scale .93, social victimization scale .90, and verbal victimization scale .94. The alpha coefficients for the sample in this study are commensurate with previous studies.

### **Sociometric Teacher Report of Students' Social Functioning**

Teachers completed ratings of how much each student in their classroom is liked or disliked by their peers (Appendix B). Ratings were made on a 7-point scale from 1) *very much disliked* to 7) *very much liked*. The raw score obtained from teacher ratings was converted into a T-score to create a social functioning score. For this study, a social functioning composite was created by averaging the T-scores derived from the self-report of the Piers-Harris 2 Popularity scale and teacher reports of a student's social functioning (De Rosier & Lloyd, 2010).

In addition to social functioning, teachers completed ratings regarding a student's aggression and victimization status. Teachers were asked to indicate whether youths within their first period classroom engaged in physical, verbal, or relational aggression, as well as whether they were the victim of any of these types of peer aggression. For data analyses, students who were reported as being an aggressor or a victim, respectively, were assigned a one (reported as being a bully or victim, respectively) or zero (not reported as being a bully or victim, respectively).

## **Cyber Aggression and Victimization Measure**

Due to the lack of availability of comprehensive cyber aggression and victimization measures, a measure was adapted for the current study from one created by Janicke and colleagues (D. Janicke, personal communication, November 14, 2012) to examine the relationship between cyber aggression/victimization, child weight status, and psychosocial functioning. The Cyber Aggression and Victimization measure (Appendix C) obtains information on a youth's perception of their experience in the cyber world in four different areas. Research conducted on this measure indicated that victims of cyber aggression experienced more parent-reported internalizing symptoms than youth who were not victimized. Further, those who endorsed cyber aggression indicated higher levels of self-reported depression and were more likely to endorse engaging in traditional aggression compared to non-perpetrating peers.

The measure is comprised of four parts. The first part of the measure requests information regarding the frequency of use of varying electronic and internet media formats. To illustrate, peers are asked to rate their frequency of use within the past month of email, text messaging, and social networking sites on a frequency scale ranging from 1) *never* to 4) *every day*. Part two of the measure requests youth to endorse the frequency with which they have experienced threatening or embarrassing events in electronic or online formats on a scale ranging from 1) *never* to 4) *several times a week*. Next, the youth is asked to identify how often they have experienced consequences due to threatening or embarrassing situations on a scale of 1) *never* to 4) *always*. The last part of the measure asks the youth to report the aggressive activity he or she has engaged in via electronic or internet formats on a frequency scale ranging from 1) *never* to 4) *several times a week*. Total Cyber Aggression and total Cyber

Victimization scores can be derived from the measure by summing items asking about aggression and victimization, respectively.

For the purposes of the current study, several items (item numbers 9, 10, and 38) were added to this measure to further assess youth habits regarding use of electronic media and whether they have engaged in cyber aggression using their true identity or anonymously. The following is one example of the items that were added to the measure, “How much do your parents monitor your use of social networking sites, blogs, etc.”

Janicke and colleagues (D. Janicke, personal communication, November 14, 2012) did not report Cronbach’s alphas for the subscales from the measure due to all alphas falling under .60. For the current sample strong alpha coefficients were indicated for subscales from this measure that were the focus of the current study. The Cyber Aggression scale (items 31 to 37) had a Cronbach’s alpha coefficient of .91 and the Cyber Victimization scale (items 11 to 18) had an alpha of .93. This indicates that the measure exceeded expectations with this sample compared to the previous samples. One potential reason for better internal consistency in the current sample is differences in age ranges of study participants. While the current study focused on seventh and eighth graders, prior work with this scale included children as young as age 8, who may use social networking sites and cell phone text messaging less than older youth. In addition, the current study included students in the age range where peer victimization is at its peak.

### **School Functioning**

Academic and school functioning was assessed via self report of grades as well as number of behavior referrals and suspensions received, respectively. On the

demographic form, students reported their current grades (A, B, C, D, or F) in core classes (math, language arts, science/physical science, and civics/US history). These reported grades were transformed into an overall GPA for core classes by assigning each grade a numerical value (i.e., A=4, B=3, C=2, D=1, and F=0), summing those numerical values across the four core classes, and then obtaining the mean value across classes. Students also indicated how many suspensions and referrals they received during the course of the school year. Behavior referrals and suspensions were summed for each student for use in analyses.

### **Procedures**

Approval from the Institutional Review Board (IRB-02) was obtained prior to conducting the study. Following approval, students in grades seven and eight were recruited from a public middle school (the middle school with the largest enrollment) in the Columbia County School District that had exhibited interest in learning more about the prevalence of traditional and cyber aggression and victimization amongst their students and how the school could best address these behaviors. Since this project was conducted in collaboration with the school, some specific items of interest to the school were included in the measures that the students completed, although these items were not a focus of analyses for this study. Active consent was needed in order for the student to participate in the study. A consent letter detailing the purpose of the study (Appendix D) was sent home with each student to present to their parents or guardians. Parents either indicated that they did or did not want their child to participate in the survey, and the form was returned to school and given to the first period teachers. The teachers sent the consent forms to the front office on the identified day where a graduate student was waiting to collect them. The classrooms that had 100% return rate

for consent forms, regardless of whether the parent(s)/guardians consented or did not consent for the child to participate in the study, received a doughnut/bagel party after the study was complete. Only one classroom qualified for the doughnut/bagel party. Study surveys were administered on a date agreed upon with the school during the first class of the day in late May 2012; survey administration within participating classrooms was supervised by teachers, and the researchers were on site for consultation if needed.

Teachers were provided with a packet for each student participating in the study in their class. Each packet contained the measures the student was to complete and return to the teacher, as well as a student assent form (see Appendix E). The student assent form was at the top of each student packet. The order of the questionnaires was counterbalanced in each packet, such that the initial questionnaire after the assent form and demographic form varied among students to help control for order effects and questionnaire fatigue. On the packet were instructions delineating what each student was to complete and how it was to be completed. Additionally, there were instructions regarding the assent form. Before students began completing the packet, they either assented or declined assent to the study. Those students who declined to participate were to return the packet to the teacher. Teachers were instructed to notify students whose parents consented to the study that there would not be any disciplinary sanctions or impacts on their grade if they did not participate.

Each student packet was pre-assigned an ID number (which linked the forms together) and was passed out to the students the day of the survey. The ID numbers were completely arbitrary and were not able to be linked to any student's name.

Students were provided with a blank cover sheet, allowing them to cover their responses as they completed items. They were told that their responses would be anonymous and would not be able to be identified. Following assent to the student, students completed the demographic form first and then continued with the survey.

While the students were completing their questionnaires, the teachers were also completing a teacher report questionnaire about each student's social functioning. Teachers were provided with a consent form to read (Appendix F); by completing questionnaires they were consenting for the study. Due to this survey being anonymous, each student packet had a sticky note attached to the front containing the packet ID number. While students were completing the survey, teachers collected these sticky notes one at a time. The teacher wrote the student's ID number on their survey form, completed the survey, and placed the sticky note for that student on top of the survey form. Then, the teacher followed the same procedure for all students participating in the survey, completing one survey at a time. Teachers were instructed not to write student names on any forms. Completion time for the teacher report measures was estimated to take 15-25 minutes to complete. If the teacher declined to participate, then they simply left their survey forms blank and returned them to the front office with the student surveys, when they were complete. Teachers who did participate received a five dollar gift card to Starbucks following completion of the study.

Completed measures were placed in a manila envelope. The researchers were on site if any questions or concerns arose during the completion of the measures. No students reported experiencing distress during the completion of the study measures, and no significant problems were reported with survey administration. All classes

finished the survey within the first period and did not need additional time. Once a class had completed the measures a student brought the sealed envelopes to the front office for the researchers to collect.

Table 2-1. Sample demographic characteristics

Variable	Percent of sample (N=185)
<b>Gender</b>	
Males	44.9
Females	55.1
<b>Ethnicity</b>	
Caucasian	66.8
African American	19.6
Hispanic	4.9
Other	8.6
<b>GPA</b>	
4.0	16.4
3.0-3.9	35.0
2.0-2.9	32.2
1.0-1.9	13.6
0.0-0.9	2.8
<b>Suspensions</b>	
Yes	8.7
No	91.3
<b>Number of Suspensions</b>	
None	90.8
1	4.9
2-3	1.6
4-5	1.6
6 or more	1.0
<b>Referrals</b>	
None	76.8
1	11.4
2-3	8.6
4-5	1.0
6 or more	2.1
<b>Who Child Lives With*</b>	
Mother	88.1
Father	63.2
Grandparents	10.8
Relative	14.1
Step-mother	5.9
Step-father	12.4

\*Percentages listed may total more than 100% as students were allowed to select more than one option.

Table 2-2. Total sample mean and standard deviations of measures used in study

Variable	Mean	SD	Range
<b>APRI Total Bully</b>	<b>24.16</b>	<b>9.95</b>	<b>18-108</b>
Physical Bully	7.60	3.12	6-36
Social Bully	7.46	3.34	6-36
Verbal Bully	9.08	4.32	6-36
<b>APRI Total Victim</b>	<b>28.60</b>	<b>16.76</b>	<b>18-108</b>
Physical Victim	8.50	.07	6-36
Social Victim	9.54	5.96	6-36
Verbal Victim	11.05	7.17	6-36
<b>Cyber Aggression</b>	<b>.62</b>	<b>2.05</b>	<b>0-21</b>
<b>Cyber Victimization</b>	<b>1.06</b>	<b>3.12</b>	<b>0-24</b>
<b>MASC</b>			
Anxiety Disorders Index	47.13	11.36	25-75
Total Physical Symptoms	44.47	9.27	34-81
Total Social Anxiety	49.74	11.82	32-79
<b>PH2-Popularity Scale</b>	<b>49.96</b>	<b>10.77</b>	<b>24-68</b>
<b>GPA</b>	<b>2.86</b>	<b>.92</b>	<b>.0-4.0</b>
<b>Total Suspensions and Referrals</b>	<b>.84</b>	<b>2.61</b>	<b>0-20</b>
<b>Social Functioning Composite</b>	<b>49.88</b>	<b>8.87</b>	<b>18.8-64.4</b>

## CHAPTER 3 RESULTS

All data analyses were conducted using the Statistical Package for the Social Sciences 20.0 (SPSS).

### **Descriptive Analyses**

Descriptive analyses were conducted to determine the prevalence of traditional and cyber aggression and victimization behaviors within the sample. For the APRI measure a total score of 18 means no aggression or victimization; anything over 18 for the total Bully and Victim scales indicates that the youth has engaged in aggression or been a victim of aggression at least some of the time. Subscale scores (physical and social aggression and victimization) on the APRI exceeding 6 indicate that youth have either aggressed or been victimized at least sometimes. Mean T-scores for both the total aggression and victimization scales, as well as the subscales, indicated that youth reported aggressing or experiencing victimization at least some of the time.

Overall, 73.6% of students reported engaging in some type of traditional aggression toward peers at least once this past school year on the APRI. When examining those students who reported engaging in traditional aggression, 44.3% reported physical aggressing, 42.1% endorsed relational aggressing, and 69.4% endorsed verbal aggressing on peers. Of those aggressors, 73.4% were male and 73.7% female. See Table 3-1 for the breakdown of percentages of traditional and cyber aggression and victimization types by gender for the overall sample. Overall, 75.7% of youth reported being traditionally victimized by peers (70.9% male, 79.8% female). With regards to type of victimization, 43.1% endorsed physical victimization, 61.8% endorsed relational victimization, and 68.4% reported experiencing verbal victimization. In total,

verbal aggression seemed the most prominent form of aggression and victimization endorsed by students on the APRI. For the Cyber Aggression and Victimization measure descriptive analyses revealed that 20.6% of students reported cyber aggressing on peers (11.4% males, 27.7% females), while 30.7% students endorsed experiencing cyber victimization (20.0% male, 39.4% female).

When a cutoff criterion score of 24 was used for the Total Bully and Total Victim scales of the APRI measure in order to select students engaging in more frequent aggression or experiencing more frequent victimization, 36.5% of youth endorsed bullying others while 41.0% endorsed experiences of victimization. When this cutoff criterion was applied the prevalence of traditional aggression and victimization decreased and was just slightly higher than ranges reported in the literature for studies utilizing cutoff scores to identify bullies and victims. It should be noted that the APRI measure was created as a continuous measure and does not have a set cutoff criteria for defining bullies and victims.

Preliminary Analyses of Variance (ANOVA) were conducted to examine gender and ethnic differences in self-report measures that were the focus of analyses, in order to determine whether these demographic variables should be controlled for in subsequent analyses. Presented in Table 3-2 are the overall mean T-scores and standard deviations, as well as mean T-Scores and standard deviations by gender, from the Multidimensional Anxiety Scale for Children (MASC) and Piers-Harris Children's Self-Concept Scale-Second Edition (Piers-Harris 2). Also presented are the overall mean total scores from the Adolescent Peer Relations Instrument (APRI) and the Cyber Aggression and Victimization measure, as well as the mean total scores and standard

deviations by gender. Analyses of Variance (ANOVA) revealed significant gender differences between males and females on the Social Anxiety scale of the MASC  $F(1, 182) = 10.13, p < .01, R^2 = .23$ , with more females reported experiencing social anxiety compared to males. Analyses did not reveal gender differences for the Physical Symptoms of Anxiety scale  $F(1, 181) = .403, p = .53, R^2 = .05$ , and Anxiety Disorders Index  $F(1, 182) = .49, p = .48, R^2 = .04$  from the MASC, or the Popularity Domain  $F(1, 178) = 3.38, p = .07, R^2 = .14$  from the Piers-Harris 2.

Aim one of this study examined gender differences for various measures from the APRI and Cyber Aggression and Victimization measure (see Aim one findings below for details of these analyses) and revealed that there were gender differences for some of these variables. Due the relations between gender and several study variables, gender was entered as a demographic control variable in block one for all of the primary aims in this study utilizing hierarchical regressions.

For the ANOVA's examining ethnic differences for the self-report measures, results did not reveal significant differences between ethnicity groups for the MASC scales Physical Symptoms of Anxiety,  $F(1,181) = 1.10, p = .30, R^2 = .01$ , Social Anxiety,  $F(1,181) = .46, p = .50, R^2 = .00$ , and Anxiety Disorders Index,  $F(1,181) = .02, p = .88, R^2 = .00$ , as well as the Piers-Harris Popularity Domain,  $F(1,177) = .17, p = .68, R^2 = .00$ . In addition, the scales from the APRI, Total Bully,  $[F(1, 170) = 1.53, p = .22, R^2 = .09$ , Physical Bully,  $F(1, 180) = 2.74, p = .10, R^2 = .12$ , Social Bully,  $F(1, 180) = 1.89, p = .17, R^2 = .10$ , Total Victim,  $F(1, 170) = .03, p = .87, R^2 = .00$ , Physical Victim,  $F(1, 178) = .03, p = .87, R^2 = .00$ , and Social Victim,  $F(1, 175) = .01, p = .94, R^2 = .00$ , as well as the Cyber Aggression,  $F(1, 177) = 1.42, p = .24, R^2 = .09$ , and Cyber

Victimization,  $F(1, 176) = 2.68, p = .10, R^2 = .12$ , scales from the Cyber Aggression and Victimization measure used in this study, did not reveal significant differences between ethnicity groups. Thus ethnicity was not included as a demographic control variable in the analyses for the primary aims of this study.

As would be expected given that this is a community sample of adolescents, the mean T-scores for the MASC (65 or higher) and the Piers-Harris 2 (60 or higher or 39 or lower) did not fall in the Clinical range; however, the ranges indicate that some individuals did report clinically significant symptoms.

### **Primary Analyses**

Prior to conducting the hierarchical regressions for primary analyses, normality testing was conducted revealing variables that were not normally distributed. Several corrections via transformations were conducted to correct the non-parametric data. Following each transformation of normality the data was re-checked. Despite these corrections the data continued to remain not normally distributed. Thus, bootstrapped hierarchical regressions were used for the primary aims of this study. Bootstrapping is an analysis where robust estimates of standard errors are obtained. The standard error coefficient is the standard deviation of the mean when the mean is randomly drawn from the sample an infinite number of times. Further, it is an alternative to parametric estimates when the normality of the data is questioned.

Due to the number of analyses conducted for the primary study aims presented below, there could be a higher likelihood that Type 1 errors could occur with less stringent significance levels (i.e.,  $p < .05$ ). However, given that there are few studies examining some of the relationships being examined in the current study (particularly

with regards to cyber aggression and victimization),  $p$ -values of less than .05 were accepted as significant to help guard against missing significant findings and inform directions for further research. Notably, findings with  $p$ -values of less than .01 can likely be interpreted with greater confidence, whereas findings with  $p$ -values of only less than .05 should be interpreted with more caution.

### **Aim One**

**Analyses 1a: Gender differences in physical and relational aggression.** For this aim, two Analyses of Variance (ANOVA) were conducted comparing males and females on APRI scores for social and physical aggression, respectively, assessing whether females self-reported more relational aggression than males and males self-reported more physical aggression than females. Further, one Chi Square analysis was conducted comparing teacher's ratings of males and females for relational and physical aggression respectively, assessing whether teachers reported more females as relational aggressors and more males as physical aggressors on the Sociometric Teacher Report of Students' Social Functioning measure. The analysis using teacher data were conducted on a subset of the overall sample where teacher data was available.

According to the results, there was a significant difference between genders on the social aggression scale of the APRI, indicating that females were more likely to endorse relational aggression than males,  $F(1, 181) = 4.80, p < .05, R^2 = .16$ . However the effect size was small. For the physical aggression scores on the APRI, gender differences were not significant, indicating that males and females reported similar levels of physical aggression against peers,  $F(1, 181) = .01, p = .94, R^2 = .00$ .

For the teacher report measure, the data for students who had teacher report measures completed (110 students) was examined. The results of this aim indicated that teachers significantly reported more males as physical aggressors compared to females ( $\chi^2 = 4.73, p < .05$ ). Conversely, there were no gender differences between teachers' report of relational aggression ( $\chi^2 = .41, p = .52$ ).

**Analyses 1b: Gender differences in physical and relational victimization.**

For this aim, two Analyses of Variance (ANOVA) were conducted comparing males and females on APRI scores for physical and social victimization, respectively, assessing whether males self-reported greater victimization from physical aggression and females self-reported greater relational victimization. For the physical victimization scores on the APRI there was not a significant difference between males and females,  $F(1, 179) = .15, p = .70, R^2 = .01$ . Conversely, there was a significant gender difference on the APRI social victimization scale, indicating that females were more likely to endorse experiencing relational victimization compared to males,  $F(1, 176) = 10.13, p < .01, R^2 = .00$ . Teachers identified very few students as victims of aggression; therefore, Chi Square analyses were not conducted for the teacher report of student victimization data.

**Analyses 1c: Gender differences in cyber aggression.** To assess whether, due to some shared features between social and cyber aggression, females self-reported more cyber aggression than males, an Analyses of Variance (ANOVA) was conducted comparing male and female reports of Cyber Aggression on the Cyber Aggression and Victimization measure. According to the results of the analysis, males and females did not differ significantly in their self-report of cyber aggression,  $F(1, 178) = 2.55, p = .11, R^2 = .12$ .

Overall, for aim one females self-reported more relational aggression and victimization compared to males. For the physical aggression and victimization scales there were no significant differences between males and females. Analyses also revealed no differences between males and females for cyber aggression. Teachers reported more males as physically aggressive, while they did not report significant differences between males and females on relational aggression.

## **Aim Two**

**Analyses 2a: Associations between traditional and cyber aggression and social functioning.** For this aim, two bootstrap hierarchical regression analyses were conducted testing whether greater self-reported aggressive behaviors (total traditional and Cyber Aggression) were significantly associated with lower social functioning composite scores (standardized mean of self and teacher report). Block one of each regression consisted of gender as a demographic control variable. Total traditional aggression (APRI Bully) and Cyber Aggression (Cyber Aggression and Victimization measure) scores were entered into block two, respectively. All regression analyses statistics for this aim are presented in Tables 3-3 (total traditional aggression) and 3-4 (Cyber Aggression).

The overall fit for the model examining total traditional aggression was not significant ( $R^2 = .01$ ,  $p = .42$ ). In block one, gender was not a significant demographic predictor ( $B = 6.51$ ,  $p = .51$ ). The addition of total traditional aggression in block two was not significant ( $B = -.34$ ,  $p = .21$ ).

For the regression examining total Cyber Aggression the overall model was not significant ( $R^2 = .02$ ,  $p = .32$ ). In block one, gender was not a significant demographic

predictor ( $B = 6.89, p = .49$ ). The addition of total Cyber Aggression in block two was not significant ( $B = -1.99, p = .32$ ).

**Analyses 2b: Associations between traditional and cyber victimization and social functioning.** For this aim, two bootstrap hierarchical regression analyses were conducted testing whether greater self-reported peer victimization (traditional and cyber) was significantly associated with lower social functioning composite scores (standardized mean of self and teacher report). Block one of each regression consisted of gender as the demographic control variable. Total traditional victimization from the APRI (APRI Victim) and Cyber Victimization scores from the Cyber Aggression and Victimization measure were entered as predictors in block two, respectively. All regression analyses statistics for Aim 2b are presented in Tables 3-5 (traditional victimization) and 3-6 (Cyber Victimization).

The overall model including total traditional victimization was not significant ( $R^2 = .01, p = .46$ ). In block one, gender was not a significant demographic predictor ( $B = 7.17, p = .47$ ). The addition of total traditional victimization scores from the APRI in block two was not significant ( $B = -.18, p = .40$ ).

For the analysis including Cyber Victimization, the overall model was significant ( $R^2 = .10, p < .01$ ) following the addition of the Cyber Victimization variable in block two. However, gender was not a significant demographic predictor ( $B = -.90, p = .60$ ) in block one. Additionally, the beta weight for Cyber Victimization in block two was not significant ( $B = -.75, p = .08$ ).

Overall, analyses for aim two indicated that higher scores on the APRI total aggression and victimization scales, as well as on the Cyber Aggression and Cyber Victimization scales, did not predict poorer social functioning.

### **Aim Three**

For this aim, six bootstrap hierarchical regression analyses were conducted which included interaction terms. The results for Aims 3a and 3b were based on beta weights for the centered variables (APRI Victim scale, total Cyber Victimization) entered in block one of each regression analysis. Results for Aim 3c were based on the addition of the interaction term in block two of each regression analysis.

For three of the regressions conducted, one for each of the dependent variables (Anxiety Disorders Index, total Physical Symptoms of Anxiety, and total Social Anxiety from the MASC), a centered demographic variable and a centered total traditional victimization (APRI Victim scores) variable were entered in block one, while the gender by total traditional victimization interaction term was added in block two. All regression analyses statistics are presented in Table 3-7 (Anxiety Disorders Index), 3-8 (total Physical Symptoms of Anxiety), and 3-9 (total Social Anxiety). The remaining three regressions were similar except that centered gender and centered Cyber Victimization scores (from the Cyber Aggression and Victimization measure) were entered into block one, and the gender by Cyber Victimization interaction term was entered in block two. All regression analyses statistics are presented in Table 3-10 (Anxiety Disorders Index), 3-11 (total Physical Symptoms of Anxiety), and 3-12 (total Social Anxiety).

**Analyses 3a: Associations between total traditional victimization and anxiety.** Results from block one of the regression analyses were examined to determine whether greater self-reported total traditional victimization was significantly

positively associated with self-reported symptoms of anxiety disorders (MASC Anxiety Disorders Index), as well as total Physical Symptoms of Anxiety, and total Social Anxiety from the MASC. Of interest in block one of each regression were the beta weights for the centered total traditional victimization score from the APRI.

For the analysis predicting the Anxiety Disorders Index from the MASC, the beta weight for the centered total traditional victimization predictor in block one was significant ( $B = .37, p < .01$ ). As hypothesized, the relationship between total traditional victimization and the Anxiety Disorders Index of the MASC was positive, indicating that as traditional victimization scores on the APRI increased, scores on the Anxiety Disorders Index increased (indicating more anxiety).

For the analysis predicting total Physical Symptoms of Anxiety, the beta weight for the centered total traditional victimization predictor in block one was significant ( $B = .36, p < .01$ ). As hypothesized, the relationship between the total traditional victimization and the Physical Symptoms of Anxiety scale of the MASC was positive, indicating that as traditional victimization scores on the APRI increased, Physical Symptoms of Anxiety increased (indicating more anxiety).

For the analysis predicting total Social Anxiety, the beta weight for the centered total traditional victimization predictor in block one was significant ( $B = .39, p < .01$ ). As hypothesized, the relationship between total traditional victimization and the Social Anxiety scale of the MASC was positive, indicating that as traditional victimization scores on the APRI increased, Social Anxiety increased (indicating more anxiety).

**Analyses 3b: Associations between cyber victimization and anxiety.** Results from block one of the regression analyses were examined to determine whether greater

self-reported experiences of cyber victimization were significantly associated with greater self-reported anxiety disorder symptoms (MASC Anxiety Disorders Index), as well as total Physical Symptoms of Anxiety, and total Social Anxiety from the MASC. Of interest in block one of each regression were the beta weights for the centered total Cyber Victimization score from the Cyber Aggression and Victimization measure.

For the analysis predicting the Anxiety Disorders Index from the MASC, the beta weight for the centered Cyber Victimization predictor in block one was not significant ( $B = .60, p = .28$ ).

For the analysis predicting total Physical Symptoms of Anxiety, the beta weight for the centered Cyber Victimization predictor in block one was significant ( $B = 1.28, p < .01$ ). As hypothesized, the relationship between the Cyber Victimization scale and total Physical Symptoms of Anxiety was positive, indicating that higher Cyber Victimization scores were associated with higher scores on Physical Symptoms of Anxiety (more anxiety).

For the analysis predicting social anxiety, the beta weight for the centered Cyber Victimization predictor in block one was significant ( $B = .90, p < .05$ ). As hypothesized, the Cyber Victimization scale was positively associated with total Social Anxiety, such that higher scores on the Cyber Victimization scale were related to higher scores on total Social Anxiety (greater anxiety).

**Analyses 3c: Examining gender as a moderator of the relationship between peer victimization and anxiety.** For this aim, the results were extracted from block two of the six bootstrap hierarchical regression analyses, which contained the interaction terms testing whether gender moderated the relationship between peer victimization

and anxiety such that the relationship between peer victimization and anxiety was stronger for females than males. For each analysis the significance of  $R^2$  change from block one to block two, indicating the additional variance explained by the interaction term, will be discussed. Overall model  $R^2$  values can be found in the tables.

See Table 3-7 for regression statistics for the analysis including total traditional victimization and the dependent variable Anxiety Disorders Index from the MASC. For this analysis, the  $R^2$  change for block two, with the addition of the interaction term, was not significant ( $\Delta R^2 = .01, p = .19$ ). In block two, the interaction term gender by total traditional victimization was not significant ( $B = -.13, p = .12$ ), which did not support the hypothesis of gender as a moderator. In addition, the centered gender term was also not a significant predictor in block one or two ( $B = -1.13, p = .46$ , and  $B = -1.29, p = .40$ , respectively).

See Table 3-8 for regression statistics for the analysis including total traditional victimization and the dependent variable total Physical Symptoms of Anxiety from the MASC. For this analysis, the  $R^2$  change for block two, with the addition of the interaction term, was not significant ( $\Delta R^2 = .01, p = .23$ ). The addition of the interaction term gender by traditional victimization in block 2 was not significant ( $B = -.09, p = .30$ ), which did not support the hypothesis of gender as a moderator. The centered gender variable was also not significant in block one or two ( $B = -.79, p = .56$ , and  $B = -.90, p = .52$ , respectively).

See Table 3-9 for regression statistics for the analysis including total traditional victimization and the dependent variable total Social Anxiety from the MASC. For this analysis, the  $R^2$  change for block two, with the addition of the interaction term, was not

significant ( $\Delta R^2 = .01, p = .08$ ). In block two, the gender by total traditional victimization interaction term was not significant ( $B = -.18, p = .05$ ), which did not support the hypothesis of gender as a moderator. Conversely, the centered gender term in block one and two was a significant predictor ( $B = 3.73, p < .05$ , and  $B = 3.51, p < .05$ ). The relationship between gender and the dependent variable was positive, indicating that females reported a higher level of social anxiety compared to males.

See Table 3-10 for regression statistics for the analysis examining total Cyber Victimization and the dependent variable Anxiety Disorders Index from the MASC. For this analysis, the  $R^2$  change for block two, with the addition of the interaction term, was not significant ( $\Delta R^2 = .01, p = .19$ ). In block two, the interaction term gender by Cyber Victimization was not significant ( $B = .89, p = .35$ ), which did not support the hypothesis of gender as a moderator. Additionally, the centered gender term in block one and block two was not a significant predictor ( $B = .87, p = .62$ , and  $B = .96, p = .62$ , respectively).

See Table 3-11 for regression statistics for the analysis examining total Cyber Victimization and the dependent variable total Physical Symptoms of Anxiety from the MASC. For this analysis, the  $R^2$  change for block two, with the addition of the interaction term, was significant ( $\Delta R^2 = .03, p < .05$ ). However, the beta weight for the interaction term gender by Cyber Victimization in block two fell short of significance ( $B = 1.25, p = .09$ ), which did not support the hypothesis of gender as a moderator. The centered gender term was not a significant predictor in block one or two ( $B = .16, p = .92$ , and  $B = .29, p = .84$ , respectively).

See Table 3-12 for regression statistics for the analysis examining total Cyber Victimization and the dependent variable total Social Anxiety from the MASC. For this

analysis, the  $R^2$  change for block two, with the addition of the interaction term, was not significant ( $\Delta R^2 = .00$ ,  $p = .37$ ). The addition of the interaction term gender by Cyber Victimization in block two was not significant ( $B = .61$ ,  $p = .41$ ), which did not support the hypothesis of gender as a moderator. Conversely, the centered gender term was a significant predictor in block one and two ( $B = 5.16$ ,  $p < .05$ , and  $B = 5.22$ ,  $p < .05$  respectively). The relationship between gender and total Social Anxiety was positive. Females were more likely to endorse social anxiety than males.

Overall, results for aim three indicated that youth who reported higher rates of traditional and cyber victimization also reported high levels of anxiety. Further, females reported experiencing significantly more social anxiety compared to males. In each regression the interaction term was not significant, indicating that gender did not moderate the relationship between total and cyber victimization and each of the dependent anxiety variables.

#### **Aim Four**

**Analyses 4a: Associations between physical aggression and school functioning.** Two bootstrap hierarchical regression analyses, one for each of the dependent variables (GPA of current core classes and the total number of referrals and suspensions combined), were conducted testing whether greater self-reported physical aggression was significantly associated with poorer school functioning. In each of the two bootstrap hierarchical regressions, gender was entered into block one while the APRI physical aggression scores were entered into block two. The regression analyses statistics are presented in Table 3-13 (GPA) and 3-14 (total number of referrals and suspensions combined).

For the analysis predicting GPA, the overall model was not significant ( $R^2 = .02$ ,  $p = .46$ ) Gender was not a significant predictor ( $B = .21$ ,  $p = .15$ ) in block one. The addition of the physical aggression scores in block two was also not significant ( $B = -.02$ ,  $p = .55$ ), which did not support the hypothesis.

For the analysis predicting total number of suspensions and referrals combined, the overall model was significant ( $R^2 = .11$ ,  $p < .001$ ). Gender was not a significant predictor ( $B = -.34$ ,  $p = .39$ ) in block one. The addition of the physical aggression predictor in block two fell just short of significance ( $B = .26$ ,  $p = .06$ ).

**Analyses 4b: Associations between cyber aggression and school functioning.** Two bootstrap hierarchical regression analyses, one for each of the dependent variables (GPA of current core classes and the total number of referrals and suspensions combined), were conducted testing whether greater self-reported cyber aggression was significantly related to school functioning, with the prediction that they would not be related. Gender was entered into block one of the analyses, while the total Cyber Aggression variable was entered into block two. The regression analyses statistics are presented in Table 3-15 (GPA) and 3-16 (total number of suspensions and referrals combined).

For the analysis predicting GPA, the overall fit of the model was just short of significance ( $R^2 = .04$ ,  $p = .05$ ). Gender was not a significant predictor in block one ( $B = .21$ ,  $p = .13$ ). The addition of the Cyber Aggression predictor to block two, however, was significant ( $B = -.07$ ,  $p < .05$ ), resulting in 3.5% of the variance being explained. The relationship between cyber aggression and GPA was negative. Lower Cyber Aggression scores were associated with higher GPA's. Thus, youth with higher GPA's

were less likely to engage in cyber aggression, which was contrary to the hypothesis that these variables would not be related. However, this finding should be interpreted with caution given that the overall model was just short of significance.

For the analysis predicting total number of suspensions and referrals, the overall fit of the model was significant ( $R^2 = .14, p < .001$ ). Gender was not a significant predictor ( $B = -.53, p = .22$ ) in block one. The addition of the Cyber Aggression predictor to block two was significant ( $B = .47, p < .05$ ), resulting in 14.2% of the variance being explained. There was a positive relationship between the cyber aggression predictor and the dependent variable, indicating that as reports of cyber aggression increased, so did the total number of suspensions and referrals. Therefore, youth who reported engaging in more cyber aggression also reported receiving more suspensions and referrals combined, which was contrary to the hypothesis that these variables would not be related.

**Analyses 4c: Associations between traditional and cyber victimization and school functioning.** Four bootstrap hierarchical regressions, one for each of the dependent variables (GPA of current core classes and the total number of referrals and suspensions combined), were conducted testing whether greater self-reported total traditional and Cyber Victimization, respectively, were significantly associated with poorer school functioning as measured by GPA, but not significantly associated with the total number of suspensions and referrals. The first two bootstrap hierarchical regression analyses contained gender in block one, while the total traditional victimization scale from the APRI (total Victim) was entered into block two. For the two remaining bootstrap hierarchical regressions, gender was entered into block one, while

total Cyber Victimization was entered into block two. The regression analyses statistics are presented in Tables 3-17 (GPA with traditional victimization as the predictor), 3-18 (total number of suspensions and referrals with traditional victimization as the predictor), 3-19 (GPA with cyber victimization as the predictor), and 3-20 (total number of suspensions and referrals with cyber victimization as the predictor).

For the analysis including total traditional victimization predicting GPA, the overall fit of the model was significant ( $R^2 = .04$ ,  $p < .05$ ). Gender was not a significant predictor ( $B = .20$ ,  $p = .16$ ) in block one. The addition of the total traditional victimization scale was significant in block two ( $B = -.01$ ,  $p < .05$ ), resulting in 3.6% of the variance being explained. As hypothesized, the relationship between the total traditional victimization scale and GPA was negative indicating that as self-reports of traditional victimization increased, GPA decreased.

For the analysis including total traditional victimization predicting total number of suspensions and referrals, the overall fit of the model was significant ( $R^2 = .10$ ,  $p < .001$ ). Gender was not a significant predictor ( $B = -.33$ ,  $p = .44$ ) in block one. The addition of the total traditional victimization score in block two also was not significant ( $B = .05$ ,  $p = .10$ ).

For the analysis including Cyber Victimization predicting GPA, the overall fit of the model was not significant ( $R^2 = .03$ ,  $p = .09$ ). Gender was not a significant predictor ( $B = .22$ ,  $p = .11$ ) in block one. Similarly, the addition of the Cyber Victimization scale in block two did not result in significance ( $B = -.04$ ,  $p = .06$ ).

For the analysis including Cyber Victimization predicting total number of suspensions and referrals combined, the overall fit of the model was significant ( $R^2$

=.17,  $p < .001$ ). Gender was not a significant predictor ( $B = -.56$ ,  $p = .19$ ) in block one. The addition of the Cyber Victimization score in block two was also not a significant predictor ( $B = .33$ ,  $p = .05$ ), although it fell just short of significance which would provide some evidence against the hypothesis that these variables would not be related. However, this must be interpreted with caution given the fact that it fell short of the .05 significance level.

Overall, analyses for aim four indicated that physical aggression was not significantly associated with poorer school functioning. However, greater self-reported cyber aggression predicted GPA. Further, youth who reported engaging in more cyber aggression also reported receiving more suspensions and referrals combined. Regarding victimization variables, self-reported traditional victimization predicted poorer academic functioning as measured by GPA but not the total number of suspensions and referrals. Cyber victimization was not a significant predictor of school functioning as measured by GPA and the total number of suspensions and referrals.

Table 3-1. Percent of sample experiencing aggression and victimization at least once this year by gender

Variable	<i>N</i>	%
<b>APRI Total Aggression</b>	<b>131</b>	<b>73.6</b>
Male	58	73.4
Female	73	73.7
Physical Aggression	81	44.3
Male	41	50.6
Female	40	39.2
Social Aggression	77	42.1
Male	23	28.4
Female	54	52.9
Verbal Aggression	127	69.4
Male	54	66.7
Female	73	71.6
<b>APRI Total Victimization</b>	<b>131</b>	<b>75.7</b>
Male	56	70.9
Female	75	79.8
Physical Victimization	78	43.1
Male	35	43.8
Female	43	42.6
Social Victimization	110	61.8
Male	39	49.4
Female	71	71.7
Verbal Victimization	121	68.4
Male	49	61.3
Female	72	74.2
<b>Cyber Aggression</b>	<b>37</b>	<b>20.6</b>
Male	9	11.4
Female	28	27.7
<b>Cyber Victimization</b>	<b>55</b>	<b>30.7</b>
Male	16	20.0
Female	39	39.4

Table 3-2. Means and standard deviations of study measures by gender

Variable	Male		Female		F	p	R <sup>2</sup>
	M	SD	M	SD			
MASC Anxiety Disorders Index	46.48	11.58	47.66	11.21	.49	.48	.04
MASC Physical Symptoms	43.99	9.51	44.86	9.10	.40	.53	.05
MASC Social Anxiety	46.76**	11.18	52.20**	11.82	10.13	.00	.23
PH2 Popularity Scale	51.60	10.83	48.65	10.60	3.38	.07	.14
APRI Total Bully	23.03	6.84	25.06	11.82	1.85	.18	.10
APRI Physical Bully	7.58	2.22	7.62	3.69	.01	.94	.00
APRI Social Bully	6.86*	2.47	7.94*	3.84	4.80	.03*	.16
APRI Verbal Bully	8.52	3.32	9.53	4.94	2.50	.12	.12
APRI Total Victim	25.87	13.79	30.88	18.66	3.90	.05	.15
APRI Physical Victim	8.24	4.32	8.53	5.61	.15	.70	.01
APRI Social Victim	8.03**	4.54	10.76**	6.66	10.13	.00**	.00
APRI Verbal Victim	9.85*	6.08	12.04*	7.86	4.16	.04*	.15
Cyber Aggression	.34	1.30	.83	2.47	2.55	.11	.12
Cyber Victimization	.76	3.01	1.30	3.15	1.33	.25	.09

Note. Significant *p* values refer to differences between gender.

\**p* < .05. \*\**p* < .01.

Table 3-3. Summary of regression statistics for aim 2-a: Association between traditional aggression and social functioning

Variable	<i>B</i>	SE	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> change
Block 1			.01	.01
Gender	6.51	8.05		
Block 2			.01	.01
Gender	6.86	8.12		
APRI Total Traditional Aggression	-.34	.15		

Note: No values were significant.

Table 3-4. Summary of regression statistics for aim 2-a: Association between cyber aggression and social functioning

Variable	<i>B</i>	SE	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> change
Block 1			.01	.01
Gender	6.89	8.36		
Block 2			.02	.01
Gender	7.71	8.61		
Cyber Aggression	-1.99	1.62		

Note: No values were significant.

Table 3-5. Summary of regression statistics for aim 2-b: Association between traditional victimization and social functioning

Variable	<i>B</i>	SE	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> change
Block 1			.01	.01
Gender	7.17	8.58		
Block 2			.01	.01
Gender	7.99	8.19		
APRI Total Traditional Victimization	-.18	.17		

Note: No values were significant.

Table 3-6. Summary of regression statistics for aim 2-b: Association between cyber victimization and social functioning

Variable	<i>B</i>	SE	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> change
Block 1			.00	.00
Gender	-.90	1.71		
Block 2			.10**	.10**
Gender	-.56	1.71		
Cyber Victimization	-.75	.53		

\*\* *p* < .01.

Table 3-7. Summary of regression statistics for aim 3-a and 3-c: Anxiety Disorders Index from the MASC

Variable	<i>B</i>	SE	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> change
Block 1			.26***	.26***
Gender	-1.13	1.48		
Total Traditional Victimization	.37**	.05**		
Block 2			.27	.01
Gender	-1.29	1.50		
Total Traditional Victimization	.39**	.05**		
Interaction (gender by Total Traditional Victimization)	-.13	.10		

Note. Variables were centered prior to analyses.

\*\* *p* < .01. \*\*\* *p* < .001.

Table 3-8. Summary of regression statistics for aim 3-a and 3-c: Total Physical Symptoms of Anxiety from the MASC

Variable	<i>B</i>	SE	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> change
Block 1			.37***	.37***
Gender	-.79	1.18		
Total Traditional Victimization	.36**	.04**		
Block 2			.38	.01
Gender	-.90	1.25		
Total Traditional Victimization	.37**	.04**		
Interaction (gender by Total Traditional Victimization)	-.09	.09		

Note. Variables were centered prior to analyses.

\*\* *p* < .01. \*\*\* *p* < .001.

Table 3-9. Summary of regression statistics for aim 3-a and 3-c: Total Social Anxiety from the MASC

Variable	<i>B</i>	SE	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> change
Block 1			.31***	.31***
Gender	3.73*	1.51*		
Total Traditional Victimization	.39**	.04**		
Block 2			.32	.01
Gender	3.51*	1.52*		
Total Traditional Victimization	.41**	.05**		
Interaction (gender by Total Traditional Victimization)	-.18	.10		

Note. Variables were centered prior to analyses.

\* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

Table 3-10. Summary of regression statistics for aim 3-b and 3-c: Anxiety Disorders Index from the MASC

Variable	<i>B</i>	SE	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> change
Block 1			.02	.02
Gender	.87	1.75		
Cyber Victimization	.60	.62		
Block 2			.03	.01
Gender	.96	2.03		
Cyber Victimization	.76	.71		
Interaction (gender by Cyber Victimization)	.89	1.58		

Note. Variables were centered prior to analyses. No values were significant.

Table 3-11. Summary of regression statistics for aim 3-b and 3-c: Total Physical Symptoms of Anxiety from the MASC

Variable	<i>B</i>	SE	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> change
Block 1			.13***	.13***
Gender	.16	1.39		
Cyber Victimization	1.28**	.54**		
Block 2			.16*	.03*
Gender	.29	1.75		
Cyber Victimization	1.49**	.68**		
Interaction (Gender by Cyber Victimization)	1.25	1.48		

Note. Variables were centered prior to analyses.

\*\* *p* < .01. \*\*\* *p* < .001.

Table 3-12. Summary of regression statistics for aim 3-b and 3-c: Total Social Anxiety from the MASC

Variable	<i>B</i>	SE	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> change
Block 1			.09***	.09***
Gender	5.16*	1.71*		
Cyber Victimization	.90*	.49*		
Block 2			.10	.00
Gender	5.22*	2.07*		
Cyber Victimization	1.00	.76		
Interaction (gender by Cyber Victimization)	.61	1.63		

Note. Variables were centered prior to analyses.

\*  $p < .05$ . \*\*\*  $p < .001$ .

Table 3-13. Summary of regression statistics for aim 4-a: GPA

Variable	<i>B</i>	SE	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> change
Block 1			.01	.01
Gender	.21	.14		
Block 2			.02	.00
Gender	.21	.14		
Physical Aggression	-.02	.03		

Note. No values were significant.

Table 3-14. Summary of regression statistics for aim 4-a: Total number of suspensions and referrals

Variable	<i>B</i>	SE	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> change
Block 1			.01	.01
Gender	-.34	.37		
Block 2			.11***	.10***
Gender	-.35	.36		
Physical Aggression	.26	.12		

\*\*\*  $p < .001$ .

Table 3-15. Summary of regression statistics for aim 4-b: GPA

Variable	<i>B</i>	SE	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> change
Block 1			.01	.01
Gender	.21	.14		
Block 2			.04	.02
Gender	.24	.13		
Cyber Aggression	-.07*	.03*		

\*  $p < .05$ .

Table 3-16. Summary of regression statistics for aim 4-b: Total number of suspensions and referrals

Variable	<i>B</i>	SE	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> change
Block 1			.01	.01
Gender	-.53	.41		
Block 2			.14***	.13***
Gender	-.76	.39		
Cyber Aggression	.47*	.20*		

\*  $p < .05$ . \*\*\*  $p < .001$ .

Table 3-17. Summary of regression statistics for aim 4-c: GPA

Variable	<i>B</i>	SE	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> change
Block 1			.01	.01
Gender	.20	.15		
Block 2			.04*	.02*
Gender	.24	.15		
Total Traditional Victimization	-.01*	.00*		

\*  $p < .05$ .

Table 3-18. Summary of regression statistics for aim 4-c: Total number of suspensions and referrals

Variable	<i>B</i>	SE	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> change
Block 1			.00	.00
Gender	-.33	.39		
Block 2			.10***	.09***
Gender	-.56	.35		
Total Traditional Victimization	.05	.02		

\*\*\*  $p < .001$ .

Table 3-19. Summary of regression statistics for aim 4-c: GPA

Variable	<i>B</i>	SE	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> change
Block 1			.01	.01
Gender	.22	.13		
Block 2			.03	.02
Gender	.24	.14		
Cyber Victimization	-.04	.02		

Note: No values were significant.

Table 3-20. Summary of regression statistics for aim 4-c: Total number of suspensions and referrals

Variable	<i>B</i>	SE	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> change
Block 1			.01	.01
Gender	-.56	.41		
Block 2			.17***	.15***
Gender	-.74	.39		
Cyber Victimization	.33	.15		

\*\*\*  $p < .001$ .

## CHAPTER 4 DISCUSSION

Overall, the results of the current study demonstrated that traditional aggression and victimization is prevalent within this rural sample, as 73.6% of youth reported aggressing and 75.7% endorsed experiencing victimization at least once during the school year. This rate is higher than past research would indicate, but can be accounted for by the inclusion of any amount of peer aggression or victimization. Previous research has cited 4 to 36% peer aggression rates and 9 to 31% victimization rates (Berger, 2007; O'Brennan, Bradshaw, & Sawyer, 2009; Spriggs et al., 2007). The majority of studies categorized the aggression and victimization variables based upon cutoffs, while this study kept the variables as continuous. Thus, the percentages cited include frequencies ranging from once to multiple times this past year. When a cutoff criterion of 24 was applied to the Total Bully and Total Victim scales of the APRI measure, 36.5% and 41.0% of youth reported aggressing and experiencing victimization respectively. While these percentages are similar to prevalence rates cited within the literature, they are still slightly higher. The cutoff criterion of 24 meant that youth endorsed experiencing victimization once a week on at least two items. Conversely, cyber aggression and victimization does not appear as prevalent as traditional aggression and victimization. Within this rural sample, 27.7% of youth endorsed cyber aggressing and 39.4% endorsed experiencing any cyber victimization. Previous studies cited 4 to 35% prevalence rates of cyber aggression and 5 to 14% cyber victimization rates (Dempsey et al., 2009; Hinduja & Patchin, 2008; Kowalski & Limber, 2007; Sourander et al., 2010; Williams & Guerra, 2007; Wang et al., 2009). The prevalence of cyber aggression was comparable to urban and suburban rates described within the

literature, while cyber victimization rates were higher than previous literature indicated. This result could pertain to the lack of cutoff criterion used to measure cyber victimization. In this study, the variable was continuous, thereby resulting in more youth being identified as a victim. In general, cyber aggression and victimization rates continue to remain less prevalent compared to traditional forms of aggression. This could partially be due to the lack of established measures assessing this construct. Some research assessing these variables used only a few questions, ranging from two to four, and only counted greater frequencies, such as two or three times a month, when determining the prevalence of cyber aggression and victimization (Wang et al., 2009; Spriggs et al., 2007). Conversely, other studies evaluated cyber aggression and victimization as a continuous variable, without a categorical cutoff (Erdue-Baker, 2010; Kowalski & Limber, 2007). The lack of comparable rates between traditional and cyber aggression and victimization could additionally relate to the fact that traditional aggression continues to be the most popular method of engaging in peer victimization.

In contrast to the gender differences found with some of the peer aggression and victimization scales (discussed below), descriptive analyses revealed no ethnic differences for the physical aggression and victimization, social aggression and victimization, and total aggression and victimization scales of the APRI, as well as Cyber Aggression and Victimization scales. A prior study in the field revealed ethnicity differences in physical and verbal aggression where African Americans reported more aggression in these categories compared to Caucasians and Latinos (Wang et al., 2009). In addition, Latinos and Caucasians reported more relational victimization than African Americans. No other differences were found. Caucasians were the predominant

ethnicity in the current sample, which may have made it more difficult to detect ethnic differences if they are present. The high percentage of Caucasians in this study was consistent with previous research (Craig, 1997; Pornari & Wood, 2010) and the population demographics of the county in which it was conducted. However, this may not be reflective of other counties within Florida or the country, and suggests the need for future studies to include more diverse samples.

The results for the first aim of this study partially supported the hypotheses that males would self-report more physical aggression than females and females would self-report more relational aggression than males, and that males would report more physical victimization than females and females would self-report more relational victimization than males. Specifically, for the Social Aggression scale of the APRI females self-reported more relational aggression compared to males. Additionally, for the Social Victimization scale of the APRI females self-reported experiencing more relational victimization compared to males. The identification of females as being more likely to engage in relational aggression and victimization was similar to other findings within the literature although there is also some research supporting a lack of gender differences in type of aggression (Craig, 1998; Pornari & Wood, 2010). Existing research continues to lack understanding of the developmental process regarding relationally aggressive behaviors (Spieker, 2012). However, despite the lack of understanding of the developmental process there is substantial research, dating as early as the 1920s, indicating that gender differences exist in reference to relational aggression (Archer, 2004; Craig, 1998, Pornari & Wood, 2010). Preliminary data indicates that maternal callousness and low maternal sensitivity put females at risk for

relationally aggressive behaviors (Brown et al., 2007; Casas et al., 2006; Curtner-Smith et al., 2006). The results of this study continue to support general models of aggressive behaviors indicating that females are more likely to engage in relationally aggressive behaviors compared to males (Spieker et al., 2012).

In contrast, for the Physical Aggression and Victimization scales there were no significant differences between males and females. This lack of difference could be partly attributed to more females in the study compared to males. Also, evidence exists within the literature indicating a lack of gender discrepancy for physical aggression and victimization (Peskin, Tortolero, & Markham, 2006). This study consisted of a sample drawn from eight urban middle and high schools in Texas, with aggression and victimization being measured with eight and four questions, respectively, within the past thirty days. On the other hand, the majority of research, regardless of methodology and the time period when research was conducted, supports gender disparities, where males are typically more likely to engage in, and are victims of, physical aggression (Erdur-Baker, 2012; Rodkin & Berger, 2008; Zimmer-Gembeck, Geiger, & Crick, 2005). Notably, the majority of the studies supporting gender disparities were conducted in urban and suburban areas or in other countries. The results of this study are not consistent with the predominant findings within the literature supporting gender disparities for physical aggression and victimization. In addition to the current sample containing more females than males, this lack of findings could also potentially be attributed to the nature of the rural sample included in this study, which may differ from populations used in previous research studies. For this sample, findings such as these

are concerning and suggest that female engagement in physical peer aggression needs to be further studied and targeted in bullying prevention programs.

Contrary to the hypothesis that there would be gender discrepancies in cyber aggression, analyses revealed no differences between males and females. While this finding is similar to some previous research findings, evidence also exists suggesting that a larger proportion of females report being perpetrators and victims of cyber aggression (Dempsey et al., 2009; Erdur-Baker, 2010; Kowalski & Limber, 2007; Marini et al., 2006; Patchin & Hinduja, 2006). The absence of findings in this study may partly relate to the continuous measurement of cyber aggression, as opposed to using cutoffs to determine aggressors. If in previous research males were more likely to endorse fewer cyber aggression episodes compared to females, applying a cutoff criterion to define cyber aggressors could identify more females as aggressors. Thus, more research is needed examining gender differences using continuous measures.

The results for aim one partially supported the hypotheses that teachers would rate males as more physically aggressive and females as more relationally aggressive. Teachers reported more males as physically aggressive, while they did not report significant differences between males and females on relational aggression. Analyses could not be conducted examining gender differences in teacher reports of victimization, as teachers identified very few students as victims of aggression. These results could be attributed to several factors. Evidence exists within the literature supporting the stability of teacher reports of physical aggression over time, while reports of relational aggression are not consistent over time (Kuppens et al., 2009). This difference could relate to the difference between physical and relational aggression. Specifically,

physically aggressive behaviors are disruptive within the classroom and much more likely to be noticed, whereas relational aggression is more difficult to detect and more likely to occur in areas where teachers are typically not present (i.e., the hallways, lunchroom, and on the bus). One study indicated that youth report teachers as lacking awareness of youths' aggression and victimization status (Bauman & Del Rio, 2005; Kochenderfer-Ladd & Pelletier, 2008; Smith & Shu 2000). Another study found that teachers have difficulty successfully identifying relational aggression and victimization, which could have potentially contributed to the lack of significant findings for this aim (Bradshaw et al., 2007). In addition to these factors, the teachers who participated in this study may have had less knowledge regarding the experiences and behavior of some of the students in their class, as some of the students only saw the teacher for one class period and did not have contact with that teacher for the remainder of the day. Overall, the current findings appear consistent with the research presented on this topic (Renk & Phares, 2004).

For aim two examining the relationship between self-reports of traditional peer aggression and victimization, as well as cyber aggression and victimization, and social functioning, the hypotheses were not supported by the results of this study. Higher scores on the APRI Total Aggression and Victimization scales, as well as the Cyber Aggression and Cyber Victimization scales did not predict poorer social functioning as expected. This lack of significance could be attributed to the way a youth's social functioning was measured. While the social functioning composite was calculated using data from multiple informants (self and teacher), peer report was not able to be included, which is the gold standard when measuring youth's social functioning.

Additionally, teacher ratings of youth social functioning, which comprised one aspect of the social functioning composite used in analyses, were based on one item and were highly positively skewed. Highly positive ratings may have restricted the range of the composite measure, therefore making it more difficult to find significant results.

Due to these concerns regarding teacher ratings, exploratory analyses examining social functioning using only the Piers-Harris 2 Popularity Domain were conducted. These analyses revealed a significant relationship between self-reports of traditional peer aggression ( $B = -.17, p < .05$ ) and victimization ( $B = -.36, p < .01$ ) and the Piers-Harris 2 Popularity Domain; there was also a significant relationship for cyber aggression ( $B = -.84, p < .05$ ), but not cyber victimization ( $B = -.73, p = .06$ ). As youth self-report of traditional aggression and victimization and cyber aggression decreased, scores on the Piers-Harris 2 increased indicating better social functioning. These results suggest that the highly positive teacher ratings restricted the range of the overall composite measure, thus reducing the chance of finding significant results.

For aim three examining whether traditional and cyber victimization predicted self-reported symptoms of anxiety, the hypotheses for aim 3a and 3b were mostly supported. Specifically, youth who reported higher rates of traditional and cyber victimization also reported high levels of anxiety. Further, females reported experiencing significantly more social anxiety compared to males. These results are consistent with previous research (Craig, 1998; Dempsey et al., 2009). Youth who experience traditional victimization are more likely to endorse symptoms of anxiety compared to non-victimized peers. Furthermore, the results also support a relationship between self-reports of cyber victimization and greater physical symptoms of anxiety and social

anxiety, but not anxiety symptoms that are indicative of an anxiety disorder. There is a shortage of research within the literature linking cyber victimization to symptoms of anxiety. Therefore, the current results suggest that cyber victimization is related to anxiety in line with findings for traditional peer victimization.

In addition, aim 3c hypothesized that gender would moderate the relationship between traditional and cyber victimization and each of the dependent anxiety variables. The results of this study did not support the hypotheses. The only interaction term that approached significance ( $p = .05$ ) was in the analysis for gender moderating the relationship between total traditional victimization and total Social Anxiety. In each regression the interaction term was not significant, indicating that gender did not moderate the relationship between total and cyber victimization and each of the dependent anxiety variables. For two of the anxiety scales, total Physical Symptoms of Anxiety and Anxiety Disorders Index, gender was also not a significant predictor in block one. However, for the total Social Anxiety scale, gender was a significant predictor in block one, even though the interaction term was not significant.

The lack of significant interaction effects could be attributed to several factors, the first being that gender may not moderate the relationships between traditional and cyber victimization and symptoms of anxiety. Another reason could potentially be attributed to the MASC norms. The MASC attempts to control for gender differences by providing separate norms for males and females. Thus, the lack of significant moderating effects of gender might be attributed to the MASC T-scores being gender normed. In an attempt to determine the impact that the gender normed T-scores may have had on the results of the regression, exploratory analyses were conducted

repeating each regression for this aim using the raw scores of the MASC scales instead of the T-scores. According to the results, the only interaction term that was significant ( $p < .05$ ) was in the analysis for gender moderating the relationship between total traditional victimization and total Social Anxiety. For the remaining regressions, the interaction term remained non-significant. Thus, the gender-normed T-scores appeared to have had little impact on the results.

Alternatively, as the sample in this study is a non-clinical sample, the majority of participants endorsed non-clinically significant levels of anxiety, thus restricting the range for this measure. Perhaps findings would have differed if the sample had been larger and had a greater range of scores on the MASC. Lastly, when examining the correlations between anxiety symptoms and reports of traditional and cyber victimization for males and females separately, it was found that for the majority of the scales the magnitude of the relationship between the variables did not differ significantly for males and females, which would support the absence of moderator effects. However, there was one exception. The correlation for males compared to females between Cyber Victimization and the Physical Symptoms of Anxiety scale was of significantly lower magnitude ( $p < .05$ ); while both correlations were positive the relationship between these variables was stronger for females compared to males. This finding suggests a possibility that there may also have been insufficient power to detect moderator effects of lower magnitude if they were present.

Aim four examined relationships between self-reported peer aggression and victimization (both traditional and cyber) and school functioning as measured by GPA of core classes and the total number of referrals and suspensions combined. It was

hypothesized that greater self-reported physical aggression would be significantly associated with poorer school functioning, whereas cyber aggression would not be associated with school functioning. The results did not support these hypotheses. Despite evidence indicating that students who are more aggressive have lower academic functioning compared to non-aggressive peers, the result of this aim was not commensurate with previous research findings. Similarly, although research demonstrates that physical aggressors tend to receive more suspensions and are more likely to fall behind academically compared to non-aggressive peers (DeRosier & Lloyd, 2010), the results of this aim were not commensurate with previous research findings, although they fell just short of significance in the expected direction. Conversely, greater self-reported cyber aggression predicted GPA, such that youth with lower GPA's were more likely to engage in cyber aggression. Further, youth who reported engaging in more cyber aggression also reported receiving more suspensions and referrals combined. Both of these findings were contrary to the hypothesis that cyber aggression would not be related to school functioning. Although there is a dearth of literature regarding the relationship between academic functioning and cyber aggression, one study found that cyber aggressors tended to experience more school impairment such as receiving detentions and suspensions (Ybarra et al., 2007).

Additionally, it was hypothesized that greater self-reported traditional and cyber victimization would be significantly associated with poorer school functioning as measured by GPA, but not significantly associated with the number of suspensions and referrals. The results mostly supported the hypotheses, such that youth who reported experiencing more traditional victimization had poorer academic functioning as

measured by GPA. In addition, commensurate with the hypothesis traditional victimization was not a significant predictor of the total number of suspensions and referrals. While research supports poorer academic functioning as measured by GPA in traditionally victimized youth, there is a lack of support for traditionally victimized youth receiving a greater number of suspensions and referrals compared to their non-victimized peers (DeRosier & Lloyd, 2012; Eaton et. al., 2008).

Contrary to hypotheses, cyber victimization was not a significant predictor of school functioning as measured by GPA. However, as hypothesized, cyber victimization was not significantly related to the total number of suspensions and referrals. However, the relationship did fall just short of significance, suggesting that the two variables might actually have some relationship with one another contrary to the hypothesis. There is a lack of research focusing on cyber victimization and measures of school functioning. However, some previous research has indicated that youth who are victims of cyber aggression often receive more frequent detentions or suspensions compared to non-cyber victimized peers (Ybarra et al., 2007). However, the majority of research focusing on cyber aggression and victimization studies in general did not study cyber aggression and victimization as unique variables apart from traditional aggression and victimization (Wang et al., 2009; Kowalski & Limber 2007).

A potential reason for the unexpected significant finding that cyber aggression was related to a greater number of suspensions and referrals could be due to how suspensions and referrals were measured. This study relied on youth self-report for determining the number of suspensions and referrals received. Students could have over-reported or under-reported the number of referrals and suspensions they received

this school year, thus introducing measurement error for this variable. In the current sample, under-reporting may have been a concern, as the total number of self-reported referrals in this sample (105) was relatively lower than might be expected given aggregate school records data for referrals. Taking 26.7% (percentage of seventh and eighth graders participating in the study) of referrals from school records data (183) suggests that reports of referrals should have been higher. However, this would assume that referrals are equally distributed across students, which is not the case. Also, it is unknown how representative this sample was with regards to referrals and suspension compared to the total seventh and eighth grade student body, and it is likely that students who get more referrals could be underrepresented in the current sample, as these students may have been less likely to have parents sign consent forms or participate. Nonetheless, the current data probably under-estimate's the true number of referrals for participating students. However, when data for the current sample are broken down by gender, 58.1% of total referrals were reported by males while 41.9% were reported by females, which was similar to the gender breakdowns for the school district. These percentages indicate that the overall sample data was consistent with what is seen at the district level with regards to gender distribution. Finally, this study did not control for traditional and cyber victimization when examining the relationship of aggression to total suspensions and referrals. It could be that this relationship differs for those who are both victims and aggressors, as compared to those who are only aggressors.

Overall, the current findings need to be interpreted in light of the fact that analyses were conducted examining traditional and cyber aggression as separate

variables. However, concerns have been raised by researchers in the field of peer victimization that these may be highly overlapping constructs. According to Olweus (2012), the prevalence of cyber aggression is actually over-emphasized within the literature, and he argues that most students who engage in cyber aggression are also perpetrators of traditional peer aggression, and that most cyber victims are also victims of traditional forms of aggression. In line with these arguments, there is research to support that traditional and cyber aggression and victimization are similarly overlapping constructs, such that cyber aggression is an extension of traditional peer aggression with little unique qualities (Erdur-Baler. 2010; Li, 2005; Li, 2006; Raskauskas & Stoltz, 2007).

To determine the extent of overlap in the current study, follow-up exploratory analyses were conducted to determine if cyber aggression and victimization were independent and unique from traditional aggression and victimization. According to the results, cyber aggression was not independent from traditional aggression. There was a 100% overlap between traditional and cyber aggression variables, such that all students who indicated perpetrating cyber aggression also reported perpetrating traditional forms of peer aggression. This finding indicates that cyber aggression did not occur independently of traditional aggression within this sample. Similarly, only 4.8% of the current sample endorsed uniquely experiencing cyber victimization independently of traditional victimization; the majority of cyber victims overlapped with victims of traditional peer aggression. These results support arguments and findings that cyber aggression and victimization are not necessarily unique and separable from traditional aggression and victimization. Olweus (2012) reported research findings supporting the

high degree of overlap ranging from 88% to 93% between traditional and cyber aggression and victimization.

Overall, results from the current study indicate that children who cyber aggress and experience cyber victimization are also involved in traditional forms of peer aggression and victimization, and thus may not be uniquely different from their peers who are involved only in traditional aggression and victimization. This likely explains why similar relationships were found between traditional and cyber forms of aggression and victimization and other variables examined in this study (i.e., anxiety, school functioning). In order to examine whether cyber aggression or victimization have unique effects, it would be important to look at both traditional and cyber variables in the same analyses (e.g., does cyber victimization contribute unique variance over and above traditional victimization when predicting anxiety). These types of analyses were not the main focus of this study, but will be important to examine in future research.

Concerns regarding cyber victimization have increased due to widespread availability of internet access via cell phones, iPod's, and tablets (Mishna et al.,2009; Pornari & Wood, 2010). Therefore, research has increased its focus on studying cyber aggression and victimization within the last 20 years. According to the literature, up to 97% of youth ages 12-18 access the internet (Kowalski & Limber, 2007). In an attempt to understand how many students access social networking sites via the internet and engage in risky cyber behaviors further exploratory analyses were conducted. These analyses revealed that 82.3% of the youth in this sample reported having a social networking site, indicating that at least 82.3% of the sample from this study accesses the internet. This percentage may not be inclusive of the students who access the

internet for other means (playing games) and who have or visit blog sites and other means of socializing via the internet. When examining internet risky behavior, of those who had a social networking site, 31.4% reported that they share their password with peers. In turn, having access to a peer's password may allow for other students to pose as the individual and engage in cyber aggressive behaviors. In addition to sharing a password, 44.4% of youth indicated that their parents never monitor their internet use, which may potentially increase the likelihood for inappropriate online behavior.

### **Implications**

Results of this study correspond with the literature documenting the association between anxiety and traditional and cyber victimization. According to the significant findings of this study, youth who experience traditional victimization also experience greater total anxiety disorders symptoms, as well as greater physical anxiety symptoms and social anxiety compared to youth who did not report experiencing traditional victimization. Youth who endorsed cyber victimization also reported experiencing greater physical anxiety symptoms and social anxiety compared to peers who did not report cyber victimization. Overall, these results indicate that youth who experience traditional and cyber victimization are more likely to experience increased anxiety compared to non-victimized peers. Therefore, anxiety should be addressed when schools are contemplating implementation of peer aggression prevention efforts. Moreover, intervention efforts should take into account anxiety symptoms when treating traditional and cyber victimized youth. In conjunction with increased anxiety, victimized youth who are experiencing anxiety are at risk for decreased social functioning, which could further exacerbate their anxiety in social situations (Greco & Morris, 2005). Thus, social functioning should also be monitored.

Regarding school functioning, cyber aggression was related to lower GPA's and increased numbers of suspensions and referrals. Further, results from this study indicated that traditional and cyber victimization was significantly related to school functioning. Specifically, youth who reported experiencing more traditional victimization reported lower GPA's and increased numbers of suspensions and referrals combined. Similar to findings in the literature, traditionally victimized youth have decreased academic functioning (Nansel et al., 2001; Sharp, 1995). Lower GPA could result from school avoidance allowing for decreased development of academic skills in the classroom, as well as a poorer academic self-concept (Flook et al., 2005; Mercer & De Rosier, 2008). In addition, both youth reporting traditional and cyber victimization experiences also had increased numbers of suspensions and referrals. When implementing prevention initiatives for peer victimization, in addition to assessing for anxiety, school personnel should be aware of findings such as these with regards to school functioning and assess for academic and school behavioral functioning when working with youth who are victimized. Prevention efforts should also target academic functioning when working with aggressors.

When assessing for peer aggression and victimization, school personnel should be mindful that research supports a significant overlap between traditional and cyber aggression and victimization. Thus, when evaluating the prevalence of cyber victimization and aggression in a school, personnel should assess for the prevalence of unique cyber victimization experiences prior to implementing more preventative efforts solely in this area. This is in line with Olweus' (2012) concern that a change in the focus of anti-bullying efforts could occur to focus more on cyber bullying if this type of

aggression is deemed as the predominant problem in the schools. Again, findings from this study, as well as research conducted by Olweus (2012), that indicate significant overlap between traditional and cyber aggression and victimization constructs suggests a need for traditional peer aggression to continue to be a primary focus of prevention efforts. Thus, academic environments should continue to put forth effort and resources to counteract traditional bullying as this type of aggression continues to be more prevalent. Due to the significant rates of overlap, cyber aggression and victimization could decrease as a result of traditional aggression and victimization intervention.

Contrary to popular belief, where some research has suggested that peer aggression has increased due to the availability of electronic media, the results from this study do not support this claim. Again, in line with Olweus' (2012) arguments, the results of this study suggest that few unique youth were victims of cyber aggression without also being victims of other traditional forms of peer aggression at school. This is an important point as media has purported that cyber aggression and victimization has increased in prevalence and has significant consequences. Unfortunately, this view could increase symptoms of anxiety and stress unnecessarily among parents (Olweus, 2012). However, even if cyber aggression is not as prevalent as purported, efforts to decrease this behavior may still be important. As an example, results from this study indicated that 44.4% of youth believe their parents are not monitoring their internet behaviors. Providing education to parents, as well as youth, regarding internet safety could increase parental monitoring and hopefully decrease cyber aggression and consequently cyber victimization.

The current study focused on a rural sample, as there appears to be a dearth of research examining traditional and cyber aggression and victimization rates in rural populations. Findings suggest that rates of traditional and cyber aggression and victimization in this rural sample were higher compared to urban and suburban middle school rates reported within the literature, which could be attributed to the constructs being measured as continuous variables. Nonetheless, these prevalence rates highlight the importance of examining traditional and cyber peer aggression and victimization in both rural and urban populations.

### **Limitations**

Several limitations should be taken into account when interpreting findings from the current study. First, participant data gathered in this study came from one rural middle school, therefore findings may not necessarily generalize to other environments. A second primary limitation is that the data collected in this study is cross-sectional, thereby not allowing for causal inferences regarding the direction of the relationships. Another limitation of this study relates to the lower Cronbach's alpha of the Anxiety Disorders Index scale from the MASC, indicating that this subscale did not have the same level of internal consistency as found in the normative sample, which may have potentially impacted the results containing this subscale. A further limitation of this study pertains to the method used to gather information on peer aggression and victimization. Peer aggression and victimization was measured via self-report, with disadvantages of these types of measures relating to factors that decrease the validity of the results. Youth potentially differ in their interpretation of aggression, as well as their willingness to identify themselves as an aggressor or a victim (Ladd & Kochenderfer-Ladd, 2002).

Conversely, youth may over-report their aggressive behaviors or victimization status thereby decreasing the validity of the results.

Information from multiple informants was limited; particularly peer report, which is the gold standard in assessing a youth's social functioning. While gathering peer reports was initially planned for this study, changes to methodology were made based on Institutional Review Board feedback. As a result, data on social functioning was extracted from a youth self-report and teacher report measure. Teachers' knowledge of a youth's social functioning, as well as aggression and victimization history, could be limited, particularly for victimization status. Thus, findings for the hypotheses regarding social functioning may have differed if peer reports were available. Another limitation is that GPA and total number of suspensions and referrals combined was collected via self-report. Youth report could be inaccurate for these types of data, thus collecting this information directly from school records could increase accuracy of the information.

### **Future Directions**

The current study did not obtain information from multiple informants, particularly peer report, of social functioning. Assessing cross-informant report regarding social functioning could provide a broader conceptualization of a youth's overall social functioning. Thus, obtaining this information would facilitate the understanding of the effect traditional and cyber aggression has on social functioning from a multi-informant perspective.

Youth in this study were not put into categories of aggressors, victims, and both aggressors and victims, which could impact the results found. However, examination of these constructs as continuous variables may be important for future studies to better understand the relationships of these behaviors and experiences with other variables.

Potential negative consequences of even minor peer victimization are more likely to be noted when peer victimization is studied as a continuous variable. This understanding could facilitate further development of prevention and intervention measures for traditional and cyber aggression and victimization.

While this study assessed a variety of anxiety symptoms using a standardized measure, the study was cross-sectional. It could be that youth who are more inclined to experience anxiety experience more victimization, further increasing their anxiety. Similarly, youth with poor social functioning or more behavioral issues (resulting in more school referrals/suspensions) may be at higher risk for being victimized. Overall, the cross-sectional data from the current study, as well as a number of other studies in the literature, makes it difficult to determine the temporal or causal relationships between peer aggression and victimization and indices of youth functioning. More longitudinal research is needed to better understand the direction of these relationships.

Finally, although there is significant overlap between traditional and cyber aggression and victimization, further research needs to be conducted examining whether cyber victimization has any unique impacts over and above the impacts of traditional peer victimization on the variables examined in this study (social functioning, anxiety, and school functioning). In addition, those who are uniquely victimized or aggress through cyber means should be further studied to facilitate understanding of the characteristics of unique cyber aggressors and victims. In conjunction, motivation for engaging in aggressive behaviors deserves further study, as there is minimal information regarding motivation within the literature. Understanding why the aggression

is occurring could aid in the creation of more effective preventative and intervention methods.

APPENDIX A  
DEMOGRAPHIC INFORMATION

ID Number \_\_\_\_\_

**DEMOGRAPHIC INFORMATION**

School: \_\_\_\_\_

Age: \_\_\_\_\_

Circle One of the Following:

Grade: 7<sup>th</sup>    8<sup>th</sup>                      Sex: Male    Female

Ethnicity: White (non-Hispanic)    African American                      Hispanic                      Asian

Native American    Multi-racial                      Other

Please circle your grade in the following classes:

Math (or Algebra)	A	B	C	D	F
Language Arts	A	B	C	D	F
Science/Physical Science	A	B	C	D	F
Civics/US History	A	B	C	D	F

Have you been suspended this school year? Circle one of the following: Yes    No

If you have been suspended this school year, please write the number of times you have been suspended below

\_\_\_\_\_

If you have received any referrals at school this year, please write the number of referrals you have received below

\_\_\_\_\_

Who do you live with, check all that apply:

Mother     Father     Grandparent     Other relative     other

Step-father     Step-mother

APPENDIX B  
 SOCIOMETRIC TEACHER REPORT OF STUDENTS' SOCIAL FUNCTIONING

ID Number \_\_\_\_\_

**SOCIOMETRIC TEACHER REPORT OF STUDENTS' SOCIAL  
 FUNCTIONING**

**Directions:** Please write the ID number of the student in the place provided. Then, rate how much the student in your class is **liked or disliked** by other students in his or her grade. Next, circle the aggression or victimization status of the student, if any.

**How much is this student liked/disliked by other students in her/his grade? (circle one number)**

**Scale:**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>Very much Disliked</b>	<b>Disliked</b>	<b>Somewhat Disliked</b>	<b>Not Liked or Disliked</b>	<b>Somewhat Liked</b>	<b>Liked</b>	<b>Very Much Liked</b>

**Definitions for Aggressive subtypes**

- Physical Aggression: starts fights, uses physical force to get his/her own way, hits, kicks, punches, pushes, and shoves other students
- Verbal Aggression: students who call others names, say mean things to others, or verbally tease others about their appearance, clothes, and or family
- Relational Aggression: students who say negative things about others, embarrass others, gossip about them, and spread rumors, etc

**Definitions for Victimization subtypes**

- Physical Victimization: students who are victims of aggression (they are picked on, hit, kicked, pushed, or shoved by others)
- Verbal Victimization: students who are called names, have mean things said to them, or are verbally teased by others about their appearance, clothes, and or family
- Relational Victimization: students who have negative things said about them, are embarrassed, gossiped about, and have rumors spread about them, etc.

**Please circle any of the following that apply for this student (you may circle more than one in each row):**

**Is this student:**

Physically Aggressive  
 None of these

Verbally Aggressive

Relationally Aggressive

**Is this student:**

Physically Victimized  
 None of these

Verbally Victimized

Relationally Victimized

**APPENDIX C**  
**CYBER AGGRESSION AND VICTIMIZATION MEASURE**

<b>How often have you used the following in the past month?</b>	<b>Never</b>	<b>A Few Times a Month</b>	<b>A Couple of Times a Week</b>	<b>Every day</b>
1. Blogging (online journal/diary)	1	2	3	4
2. Chatrooms	1	2	3	4
3. Instant Messaging/IMing (such as facebook IM or AIM)	1	2	3	4
4. Email	1	2	3	4
5. A website where you posted comments, videos or pictures online (such as YouTube, MySpace, Facebook)	1	2	3	4
6. Tweeting	1	2	3	4
7. Text messaging	1	2	3	4
8. Phone (including cell phone)	1	2	3	4
9. I have a social networking account (i.e., facebook, myspace)	<b>Yes</b>		<b>No</b>	
10. If you answered yes to #9, have you ever given your password to another friend or student?	<b>Yes</b>		<b>No</b>	

**PART 2: WHAT HAPPENS TO YOU**

Instructions: Circle **ONE** number per question to show how often each action **happened to you in the past couple of months.**

<b>During the past year at school year...</b>	<b>Never</b>	<b>Once or Twice a Month</b>	<b>One or Twice a Week</b>	<b>Several times a week</b>
8. Someone has sent me a text message that was hurtful, mean, or threatened to harm me.	1	2	3	4
9. Someone has texted an embarrassing picture of me	1	2	3	4
10. Someone posted an embarrassing picture or video of me online.	1	2	3	4
11. I have received mean or threatening phone calls (does not include text messaging)	1	2	3	4
12. I have received hurtful, mean, or threatening emails.	1	2	3	4
13. Another person has threatened me or treated me in a mean way in a chat room.	1	2	3	4
14. I have been picked on, made fun of, or threatened by another person through instant messaging (e.g., IM)	1	2	3	4
15. I have had a mean, hurtful, or threatening comment posted about me on a website (such as on MySpace or Facebook)	1	2	3	4

16	In thinking about your answers above (#8-14), how often do you know the person who does these things to you? (circle one)	Never	Sometimes	Often	Always
17	When you know the person in #15, are they <u>most often</u> a friend or not a friend? (circle one)	Friend		Not A Friend	

**PART 3: HOW YOU FEEL**

Instructions: Based on the experiences you had above, circle **ONE** number per question to show how these experiences **generally** made you feel. If you answered “Never” for all of the questions above, circle never for questions #17-26.

<b>Because of mean, hurtful, embarrassing, or threatening messages I have received by phone, text, or through the internet...</b>	Never	Sometimes	Often	Always
17. I have stayed home from school.	1	2	3	4
18. I have felt lonely.	1	2	3	4
19. I have become upset (like angry or crying)	1	2	3	4
20. I have wanted to change schools.	1	2	3	4
21. I have been afraid or worried.	1	2	3	4
22. It was harder for me to do things (such as school work)	1	2	3	4
23. I missed going somewhere, seeing people, or doing something that I would have enjoyed.	1	2	3	4
24. I have been embarrassed or felt bad about myself.	1	2	3	4
25. I have been mean to or threatened someone else by text message, over the phone or on the internet.	1	2	3	4
26. My friendships have changed.	1	2	3	4

**PART 4: WHAT YOU DO**

Instructions: These questions ask about things you might have done over the past month. Please circle **ONE** answer per question.

<b>During the Past Several Months...</b>	Never	Once or Twice a Month	One or Twice a Week	Several times a week

27. I have sent mean or threatening text messages to someone.	1	2	3	4
28. I posted an embarrassing picture or video clip on line of someone in order to be mean or hurt them.	1	2	3	4
29. I have made mean or threatening phone calls (does not include text messaging)	1	2	3	4
30. I have sent mean or threatening emails to someone.	1	2	3	4
31. I have threatened or been mean to another person in a chat room.	1	2	3	4
32. I have picked on, made fun of, or threatened someone through instant messaging (IM)	1	2	3	4
33. I have posted mean, hurtful, or threatening comments about another person on a website (e.g., MySpace, Facebook)	1	2	3	4
34. How much do your parents monitor your use of social networking sites, blogs, etc.	Never	Sometimes	Often	Always

**PART 5: DURING MY 2011-2012 SCHOOL YEAR**

Instructions: Please circle **ONE** answer per question.

39. I think bullying is a problem at my school	Strongly Disagree	Disagree	Unsure/Don't know	Agree	Strongly Agree
40. I have missed school due to bullying	Yes		No		

## APPENDIX D PARENT/GUARDIAN CONSENT LETTER

Dear Parent/Guardian,

I am a doctoral student in the Department of Clinical and Health Psychology at the University of Florida and am working under the supervision of Brenda Wiens, Ph.D. In collaboration with the Columbia County School District and Lake City Middle School, we will be surveying 7<sup>th</sup> and 8<sup>th</sup> grade students to evaluate how peer aggression and victimization (including cyber/internet aggression) relates to a child's social, psychological, and academic functioning. This information will be used to help inform policies and programs regarding bullying at LCMS. The surveys will be administered at school during the first class of the day and will take approximately 45 minutes to complete. Students will complete a demographic form prior to beginning the surveys. Surveys will ask about bullying/victimization history and attitudes, social functioning, and anxiety. Each child will be provided with a cover sheet in order to cover his/her responses from others. We will also be asking each student to self-report their grades, referrals, and suspensions to help learn how peer aggression is related to students' school functioning. Teachers will also be completing measures pertaining to each student's social functioning.

To assist in protecting your child's identity, the survey being conducted will be anonymous. At no time will a student's name be on any of the measures. Once all surveys are collected by the researchers, the surveys will only be available to the researchers and will be kept in a locked cabinet in a locked university office. Once all data are analyzed, the results of the survey will be compiled into a summary that will be provided to Lake City Middle School and the school district; no individual data will be provided to the school or district, only overall group data will be provided. The school will use this information to help inform policies and programs to target bullying. If a student does not wish to answer a particular question on the survey, they can leave it blank. Also, if a student does not wish to participate in the entire survey, they may do class work instead. Whether your child participates or does not participate in this survey will not affect his/her academic standing or class grade. Please complete the bottom of this letter indicating whether or not you agree to your child's participation in this study and have your child return it to his/her teacher. Students who do not participate in the survey will complete classroom work as assigned by their teacher during survey administration.

Participation in this survey is completely voluntary, and your child can choose not to participate at any time without consequence. Further, you can also choose for your child to not participate without consequence. We do not anticipate any significant risks to your child. However, if your child has concerns following completion of the survey their guidance counselor will be available to assist and provide referrals for assistance if needed. Your child will not benefit directly by participating in this survey. Compensation will be offered to those students who return this consent form regardless of whether they are allowed to participate or not. If your student's classroom has a 100 percent return rate for the consent forms, that classroom is eligible for a doughnut/bagel party following completion of the study. If you have any questions about the survey or survey analyses, please contact Jennifer Muñoz at (352) 273-5125. Jennifer Muñoz has obtained approval from the University of Florida Institutional Review Board (IRB02 Social and Behavioral Research) to administer and analyze the surveys. If you have questions about this research, please contact the IRB02 office, University of Florida, Box 112250, Gainesville, FL 32611, (352) 392-0433.

Jennifer Muñoz  
Graduate Practicum Student  
Clinical & Health Psychology  
University of Florida

Brenda Wiens, Ph.D.  
Clinical Assistant Professor  
Clinical & Health Psychology  
University of Florida

Gloria Spivey  
Coordinator  
Student Outreach Services Center  
Columbia County School District

---

**Please indicate below whether or not you agree to your child's participation in this study.**

**I have read the procedure above:**

**YES, I voluntarily give consent to allow my child to participate in the survey.**

Child's name: \_\_\_\_\_

Approved by University of Florida Institutional Review Board 02 Protocol # 2012-U-0249 For Use Through 05-10-2013
---

\_\_\_\_\_  
Parent / Guardian Signature

\_\_\_\_\_  
Date

---

**NO, I do not give consent to allow my child to participate in the survey.**

Child's name: \_\_\_\_\_

\_\_\_\_\_  
Parent / Guardian Signature

\_\_\_\_\_  
Date

Approved by  
University of Florida  
Institutional Review Board 02  
Protocol # 2012-U-0249  
For Use Through 05-10-2013

## APPENDIX E STUDENT ASSENT FORM

### STUDENT ASSENT FORM

Jennifer Muñoz is a graduate student at the University of Florida, and she is studying peer aggression and victimization and how these experiences relate to social, emotional, and school functioning. You are being asked to complete 4 measures and a demographic form. This survey should take about 45 minutes. This research study will not affect your grades or relationship with your teacher. The school faculty/teachers were aware of this research project ahead of time and you will not miss any schoolwork when you are completing the questionnaires. Parent(s) have also been sent a letter about this study and have agreed to your participation.

If you do not want to answer the questions, please give the packet back to your teacher. If you agree to complete these questionnaires, please give them to your teacher when you have finished filling them out. You can choose to leave items blank or stop participating in this study at any time. Your responses are private, so **please use the cover sheet provided to protect your responses**. The teachers will not see your responses. The questionnaires will be anonymous and will not ask for your name; do not write your name on the survey.

Approved by  
University of Florida  
Institutional Review Board 02  
Protocol # 2012-U-0249  
For Use Through 05-10-2013

## APPENDIX F TEACHER CONSENT FORM



College of Public Health and Health Professions  
Department of Clinical and Health Psychology

101 South Newell Drive, Rm 3151  
PO Box 100165  
Gainesville, FL 32610-0165  
Phone: (352) 273-6617  
Fax: (352) 273-6156

Dear Educator,

I am a doctoral student in the Department of Clinical and Health Psychology at the University of Florida and am working under the supervision of Brenda Wiens, Ph.D. In collaboration with the Columbia County School District and Lake City Middle School, we are inviting all 7<sup>th</sup> and 8<sup>th</sup> teachers to participate in a study evaluating how peer aggression and victimization (including cyber/internet aggression) relates to a child's social, psychological, and academic functioning. In particular, as part of this research we will be asking participating teachers to rate participating students in their class on social functioning (i.e., how much a student is liked or disliked), aggression status, and victimization status. This information, in conjunction with the survey your students will complete, will be used to inform policies and programs to target bullying.

If you agree to participate in this study, you will complete the surveys in the envelope that accompanies this letter. If you do not agree to participate, simply leave the measures blank. This survey is anonymous. Thus, you will not be required to put your name or any of the students' names on the forms. Once the students have received their surveys, they are to place the sticky note with an ID number, which matches the ID number of that student's packet, on their desk. Please take the sticky note and write the ID number on the survey form. Then, complete the survey for that student and place the sticky note on top of the survey form prior to proceeding to the next student and completing the next survey. Using this method, I can gather more information about the students' social functioning while preserving the anonymity of the student.

Your total time completing surveys should be approximately 15-25 minutes. School administrators or personnel will not have access to the measures you are being asked to complete. When you have completed the survey, please place the measures in the manila envelope provided. Return the surveys to the front office where a University of Florida graduate student will be waiting to collect the information. Confidentiality of your responses will be protected by the anonymous nature of the surveys. The researchers will keep all collected surveys in a locked cabinet in a locked university office. Once all data are analyzed, the results of the survey will be compiled into a summary that will be provided to Lake City Middle School and the school district; no individual data will be provided to the school or district, only overall group data will be provided. The school will use this information to help inform policies and programs to target bullying.

You have the right to withdraw consent for your participation at any time without consequence. Participation in this study is entirely voluntary. If you choose to participate you will receive a five dollar gift card to Starbucks following completion of the study. This study involves minimal risk, and there are no immediate benefits to participants. If you have any questions about this research protocol, please contact me at (352) 273-5125. Jennifer Muñoz has obtained approval from the University of Florida Institutional Review Board (IRB02 Social and Behavioral Research) to administer and analyze the surveys. If you have questions about this research, please contact the IRB02 office, University of Florida, Box 112250, Gainesville, FL 32611, (352) 392-0433.

Jennifer Muñoz, M.A., M.S.  
Graduate Student

Brenda Wiens, Ph.D.  
Clinical Assistant Professor

Approved by  
University of Florida  
Institutional Review Board 02  
Protocol # 2012-U-0249  
For Use Through 05-10-2013

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## BIOGRAPHICAL SKETCH

Jennifer E. Rosado Muñoz was born in Orlando, Florida, and is the younger of two children. She earned her Bachelor of Arts in psychology at Walla Walla University in 2002, with a minor in biology, and went on to earn a Masters of Arts in counseling psychology at Walla Walla University in 2005. Upon graduating with the Dean's Scholastic Achievement Award in 2005, Jennifer took a full time position as a therapist in a rural children's multi-treatment residential facility in Pendleton, Oregon. She then took a position at Lakeside Behavioral Healthcare in Orlando, Florida as a full time children's outpatient therapist.

Jennifer relocated to Gainesville, Florida in August of 2008 to continue her graduate career in clinical psychology. She received her second master's degree in May 2010. During her graduate career she received the Molly Harrower Excellence in Psychodiagnostic Assessment Award in 2011. She is currently completing her fifth year in the clinical psychology doctoral program at the University of Florida, as a psychology intern at Nationwide Children's Hospital. She will be receiving her doctorate of philosophy degree in August of 2013.