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The New Frontier of Peer Victimization: Prospective Associations Between Adolescents' On-line Peer Victimization and Internalizing Symptoms

Ryan R. Landoll
University of Miami, r.landoll@umiami.edu

UNIVERSITY OF MIAMI

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Ryan Richard Landoll

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Ryan Richard Landoll

Approved:

Annette M. La Greca, Ph.D. Professor of Psychology and Pediatrics	M. Brian Blake, Ph.D. Dean of the Graduate School
Jill Ehrenreich May, Ph.D. Associate Professor of Psychology	Kristin Lindahl, Ph.D. Associate Professor of Psychology
Maria Llabre, Ph.D. Professor of Psychology Pediatrics	Jason Jent, Ph.D. Assistant Professor of Clinical

LANDOLL, RYAN RICHARD (Ph.D., Psychology)
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The New Frontier of Peer Victimization: Prospective Associations Between Adolescents' On-line Peer Victimization and Internalizing Symptoms

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Peer victimization in adolescence has been consistently associated with increases in internalizing symptoms, such as depression and social anxiety. Recently, both empirical and public attention has focused on cyber victimization, or negative peer experiences that occur in an on-line context. Adolescent Internet use has reached nearly universal rates (recent estimates report over 93% of adolescents have access to the Internet, with the majority accessing the Internet daily), and the rise of social networking and media tools has created a diverse and complicated environment for adolescents to interact within cyberspace. Research has made great strides in identifying the potential negative effects of cyber victimization, which include poor academic functioning, frustration, sadness, low self-esteem, low peer support, feelings of depression and social anxiety, and suicidal ideation. However, existing measures of cyber victimization: a) are often limited by their focus on older communication tools or limited item content, which may miss important information about a variety of diverse aversive experiences adolescents face on-line; b) lack prospective data on the effects of cyber victimization on psychological outcomes, which limit the ability to make inferences about causality or the directionality of effects; and c) have not examined potential moderators of associations between cyber victimization and internalizing distress, which limits our understanding of

these pathways to intelligently inform targeted and meaningful clinical interventions. Finally, research is needed that examines the interplay between traditional, face-to-face, peer victimization and cyber victimization, particularly with a consideration of types of both peer and cyber victimization. The current study sought to (a) examine the psychometric properties and validate a new measure of cyber victimization, the *Cyber Victimization Scale for Adolescents (CVS-A)*, (b) explore the concurrent and prospective associations between cyber victimization and internalizing symptoms (depression, social anxiety and general anxiety), and (c) identify potential moderators (peer social support, gender, Internet use) of the relationship between cyber victimization and internalizing symptoms, both concurrently and prospectively.

Participants were 1,045 public high school students (58% girls), ages 13-19 years, 73% Hispanic, 11% White non-Hispanic, 12% Black (African-American, Caribbean American and Hispanic Black) and 4% Asian. Participants were recruited from two public high schools in an urban area of the Southeastern United States. Participants completed questionnaires during class periods at two time points during the spring of the academic year, approximately six weeks apart. These questionnaires included information on demographics and electronic media usage, the *CVS-A*, the *Revised Peer Experiences Questionnaire*, the *Center for Epidemiological Studies – Depression* scale, the *Social Anxiety Scale for Adolescents*, the short form of the *Revised Children's Manifest Anxiety Scale – 2nd Edition*, and the *Perceived Social Support* scale. Data were collected as part of a larger study that sampled adolescents at three time points throughout the academic year.

Data were analyzed using prudent statistical techniques. To evaluate the psychometric properties of the CVS-A, confirmatory factor analytic strategies were utilized as appropriate based on theoretically derived models. For other planned analyses, hierarchical linear regression techniques were utilized, controlling for demographic variables and traditional peer victimization to test for the unique contributions of cyber victimization on three separate measures of internalizing symptoms, focusing specifically on symptoms of depression, social anxiety and general anxiety. For prospective analyses, symptomology at baseline was also controlled.

In regards to the first study aim that sought to evaluate the psychometric properties of the CVS-A, results provided good evidence for psychometric support of a single factor structure utilizing 13 items of the CVS-A ($\alpha = .80$). Additionally, there was some support for subscales of the CVS-A based on a theoretical model that parallel known subscales of traditional peer victimization, including Aggressive, Relational and Reputational forms of cyber victimization. Regarding the second study aim, controlling for traditional peer victimization, cyber victimization was found to predict significant incremental variance in adolescents' symptoms of depression both concurrently ($\beta = .09$, $p < .05$) and prospectively, ($\beta = .13$, $p < .01$). Relational peer victimization, in particular, was significantly and strongly associated with social anxiety, both concurrently ($\beta = .36$, $p < .001$) and prospectively, ($\beta = .08$, $p < .01$). Regarding the third study aim, perceived social support from peers and gender moderated the relationship between cyber victimization and depressive symptoms over time. Specifically, counter to expectations, cyber victimization was more strongly associated with depressive symptoms over time among adolescents who reported higher levels of perceived social support from friends (β

= .18, $p < .001$) compared to those who reported lower levels of peer social support from friends ($\beta = .10$, $p < .001$). Additionally, when utilizing CVS-A subscales, reputational cyber victimization predicted increases in depressive symptoms over time for boys ($\beta = .09$, $p < .05$), but not for girls ($\beta = .06$, $p = .08$), and aggressive cyber victimization predicted depressive symptoms over time for girls ($\beta = .20$, $p < .001$), but not for boys ($\beta = .05$, $p = .16$).

These findings provide initial support for the CVS-A as a reliable and valid instrument to examine cyber victimization among adolescents. The CVS-A offers several advantages over existing measures of cyber victimization, including the incorporation of newer communication methods, inclusion of a variety of on-line experiences, and the ability to delineate between potential subtypes of cyber victimization. Additionally, these results provide evidence that cyber victimization may have a unique and negative effect on adolescents' symptoms of depression, above and beyond the effects of traditional, face-to-face peer victimization. Results also suggest the possibility that cyber victimization may play a unique role in depressogenic pathways of internalizing distress, as opposed to anxious pathways. Furthermore, it appears that adolescents with higher levels of peer support may be at increased risk of reporting depressive symptoms after experiencing cyber victimization, contrary to expectations that adolescents with high peer social support are buffered from psychological distress. Differential findings among boys and girls suggest potential gender differences in the interpretation and meaning of certain cyber victimization and its role in emotional functioning, which may impact our treatment of youth experiencing cyber victimization.

This study was limited by several factors (e.g., lack of comparison measure of cyber victimization, reliance on self-report). Future clinical and empirical work would benefit from a consideration of these findings to enhance targeted interventions for adolescents' experiencing peer and cyber victimization and inform areas of future research by further examining potential gender differences as well as the existence of subtypes of cyber victimization.

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CHAPTER 1: INTRODUCTION

Substantial work has documented the pernicious effects of peer victimization (PV) on adolescents (e.g., Adams & Bukowski, 2008; La Greca & Harrison, 2005; Prinstein, Boergers, & Vernberg, 2001; Siegel, La Greca, & Harrison, 2009; Storch, Milsom, DeBaraganza, Lewin, Geffken, Silverstein, 2007). In particular, PV experiences contribute to adolescents' feelings of social anxiety and depression (e.g., La Greca & Harrison, 2005; Ranta, Kaltiala-Heino, Pelkonen, & Marttunen, 2009), which in turn puts them at risk for recurring PV (Reijntjes, Kamphuis, Prinzie, & Telch, 2010).

Despite linkages between PV and internalized distress, there has been little systematic exploration of the role of electronic media in PV. This is an important oversight, given the high use of the Internet and social networking sites (SNSs) among older adolescents and emerging adults. With respect to emerging adults, a recent study by the Pew Research Center's *Internet and American Life Project* (Lenhart, Purcell, Smith, & Zickuhr, 2010) revealed that 93% of adolescents and young adults go online, and close to three-quarters of online adolescents and young adults use SNSs. Moreover, several recent cases of youth suicide resulting from online PV (e.g., Pilkington, 2010) have underscored the need for more empirical research on cyber forms of PV and its impact on young persons' mental health.

One challenge in understanding the existing research on cyber forms of PV is the lack of a consistent operational definition and terminology when discussing this form of victimization. In fact, it should be noted that the terms "cyber bullying," "cyber aggression," "Internet harassment," and "cyber victimization" have been used in the literature somewhat interchangeably, although they may focus on different behaviors or

individuals (Tokunga, 2010). For the purposes of this paper, we use the terms cyber aggression and cyber victimization to refer to the instigators and recipients of these behaviors, respectively.

Overall, the primary aims of the current study were to develop and examine the psychometric properties of the *Cyber Victimization Scale for Adolescents* and to examine the concurrent and prospective associations between cyber victimization and internalizing symptoms, including symptoms of depression, social anxiety and general anxiety. It is important to note that previous research examining cyber victimization and internalizing symptoms has relied exclusively on concurrent models, thereby limiting inferences regarding directionality of effects. Thus, the current study offers a critical advancement to the literature. Additionally, the current study examined potential moderators, including gender, Internet usage, and peer social support, of the associations between cyber victimization and internalizing symptoms concurrently and over time. The following sections review existing literature on PV more generally and the rise of Internet use among adolescents to set the stage for a discussion of the existing gaps in the literature addressed by this study.

Peer Victimization (PV) in Adolescence

More generally, PV in adolescence is important to understand because of its frequency and associations with negative outcomes (Adams & Bukowski, 2008; Dinkes, Cataldi, & Lin-Kelly, 2007; Hawker & Boulton, 2000; La Greca & Harrison, 2005; Prinstein et al., 2001; Storch, Brassard, & Masia-Warner, 2003a). Adolescence is a time during which PV experiences appear to be relatively common. Prevalence estimates have suggested 20-30% of adolescents report experiencing PV on a regular (i.e., weekly) basis

(Dinkes et al., 2007; La Greca & Harrison, 2005; Storch et al., 2003a). Research that focuses on the victims, or recipients, of aversive peer experiences, has found that peer victimized adolescents report higher rates of social anxiety, depressive symptoms and loneliness (Adams & Bukowski, 2008; Hawker & Boulton, 2000; Prinstein et al., 2001; Storch et al., 2003a; Storch, et al., 2007). In turn, this internalized distress puts them at risk for recurring PV (Reijntjes et al., 2010).

In attempts to capture the diversity of PV experiences, several terms have been used to describe types of aversive peer experiences. These include *overt* forms of PV (i.e., hitting, punching, shoving), *relational* forms of PV that utilize one's relationship with another individual to harm them (i.e., social exclusion, manipulation; Crick, 1996; Crick, Bigbee, & Howes, 1996, Crick & Grotpeter, 1995), and efforts to damage one's reputation within the larger peer group, which is referred to as *reputational* victimization (De Los Reyes & Prinstein, 2004).

Of these different PV types, it appears that *relational* victimization has been most associated with adolescents' internalized distress, such as feelings of social anxiety and depression (La Greca & Harrison, 2005, Siegel et al., 2009). However, the associations between cyber victimization and these types of PV are not clear, as most past research has only looked at general PV (Juvonen & Gross, 2008; Kowalski & Limber, 2006; Gradinger, Strohmier, & Spiel, 2009; Mitchell, Ybarra, & Finkelhor, 2007).

More recently, Wang and colleagues (2010) distinguished between cyber victimization and other types of "traditional" PV. While results suggested that cyber victimization most often co-occurred with "verbal" victimization (e.g., name-calling), latent class analysis revealed that adolescents experiencing cyber victimization were

likely to experience elevated levels of all forms of "traditional" PV. Furthermore, Wang and colleagues (2010) were not able to isolate any PV types particularly related to cyber victimization; however these authors only used one item to assess cyber victimization. More research is needed to better understand how cyber victimization is associated with other, more established forms of PV and to replicate these findings. It is possible that subtypes of cyber victimization exist, with unique associations both to traditional PV as well as psychological outcomes.

The current study examined the potential existence of subtypes of cyber victimization, as well as the relationship between cyber victimization and traditional types of PV. In exploring the relationship between traditional types of PV and cyber victimization, the current study informs our understanding of both the unique nature of cyber victimization and its parallels to traditional forms of PV. This comprehensive examination of a variety of negative interpersonal experiences adolescents face also allows for a clearer picture of both the shared and unique contributions of both cyber and traditional PV in the development and maintenance of internalizing symptoms among adolescents.

Internet Use in Adolescence

The current study examined both traditional types of PV as well as adolescents' experience of cyber victimization. Understanding cyber victimization is important given the high use of the Internet and electronic media by adolescents. As discussed previously, the most recent statistics suggest that 93% of adolescents are on-line (Lenhart et al., 2010). As an age group, adolescents (ages 12-17 years) have the highest rates of Internet use compared to any other age demographic (Lenhart et al., 2010). Furthermore,

only 11% of youth who use the Internet use it less than once a week and the majority use the Internet daily (Lenhart et al., 2010). As such, electronic media use occupies a significant portion of many adolescents' days. Recent estimates suggest that adolescents spend over an hour and a half each day sending and receiving text messages, and close to two hours using the Internet – the majority of that time being spent on websites involving some sort of social interaction (e.g., social networking sites, gaming, on-line video sharing or instant messaging; Rideout, Foehr, & Roberts, 2010). Taken together, this suggests that teens generally spend between three and four hours per day engaged with electronic media, particularly using this media to communicate and interact with others.

Given adolescents' widespread use of the Internet as a means of social interaction, it is important to better understand the role of Internet use on adolescents' social and emotional well-being. Early research suggested that Internet use is associated with high rates of depression and poor social functioning in both adolescents and adults (Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay, & Scherlis, 1998), but more recent studies have failed to find direct associations between Internet use and negative well-being (for review, see Brown & Bobkowski, 2011). However, there are concerns that socially anxious and depressed youth may utilize the Internet to communicate with individuals they do not know personally, prompting concerns of predatory activities (Brown & Bobkowski, 2011; Gross, Juvonen & Gable, 2002). Additionally, among adolescents, increased use of chat rooms is associated with higher general psychological distress and increased likelihood of engaging in alcohol, tobacco and drug use, and risky sexual behavior (Beebe, Asche, Harrison, & Quinlan, 2004). However, evidence also suggests a wide range of positive effects from Internet social interaction (McKenna & Bargh, 2000).

For example, the Internet provides adolescents with positive opportunities to expand and explore their sense of self (Maczewski, 2002) and to foster existing friendships and self-disclosure (Valkenburg & Peter, 2009a). Indeed, even the topics teens discuss and report on-line suggest more positive than negative on-line experiences (Anderson-Butcher, Lasseigne, Ball, Brzozowski, Lehnert, & McCormick, 2010).

In an effort to better understand the potentially positive and negative effects of on-line behavior, Kraut and colleagues (2002) outlined two potential theories. The first was a "social compensation" hypothesis, suggesting that those with fewer offline social supports could "compensate" through forming social support networks on the Internet. The second was a "rich get richer" hypothesis, suggesting that socially competent individuals reap benefits of Internet usage, whereas those who are less socially competent do not derive similar benefits and may, in fact, experience negative effects of Internet use. Indeed, Kraut and colleagues (2002) found evidence to support the "rich get richer" hypothesis. Subsequent research among adolescents has also supported this hypothesis and the idea of similarity in on-line and offline behavior (Gross, 2004; Gross et al., 2002; Lee, 2009; Mikami, Szwedo, Allen, Evans, & Hare, 2010).

Other research partially supports both theories. For example, Selfhout and colleagues (2009) distinguished between social communication uses of the Internet (i.e., instant messaging) and non-communication uses (i.e., web-surfing). Their findings suggested that non-communication uses predicted increases in depressive symptoms for adolescents with low perceived friendship quality. In contrast, their findings suggested that social communication uses predicted decreases in depressive symptoms over time among those adolescents with low perceived friendship quality.

These diverse and sometimes conflicting findings may be due to the fact that adolescents' use of the Internet and electronic media are continually evolving and changing (Kraut, Kiesler, Boneva, Cummings, Helgeson, & Crawford, 2002; Valkenburg & Peter, 2009b). Thus, it is important to examine specific contexts of adolescents' Internet usage that are currently relevant and to consider a variety of factors that may affect associations between adolescents' on-line and offline behavior.

One on-line context that may be particularly salient is social networking sites, such as Facebook or MySpace, which have become increasingly popular. Statistics suggest that nearly three quarters of on-line teens use social networking sites, a number that has increased by almost 50% in the last four years (Lenhart et al., 2010). These sites offer an unprecedented amount of social information, social interaction and social management; thus, it is perhaps not surprising that research suggests that adolescents' behavior on these sites appears to be closely linked to offline behavior (Mikami et al., 2010). Furthermore, these sites are becoming increasingly accessible through mobile devices (Donovan, 2011), providing adolescents with almost constant access. As these sites continue to grow in popularity and represent the most popular on-line activity for teens (Rideout et al., 2010), they represent a critical context in which to examine associations between adolescents' on-line experiences and their social and emotional well-being. Thus, this study focused on understanding the breadth of experiences adolescents may experience via these sites, in the context of developing a measure of cyber victimization.

Adolescent Internet use has become nearly ubiquitous (Lenhart et al., 2010). Currently, research is mixed on whether or not Internet use itself is "good" or "bad" for adolescents' social and emotional development (c.f., Beebe et al., 2004 and McKenna & Bargh, 2000). These mixed findings are likely due to the variety of on-line interactions adolescents experience, from social communication and networking to web-based research (Kraut et al., 2002; Selfhout, Branje, Delsing, ter Bogt, & Meeus, 2009; Valkenburg & Peter, 2009b). The current study focuses more specifically on a particular type of on-line experiences, cyber victimization. Additionally, the current study conceptualizes cyber victimization in a way that recognizes the diversity of adolescents' Internet experiences to enhance its validity and applicability to this population.

Measurement Issues in Cyber Victimization Research

As research suggests, an understanding of the Internet's role in adolescents' psychological functioning is likely to be more complex than simply the amount of Internet usage. Certain salient experiences that occur on-line may have more relevance for social and emotional functioning than the amount of Internet use. One potentially salient experience is that of cyber victimization. Currently, research on cyber victimization has varied greatly in its methodology and focus. In particular, as noted previously, there is no consistent operational definition of cyber victimization and previous assessments have been limited in scope. Thus, it is not surprising that estimates of rates of cyber victimization among adolescents range from 4 – 53% (Kowalski, Limber, & Agatston, 2008). There is a strong need for an empirical approach to the development of a comprehensive measure of cyber victimization.

One aforementioned limitation in the development of a measure of cyber victimization is that operational definitions of cyber victimization have varied from direct threats to sending or posting hurtful texts/images on-line, to more general use of electronic media to intimidate others (Tokunga, 2010). Despite the fact that victims and aggressors may constitute two (not necessarily overlapping) groups, researchers have used the term cyber-bullying interchangeably in reference to studying either the aggressor or the victim. Additionally, some definitions of cyber aggression (and cyber victimization) include the idea that this behavior consists of repeated aggressive acts (Patchin & Hinduja, 2006), despite the fact that even one negative experience may be impactful. It will be important to establish more consistent definitions and methodology for understanding cyber victimization in order to draw conclusions from findings across different studies (Tokunga, 2010).

Furthermore, what is also needed is an expanded focus on the types of experiences adolescents may encounter on-line. For the most part, past research on cyber victimization has focused on aversive experiences that occur via older communication tools (i.e., instant messaging, chat rooms, texting, email; Katzer, Fetchenhauer, & Belschak, 2009; Kowalski & Limber, 2006; Slonje & Smith, 2008), despite the fact that the use of these communication tools has seen declines in usage over the past few years among adolescents (Lenhart, 2010). Often, cyber victimization has been measured by one or two questions on negative, hurtful, or harmful acts that occur via electronic media (Beran & Li, 2005; Gradinger et al., 2009; Juvonen & Gross, 2008; Mitchell et al., 2007; Patchin & Hinduja, 2006; Wang, Iannotti, Luk, & Nansel, 2010; Williams & Guerra, 2007; Ybarra & Mitchell, 2004; Ybarra, Mitchell, Wolak, & Finkelhor, 2006). A few

additional studies have measured cyber victimization with several items, still often five or less (Hay & Meldrum, 2010; Mitchell et al., 2007; Pornari & Wood, 2010; Sengupta & Chadhum, 2011), and very few have incorporated items reflecting aversive experiences on social networking sites. This oversight is surprising, given the wide-spread popularity of social networking sites among youth as the communication tool of choice and the degree of accessibility adolescents have to these sites through personal computers and mobile devices (Donovan, 2011; Lenhart et al., 2010). In order to improve on earlier definitions of cyber victimization, it is important to consider incorporating PV experiences that occur through social networking sites, as well as more broadly capture the wealth of adolescents' on-line experiences.

A preliminary study using 216 college-aged older adolescents and young adults provided initial evidence for the development of a cyber victimization scale that addressed the issues delineated above (Landoll & La Greca, 2010). Specifically, these authors obtained promising results for the psychometric properties of the 11-item Cyber Victimization Scale (CVS); this measure had a single factor structure, high internal consistency and convergent validity with other forms of PV (Landoll & La Greca, 2010). Furthermore, cyber victimization was found to be incrementally predictive of both social anxiety and depressive symptoms, even after controlling for the effects of overt and relational PV. In particular, girls and heavy Internet users were found to experience the strongest associations between cyber victimization and symptoms of depression and social anxiety; however, associations were also significant for boys and infrequent users (Landoll & La Greca, 2010). In a desire to better understand the role of cyber victimization in social and emotional development among younger adolescents, the scale

was modified and expanded in several ways. This revised measure was called the Cyber Victimization Scale for Adolescents (CVS-A). Several considerations informed this revision, as described below.

One important consideration in modifying this scale was to develop a more comprehensive measure of cyber victimization that theoretically is similar to off-line parallels. As discussed previously, evidence suggests adolescents' on-line behavior mimics their off-line behavior (Gross, 2004; Gross et al., 2002; Lee, 2009; Mikami et al., 2010). In examining traditional PV, research has recognized different types of victimization that demonstrate differential associations with psychological outcomes (La Greca & Harrison, 2005; Siegel et al., 2009). As such, it was important to examine the possibility that subtypes of cyber victimization may also exist. While research to date has examined cyber victimization as a unitary construct, this is often due to reliance on a limited item pool (Beran & Li, 2005; Gradinger et al., 2009; Mitchell et al., 2007; Patchin & Hinduja, 2006; Wang et al., 2010; Williams & Guerra, 2007; Ybarra et al., 2006). The current study examined the potential utility of identifying cyber victimization subtypes that might parallel the types of PV experiences adolescents encounter (i.e., overt, relational, and reputational PV). Thus, the current study offered the opportunity to explore and expand our current conceptualization of cyber victimization.

Beginning with the 11-item CVS (Landoll & La Greca, 2010), items were modified and expanded to be appropriate for adolescents. Specifically, the use of multiple items on the CVS-A might allow us to better capture the breadth of aversive on-line experiences adolescents encounter than would single-item or limited-item measures (Menesini & Nocentini, 2009). The original CVS was modified because it only assessed

cyber victimization experiences occurring via social networking sites; thus, the CVS-A was expanded to include items that reflected not only social networking sites, but other forms of new media (e.g., file sharing websites such as YouTube, blogs) and older communication tools (e.g., text and instant messaging). Additionally, the CVS-A was modified to be appropriate for use with high school aged adolescents; the original CVS was developed with a college sample of young adults, whose use of social networking sites and electronic media more broadly may be considerably different than younger adolescents. As discussed above, adolescents are the most frequent consumers of these forms of electronic media. Finally, including more items on the CVS-A allowed for the exploration of potential subtypes of cyber victimization; this may offer an important extension to existing literature that is consistent with our understanding of traditional PV.

Thus, in summary, the first study aim was to validate the CVS-A and explore its psychometric properties. The CVS-A is considered an improvement on existing measures of cyber victimization as it is theoretically informed and empirically based, with a consideration of past literature (Landoll & La Greca, 2010). Additionally, the CVS-A, like the original CVS, included more items than previous measures in order to capture a more comprehensive picture of adolescents' negative on-line experiences, with a particular focus on the impact of new electronic media, such as social networking sites, which had also been missing from previous assessments. Finally, the current study considered the role of traditional PV both in the development and revision of the CVS-A and in further study aims, described below.

Cyber Victimization and Internalized Distress

A second study aim addressed the concurrent and prospective associations between adolescents' cyber victimization and internalizing distress, including symptoms of depression, social anxiety and general anxiety. Cyber victimization has been concurrently associated with a variety of negative psychological outcomes for adolescents, including poor academic functioning, frustration, sadness, low self-esteem, low peer support, suicidal ideation, and feelings of depression and social anxiety (Juvonen & Gross, 2008; Katzer et al., 2009; Gradinger et al., 2009; Kiriakidis & Kavoura, 2010; Mitchell et al., 2007; Patchin & Hinduja, 2006; Hinduja & Patchin, 2010; Perren, Dooley, Shaw, & Cross, 2010; Tokunga, 2010; Williams & Guerra, 2007; Ybarra, 2004; Ybarra & Mitchell, 2004; Ybarra et al., 2006). Thus, understanding cyber victimization and its effects may eventually aid in the development of effective prevention and treatment programs for adolescents' internalizing distress.

In addition to the negative outcomes associated with cyber victimization directly, research suggests that there may be a significant overlap between individuals who experience face-to-face PV and those who experience cyber victimization from peers; such individuals may be at increased risk for negative psychological outcomes given their exposure to multiple forms of victimization (Gradinger et al., 2009; Li, 2007; Mitchell et al., 2007; Slonje & Smith, 2008; Wang et al., 2010). Given the documented associations between face-to-face PV and internalizing distress, specifically symptoms of social anxiety and depression (De Los Reyes & Prinstein, 2004; La Greca & Harrison, 2005; Siegel et al., 2009; Ranta et al., 2009), as well as the preliminary findings of research on cyber victimization in regards to the internalizing disorders of youth (Landoll & La

Greca, 2010; Hinduja & Patchin, 2010; Tokunga, 2010), the current study focused on understanding concurrent associations between cyber victimization and symptoms of anxiety, social anxiety, and depression.

The current study also focused on prospective associations between adolescents' cyber victimization experiences and their internalized distress. One glaring limitation of research to date is the absence of prospective studies on the impact of cyber victimization (for review, see Tokunga, 2010 and Kiriakidis & Kavoura, 2010). Previous studies exploring face-to-face PV in adolescence have found robust associations with symptoms of social anxiety and depression, including both prospective and bi-directional links (De Los Reyes & Prinstein, 2004; La Greca & Harrison, 2005; Prinstein et al., 2001; Siegel et al., 2009). Thus, when studying the effects of cyber victimization on adolescents' feelings of social anxiety and depression, it will be important not only to take into account other PV experiences, but also to explore the directionality of links between cyber victimization and negative psychological outcomes. Thus, as part of the second study aim, this study examined the prospective association between adolescents' cyber victimization experiences and increases in their symptoms of anxiety, social anxiety, and depression.

Social Support, Gender and Internet Use as Potential Moderating Variables

Finally, a third study aim was to explore several variables that may moderate the association between cyber victimization and internalizing distress. A consideration of potential moderating influences between cyber victimization and adolescents' internalized distress may help to better identify those adolescents who are more vulnerable to the impact of cyber victimization experiences. Additionally, aside from the

preliminary study utilizing the CVS, there is a lack of empirical evidence that examines the role of potential moderating influences between cyber victimization and adolescents' internalized distress (Landoll & La Greca, 2010). For the current study, peer social support, gender, and Internet use were examined as potential moderating variables. The selection of each of these variables is reviewed below.

First, this study will examined adolescents' peer social support as a moderating variable. Past research on face-to-face PV has indicated the importance of social support for enhancing adolescents' social functioning, as well as protecting them from negative outcomes (Malecki & Demaray, 2002). In particular, social support (or lack thereof) has been found to moderate the relationship between PV and psychological distress, including loneliness, stress, social competence, and depressive symptoms, such that social support is seen as a protective factor and social isolation confers further risk (Bailey, 2008; Goldbaum, Craig, Pepler, & Connolly, 2003; Newman, Holden, & Delville, 2005; Storch et al., 2003a; Storch & Masia-Warner, 2004). For example, Bailey (2008) found that disclosure of PV to individuals within an adolescent's social support network was predictive of lower symptoms of anxiety and depression. Thus, the current study considered the role of peer social support in moderating the associations between cyber victimization and adolescents' internalized distress. Specifically, it was expected that adolescents who report higher peer social support would be less vulnerable to the effects of cyber victimization on internalized distress, compared to adolescents who report lower social support.

Second, gender also was examined as a moderator. Research on gender differences in prevalence of cyber victimization has been mixed, with most studies finding non-significant gender differences (Beran & Li, 2005; Juvonen & Gross, 2008; Katzer et al., 2009; Slonje & Smith, 2008), but others suggesting that girls may be more at risk to experience cyber victimization (Kowalski & Limber, 2006). However, these studies do not consider gender as a moderator of associations between cyber victimization and psychological outcomes. Research on adolescents' face-to-face PV has suggested that girls may be particularly vulnerable to negative effects of relational victimization (Galen & Underwood, 1997; Siegel et al., 2009; Storch, Phil, Nock, Masia-Warner, & Barlas, 2003b) and that PV experiences have a greater impact on adolescent girls' distress levels than boys' (e.g., Prinstein et al., 2001; Siegel et al., 2009). Other evidence suggests that adolescent girls identify and respond more negatively to interpersonal stressors than boys (Hankin, Mermelstein, & Roesch, 2007). Thus, the current study expanded existing research and examined the role of gender in moderating the associations between cyber victimization and adolescents' internalized distress. Specifically, it was expected that girls would demonstrate stronger associations between cyber victimization and internalized distress, compared to boys.

Third, and finally, this study examined overall Internet use as another important moderating variable. As discussed above, there are competing hypotheses regarding the positive and negative effects of the Internet (c.f., Kraut et al., 1998; McKenna & Bargh, 2000). As such, it is important to examine whether the impact of cyber victimization has disproportionate effects on heavier (versus lighter) Internet users, or whether cyber victimization represents a particularly damaging experience for those who use the

Internet infrequently. Research to date would at least suggest there are main effects of Internet use on cyber victimization, such that heavy Internet or "expert" users experience greater cyber victimization (Juvonen & Gross, 2008; Sengupta & Chadhum, 2011; Ybarra & Mitchell, 2004); however, there have been few examinations of Internet use as a potential moderator of associations between cyber victimization and psychological outcomes. Among older adolescents, Landoll and La Greca (2010) found Internet use to moderate associations between cyber victimization and depressive symptoms, such that heavier Internet users had stronger associations between cyber victimization and symptoms of depression. Thus, the current study examined the moderating influence of Internet use on the association between cyber victimization and adolescents' internalized distress. It was expected that cyber victimization would be most strongly associated with internalizing distress for heavy Internet users, compared to less frequent Internet users.

The Current Study

In summary, the current study addressed key gaps in the existing literature on the impact of cyber victimization on adolescents' psychological functioning. Past research has clearly indicated the need for a multiple item measure of cyber victimization that is sensitive to the Internet behavior of today's youth and captures behavior on popular Internet mediums such as social networking sites. Indeed, a recent review by Tokunga (2010) stressed the need for research in this area to use multiple item measures, examine individual factors that may place individuals at more or less risk for cyber victimization and move beyond cross-sectional studies.

Thus, the current study developed and validated a new measure of cyber victimization, the Cyber Victimization Scale for Adolescents (CVS-A), whose development addressed many of the above limitations. In addition to examining the psychometric properties of this new measure, the current study examined the direction of association between cyber victimization and internalizing distress through a short-term prospective design. Specifically, participants completed measures of PV, internalizing symptoms, and the CVS-A at two time points approximately six weeks apart. Past research has used an approximately two month time frame between administrations to capture the rapid fluctuations that occur developmentally within peer relationships in adolescence (Siegel et al., 2009). Thus, it was not expected that this slightly shorter time frame would adversely affect the ability to detect meaningful change. This prospective design also allowed us to examine and identify potential moderators of the associations between cyber victimization and adolescents' internalizing distress, which may aid in both treatment and future research in this area.

The **Specific Aims** of this research were as follows:

1. **To develop and examine the psychometric properties of a Cyber Victimization Scale for Adolescents (CVS-A; Landoll & La Greca, 2010) among a population of adolescents in 9th through 12th grade.**
    a. It was hypothesized this measure will demonstrate a single factor structure. However, a three factor structure that parallels traditional forms of PV (overt, relational and reputational) was also examined for reliability and validity.

b. It was hypothesized that this measure, derived from earlier work with older adolescents and young adults, will demonstrate good internal consistency and stability over time.

c. It was hypothesized that cyber victimization will be concurrently and positively associated with other forms of PV, including overt, relational, and reputational victimization.

2. **To examine concurrent and prospective associations between cyber victimization and internalizing symptoms.**

    a. It was hypothesized that cyber victimization will be positively associated with concurrent internalizing symptoms (i.e., symptoms of depression, social anxiety, and general anxiety), even when controlling for other forms of PV.

    b. It was hypothesized that higher levels cyber victimization will be predictive of increases in internalizing symptoms (i.e., symptoms of depression, social anxiety and general anxiety) over time, even when controlling for other forms of PV.

3. **To examine three potential moderators (peer social support, gender, Internet usage) of the concurrent and prospective associations between cyber victimization and internalizing symptoms.**

    a. It was hypothesized that stronger concurrent associations between cyber victimization and internalizing symptoms will be seen among girls (as compared to boys), heavy Internet users (as compared to light Internet users), and those with less peer social support (as compared to

those with high peer social support). Comparisons for classifying "heavy" and "light" Internet users and participants with "high" and "low" peer social support will be made by examining participants who score one standard deviation above and below the sample mean on those variables.

b. It was hypothesized that cyber victimization will be more predictive of internalizing symptoms over time among girls (as compared to boys), heavy Internet users (as compared to light Internet users), and those with less peer social support (as compared to those with high peer social support). Comparisons for classifying "heavy" and "light" Internet users and participants with "high" and "low" peer social support will be made by examining participants who score one standard deviation above and below the sample mean on those variables.

CHAPTER 2: METHOD

Participants

At Time 1, participants were 1045 ninth through twelfth grader recruited from two local public high schools in Miami-Dade County. Participants were 58% female, and ranged in age from 13-19 years (M = 15.80, SD = 1.21). Inclusion criteria were enrollment in ninth through twelfth grade as a student in a participating classroom within participating schools, and obtaining written parental consent, if a minor. The ethnicity of the sample was 73% Hispanic, 11% White non-Hispanic, 12% Black (African-American, Caribbean American and Hispanic Black) and 4% Asian. The participation and attrition rates for the entire study are shown in Figure 1.

Reasons for exclusion from this study included being absent from school on the day of testing, being no longer enrolled in participating classrooms (i.e., students shifting classes mid-semester), voluntary withdrawal from participation, and lack of English proficiency to complete study questionnaires. As shown in Figure 1, most non-participants were no longer enrolled (3%) or absent (8%) during testing. Because the study focused on victimization that occurs via electronic media, an additional exclusion criterion was not having access to some form of electronic media, either through personal computers at home or school, or through mobile devices. This excluded an additional 22 (2%) participants from the larger study. These 22 adolescents did not differ from the 1045 participants in regards to demographics or key study variables, with two exceptions. First is the frequency of Internet use (0%) and social networking site usage (0%) for this subsample versus 100% for the other participants; this is expected given the exclusion criteria. Second is that the individuals excluded were more likely to be Black (12% of the

full sample compared to 27% of the individuals excluded), $\chi 2$ (1) = 4.87, p = .03; however, this percentage is somewhat inflated due to the small number of participants excluded (i.e., of the 22 participants excluded for lack of Internet use, only 6 were Black).

Of those adolescents who participated at Time 1, 941 participants (90%) participated at Time 2. The majority of those unavailable were due to school absences (75%). No significant differences on key study variables emerged between participants with data from Time 1 only compared to those with data from both time points. Additionally, participants with data from Time 1 only did not differ in regards to gender or age compared to those with data from both time points. However, there were significant ethnic differences between those with data from Time 1 only and those with complete data, χ^2 (3) = 8.90, p = .03. Blacks were more likely to not participate at Time 2 compared to other ethnic groups, making up only 3% of the missing sample, compared to 12% of the sample with complete data.

In regards to missing data, analyses were conducted using all data available for each separate analytic aim. For regression analyses, this meant utilizing all participants who had data for those relevant variables, which varied by each regression equation. Prospective analyses were based on participants who had available data for key study variables drawn from those who participated at Time 2. However, results were also run on a subsample containing no missing data for any key study variable for Time 1 or Time 2. The results did not differ significantly aside from an anticipated loss of power, which reduced significance in all analyses. See the Results for more information on the analysis of missing data.

Procedure

First, approval was obtained from the University's Institutional Review Board and the Miami-Dade County Public Schools. After obtaining principal and teacher permission to recruit adolescents directly, letters and consent forms were distributed by teachers to adolescents. Parental consent forms were given in both English and Spanish. Teachers encouraged adolescents to return consent forms and they each received a $20 gift card for their assistance in the collection of the forms. Approximately 62% of students returned their parental permission forms, however this number is likely to be lower than the actual response rate, as many students were enrolled in classes taught by several participating teachers or took several classes with the same teacher and thus would have received multiple letters/consent forms. Of the students who did return a parental permission form, 1270 (87%) were given permission to participate. Adolescents who participated in this study were entered in a raffle to win a $50 Visa gift card (first prize) or one of two $20 Visa gift cards (second and third prize); these raffles were conducted separately at each of the participating schools. Adolescents were provided entries for each time point in which they participated; thus, adolescents could receive up to three entries for their study participation.

This study was part of a larger three-wave prospective study (La Greca, Landoll, & Herge, 2010). The current study uses data from the baseline data collection (Time 1), as well as the second data collection (Time 2) approximately 6 weeks later. Study questionnaires were administered in English only, as students in public high school

typically demonstrate sufficient English proficiency, as seen in previous research with this population. However, a small percentage of students (2%) were unable to complete the survey due to language concerns (see Figure 1).

At Time 1, adolescents signed assent forms and completed the following questionnaires: Cyber Victimization Scale for Adolescences, Revised Peer Experiences Questionnaire, Center for Epidemiological Studies – Depression scale, Social Anxiety Scale for Adolescents, Revised Children's Manifest Anxiety Scale – Second Edition, Perceived Social Support from Friends Scale, and a background questionnaire on demographics and media usage, as well as other measures measuring clinical, psychosocial and behavioral variables as part of the larger study. At Time 2, adolescents again completed the same measures. At each time point, adolescents were supervised by trained research assistants and completed the survey in 45 to 60 minutes during regular class periods.

Measures

Demographic Variables. (See Appendix A.) A background questionnaire assessed adolescents' age, gender, ethnicity, and use of the Internet and social networking sites. Ethnicity was measured by asking participants to select their racial background (White, Black or Asian) and whether or not they were of Hispanic/Latino descent or Caribbean descent. These responses were then used to group participants as non-Hispanic Whites, Hispanic Whites, Black (including Hispanic Blacks), and Asian. Questions regarding Internet and social networking site use assessed the frequency of usage, as well as access to certain types of electronic media (i.e., smartphones, picture messaging), the number of "friends" adolescents have on social networking sites and the degree to which they

monitor their privacy on these sites. Social networking and Internet use was measured by having participants report their frequency of text messaging, Internet/email access and social networking use in the past 3 months using a 6-point scale based on questions from previous study of adolescent media usage (Lenhart et al., 2010). The scoring of adolescent media usage was explored in planned analyses and is described below.

Cyber Victimization. (See Appendix B.) The *Cyber Victimization Scale for Adolescents* (CVS-A) was designed for use in this study. It was based on the *Cyber Victimization Scale* (CVS) (Landoll & La Greca, 2010) that assessed aversive peer experiences occurring via social networking sites, such as Facebook and MySpace.

To develop the initial CVS (Landoll & La Greca, 2010), the study team, which consisted of four advanced graduate students in clinical child psychology, first reviewed previous assessments of cyber victimization (e.g., Kowalski & Limber, 2006; Juvonen & Gross, 2008; Slonje & Smith, 2008; Williams & Guerra, 2006; Ybarra, 2004; Ybarra & Mitchell, 2004). Missing from previous measures was an assessment of aversive social experiences adolescents and young adults may experience on social networking sites. Thus, items were generated by using focus groups of adolescents and young adults (ages 13-25 years), who provided examples of ways that they or their peers experienced victimization through social networking sites. Focus group members generated items using the general prompt of "What are some things that you have done or have had done to you on social networking sites to make you upset or mad?" Later focus groups were also given items generated from previous focus groups and asked whether or not they had experienced those items and if they had any additional experiences. The focus groups led to the development of 12 items. In addition, further refinements to the items were made

in consultation with clinical psychologists with expertise in the area of peer relations using the Revised Peer Experiences Questionnaire (R-PEQ; Prinstein et al., 2001) as a model.

In total, the initial form of the CVS consisted of 12 items (items added to the CVS-A are marked with an asterisk in Appendix B) that reflected a variety of aversive experiences that one might experience on-line, as well as an additional question assessing the frequency of usage of social networking sites. These experiences included direct social exclusion (e.g., "A peer removed me from his/her list of friends on a social networking site"), indirect social exclusion (e.g., "A peer made me feel bad by not listing me in his/her 'Top 8' or 'Top Friends' list"), efforts to embarrass someone or damage one's reputation (e.g., "A peer pretended to be me on a SNS and did things to make me look bad/damage my friendships"), direct harassment (e.g., "A peer sent me a mean message on a SNS") and negative experiences regarding romantic relationships (e.g., "A person I was dating broke up with me using a SNS"). Participants rated how often each item occurred to them using a 5-point scale from 1 = "Never" to 5 = "A Few Times a Week."

Preliminary work with this scale, using older adolescents/young adults, found that this scale had single factor structure using 11 of the original 12 items (Landoll & La Greca, 2010). The internal consistency of this single factor structure was $\alpha = .81$ (Landoll & La Greca, 2010). Thus, the CVS score is obtained by calculating the average item score across the 11 items and can range from 1 ("Never") to 5 ("A Few Times a Week"). In support of the validity of the measure, using 216 college-aged older adolescents, Landoll and La Greca (2010) found that cyber victimization was strongly

associated with other forms of face-to-face PV (overt victimization: $r = .43$, $p < .001$; relational victimization: $r = .40$, $p < .001$), yet remained a distinct construct. Differences were not seen for the total CVS score across genders or comparing heavy versus light Internet users, although item level differences were seen between boys and girls. Furthermore, cyber victimization was found to be incrementally predictive of both social anxiety ($\Delta R^2 = .04$, $\beta = .24$, $p < .001$) and depressive symptoms ($\Delta R^2 = .09$, $\beta = .35$, $p < .001$), after controlling for the effects of overt and relational victimization.

To develop the CVS-A, several modifications were made to this measure. First, eight items were added to the measure. Specifically, based on feedback from focus groups of high-school aged adolescents, the original 12-item pool was expanded to include 4 additional items (16 items total) that reflected additional aversive peer experiences that may occur on-line (e.g., "A peer shared embarrassing pictures or videos of me via electronic media," "A peer posted things via electronic media to try and make me feel excluded from a party or social event"). These additional items also were intended to capture potential subtypes of cyber victimization that may parallel types of traditional PV questionnaires (e.g., relational PV, reputational PV), as reflected on measures such as the R-PEQ (De Los Reyes & Prinstein, 2004). In addition, 4 items were added to reflect positive peer experiences (e.g., "A peer posted pictures of me having fun and spending time with them via electronic media") that may occur on-line. (All newly developed items are marked with an asterisk in the measure that appears in Appendix B.) All items were scored using the same 5-point scale (1 = "Never", 5 = "A Few Times a Week"). Thus, the CVS-A now had 20 items, 16 to assess cyber victimization experiences and 4 positive/filler items.

Second, the language of the CVS-A items were modified to refer to technology use in a broader manner. Specifically, the term "electronic media" was used to replace many of the specific technology mediums (i.e., texting, social networking sites) to allow for a more diverse set of experiences that were not so dependent on a specific type of technology. Electronic media was defined as "any Internet site, Social Networking Site (SNS), text messaging, email, instant messaging and picture messaging accessed via a computer, cell phone, or other mobile device."

Third, the original CVS item assessing frequency of social networking usage was removed from the measure and instead placed on the demographic questionnaire and combined with several additional items on adolescents' electronic media usage (as described above).

Finally, the instructions for the measure were revised so participants were instructed to rate how often these experiences have occurred in the past two months to reflect the design of the current study, with assessments occurring about 6 weeks apart, and provide clarity on the assessment period, as the original CVS had not specified a specific time frame for participants' responses. Scores for the CVS-A were calculated by averaging the participants' ratings for the items that were retained on the scale (see the Results).

As part of the larger study, but not included in planned analyses, participants also were asked to identify whether or not they had engaged in any of these behaviors as an aggressor against other peers. Participants responded either "Yes" or "No." Participants were asked to rate the occurrence of these events over the same two month period.

Peer Victimization. (Appendix C) The *Revised Peer Experiences Questionnaire-* (R-PEQ; De Los Reyes & Prinstein, 2004) is an 18 item scale that assesses relational, reputational, and overt victimization. Participants rated how often these experiences have occurred in the past two months. Three items reflect overt victimization (e.g., "A peer hit, kicked, or pushed me in a mean way." "A peer chased me like he/she was really trying to hurt me."). Three items reflect relational victimization (e.g., "Some peers left me out of an activity that I really wanted to be included in," "A peer did not invite me to a party/social event even though they knew I wanted to go."). Three items reflect reputational victimization (e.g., "A teen tried to damage my social reputation by spreading rumors about me", "A teen gossiped about me so others would not like me", "A teen said mean things about me so that people would think I was a loser").

Participants rated how often each event occurred to them using a 5-point scale (1 = "Never" to 5 = "A Few Times a Week"). Subscale scores for overt, relational, and reputational victimization were calculated by taking the mean of individual items on each subscale, and thus can range from 1 to 5. The R-PEQ has been shown to have good internal consistency (previous studies have found $\alpha = .84$ for relational victimization, $\alpha = .83$ for reputational victimization, and $\alpha = .78$ for overt victimization; De Los Reyes & Prinstein, 2004). Additionally, other studies have reported similar reliability estimates (La Greca & Harrison, 2005; Siegel et al., 2009). The R-PEQ has also demonstrated good convergent validity with measures of internalizing distress, other measures of PV and peer aggression (De Los Reyes & Prinstein, 2004; La Greca & Harrison, 2005; Prinstein

et al., 2001; Siegel et al., 2009). In the current sample, at Time 1, internal consistency was as follows: $\alpha = .73$ for relational victimization, $\alpha = .79$ for reputational victimization, and $\alpha = .66$ for overt victimization.

Depressive Symptoms. (Appendix D) The *Center for Epidemiological Studies – Depression Scale* (CES-D; Radloff, 1977) is a 20-item measure that assesses depressive symptoms. Participants rate how often they identified with each statement over the past 2 weeks (e.g., "I felt that I could not shake off the blues even with help from my family or friends," "I felt lonely.") Items are scored 0 – 3, with higher scores indicating higher frequency of depressive symptoms (or lower frequency of positive feelings). The total score was used, which is calculated by summing all item scores, and thus can range from 0 to 60. The CES-D has been widely used in research and found to be a reliable and valid measure of depressive symptoms in adolescents, having demonstrated appropriate convergent validity with clinical interviews for depression (Chabrol, Montovany, Chouicha, & DuConge, 2008). Previous studies have reported internal consistency to be $\alpha = .85$. In the current sample, internal consistency was $\alpha = .88$ at Time 1 and $\alpha = .87$ at Time 2.

Social Anxiety Symptoms. (Appendix E) The *Social Anxiety Scale for Adolescents* (SAS-A; La Greca & Lopez, 1998) is an 18-item measure that assesses symptoms of social anxiety over the past three months (e.g., "I feel shy around people I don't know," "I worry about what others think of me."). Respondents rate the items on a 5-point scale, with responses ranging from 1 ("Not at all") to 5 ("All the time"). While the SAS-A contains 3 subscales (Fear of Negative Evaluation, Social Avoidance and Distress in New Situations and Social Avoidance and Distress – General), the total score was used for the

study analyses and is calculated by summing all items; this total can range from 18 to 90. The SAS-A has been widely used to identify adolescents who exhibit symptoms of social anxiety (La Greca & Stone, 1993; La Greca & Harrison, 2005; Siegel et al., 2009). Internal consistency for the total score in previous studies has been high (α = .87-.91; La Greca & Harrison, 2005; Siegel et al., 2009). Additionally, convergent validity with other measures of social anxiety has been found for the total score (Storch, Masia-Warner, Crisp, & Klein, 2005). In the current sample, the internal consistency of the SAS-A was α = .92 at Time 1 and α = .93 at Time 2.

Anxiety Symptoms. (Appendix F). The *Revised Children's Manifest Anxiety Scale: Second Edition* (RCMAS-2 SF-TOT; Reynolds & Richmond, 2008) is a 10-item questionnaire assessing fear or anxiety symptoms. This is a widely used scale that includes items such as "I am nervous" and "I worry that others do not like me." Adolescents respond "Yes" or "No" to indicate whether or not they personally agree with each item over the past two months. The scale provides an overall score of anxiety symptoms by summing all "Yes" responses. The RCMAS-2 has demonstrated excellent psychometric properties and was normed across youth ranging from age 6 to age 19 (Reynolds & Richmond, 2008). Previous estimates of internal consistency for the RCMAS-2 have ranged from α = .78 to .85 (Reynolds & Richmond, 2000) and its factor structure has been found to be consistent among Hispanic and European American youth (Varela & Biggs, 2006). In the current sample, internal consistency was α = .74 at Time 1 and α = .79 at Time 2.

Social Support. (Appendix G) The *Perceived Social Support From Friends Scale* (PSS; Procidano & Heller, 1983) is a 20-item measure used to assess adolescents' perceived social support from close friends. Adolescents rated whether each statement about a form of social support is true (1) or false (0) for themselves. The total score was used and is calculated by summing across all items and thus can range from 0 to 20. This scale has been widely used in past research with adolescents and demonstrated excellent internal consistency, ranging from $\alpha = .81$ to .92 (La Greca, Auslander, Greco, Spetter, Fisher, & Santiago, 1995; Lyons, Perrotta, & Hancher-Kvam, 1988; Procidano & Heller, 1983; Sears, Graham, & Campbell, 2009). The PSS has also demonstrated validity, in that it has positive relationships with other measures of help-seeking and friendship support among adolescents (Sears et al., 2009). In the current sample, the internal consistency of the PSS was $\alpha = .79$.

CHAPTER 3: RESULTS

Specific Aim #1: Psychometric Analyses of the Cyber Victimization Scale for Adolescents

Preliminary Analyses. Prior to conducting additional preliminary and planned analyses, it was necessary to determine the factor structure of the CVS-A and evaluate its psychometric properties. In order to determine the most appropriate factor structure, a cross-validation technique was used in which the main sample at Time 1 was randomly divided into two independent subsamples ($n_A = 591$, $n_B = 571$). These subsamples were found to exhibit no significant differences on any of the key study and demographic variables.

Conceptual Model. As previously discussed, a conceptual approach to considering potential subscales within the CVS-A was developed. As the CVS-A was originally created with inspiration from the R-PEQ and a consideration of the overt, relational and reputational types of PV (Landoll & La Greca, 2010), CVS-A items were analyzed for whether or not they fit with cyber victimization that may mirror or resemble traditional counterparts. Independent raters with knowledge of the CVS-A scale development and PV categorized each CVS-A item as an indicator of relational, reputational or aggressive (considered similar to overt PV) cyber victimization. Results of these ratings are included in Table 1. Five independent raters agreed on 50% of the items (and 40% of the negative items) with 100% agreement. Additionally, only 1 item (item 12; "A peer sent me a mean message via electronic media") failed to elicit a majority of raters with consistent responses. For one item (item 14), the majority of raters identified this item ("A peer prevented me from joining a group via electronic media that I really wanted to join") as relational cyber victimization; however, upon discussion, it was agreed that aggressive

cyber victimization was a better fit. This distinction was made in clarifying that aggressive cyber victimization, being considered potentially similar to traditional overt PV, represented a malicious, intentional and deliberate occurrence, recognizing that the severity of these behaviors could occur along a continuum of less severe aggressive acts to more severe acts. Other discrepancies were discussed and resolved such that three items were eliminated (items 3, 11, 12). Item 3 was eliminated due to having a majority of the following concerns: conceptual difficulties in resolution and/or concerns about item meaning differing across context; low endorsement; or high skewness in item response (item-level descriptives are shown in Table 2). Item 11 was eliminated due to concerns that the item was not clear whether or not this event occurred in a public domain (e.g., spreading rumors on a public portion of a website) or private (e.g., sharing a secret or rumor with another individual via text or personal message), and thus could not be reliably assigned to a category. Item 12 was eliminated for failure to obtain a majority of raters' opinions and inability to resolve conceptual difficulties across raters. Thus, the final factor structure for the three-factor model was as follows: positive items (items 4, 10, 15, 20; not included in planned analyses); aggressive cyber victimization (items 9, 13, 14, 16, 19); relational cyber victimization (items 1, 2, 17, 18) and reputational cyber victimization (items 5, 6, 7, 8).

Confirmatory Factor Analysis. In line with planned analyses, a confirmatory factor analysis (CFA) was conducted to test the generalizability of the conceptual model described above consisting of aggressive, relational and reputational subscales. An alternative model was tested utilizing a single factor structure of 13 items following the elimination of items 3, 11 and 12 as described above and consistent with the single factor

structure suggested by Landoll and La Greca (2010) and theoretical consideration of a higher-order factor of cyber victimization. These CFAs were conducted on both subsamples in line with prudent statistical practice with factorial loadings constrained to be equal across both samples which were tested simultaneously (Thompson, 2004). The path model tested in the CFA is shown in Figure 2 for the three-factor model and Figure 3 for the single factor model. Given the fact that items were expected to share some common variance, error variances for items were allowed to be correlated and estimated with one another as suggested by the model for both structures.

For the single factor structure, the final model yielded good fit in consideration of the large sample size, χ^2 (128) = 269.35, $p < .01$, CFI = .95, RMSEA = .05, SRMR = .05. For the three-factor model, the final model yielded similar fit statistics, χ^2 (126) = 311.10, $p < .01$, CFI = .93, RMSEA = .05, SRMR = .04. Item loadings for the three-factor and single factor structures are shown in Table 3 and all appeared to be reasonable, thus no items were considered for elimination. A chi-square difference test between the two models suggested the single factor structure yielded superior fit, χ^2 (2) = 41.75, $p < .001$.

Psychometric properties, including descriptives, reliability (Cronbach's alpha), stability (bivariate correlations of test-retest reliability for Time 1 and Time 2 approximately 6 weeks apart) and convergent validity with face-to-face PV for all models are shown in Table 4. All cyber victimization scales demonstrated adequate test-retest reliability over approximately 6 weeks (r = .43 to .65). All scales demonstrated appropriate, positively significant associations with traditional PV as well as appropriate correlations among subscales. Additionally, the correlations between cyber victimization and traditional PV were significantly higher than correlations between cyber

victimization and internalizing distress and Internet use when tested using a Fisher's z test. This would be expected as the associations between forms of PV should be higher than associations between any type of PV and various psychological outcomes. However, the subscales were limited by poor internal consistency and had some deviations from normality. The full scale demonstrated good internal consistency and required only a simple transformation to correct skewness when utilized as an outcome in planned analyses.

In summary, the three-factor structure contained subscales that were conceptually meaningful and were distributed relatively normally with some adequate indicators of reliability (stability, convergent validity with traditional PV). However, the use of the three-factor model was tempered by its poor internal consistency and demonstrated worse fit during model testing. The single factor structure demonstrated both strong statistical support (including good internal consistency and improved model fit) and theoretical support consistent with previous research (Landoll & La Greca, 2010), and, as such, was utilized primarily in planned analyses. However, the three-factor model was tested in an exploratory fashion and is reported below when different from main analyses.

Preliminary Analyses and Descriptive Information

Distribution of Variables and Missingness. All other study variables were examined for normality and found to be within acceptable limits (Skewness < 3, Kurtosis < 10). Data were also examined for missingness. Scaled scores were not calculated for individuals who had greater than 20% of items missing. This was found to be less than 20% of cases for all study variables. However, as some participants were missing certain study variables and not others, use of list-wise deletion in prospective regression analyses

eliminated up to 21% of cases at Time 1 and up to 27% at Time 2. Adolescents without missing data reported higher Internet usage (M = 4.43, SD = .86), t (527.60) = 2.64, p < .01, compared to those missing data on one or more key study variables (M = 4.25, SD = 1.06). Adolescents without missing data were also younger (M = 15.74, SD = 1.19) than those with missing data (M = 15.89, SD = 1.24), t (1110) = 2.68, p < .01. No other significant differences emerged between those with missing data and those without on key study variables.

Means and Demographic Differences for Key Study Variables. Next, mean levels for study variables were examined in comparison to past community samples. Means and standard deviations for all key study variables are presented for the full sample in Table 4, using all available data for each individual study variable. These values were similar to previous community samples of adolescents, including relatively low endorsement of peer and cyber victimization (e.g., La Greca & Harrison, 2005; Prinstein, Cheah, & Guyer, 2005).

Mean levels of study variables were also analyzed for demographic differences in regards to gender, age and ethnicity of the sample based on all available data. Means and standard deviations broken down by gender and ethnicity are presented in Table 6. For gender differences, several significant differences emerged. Among PV variables, girls reported higher relational, t (1032) = 2.96, p < .01, reputational, t (1001.34) = 5.26, p < .001, and cyber victimization, t (1022) = 2.22, p = .03, compared to boys. Boys reported higher overt victimization, t (759.18) = 4.99, p < .001, compared to girls. In regards to outcome and potential moderators, girls reported more symptoms of depression at Time 1, t (977) = 2.92, p < .001, and Time 2, t (959.45) = 4.33, p < .001; more general anxiety

at Time 1, t (921.56) = 6.88, $p < .001$, and Time 2, t (902.07) = 5.66, $p < .001$; as well as more social anxiety at Time 1, t (989) = 2.99, $p < .01$, and Time 2, t (925) = 3.53, $p < .001$. Girls also reported more social networking use, t (659.20) = 5.13, $p < .001$, and perceived social support from friends, t (818.32) = 8.49, $p < .001$, compared to boys.

In regards to age, there was a significant negative correlation between age and overt victimization, $r = -.09$, $p < .01$, cyber victimization, $r = -.07$, $p = .03$, and general anxiety at Time 1, $r = -.07$, $p = .03$, and Time 2, $r = -.08$, $p = .01$. No other difference on key study variables emerged by age.

Finally, in regards to ethnicity, significant differences emerged for cyber victimization, F (3, 985) = 2.96, $p = .03$, overt victimization, F (3, 995) = 3.73, $p = .01$, relational victimization, F (3, 994) = 4.69, $p < .01$, reputational victimization, F (3, 994) = 3.55, $p = .01$, and social anxiety, F (3, 954) = 2.96, $p = .03$. In particular, non-Hispanic Whites reported higher relational victimization compared to the rest of the sample, t (994) = 3.52, $p < .001$, and Hispanics reported lower overt victimization, t (139.15) = 2.63, $p < .01$, lower reputational victimization, t (120.26) = 2.69, $p < .01$, and lower social anxiety, t (954) = 2.33, $p = .02$, compared to the rest of the sample. While the omnibus F statistic was significant for cyber victimization, post-hoc follow-up testing did not reveal significant differences. Furthermore, given the disproportionate amount of Hispanic Whites in the sample (73% of the sample), caution should be utilized in interpreting these results. No other significant demographic difference on key study variables was observed.

Correlations Among Key Study Variables. Bivariate correlations are shown in Table 5. Significant correlations emerged in expected directions. Specifically, cyber victimization at Time 1 and Time 2 was significantly associated with higher levels of other forms of PV at Time 1, higher levels of internalizing symptoms (depression, social anxiety and general anxiety) at both time points, and higher levels of Internet and social networking use. Other, "traditional" forms of PV (relational, reputational, and overt) were also positively associated with all three measures of internalizing symptoms at both time points. Additionally, reputational and relational victimization were positively associated with social networking use. Lastly in terms of PV, overt and relational victimization were negatively associated with perceived social support from friends. Depressive symptoms at both Time 1 and Time 2 were additionally positively associated with the other internalizing symptoms at both time points and negatively associated with perceived social support from friends; the same pattern emerged for social anxiety. Additionally of interest was the fact that both social and general anxiety (at both time points) were positively associated with Internet use and general anxiety (at both time points) was also positively associated with social networking use. Finally, Internet and social networking use were highly positively correlated and additionally were positively correlated with perceived social support from friends.

Measurement of Electronic Media Usage. Descriptive information on electronic media usage for the sample is presented in Table 7. In order to measure electronic media usage as a potential moderating variable, several alternatives were explored. The first was an attempt to create a higher-order factor measuring electronic media usage comprised of items asking participants to report their personal extent of social networking usage,

Internet usage and texting. This approach was limited by the ability to only utilize three items, which was reflected in statistical analyses and limited the ability of a confirmatory factor analysis to identify a higher order factor. As such, this factor demonstrated poor internal consistency, $\alpha = .47$ and a confirmatory factor analysis using these three items yielded a poor fit, $\chi^2(1) = 84.89$, $p < .001$, CFI = .76, RMSEA = .29, SRMR = .13. Follow-up analyses suggested in particular, texting did not appear to be as strongly correlated with Internet usage, $r = .10$, $p < .01$, or social networking usage, $r = .21$, $p < .001$, as Internet and social networking usage were associated with one another, $r = .48$, $p < .001$. Furthermore, the removal of texting from this three factor solution was the only item removal which improved Cronbach's alpha ($\alpha = .62$). Since two items are insufficient to create a common factor using common statistical practices (Thompson, 2004), these two items were utilized in subsequent analyses as potential moderators in parallel analyses.

In summary, key study variables exhibited patterns of descriptive data that are consistent with previous literature. As noted when discussing the factor structure of the CVS-A, some violations of normality were observed for cyber victimization, which were fixed with appropriate transformations as needed when utilized as an outcome measure in planned analyses. Electronic media usage, as measured by three separate indicators, was not a reliable single construct; thus, planned analyses examined Internet use and social networking use in parallel regression analyses and any differences in findings are noted below.

Specific Aim #2: Concurrent and Prospective Associations Between Cyber Victimization and Internalizing Symptoms

Concurrent Associations. Concurrent associations between cyber victimization and internalizing symptoms were conducted using planned parallel regression analyses. Results are shown in Table 8.

Demographic variables (age, gender, ethnicity) were entered on the first step. For depressive symptoms, gender was a significant predictor such that girls reported higher depressive symptoms compared to boys. Additionally, while not when entered initially, in the final model, Blacks were significantly more likely to report greater depressive symptoms than non-Hispanic Whites. For social anxiety, gender and ethnicity were significant predictors, such that girls reported higher symptoms of social anxiety compared to boys and Hispanics reported lower social anxiety compared to non-Hispanic Whites, although the latter difference was not significant in the final model. For general anxiety, gender was also a significant predictor, such that girls reported higher symptoms of general anxiety compared to boys.

Traditional forms of PV were entered on the second step. For symptoms of depression and general anxiety, all three forms of traditional PV (overt, relational and reputational), were associated with increased symptomology. For social anxiety, overt and relational were significant positive predictors.

Finally, cyber victimization (measured by the single factor structure consisting of 13 items as described above) was entered on the third and final step. In line with study hypotheses, cyber victimization was positively associated with higher depressive symptoms after controlling for traditional forms of PV, and the inclusion of this step

contributed an additional 1% of the variance to the final model, which predicted a total of 24% of the variance in depressive symptoms at Time 1. Contrary to study hypotheses, cyber victimization was not significantly incrementally predictive in the final step for either social anxiety or general anxiety, after controlling for traditional forms of PV.

Prospective Associations. Prospective associations between cyber victimization and internalizing symptoms were conducted using planned parallel regression analyses similar to those described for concurrent analyses. In fact, the first three steps were identical to the planned concurrent analyses, except that Time 2 variables were used as outcomes. Results for prospective analyses predicting internalizing symptoms at Time 2 are shown in Table 9.

For demographic variables (entered on step 1), gender was a significant predictor for all internalizing symptoms, with girls experiencing higher levels of symptomology compared to boys when initially entered. Additionally, Hispanics were less likely to report higher social anxiety compared to non-Hispanic Whites when initially entered. This is similar to concurrent findings.

In terms of predictors of Time 2 outcomes, for traditional forms of PV (entered on step 2), all three forms of traditional victimization were significantly and positively associated with symptoms of depression and general anxiety at Time 2 when initially entered. Relational victimization was significantly and positively associated with social anxiety at Time 2 both initially and in the final model. Additionally, cyber victimization (entered on step 3) was incrementally predictive of higher levels of depressive symptoms at Time 2 initially and in the final model.

Given the high degree of correlation among variables, it was decided to enter the Time 1 measure of internalizing symptoms on the final step to examine the change in beta weights among currently significant predictors when Time 1 levels of the outcome variables were controlled. In this way, these analyses allow for a more stringent test on the hypotheses regarding incremental and predictive validity of PV (both traditional and cyber) at Time 1. Additionally, these analyses allow for the examination of the contribution of traditional and cyber victimization to symptoms of depression, social anxiety and general anxiety over time through the model proposed on Step 3; whereas, the model including Time 1 symptoms allows for an examination of any change in symptomology predicted by Time 1 traditional and cyber victimization.

When entering depressive symptoms at Time 1 on the final step predicting depressive symptoms at Time 2, the beta weights for all traditional forms of PV and demographic variables became non-significant. However, cyber victimization remained a significant predictor in line with study hypotheses.

For social anxiety, only relational victimization remained a significant predictor when controlling for Time 1 social anxiety symptoms. Cyber victimization was not a significant predictor when entered initially or in the final model.

Finally, for general anxiety, no predictors remained significant in the final model. Similar to concurrent analyses, all forms of traditional PV, as well as gender were significant predictors when entered initially, but became non-significant with the inclusion of Time 1 general anxiety symptoms. Cyber victimization was not a significant predictor when entered initially or in the final model.

Specific Aim #3: Potential Moderating Variables of the Concurrent and Prospective Association Between Cyber Victimization and Internalizing Symptoms

Concurrent Associations. In order to test variables that may potentially moderate the associations between cyber victimization and internalizing symptoms concurrently, parallel planned regression analyses were conducted. Results are presented in Table 10. Planned analyses were identical to those described above with the following two exceptions. One, potential moderators (Internet usage and perceived social support from friends, both measured at Time 1) were included as main effects and entered on the second step of the analysis, between demographic variables and traditional PV. Two, resulting two-way interactions between potential moderating variables (gender, Internet usage, and perceived social support from friends) and cyber victimization were entered on an additional fifth and final step.

Results did not significantly differ from previously reported findings for demographic variables, traditional PV or cyber victimization. However, perceived social support from friends was a significant predictor when entered initially and was associated with lower levels of all three types of internalizing symptoms; further, it remained significant in the final model for social anxiety. Additionally, Internet usage was positively and significantly associated with social anxiety and general anxiety when initially entered and remained significant in the final model for general anxiety.

Contrary to study hypotheses, none of these two-way interactions were found to be significant, suggesting friend's social support, gender, and Internet usage do not moderate associations between cyber victimization and internalizing symptoms, when tested concurrently or when entered separately. Parallel regression analyses were also

conducted using social networking usage instead of more general Internet usage and results were also not significant. In conducting exploratory analyses with the alternative three-factor structure for cyber victimization, significant two way interactions also did not emerge.

Prospective Associations. Moderators of the prospective associations between cyber victimization and internalizing symptoms were also conducted using planned parallel regression techniques. Results are presented in Table 11. Planned analyses were identical to those used to concurrent moderators, using Time 2 internalizing symptoms as the outcomes, with one exception. Time 1 internalizing symptoms were included on a sixth and final step to provide a more stringent test of the incremental contribution of moderating variables, in line with prospective analyses described above (see Specific Aim #2b).

Results did not significantly differ from previously reported findings for demographic variables or for traditional PV or cyber victimization. Similar to concurrent findings, perceived social support from friends was a significant predictor of all internalizing symptoms when entered initially, and Internet usage was a significant predictor for symptoms of social and general anxiety when entered initially (and was marginally significant for depressive symptoms).

In line with study hypotheses, a significant interaction between cyber victimization and perceived social support from friends predicting Time 2 depressive symptoms emerged. This interaction remained significant with the inclusion of Time 1 depressive symptoms. The interaction was probed following procedures outlined by Aiken and West (1991), and further elaborated by Holmbeck (2002). The interaction was

graphed and is presented in Figure 4. Simple slope analyses indicated when perceived social support from friends was low (-1 *SD* below the mean), cyber victimization predicted greater symptoms of depression at Time 2, $\beta = .10$, $t\ (822) = 3.53$, $p < .001$. However, when perceived social support from friends was high (+1 *SD* above the mean), cyber victimization was even more strongly predictive of increased symptoms of depression at Time 2, $\beta = .18$, $t\ (822) = 4.69$, $p < .001$. This finding was inconsistent with study hypotheses and merits further consideration. No other significant moderators were found in planned analyses. Again, parallel analyses were conducted using social networking site usage as a moderator (in lieu of general Internet usage) and results were not significant.

In conducting exploratory analyses with the alternative three-factor structure for cyber victimization, several significant interactions were found. The first was a significant interaction between reputational cyber victimization and perceived social support. This interaction was in the same direction as results from planned analyses described above (i.e., that cyber victimization was more strongly associated with depressive symptoms among adolescents who reported higher perceived social support from friends compared to those who reported lower peer social support), although reputational cyber victimization was not predictive of greater symptoms of depression when perceived social support was low.

Additional significant interactions emerged between gender and both reputational, $\beta = -.13$, $t\ (753) = 2.20$, $p = .03$, and aggressive cyber victimization, $\beta = .15$, $t\ (753) = 2.94$, $p < .01$. Post-hoc probing of these interactions was conducted separately in the manner described above for simple slope analyses. Results indicated that aggressive

cyber victimization was predictive of greater depressive symptoms at Time 2 (controlling for Time 1 symptoms) for girls, $\beta = .20$, $t\ (852) = 5.02$, $p < .001$, but not for boys, $\beta = .05$, $t\ (852) = 1.40$, $p = .16$. This is consistent with study hypotheses and the interaction was graphed and is shown in Figure 5. For reputational cyber victimization, a pattern contrary to study hypotheses emerged such that reputational cyber victimization was predictive of greater depressive symptoms at Time 2 (controlling for Time 1 symptoms) for boys, $\beta = .09$, $t\ (852) = 2.06$, $p = .04$, but not for girls, $\beta = .06$, $t\ (852) = 1.74$, $p = .08$. This interaction was graphed and is shown in Figure 6. No other significant interactions emerged in exploratory analyses.

CHAPTER 4: DISCUSSION

PV has well documented associations with adolescents' internalizing distress (Adams & Bukowski, 2008; Dinkes et al., 2007; Hawker & Boulton, 2000; La Greca & Harrison, 2005; Prinstein et al., 2001; Siegel et al., 2009; Storch et al., 2003a). Past literature has delineated various types of PV, including relational, reputational and overt victimization, and has found these experiences to be relatively common among youth (Dinkes et al., 2007; La Greca & Harrison, 2005; Storch et al., 2003a). In particular, relational forms of victimization appear to strongly associated with symptoms of internalizing distress, such as social anxiety (La Greca & Harrison, 2005, Siegel et al., 2009). However, much less is known about cyber victimization and its association with psychological outcomes.

The current study addressed several limitations of previous research on adolescent PV and advanced our understanding of cyber victimization and its potential effects on adolescents' psychological functioning. Specifically, the current study designed and evaluated a new measure of adolescent cyber victimization, the CVS-A, which demonstrated good psychometric properties (i.e., good factor structure, internal consistency, stability over time, and concurrent associations with other measures of adolescent PV). Further, the study demonstrated that cyber victimization was related to adolescents' symptoms of depression, both concurrently and prospectively, and that social support and gender moderate the associations between cyber victimization and adolescents' depressive symptoms. Specifically, among adolescents with high levels of perceived social support, those with greater cyber victimization reported more depressive symptoms, compared to those with low perceived social support. Additionally, girls

experiencing aggressive CV reported higher depressive symptoms compared to boys, and boys experiencing reputational CV reported higher depressive symptoms compared to girls. These findings are discussed, in turn, below.

Development and Psychometric Properties of the CVS-A

The development of the *Cyber Victimization Scale for Adolescents* (CVS-A) represents an effort to create a detailed, experience-focused questionnaire that captures a variety of positive and aversive peer experiences adolescents encounter on-line. Findings from the current study provide encouraging psychometric support for the CVS-A.

First, with regard to *factor structure*, consistent with study hypotheses, a single factor structure for the CVS-A was supported by the results of a confirmatory factor analysis. Additionally, results are consistent with findings from previous versions of the CVS-A demonstrating a single factor structure within a young adult sample (Landoll & La Greca, 2010). This factor structure was adopted for the subsequent study analyses, as it was the most parsimonious model evaluated, had the strongest internal consistency, and demonstrated improved model fit.

The major limitation of the three-factor model of adolescents' cyber victimization experiences compared to the single factor model was poor internal consistency and poorer model fit. However, while the majority of results were similar using either model, the three-factor model offered some interesting findings in regards to moderating variables between cyber victimization subscales and symptoms of depression, elaborated below. Although promising, more research is needed to evaluate whether or not the CVS-A is best considered as a measure of a unitary construct, or whether it is best conceptualized as containing subscales that reflect reputational, relational and aggressive

cyber victimization. At the present time, it is suggested that the measure be used a unitary construct, while awaiting further investigation of the theoretical subscales.

One problem that affected the factor structure of the CVS-A was violation of the assumption of a normal distribution. This was in large part due to the low frequency of endorsement and non-normality of many of the individual items on the CVS-A. This is in contrast to the previous findings that revealed that the full scale was normally distributed among a collegiate sample (Landoll & La Greca, 2010); thus, major concerns regarding the scale's distribution should be tempered until further research.

The current rating scale provides the advantage of being identical to the scale used for the R-PEQ, allowing more easily for direct comparisons across types of PV. Thus, further evaluation is needed to determine whether or not a revision to the rating scale for the CVS-A items, to allow for the lower frequency of cyber victimization experiences, would improve the distribution of the CVS-A items. Nevertheless, it is also promising that both the full scale and subscale models of the CVS-A were fixed by simple transformations.

Second, with regards to *reliability*, results for the single factor structure were very promising. In terms of the internal consistency of the single-CVS-A scale, the findings revealed excellent internal consistency. In terms of the stability of the CVS-A from Time 1 to Time 2, the results suggested approximately 25% of the variance in this scale was shared between Time 1 and Time 2. Most encouragingly, the bivariate correlation between the CVS-A full scale at both time points was similar to correlations between relational, reputational and overt PV measured at both time points.

Third, with regards to *concurrent validity* of the CVS-A, the correlations between cyber victimization and the traditional forms of PV were significant, but not so high as to suggest concerns regarding multi-collinearity. Additionally, the stronger associations between traditional PV and cyber victimization compared to associations between cyber victimization and internalizing distress and Internet use provide evidence of divergent validity.

Finally, the *incremental validity* of cyber victimization in predicting depressive symptoms (after controlling for traditional PV) suggest cyber victimization is a separate, yet important construct to consider in adolescents' depressive symptomology. An underlying question in this emerging area of research has been whether or not cyber victimization represents a new, distinct form of PV, a different medium for the expression of PV, or a more "severe" form of PV. The pattern of findings from the current study suggests the possibility that cyber victimization may be a unique and distinct form of PV. If cyber victimization were a different medium but not conceptually different from traditional PV in general, you would likely see similar patterns of association between cyber victimization and each type of PV. Instead, findings point to a stronger association between cyber victimization and reputational PV ($r = .53$, $p < .001$) compared to the associations between cyber victimization and relational ($r = .44$, $p < .001$), Fisher's $z = 2.66$, $p < .01$, and overt PV ($r = .39$, $p < .001$), Fisher's $z = 4.03$, $p < .001$. If cyber victimization were simply more "severe" PV in general, you would see cyber victimization as incrementally predictive of any association between traditional PV and internalizing distress; instead, findings point to a unique association between cyber victimization and depressive symptoms, with null findings when examining cyber

victimization and symptoms of social or general anxiety. Reasons why cyber victimization may be distinct from traditional PV, as well as its unique relationship with reputational PV, are discussed below.

In summary, the findings provide good evidence for the psychometric properties of the CVS-A and are consistent with study hypotheses. Further research on the CVS-A is needed, however, to address issues such as the underlying factor structure and the sensitivity of the rating scale used to evaluate the items. Additionally, the cyber aggression questions included on CVS-A were not addressed in the current study and may also inform the validity of the scale.

Concurrent and Prospective Associations Between Cyber Victimization and Internalizing Symptoms

A second study aim was to examine how adolescents' reports of cyber victimization were related to their internalizing symptoms, controlling for demographics (age, gender, ethnicity) and traditional PV. Here the findings partially supported the initial predictions. Specifically, consistent with study hypotheses, both concurrent and prospective associations between cyber victimization and depressive symptoms were significant; however, cyber victimization was not related to adolescents' reports of anxiety or social anxiety, when other forms of PV were considered. Interestingly, in the prospective analyses, only cyber victimization remained a significant predictor of adolescents' symptoms of depression over time when initial symptomology was controlled, although all forms of peer victimization predicted increases in depression over time when initially entered.

CV's significant association with depressive symptoms is consistent with previous studies of cyber victimization (Juvonen & Gross, 2008; Katzer et al., 2009; Gradinger et al., 2009; Kiriakidis & Kavoura, 2010; Landoll & La Greca, 2010; Hinduja & Patchin, 2010; Perren et al., 2010; Tokunga, 2010). The prospective nature of this study offers an important extension of past literature. This makes sense, as negative peer experiences are often a predictor of psychological distress, and depressive symptoms in particular (Adams & Bukowski, 2008; Hankin et al., 2007; Hawker & Boulton, 2000; La Greca & Harrison, 2005; Prinstein et al., 2001; Shih, Eberhart, & Hammen, 2006). Findings highlight the fact that adolescents' on-line experiences are important to their social and emotional functioning and have an effect on the "real" world.

Contrary to study hypothesis, however, cyber victimization was not significantly associated with social anxiety concurrently or prospectively. Once again, relational and reputational victimization were associated with social anxiety symptoms concurrently, but overt victimization was not. Relational victimization was also a prospective predictor of increases in social anxiety, and the strongest predictor of all internalizing symptoms among traditional PV variables. This is consistent with past literature suggesting relational victimization is a robust predictor of social anxiety symptoms (Siegel et al., 2009; Storch et al., 2003a). A key feature of relational victimization is its reliance on the relationship between the perpetrator and the victim to cause emotional damage, thus, aggressors are often close friends (Crick, Casas & Nelson, 2002). In contrast, cyber victimization's association with reputational victimization, alluded to above, may suggest it plays a role in larger peer groups as opposed to within specific friendships.

While intuitively it may make sense that cyber victimization would also negatively affect adolescents' social anxiety, there are several potential explanations for these non-significant results with respect to cyber victimization. Specifically, adolescents who have symptoms of social anxiety may be less likely to experience cyber victimization. Although research has not supported the idea that adolescents who experience social anxiety use the Internet less frequently, their on-line activity may differ from non-socially anxious adolescents (Selfhout et al., 2009). In particular, research suggests adolescents with social anxiety use the Internet to interact with individuals with whom they may not know well in a face-to-face setting (Gross et al., 2002). Given that many of the items on the CVS-A reflect actions by an individual that has some familiarity with the person (to be included in their on-line "social network"), socially anxious adolescents may simply not experience cyber victimization as much due to a smaller on-line social network.

Another possible explanation for null findings may be that even if socially anxious adolescents experience cyber victimization, it might be perpetrated by individuals they do not know as well, and thus it may not carry the same psychological "meaning" or be perceived as negatively. Part of what may make cyber victimization particularly damaging is how it crosses into face-to-face interactions and experiences, which would be less likely if socially anxious individuals are not interacting on-line with their peers. It is also important to note that cyber victimization is associated with both social and general anxiety when not controlling for traditional PV, thus, the pathways through which cyber victimization affects anxious symptoms likely overlap considerably with the pathways that traditional PV affects in adolescents.

Also contrary to study hypotheses, cyber victimization was not significantly associated with general anxiety concurrently or prospectively. All three forms of traditional victimization were positively associated with general anxiety concurrently and prospectively; however, no variables were predictive of general anxiety prospectively after Time 1 symptomology was entered. More research is needed to better understand PV's role with more general experiences of anxiety as most literature has traditionally examined symptoms of social anxiety and depression (De Los Reyes & Prinstein, 2004; La Greca & Harrison, 2005; Siegel et al., 2009).

In considering the non-significant findings for general anxiety, one important consideration may be the social nature of victimization itself. Given that both traditional PV and cyber victimization represent experiences that are social by nature, it is possible that there is simply less of an association between these experiences and psychological distress that does not rely heavily on an interpersonal component (i.e., general anxiety).

Another possibility is that the non-significant prospective findings are attributable to the measure that was used to assess general anxiety. Specifically, the RCMAS-2 had a high level of stability between Time 1 and Time 2 symptoms of general anxiety. This stability may be in part due to a shorter time frame between the two time points of test administration than has been seen in previous research (Prinstein et al., 2005; La Greca & Harrison, 2005; Siegel et al., 2009). In addition, compared to previous research, this study used the short form of the RCMAS-2, which has fewer items than the full RCMAS-2, and thus the measure used in this study may fail to capture more subtle changes that

occur over time. Finally, the RCMAS-2 was designed as a measure of trait anxiety (DiFranza et al., 2004; Reynolds, 1982) and thus may not have been sensitive to tracking adolescents changes in general anxiety over time.

This study offers the ability to examine the unique contributions of cyber victimization compared to traditional PV while also distinguishing between symptoms of anxiety and depression as opposed to general psychological distress. Taken together, findings appear to consistently point to the role of relational victimization having a particular effect on social anxiety that is unique compared to other forms of PV; whereas, cyber victimization and reputational victimization appear most consistently related to depressive symptoms. This is an important distinction, as research has had difficulty disentangling the role of interpersonal processes on social anxiety versus depression (Starr, Davila, La Greca, & Landoll, 2011).

One of the processes that appears more linked to social anxiety is that of behavioral avoidance (as opposed to withdrawal; Starr et al., 2011). An aversive peer experience within a close friendship (as may occur with relational victimization) may be more likely to promote avoidance than a cyber or reputationally-based attack which may simply be harder to "avoid," particularly in the context of cyber victimization. This may be in part due to the fact that cyber victimization may be inescapable and permanent in the eyes of the victim. Many adolescents utilize smartphones (Donovan, 2011; Lenhart et al., 2010) that provide almost constant exposure to potential cyber victimization. This

constant exposure may deprive an adolescent of distancing themselves from a source of victimization, unlike more traditional forms, where avoidance may be an effective, although short-term, solution.

Another important finding is that cyber victimization is the only form of victimization found to be incrementally predictive of depressive symptoms over time when controlling for initial symptomology. This is an interesting advancement of existing literature. Cyber victimization appears to represent a particular pernicious form of victimization that, over time, is likely to place an adolescent at increased risk of depressive symptoms. It may represent a form of PV that is "over and above" the negative impact traditional forms of PV have on depressive symptomology, which again, in part, may be due to the difficulty of distancing oneself from the experience.

This unique finding must also be considered in context with cyber victimization's association with reputational PV. There is some evidence to support the possibility that CV may represent a more extreme form of reputational PV. Difficult to disentangle is the role or meaning of CV experiences that do not involve any public or reputational component (e.g., sending mean messages), however, it is important to note that even some other relational-oriented items (e.g., ignoring friend requests, removing from a list of friends, social exclusion discovered via social media) may have reputational implications given the public nature of newer electronic media, such as social networking sites. Regardless, CV appears to offer incremental validity over reputational PV, suggesting the importance of CV and electronic media in adolescents' social and emotional functioning. Additionally, the emergence of potential CV subtypes, and in

particular, different moderators of the association between subtypes of CV and internalized distress, further suggest the importance of examining the construct of CV as unique (yet related) compared to traditional PV.

Potential Moderators of Associations Between Cyber Victimization and Internalizing Symptoms

A third key study aim was to begin to examine potential moderators (e.g., gender, social support, Internet use) of the association between cyber victimization and adolescents' internalized distress. Some of the study findings supported the hypotheses, but others did not. Moderation analyses were only significant for depressive symptoms as an outcome variable and for gender and social support as moderators. Main effects of each moderator were also significant predictors of internalizing distress in patterns that replicate existing literature (Feesta & Ginsburg, 2011; Kraut et al., 1998; Stice, Rohde, Gau, & Ochner, 2011; Wittchen, Stein, & Kessler, 1999). As such, the following paragraphs focus on the aim of the current study by discussing the moderating effects observed.

First, with respect to gender, while moderating effects of gender on the associations between cyber victimization and internalizing distress were not seen in planned analyses, exploratory analyses using the three-factor model revealed interesting findings when examining adolescents' depressive symptoms over time. Specifically, boys showed a stronger association between reputational cyber victimization and symptoms of depression prospectively compared to girls; whereas, girls showed a stronger association

between aggressive cyber victimization and symptoms of depression prospectively compared to boys. It is important to note that gender differences in mean levels of cyber victimization and its subscales were not found.

One potential explanation for these findings may be they represent experiences outside of gender "norms." Past research examining traditional PV among has found boys report greater overt victimization (Crick & Bigbee, 1998; De Los Reyes & Prinstein, 2004; La Greca & Harrison, 2005; Prinstein et al., 2001). As the three-factor model of the CVS-A was derived to mirror traditional forms of PV, it may follow that aggressive cyber victimization is more pernicious to girls because it is outside of the gender "norm" as seen with traditional PV. While actual gender differences in reputational victimization have not reliably been observed (De Los Reyes & Prinstein, 2004; Prinstein et al., 2001; Siegel et al., 2009), the idea of gender "non-normative" forms of behavior being associated with greater distress is consistent with research on traditional peer aggression (Prinstein et al., 2001). It is important to note that research to date has not previous examined subtypes of cyber victimization and this study represents an important, but exploratory examination in this area of research.

Another explanation may be that these gender differences are due in part to the valence, context, meaning, or some other mechanism associated with these different sets of on-line experiences, which need further exploration. However, the statistical challenges associated with the three-factor model must temper these findings. More research is needed to better examine what may represent important theoretical distinctions in cyber victimization experiences, as well as whether or not these distinctions have different meanings for boys and girls. Future research that examines not

only the potential subscale structure of the CVS-A, but also potential structural differences across gender would offer an important extension of the current study. These future directions have the opportunity to not only shape research but also influence targeted clinical interventions for adolescents.

Second, with respect to social support, perceived social support from friends was found to moderate associations between cyber victimization and depressive symptoms, but not in the direction predicted. Adolescents who reported higher perceived social support actually reported stronger associations between cyber victimization and depressive symptoms over time, compared to those reporting lower perceived social support, contrary to study hypotheses. One potential explanation for these unusual findings may be in on-line correlates of high perceived social support. As such, this may suggest that peer social support *per se* was not a moderator of the association between cyber victimization and depression, but rather, serves as a proxy for another relevant variable.

One potentially relevant variable, which peer social support may have been a proxy for, is that of social networking size. Given the known similarity between on-line and off-line behavior (Gross, 2004; Gross et al., 2002; Lee, 2009; Mikami et al., 2010), it is plausible that those adolescents who report greater social support from friends utilize larger and more extensive social networks on-line. As many forms of electronic media are built around the formation of a social network, those with larger social networks may be more vulnerable to the effects of cyber victimization. Furthermore, as the constant exposure and difficulty distancing oneself from cyber victimization experiences may contribute to the difficulty of that experience, it is also reasonable to conclude this effect

may be more pronounced in those with a larger social network. This is different from the concept of "Internet use," as complexity of social network may evolve regardless of the amount of time an adolescent engages in electronic media use and is an important construct for future study. It also relates to potential explanations for the lack of association between cyber victimization and social anxiety, described above.

Another related explanation may come from a parallel between these findings and existing literature that has shown adolescents perceived as "popular" may display higher levels of aggression to preserve and promote their social rank (Prinstein & Cillessen, 2003). From this perspective, given the often public nature of cyber victimization experiences that may threaten one's social rank, adolescents with higher levels of peer social support may represent a group that "has more to lose" when experiencing cyber victimization and thus is more adversely affected in regards to psychological functioning. This is also consistent with findings that have examined differences between cyber and traditional PV suggesting that adolescents experiencing cyber victimization, as compared to those only experiencing traditional PV, report higher reactive aggression and cyber aggression specifically (Sontag, Clemans, Graber, & Lyndon, 2011). These youth may be engaged in reciprocal victimization experiences as a means to protect their social status, which may come at a greater cost to their emotional well-being.

Third, in terms of Internet use, the lack of a moderating effect of Internet use on cyber victimization and internalizing symptoms is not consistent with past literature using the Cyber Victimization Scale (Landoll & La Greca, 2010). However, this study examined these associations in a younger sample and comparison literature in this field is nascent. Additionally, while intuitively one may reason that individuals who use the

Internet less often may be less likely to experience cyber victimization simply due to lack of exposure, there is no evidence to suggest that the experience of cyber victimization itself is any less hurtful for individuals who use the Internet less frequently, consistent with the null findings in the current study. Past findings regarding the role of Internet use on both cyber victimization and internalizing symptoms have focused on main effects, rather than a moderating influence (Kraut et al., 1998; Beebe et al., 2004). This is an important distinction and advancement within the current study, and consistent with previous literature (Kraut et al., 1998; Beebe et al., 2004), moderate positive effects of Internet usage on internalizing symptoms were found. However, potential moderating effects may be masked when considering general Internet (or even social networking usage), without an examination of the specific types of Internet usage (Selfhout et al., 2009), or the more nuanced constructs, such as the complexity of an adolescents' social network.

In summary, the examination of these potential moderating variables (gender, peer social support and internet usage) offers important directions for future research. Gender differences provide further support for potential "subtypes" of cyber victimization or a different underlying structure or meaning of cyber victimization across gender. Future research that examines the factorial invariance (or lack thereof) of the CVS-A across gender would enhance both the psychometric properties of the CVS-A and provide important considerations for potentially gender-specific pathways and mechanisms implicated in the association between cyber victimization and depression. Findings regarding peer social support and Internet usage suggest that certain

characteristics of adolescents' on-line users, such as complexity of social networks or peer status, may be important to examine in future research, which in turn, can be used to inform prevention and treatment.

Limitations and Future Directions

While this study offers several important contributions to the literature, it is not without limitations. First, the lack of inclusion of a previously validated measure of cyber victimization limit the psychometric evaluation of the CVS-A. While limited validated measures of cyber victimization exist, future research that provides a comparison of several different measures of cyber victimization may help refine our operational definition. Inclusion of items used in previous research, even without strong psychometric support, would at least provide a benchmark for comparison. It would also be helpful in identifying whether or not a full 13-item scale provides any incremental validity or captures aversive on-line experiences that are missed by these more general screening questions. Continued item-reduction analyses may also help refine the potential CVS-A subscales and address the statistical challenges observed, including reliability of subscales and normality. However, given the overall low frequency of cyber victimization reported by this sample, it seems likely that the CVS-A is better able to identify even those rare experiences that may be meaningful through use of multiple items. Additionally, the findings regarding subtypes of cyber victimization and symptoms of depression provide support for utilizing a measure that captures different types of cyber victimization experiences.

A second limitation of this study is the reliance on adolescent self-report. While the perception of PV experiences is important in the consideration of adolescents' self-appraisals and cognitions, which are likely to influence psychopathology, the use of collateral information can be helpful in illuminating whether or not adolescents at risk for internalizing symptoms are in fact, more often victims of negative peer interactions, or perceive peer interactions more negatively. Past research suggests both may be the case (Prinstein et al., 2005), but little is known how this occurs via electronic media. Future research that utilizes creative data collection techniques (e.g., Facebook profile sampling, c.f. Mikami et al., 2010), may provide collateral information that is important and relevant.

A third limitation of this study is that the CVS-A focuses on the *perception* of negative peer experiences versus their actual experiences. This study did not measure any cognitive correlates of internalizing symptoms, despite the prevalence of cognitive bias in adolescents with depression and anxiety (De Los Reyes & Prinstein, 2004; Joormann & Gotlib, 2007; Rudolph & Clark, 2001). Future research could expand our understanding of potential moderators of cyber victimization through inclusion of these, and other potentially relevant, constructs.

A fourth limitation of this study is that information on peer aggression was not integrated with the current study in analyses of psychological outcomes. Research has suggested a high degree of overlap between victims of PV and aggressors (O'Brennan, Bradshaw, & Sawyer, 2009). In fact, typically adolescents who are both victims and aggressors of PV often report worse psychological outcomes that adolescents who are

either only victims or only aggressors of PV (O'Brennan et al., 2009; Sontag et al., 2011). Future research that addresses this limitation would enhance our understanding of not only cyber aggression itself, but also refine our knowledge of CV.

A fifth limitation of this study is the lack of collateral information on adolescents' Internet use. While efforts were made to gather data on number of Facebook "friends" and extent to which adolescents engage with parents and teachers via social networking sites, the inclusion of these variables would enhance our understanding of the complete picture of adolescents' on-line experiences. However, given the nascent state of literature in this area, it was difficult to determine theoretically meaningful ways to score and interpret these variables in the context of planned analyses. Future research that seeks to better operationalize these constructs would enhance our understanding of cyber victimization in the context of adolescents' social and emotional development.

Additionally, several design limitations exist in the current study. The first is the short time frame between sampling – approximately six weeks. While this time frame was not expected to adversely affect the ability to detect change in cyber victimization and was fairly consistent with previous studies that used a two month time frame (Landoll, 2009; Siegel et al., 2009), a longer sampling time may have reduced the stability across psychological outcomes over time (Prinstein et al., 2005; La Greca & Harrison, 2005; Siegel et al., 2009). However, it is important to note that power was sufficient to detect change across all outcomes.

Furthermore, while the diversity of this sample is a strength in comparison to many studies, Asian students were not as well sampled and relatively low levels of non-Hispanic Whites and Blacks may limit generalizability to those groups. Also, the current

study did not consider the role of sexual minority status in associations between cyber victimization and internalizing distress, despite anecdotal evidence these youth may be at particular risk (Pilkington, 2010).

Finally, the low level of internalizing symptoms in this population, while consistent with a community based sample, may not be generalizable to adolescents who are more psychologically disturbed. Future research that addresses these limitations is needed to enhance the generalizability of these findings.

Conclusions

In conclusion, this study offers several important contributions to existing literature. It provides a strong psychometric evaluation of a new measure of cyber victimization. This is particularly important, given the emerging nature of this research and the need to capture a variety of on-line experiences that take into account modern methods of communicating, such as social networking.

Additionally, this study offers support for the prospective contributions of cyber victimization to increasing symptoms of depression, above and beyond both the contributions of initial symptomology and traditional forms of PV. This examination of the unique role of cyber victimization in comparison to other forms of PV and over time is an important step forward.

Finally, the moderating role of peer social support and gender offer important information to identify populations that may be at increased risk for depression after experiencing cyber victimization. These findings provide interesting areas for future research to illuminate pathways and causal mechanisms implicated in associations between adolescents' social and emotional functioning.

The promising findings of the current study offer encouragement for future research that seeks to enhance the generalizability of these findings and strengthen the psychometric validity of the CVS-A, particularly for its subscales. Furthermore, research that explores potential mechanisms behind the differential findings with cyber victimization and depressive symptoms versus cyber victimization and anxious symptoms, as well as further explores the role of peer social support and the potentially related construct of on-line social networking complexity will offer important advances to the literature. Seeking to understand gender differences in adolescents' on-line social functioning is another important area for future research to provide targeted and well-informed interventions.

In regards to clinical interventions, this study informs approaches to treatment of anxiety and depression in several ways. It supports the notion that clinicians should become familiar with new media and its role in adolescents' social and emotional development, particularly potential cyber victimization experiences. An enhanced understanding of the role on-line experiences play in adolescents' emotional well-being will enhance both clinical intervention and preventative efforts and provide guidance on appropriate and inappropriate uses of social media among youth that is both timely and relevant.

Table 1. *Theoretical Ratings from the Cyber Victimization Scale for Adolescents (CVS-A)*

CVS-A Item[a]	Theoretical Ratings[c]					
A peer….	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Final
1. Ignored my "Friend Requests"	REL	REL	REL	REL	REL	REL
2. Removed me from a "Friend List"	REL	REL	REL	REL	REL	REL
3. Did not list me as "Top Friends"	REL	REL	REL	REL	XXX	XXX
4. Added me as a "Friend"[b]	POS	POS	POS	POS	POS	POS
5. Posted mean things on public site	REP	AGG	AGG	REP	REP	REP
6. Posted mean things anonymously[b]	REP	AGG	AGG	REP	REP	REP
7. Posted embarrassing pictures of me	REP	REP	REP	REP	REP	REP
8. Distributed embarrassing pictures or videos[b]	AGG	REP	REP	REP	REP	REP
9. Incriminated to authority figures by distributing pictures or videos[b]	AGG	REP	AGG	AGG	AGG	AGG
10. Sent nice messages[b]	POS	POS	POS	POS	POS	POS
11. Spread rumors or secrets about me via SNS	REP	REP	AGG	REP	XXX	XXX
12. Sent mean messages	AGG	REL	AGG	XXX	XXX	XXX
13. Embarrassed me through impersonating me on a SNS	AGG	AGG	AGG	AGG	AGG	AGG
14. Prevented me from joining groups	REL	REL	REL	REL	AGG	AGG
15. Posted pictures of fun times[b]	POS	POS	POS	POS	POS	POS
16. Created a SNS group to be mean[b]	AGG	AGG	AGG	AGG	AGG	AGG
17. Excluded me from parties/social events I discovered via SNS	REL	REL	REL	REL	REL	REL
18. Broke up with me via SNS	AGG	REL	REL	REL	REL	REL
19. Created jealousy with my romantic partner	AGG	REL	AGG	REL	AGG	AGG
20. Publicly complimented[b]	POS	POS	POS	POS	POS	POS

[a]Items are summarized. See Appendix B for complete item listing

[b]Items added to revised scale

[c]AGG = Aggressive Cyber Victimization; REP = Reputational Cyber Victimization; REL = Relational Cyber Victimization; POS = Positive Social Networking Behaviors; XXX = Could not assign to a factor (eliminated)

Table 2. *Descriptives from the Cyber Victimization Scale for Adolescents (CVS-A)*

CVS-A Item[a] A peer….	Three-Factor Structure Scale[c]	Descriptives		
		Mean (SD)	% Endorsed	Skewness (Kurtosis)
1. Ignored my "Friend Requests"	REL	1.41 (.64)	33%	1.74 (3.92)
2. Removed me from a "Friend List"	REL	1.45 (.60)	40%	1.22 (1.96)
3. Did not list me as "Top Friends"	XXX	1.11 (.42)	8%	4.48 (24.13)
4. Added me as a "Friend"[b]	POS	2.61 (1.23)	88%	.46 (-.51)
5. Posted mean things on public site	REP	1.26 (.59)	19%	2.60 (7.62)
6. Posted mean things anonymously[b]	REP	1.29 (.63)	21%	2.44 (6.54)
7. Posted embarrassing pictures of me	REP	1.24 (.58)	18%	2.81 (9.05)
8. Distributed embarrassing pictures or videos[b]	REP	1.14 (.46)	11%	4.08 (20.82)
9. Incriminated to authority figures by distributing pictures videos[b]	AGG	1.09 (.36)	7%	5.00 (30.29)
10. Sent nice messages[b]	POS	3.72 (1.27)	93%	-.65 (-.75)
11. Spread rumors or secrets about me via SNS	XXX	1.28 (.65)	20%	2.75 (8.58)
12. Sent mean messages	XXX	1.49 (.79)	34%	1.82 (3.62)
13. Embarrassed me through impersonating me on a SNS	AGG	1.19 (.52)	14%	3.48 (14.79)
14. Prevented me from joining groups	AGG	1.06 (.33)	4%	7.17 (61.89)
15. Posted pictures of fun times[b]	POS	3.25 (1.26)	88%	-.14 (-.82)
16. Created a SNS group to be mean[b]	AGG	1.04 (.28)	3%	8.02 (78.30)
17. Excluded me from parties/social events I discovered via SNS	REL	1.28 (.62)	21%	2.83 (9.82)
18. Broke up with me via SNS	REL	1.28 (.55)	23%	2.32 (7.15)
19. Created jealousy with my romantic partner	AGG	1.45 (.76)	32%	1.89 (3.93)
20. Publicly complimented[b]	POS	3.06 (1.32)	84%	-.03 (-1.01)

[a]Items are summarized. See Appendix B for complete item listing
[b]Items added to revised scale
[c]AGG = Aggressive Cyber Victimization; REP = Reputational Cyber Victimization; REL = Relational Cyber Victimization; POS = Positive Social Networking Behaviors; XXX = Could not assign to a factor (eliminated)

Table 3. *Factor Loadings*[a] *for CFA of Theoretical Model and Single Factor Structure*

CVS-A Item[b] A peer….	Theoretical Model[c]			Single Factor Model
	AGG	REP	REL	
1. Ignored my "Friend Requests"			.38/.38	.34/.39
2. Removed me from a "Friend List"			.57/.55	.51/.56
5. Posted mean things on public site		.40/.64		.35/.47
6. Posted mean things anonymously		.52/.63		.52/.55
7. Posted embarrassing pictures of me		.45/.56		.46/.47
8. Distributed embarrassing pictures or videos		.46/.65		.48/.56
9. Incriminated to authority figures by distributing pictures or videos	.53/.61			.58/.67
13. Embarrassed me through impersonating me on a SNS	.56/.52			.53/.50
14. Prevented me from joining groups	.43/.44			.42/.44
16. Created a SNS group to be mean	.52/.61			.48/.57
17. Excluded me from parties/social events I discovered via SNS			.46/.45	.42/.47
18. Broke up with me via SNS			.52/.49	.44/.47
19. Created jealousy with my romantic partner	.49/.46			.47/.45

[a]Standardized loadings are reported as: Sample A/Sample B

[b]Items are summarized. See Appendix B for complete item listing

[c]AGG = Aggressive Cyber Victimization; REP = Reputational Cyber Victimization; REL = Relational Cyber Victimization; POS = Positive Social Networking Behaviors; XXX = Could not assign to a factor (eliminated)

Table 4. *Psychometric Properties of Cyber Victimization Scale for Adolescents (CVS-A): Three-Factor Model and Single Factor Model*

Scale		Descriptives		Reliability		Convergent Validity with Traditional Peer Victimization (PV)			Bivariate Correlations among CVS-A scales			
		Mean (SD)	Skewness (Kurtosis)	Internal Consistency (α)	Test-Retest[d]	Overt PV	Reputational PV	Relational PV	Single Factor	AGG	REP-T	REL
Single Factor		1.24 (.30)	3.57 (28.72)	.80	.52	.39	.53	.44	--	.82	.83	.81
Theoretical Model	AGG[a]	1.17 (.29)	4.29 (36.01)	.54	.43	.30	.45	.32		--	.55	.50
	REP-T[b]	1.24 (.41)	2.82 (12.28)	.68	.45	.36	.47	.31			--	.49
	REL[c]	1.35 (.40)	1.98 (8.59)	.58	.49	.30	.40	.45				--

Notes. All correlations significant at $p < .001$

[a]Aggressive Cyber Victimization

[b]Reputational Cyber Victimization

[c]Relational Cyber Victimization

[d]Bivariate correlation between Time 1 and Time 2 measurement approximately 6 weeks apart

Table 5. *Means (Standard Deviations) and Bivariate Correlations Among Key Study Variables*

		Mean (SD)	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1.	T1 Cyber Victimization	1.24 (.30)	.56***	.39***	.45***	.54***	.33***	.31***	.22***	.22***	.29***	.25***	.09**	.17***	-.05
2.	T2 Cyber Victimization	1.26 (.37)	---	.32***	.25***	.33***	.26***	.34***	.11**	.16***	.15**	.20***	.08**	.15**	-.02
3.	T1 Overt Victimization	1.32 (.50)		---	.28***	.47***	.28***	.21***	.16***	.14***	.21***	.18***	-.02	-.04	-.14***
4.	T1 Relational Victimization	1.64 (.62)			---	.40***	.39***	.28***	.41***	.39***	.37***	.31***	.05	.10**	-.11**
5.	T1 Reputational Victimization	1.50 (.69)				---	.36***	.30***	.25***	.21***	.31***	.26***	.04	.09**	.00
6.	T1 Depression	13.76 (9.65)					---	.62***	.49***	.42***	.54***	.49***	.04	.05	-.14***
7.	T2 Depression	13.41 (9.50)						---	.36***	.45***	.41***	.52***	.04	.05	-.09**
8.	T1 Social Anxiety	38.93 (12.87)							---	.76***	.65***	.56***	.08*	.05	-.16***
9.	T2 Social Anxiety	37.32 (13.26)								---	.55***	.61***	.11**	.07	-.13***
10.	T1 General Anxiety	2.38 (2.27)									---	.68***	.11**	.08*	-.06*
11.	T2 General Anxiety	2.15 (2.39)										---	.09*	.10**	-.05
12.	Internet Usage	4.37 (.94)											---	.48***	.07*
13.	Social Networking (SN) Usage	4.13 (1.28)												---	.17***
14.	Social Support – Friends	15.44 (3.56)													---

Notes. **p* < .05. ***p* < .01. ****p* < .001.

Table 6. *Means (Standard Deviations) and Bivariate Correlations Among Key Study Variables by Gender and Ethnicity*

Variable	Total	Boys	Girls	t	Non-Hispanic White	Hispanic	Black	Asian	F
T1 Cyber Victimization	1.24 (.30)	1.23 (.33)	1.26 (.27)	2.17*	1.33 (.53)	1.23 (.25)	1.22 (.26)	1.27 (.27)	2.96*
T2 Cyber Victimization	1.26 (.37)	1.26 (.44)	1.25 (.31)	.02	1.26 (.38)	1.25 (.37)	1.27 (.39)	1.34 (.47)	.90
T1 Overt Victimization	1.32 (.50)	1.41 (.58)	1.25 (.42)	4.99***	1.37 (.56)	1.29 (.47)	1.42 (.56)	1.40 (.58)	3.73*
T1 Relational Victimization	1.64 (.62)	1.57 (.62)	1.69 (.63)	2.96**	1.84 (.73)	1.62 (.61)	1.56 (.62)	1.59 (.63)	4.69**
T1 Reputational Victimization	1.50 (.69)	1.38 (.63)	1.60 (.72)	5.26***	1.60 (.83)	1.46 (.64)	1.61 (.78)	1.68 (.90)	3.55*
T1 Depression	13.76 (9.65)	12.72 (9.11)	14.54 (9.97)	2.92**	14.01 (10.99)	13.37 (9.28)	15.42 (9.81)	15.38 (11.34)	1.84
T2 Depression	13.41 (9.50)	11.91 (8.42)	14.48 (10.07)	4.33***	13.09 (10.10)	13.08 (9.20)	15.25 (10.38)	14.03 (8.73)	1.83
T1 Social Anxiety	38.93 (12.87)	37.49 (12.39)	39.96 (13.14)	2.99**	41.88 (14.62)	38.39 (12.63)	38.63 (12.02)	41.75 (13.15)	2.96*
T2 Social Anxiety	37.32 (13.26)	35.57 (12.82)	38.66 (13.47)	3.53***	39.28 (14.55)	36.85 (13.00)	37.59 (12.96)	37.88 (12.76)	1.01
T1 General Anxiety	2.38 (2.27)	1.82 (2.07)	2.79 (2.32)	6.88***	2.49 (2.35)	2.39 (2.27)	2.06 (1.94)	2.92 (2.34)	1.53
T2 General Anxiety	2.15 (2.39)	1.66 (2.16)	2.52 (2.48)	5.66***	2.02 (2.49)	2.16 (2.39)	2.10 (2.29)	2.21 (2.34)	.12
Internet Usage	4.37 (.94)	4.34 (.95)	4.40 (.92)	.84	4.42 (.76)	4.40 (.92)	4.19 (1.07)	4.59 (.82)	2.40
Social Networking (SN) Usage	4.13 (1.28)	3.86 (1.48)	4.32 (1.08)	5.13***	4.17 (1.16)	4.14 (1.25)	4.04 (1.44)	4.15 (1.28)	.24
Social Support – Friends	15.44 (3.56)	14.32 (3.69)	16.23 (3.24)	8.49***	15.09 (4.27)	15.57 (3.49)	15.10 (3.31)	15.15 (3.56)	1.10

Notes. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 7. *Electronic Media Usage of Full Sample*

Electronic Media	**Percentage Endorsed**
Have cell phone	82.9
Can send/received pictures on smartphone	74.7
Use text messaging	80.3
Send between 1 and 100 texts daily	61.5
Send between 101 and 200 texts daily	16.9
Send over 200 texts daily	21.6
Access the Internet*	
Access every few weeks	1.9
Access weekly	11.6
Access daily	27.6
Access several times a day	58.9
Have social networking account	73.4
Access Social Networking Sites (SNS) less often than every few weeks	2.5
Access every few weeks	2.8
Access SNS weekly	14.1
Access SNS daily	27.1
Access SNS several times a day	53.5
Use cell phone to access SNS	56.4
Friends with parents or teachers on SNS	46.0
Use privacy controls to limit content viewable by parents or teachers on SNS	32.7

Notes. *As part of study inclusion, all participants reported access to the Internet at least "Every few weeks"

Table 8. *Summary of Regression Analyses Examining Specific Aim #2a Concurrent Associations*

	DV = Depression				DV = Social Anxiety				DV = General Anxiety			
	β	Final β	R^2	ΔR^2	β	Final β	R^2	ΔR^2	β	Final β	R^2	ΔR^2
Step 1:			.02	.02**			.02	.02**			.06	.06***
Age	-.01	.02			.01	.01			-.06	-.04		
Gender (1 = Girls)	.11**	.07*			.12***	.08*			.24***	.20***		
Ethnicity (1 = Hispanic)	-.04	.04			-.13**	-.06			-.05	.02		
Ethnicity (1 = Black)	.05	.09*			-.08	-.03			-.06	-.02		
Ethnicity (1 = Asian)	.03	.04			.00	.02			.04	.06		
Step 2:			.23	.21***			.19	.17***			.23	.17***
Overt Victimization	.12**	.10**			.04	.03			.10**	.09**		
Relational Victimization	.30***	.28***			.36***	.36***			.30***	.28***		
Reputational Victimization	.18***	.14***			.08*	.08*			.12**	.10*		
Step 3:			.24	.01*			.19	.00			.23	.00
Cyber Victimization	.09*	.09*			.00	.00			.06	.06		
Final Model	F (9, 916) = 31.01***			n = 925	F (9, 927) = 24.25***			n = 936	F (9, 908) = 30.20***			n = 917

Note. *p< .05, **p < .01, ***p < .001.

Table 9. *Summary of Regression Analyses Examining Specific Aim #2b Prospective Associations*

	DV = Depression				DV = Social Anxiety				DV = General Anxiety			
	β	Final β	R^2	ΔR^2	β	Final β	R^2	ΔR^2	β	Final β	R^2	ΔR^2
Step 1:			.02	.02**			.02	.02*			.04	.04***
Age	-.02	-.01			-.01	-.01			-.06	-.02		
Gender (1 = Girls)	.13***	.05			.12**	.05			.18**	.04		
Ethnicity (1 = Hispanic)	-.01	.02			-.11*	-.01			.00	.03		
Ethnicity (1 = Black)	.07	.04			-.03	.04			.01	.05		
Ethnicity (1 = Asian)	.02	.00			-.02	-.01			.00	-.02		
Step 2:			.14	.12***			.18	.16***			.16	.12***
Overt Victimization	.09*	-.01			.05	.00			.10*	.03		
Relational Victimization	.20***	.01			.36***	.08**			.23***	.02		
Reputational Victimization	.16***	.02			.04	-.02			.12**	.02		
Step 3:			.16	.02***			.18	.00			.17	.01
Cyber Victimization	.19***	.13**			.04	.05			.08	.05		
Step 4:			.40	.24***			.59	.41***			.45	.28***
Time 1 Internalizing DV	.56***	.56***			.72***	.72***			.62***	.62***		
Final Model	F (10, 817) = 55.08***			n = 827	F (10, 743) = 107.44***			n = 753	F (10, 732) = 60.74***			n = 742

Note. *p< .05, **p < .01, ***p < .001.

Table 10. *Summary of Regression Analyses Examining Specific Aim #3a Concurrent Associations*

	DV = Depression				DV = Social Anxiety				DV = General Anxiety			
	β	Final β	R^2	ΔR^2	β	Final β	R^2	ΔR^2	β	Final β	R^2	ΔR^2
Step 1:			.02	.02**			.03	.03***			.07	.07***
Age	.01	.05			.01	.02			-.07*	-.05		
Gender (1 = Girls)	.11**	.04			.12**	.12***			.25***	.23***		
Ethnicity (1 = Hispanic)	-.06	.04			-.15**	-.08			-.07	.00		
Ethnicity (1 = Black)	.03	.05			-.07	-.02			-.06	-.02		
Ethnicity (1 = Asian)	.04	.04			.00	.02			.03	.04		
Step 2:			.05	.03***			.07	.04***			.09	.02***
Internet Usage	.06	.01			.07*	.06			.09**	.07*		
Social Support – Friends	-.16***	-.06			-.20***	-.14***			-.11**	-.05		
Step 3:			.24	.19***			.21	.14***			.24	.15***
Overt Victimization	.13***	.10**			.04	.04			.10**	.09*		
Relational Victimization	.28***	.28***			.36***	.35***			.29***	.28***		
Reputational Victimization	.17***	.16***			.04	.03			.11**	.08*		
Step 4:			.25	.01*			.21	.00			.25	.01
Cyber Victimization (CV)	.09*	.09			.01	-.01			.06	.04		
Step 5:			.25	.00			.21	.00			.25	.00
CV x Gender	-.01	.01			.00	.00			.03	.03		
CV x Internet Usage	-.02	-.02			.03	.03			-.01	-.01		
CV x Social Support - Friends	.00	-.00			-.04	-.04			-.02	-.02		
Final Model	F (14, 815) = 19.39***			n = 829	F (14, 832) = 16.04***			n = 846	F (14, 813) = 18.98***			n = 827

Note. *p< .05, **p < .01, ***p < .001.

Table 11. *Summary of Regression Analyses Examining Specific Aim #3b Prospective Associations*

	DV = Depression				DV = Social Anxiety				DV = General Anxiety			
	β	Final β	R^2	ΔR^2	β	Final β	R^2	ΔR^2	β	Final β	R^2	ΔR^2
Step 1:			.02	.02**			.02	.02**			.05	.05***
Age	-.02	-.02			-.01	-.01			-.06	-.02		
Gender (1 = Girls)	.13**	.06			.11**	.04			.20***	.06		
Ethnicity (1 = Hispanic)	-.02	.00			-.11*	-.01			-.02	.01		
Ethnicity (1 = Black)	.06	.04			-.01	.05			.02	.06		
Ethnicity (1 = Asian)	.02	-.01			-.05	-.02			-.01	-.02		
Step 2:			.04	.02**			.06	.04***			.07	.02**
Internet Usage	.07†	.02			.11**	.03			.10**	.01		
Social Support – Friends	-.12**	-.03			-.19***	-.02			-.10*	-.01		
Step 3:			.15	.11***			.20	.14***			.17	.10***
Overt Victimization	.12**	.02			.06	.03			.10*	.02		
Relational Victimization	.19***	.02			.33***	.06†			.21***	.02		
Reputational Victimization	.16***	.02			.04	-.01			.11*	.03		
Step 4:			.18	.03***			.20	.00			.18	.01†
Cyber Victimization (CV)	.18***	.16**			.04	.01			.09†	.01		
Step 5:			.19	.01			.20	.00			.18	.00
CV x Gender	-.02	-.01			.00	-.01			.06	.04		
CV x Internet Usage	-.02	-.01			.04	.02			-.06	-.05		
CV x Social Support – Friends	.10*	.08*			-.06	-.02			-.07	-.05		
Step 6:			.40	.21***			.60	.40***			.46	.28***
Time 1 Internalizing DV	.53***	.53***			.72***	.72***			.61***	.61***		
Final Model	F (15, 718) = 32.20***			n = 733	F (15, 681) = 69.29***			n = 696	F (15, 669) = 37.86***			n = 684

Note. $^{\dagger}p < .06$,*$p < .05$, **$p < .01$, ***$p < .001$.

Figure Caption

Figure 1. PEERS Project Participation and Attrition (Time 3 not included in current study as indicated by dashed lines)

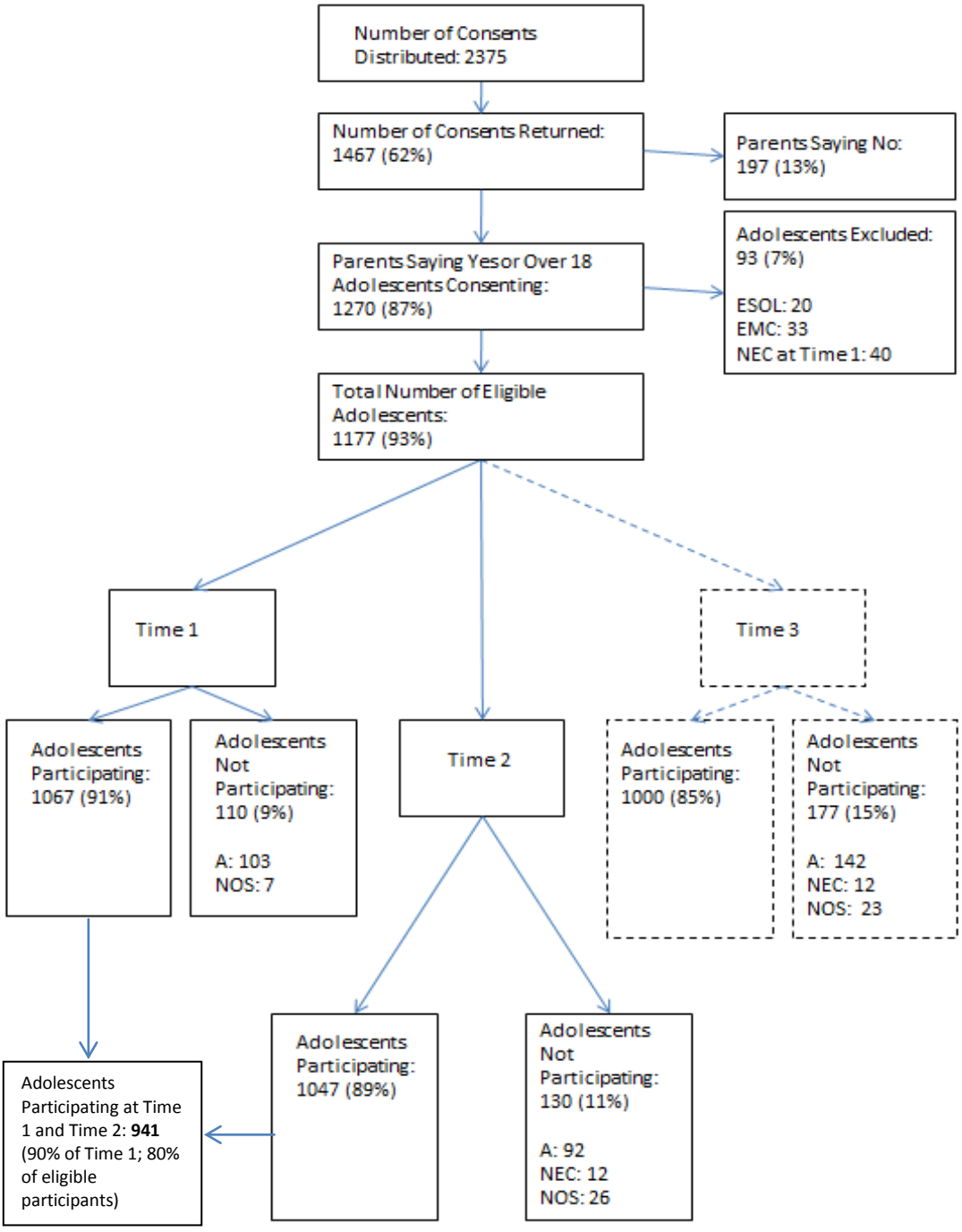
Figure 2. Path Model of Three-Factor Model Cyber Victimization Scale for Adolescents

Figure 3. Path Model of Single Factor Cyber Victimization Scale for Adolescents

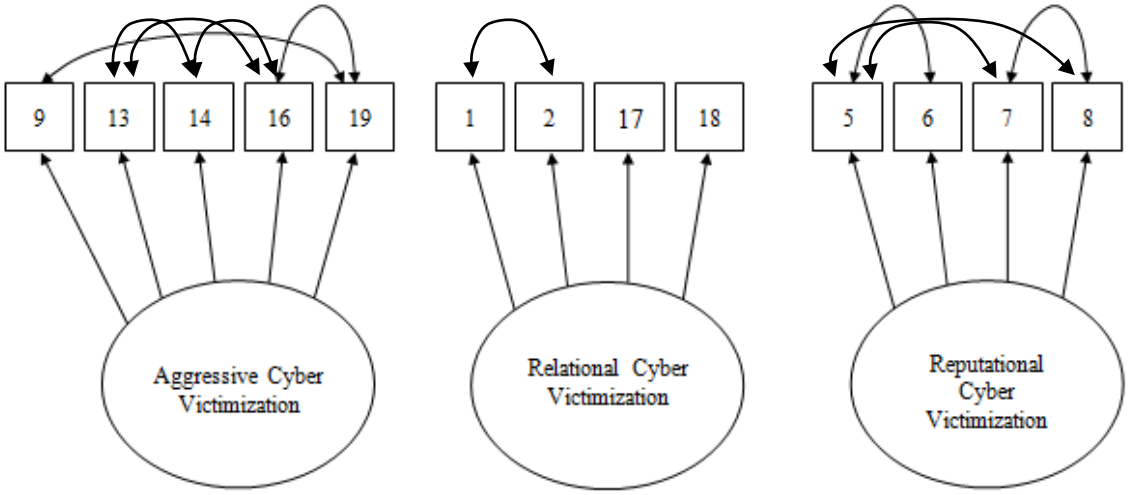
Figure 4. Post-hoc Probe of Interaction between Perceived Social Support by Friends and Cyber Victimization Predicting Time 2 Depressive Symptoms

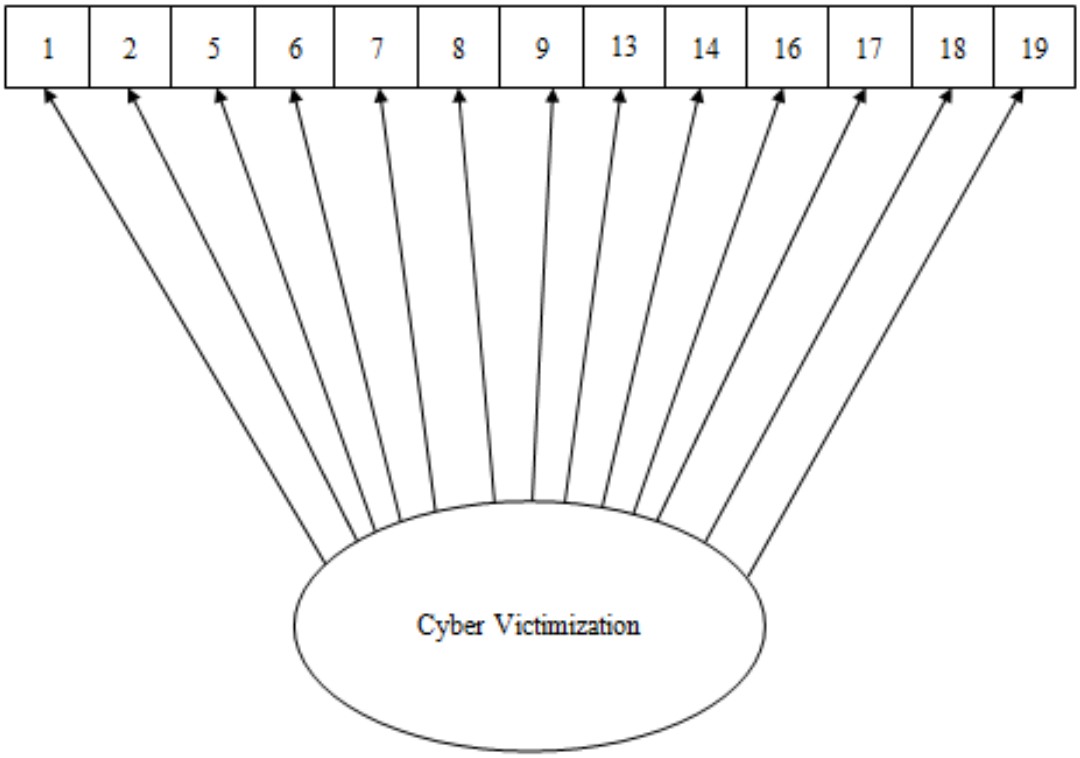
Figure 5. Post-hoc Probe of Interaction between Gender and Aggressive Cyber Victimization Predicting Time 2 Depressive Symptoms

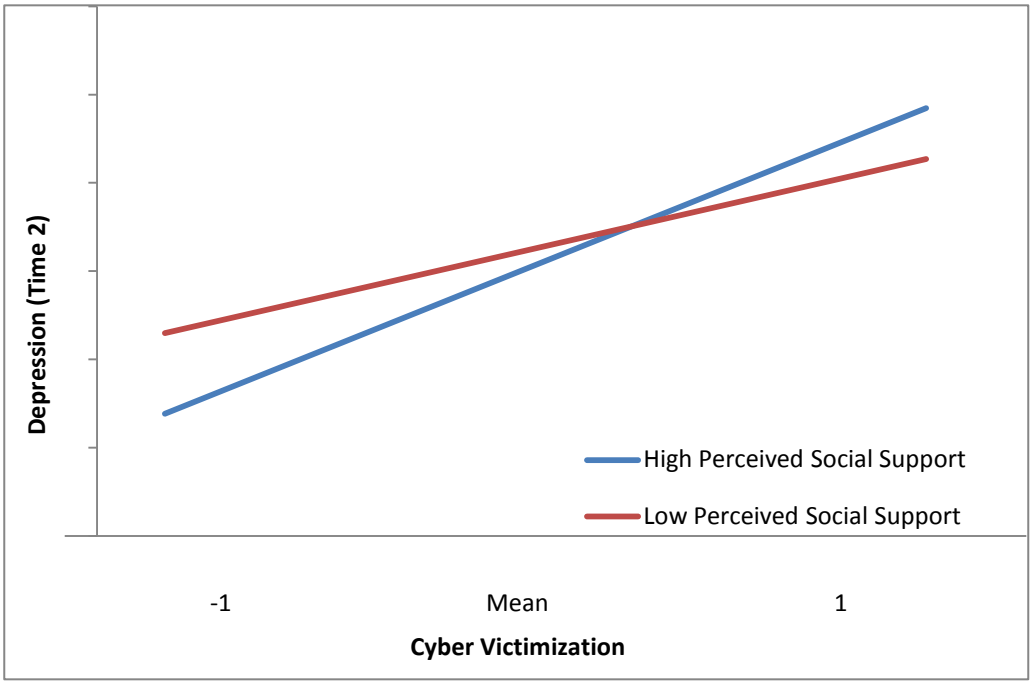
Figure 6. Post-hoc Probe of Interaction between Gender and Reputational Cyber Victimization Predicting Time 2 Depressive Symptoms

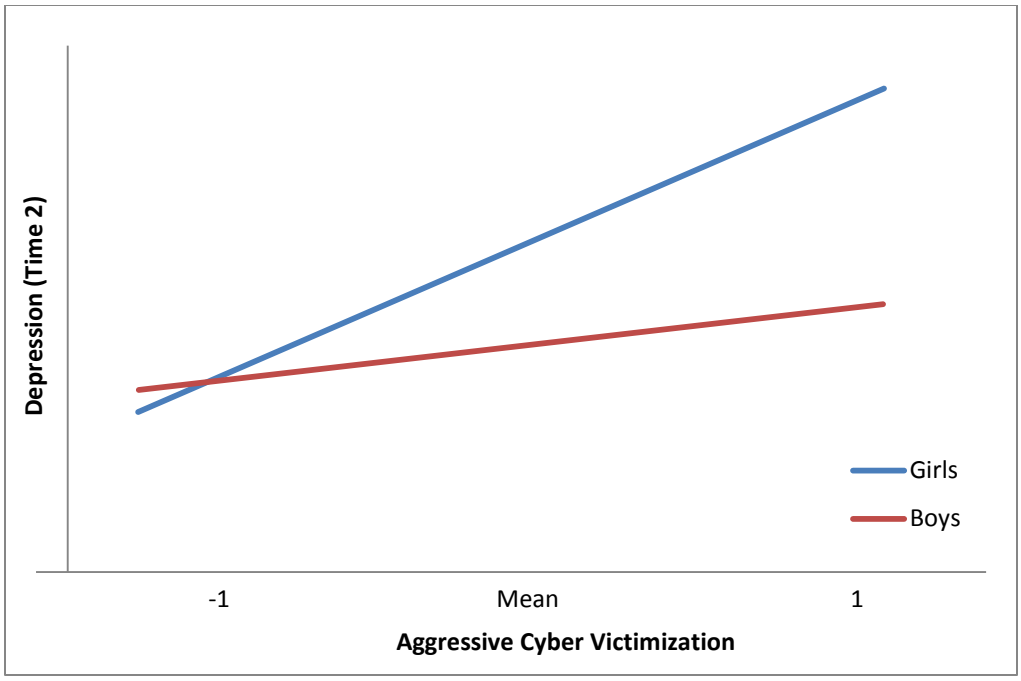


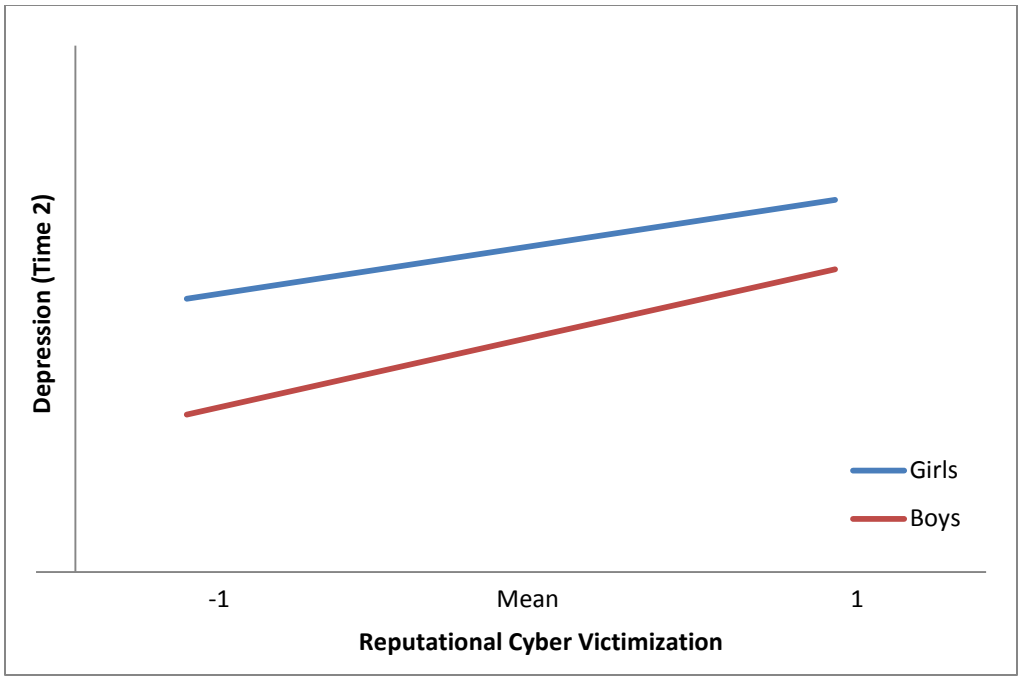
Note. A = Absent; NOS = Not Otherwise Specified; NEC = no longer enrolled in class; ESOL = English as second language (proficiency too low to complete measures); EMC = enrolled in multiple classes


9
13
14
16
19
Aggressive Cyber Victimization
1
2
17
18
Relational Cyber Victimization
5
6
7
8
Reputational Cyber Victimization


1
2
5
6
7
8
9
13
14
16
17
18
19
Cyber Victimization


Depression (Time 2)
High Perceived Social Support
Low Perceived Social Support
-1
Mean
1
Cyber Victimization


Depression (Time 2)
Girls
Boys
-1
Mean
1
Aggressive Cyber Victimization


Depression (Time 2)
Girls
Boys
-1
Mean
1
Reputational Cyber Victimization

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APPENDIX A

BACKGROUND INFORMATION – T1

1. Sex ____Boy (Male) ____Girl (Female)

2. Grade ____9 ____10 ____11 ____12

3. Date of Birth (Month/Day/Year) _____/_____/_____ Age: _____

4a. Are you of Hispanic/Latino descent? ____Yes ____ No

4b. Are you of Caribbean descent? ____Yes ____ No

4c. What is your racial background? Check the one that BEST fits your background.

____ White ____ Black ____ Asian

5. From the above descriptions, which race/ethnicity do you identify with the most?

_____

6. What language did you FIRST speak as a child? (circle)

English Spanish Other (explain)

_____

7. Who do you currently live with?

_____ Mom only

_____ Dad only

_____ Both parents

_____ Mom and her significant other (e.g. step-parent)

_____ Dad and his significant other (e.g. step-parent)

_____ Other relatives

_____ Other (explain) _____

8. How many brothers and sisters do you live with at home? _____

9. How many of them are older than you? _____

Electronic Media Usage

These questions ask about some things that peers do on electronic media. Electronic media includes social networking sites (SNS; e.g., Facebook, MySpace), web sites (e.g., Formspring, YouTube), and texting or instant messaging via cell phones.

1. Do you have a cell phone? ____Yes ____ No
4. If yes, can you send and receive pictures with your phone? ___Yes ____ No
2. Do you use text messaging? ____Yes ____ No
3. If yes, how many text messages do you send and receive on an average day?

____ 1 to 10 ____ 11 to 20 ____ 21 to 50
____ 51 to 100 ____ 101 to 200 ____ More than 200

5. How often do you access the Internet or email?

____ Several times a day ____ About once a day ____ 3-5 days a week
____ 1-2 days a week ____ Every few weeks ____ Less often or never

6. Do you have a social networking account (e.g., Facebook, MySpace)? ____Yes ____ No

If yes: How often have you used these sites in the past 3 months? (please check)

____ Several times a day ____ About once a day ____ 3-5 days a week
____ 1-2 days a week ____ Every few weeks ____ Less often or never

How many "friends" do you have on your main social networking site? _____ (fill in number)

7. Do you use your cell phone to access social networking sites? ____Yes ____ No

8. Do your parents have a social networking account or access to an account (e.g., yours, other family members')?

____Yes ____ No ____ Don't Know

If yes: Are they "friends" with you on your social networking site? ____Yes ____ No

Do you control any content they can see and access from your profile?
(e.g., do you have privacy controls set or use a "limited profile"?) ____Yes ____ No

9. Do any of your teachers have social networking accounts? ____Yes ____ No ____ Don't Know

If yes: Are any of your teachers "friends" with you on your social networking site?

____Yes ____ No

Do you control any content they can see and access from your profile?
(e.g., do you have privacy controls set or use a "limited profile"?) ____Yes ____ No

APPENDIX B

CVS-A

Using this scale, **rate how often these peer experiences have happened to you. Then also check whether or not you have done these things to another peer.**

For each item, "electronic media" refers to any Internet site, Social Networking Site (SNS), text messaging, email, instant messaging and picture messaging accessed via a computer, cell phone or other mobile device

In the past 3 months…	Never	Once or twice	A few times	About once a week	A few times a week		Did you do this to another peer?	
1. A peer I wanted to be friends with via electronic media ignored my friend request.	1	2	3	4	5		Yes	No
2. A peer removed me from his/her list of friends via electronic media.	1	2	3	4	5		Yes	No
3. A peer made me feel bad by not listing me in his/her "Top 8" or "Top Friends" list.	1	2	3	4	5		Yes	No
*4. A peer that I liked became my "friend" via electronic media.	1	2	3	4	5		Yes	No
5. A peer posted mean things about me publicly via electronic media.	1	2	3	4	5		Yes	No
*6. A peer posted mean things about me anonymously via electronic media.	1	2	3	4	5		Yes	No
7. A peer posted pictures of me that made me look bad via electronic media.	1	2	3	4	5		Yes	No
*8. A peer sent embarrassing pictures or videos of me to others via electronic media.	1	2	3	4	5		Yes	No
*9. A peer tried to get me in trouble with parents, teachers or others by posting pictures or comments about me via electronic media.	1	2	3	4	5		Yes	No
*10. A peer sent me a nice message via electronic media.	1	2	3	4	5		Yes	No
11. A peer publicly spread rumors about me or revealed secrets I had told them via electronic media.	1	2	3	4	5		Yes	No
12. A peer sent me a mean message via electronic media.	1	2	3	4	5		Yes	No
13. A peer pretended to be me via electronic media and did things to make me look bad/damage my friendships.	1	2	3	4	5		Yes	No
14. A peer prevented me from joining a group via electronic media that I really wanted to join.	1	2	3	4	5		Yes	No
*15. A peer posted pictures of me having fun and spending time with them via electronic media.	1	2	3	4	5		Yes	No
*16. A peer created a group via electronic media to be mean and hurt my feelings.	1	2	3	4	5		Yes	No
17. I found out that I was excluded from a party or social event via electronic media.	1	2	3	4	5		Yes	No
18. A peer I was dating broke up with me using electronic media.	1	2	3	4	5		Yes	No
19. A peer made me feel jealous by "messing" with my girlfriend/boyfriend via electronic media.	1	2	3	4	5		Yes	No
*20. A peer complimented me publicly via electronic media.	1	2	3	4	5		Yes	No

APPENDIX C

R-PEQ

These questions ask about some things that often happen between teens. Please rate how often you have done these things to others and how often these things have happened to you in the <u>past three months.</u>

How often has this happened to you?

1. Some teens left me out of an activity or conversation that I really wanted to be included in
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

2. A teen chased me like he or she was really trying to hurt me
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

3. A teen helped me when I was having a problem
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

4. A teen I wanted to be with would not sit near me at lunch or in class
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

5. A teen tried to damage my social reputation by spreading rumors about me
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

How often have you done this to another teen?

I left another teen out of an activity or they really wanted to be included in
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

I chased a teen like I was really trying to hurt him or her
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

I helped a teen when they were having a problem
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

I would not sit near another teen who wanted to be with me at lunch or in class
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

I tried to damage another teen's social reputation by spreading rumors about them
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

6. A teen was nice and friendly to me when I needed help
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

I was nice and friendly to a teen when they needed help
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

7. A teen did not invite me to a party or social event even though they knew that I wanted to go
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

I did not invite a teen to a party or other social event even though I knew the teen wanted to go
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

8. A teen left me out of what they were doing
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

I left another teen out of what I was doing
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

9. To get back at me, a teen told me that s/he would not be friends with me anymore
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

I told a teen that I would not be friends with them anymore to get back at them
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

10. A teen stuck up for me when I was being picked on or excluded
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

I stuck up for a teen who was being picked on or excluded
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

11. A teen gossiped about me so others would not like me
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

I gossiped about a teen so others would not like him/her
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

12. A teen threatened to hurt or beat me up
1. Never
2. Once or twice
3. A few times
4. About once a week

I threatened to hurt or beat up a teen
1. Never
2. Once or twice
3. A few times
4. About once a week

5. A few times a week

13. A teen gave me the silent treatment
(did not talk to me on purpose)
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

14. A teen said mean things about me so that
people would
people would think I was a loser
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

15. A teen helped me join into a group or conversation
conversation
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

16. A teen hit, kicked, or pushed me in a mean way
way.
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

17. A teen teased me in a mean way, by saying rude

things or calling me bad names.
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

18. A teen spent time with me when I had no one else to
one else
hang out with
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

5. A few times a week

I gave a teen the silent treatment
(did not talk to the teen on purpose)
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

I said mean things about a teen so that

would think s/he was a loser
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

I helped a teen join into a group or

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

I hit, kicked, or pushed a teen in a mean

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

I teased a teen in a mean way, by saying
rude
things or calling him or her bad names.
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

I spent time with a teen when they had no

to hang out with
1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

APPENDIX D

*For each of the following descriptions, circle the number that corresponds to how often you have felt this way **during the past week.***

	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)
1. I was bothered by things that usually don't bother me.	0	1	2	3
2. I did not feel like eating; my appetite was poor.	0	1	2	3
3. I felt that I couldn't shake off the blues even with help from my family or friends.	0	1	2	3
4. I felt that I was just as good as other people.	0	1	2	3
5. I had trouble keeping my mind on what I was doing.	0	1	2	3
6. I felt depressed.	0	1	2	3
7. I felt that everything I did was an effort.	0	1	2	3
8. I felt hopeful about the future.	0	1	2	3
9. I thought my life had been a failure.	0	1	2	3
10. I felt fearful.	0	1	2	3
11. My sleep was restless.	0	1	2	3
12. I was happy.	0	1	2	3
13. I talked less than usual.	0	1	2	3
14. I felt lonely.	0	1	2	3
15. People were unfriendly.	0	1	2	3
16. I enjoyed life.	0	1	2	3
17. I had crying spells.	0	1	2	3
18. I felt sad.	0	1	2	3
19. I felt that people dislike me.	0	1	2	3
20. I could not get "going."	0	1	2	3

APPENDIX E

SAS-A (Adolescents) - Self

This is not a test, there are no right or wrong answers. Please answer each item as honestly as you can.
Use these numbers to show HOW MUCH YOU FEEL something has been true for you *in the past 3 months*:

	Not at all	Hardly ever	Sometimes	Most of the time	All of the time
1. I worry about doing something new in front of others.	1	2	3	4	5
2. I like to do things with my friends.	1	2	3	4	5
3. I worry about being teased.	1	2	3	4	5
4. I feel shy around people I don't know.	1	2	3	4	5
5. I only talk to people I know really well.	1	2	3	4	5
6. I feel that peers talk about me behind my back.	1	2	3	4	5
7. I like to read.	1	2	3	4	5
8. I worry about what others think of me.	1	2	3	4	5
9. I'm afraid that others will not like me.	1	2	3	4	5
10. I get nervous when I talk to peers I don't know very well.	1	2	3	4	5
11. I like to play sports.	1	2	3	4	5
12. I worry about what others say about me.	1	2	3	4	5
13. I get nervous when I meet new people.	1	2	3	4	5
14. I worry that others don't like me.	1	2	3	4	5
15. I'm quiet when I'm with a group of people.	1	2	3	4	5
16. I like to do things by myself.	1	2	3	4	5
17. I feel that others make fun of me.	1	2	3	4	5
18. If I get into an argument, I worry that the other person will not like me.	1	2	3	4	5
19. I'm afraid to invite others to do things with me because they might say no.	1	2	3	4	5
20. I feel nervous when I'm around certain people	1	2	3	4	5
21. I feel shy even with peers I know well.	1	2	3	4	5
22. It's hard for me to ask others to do things with me.	1	2	3	4	5

APPENDIX F

RCMAS-2
Short Version

Directions: The sentences on this form tell how some people think and feel about themselves. Read each sentence carefully, then circle the word that shows your answer and best fits your experiences over the **past three months**.

Circle *Yes* if you think the sentence is *true* about you. Circle *No* if you think it is *not true* about you. Give an answer for every sentence, even if it is hard to choose one that fits you.

1. Often I feel sick in my stomach	YES	NO
2. I am nervous	YES	NO
3. I often worry about something bad happening to me.	YES	NO
4. I fear other kids will laugh at me in class.	YES	NO
5. I have too many headaches.	YES	NO
6. I worry that others do not like me.	YES	NO
7. I wake up scared sometimes.	YES	NO
8. I get nervous around people.	YES	NO
9. I feel someone will tell me I do things the wrong way.	YES	NO
10. I fear other people will laugh at me.	YES	NO

There are no right or wrong answers. Only you can tell us how you think and feel about yourself and your experiences over the **past three months**.

APPENDIX G

PSS-Fr

Directions: The statements which follow refer to feelings and experiences which occur to most people at one time or another in their relationships with **friends**. For each statement, there are three possible answers: Yes, No, Don't know. Please circle the answer for each item that best describes how you have felt over the **past three months**.

1. My friends give me the moral support I need.	Yes	No	Don't know
2. Most other people are closer to their friends than I am.	Yes	No	Don't know
3. My friends enjoy hearing about what I think.	Yes	No	Don't know
4. Certain friends come to me when they have problems or need advice.	Yes	No	Don't know
5. I rely on friends for emotional support.	Yes	No	Don't know
6. If I felt that one or more of my friends were upset with me, I'd just keep it to myself.	Yes	No	Don't know
7. I feel that I'm on the fringe in my circle of friends.	Yes	No	Don't know
8. There is a friend I could go to if I were just feeling down, without feeling funny about it later.	Yes	No	Don't know
9. My friends and I are very open about what we think about things.	Yes	No	Don't know
10. My friends are sensitive to my personal needs.	Yes	No	Don't know
11. My friends come to me for emotional support.	Yes	No	Don't know
12. My friends are good at helping me solve problems.	Yes	No	Don't know
13. I have a deep sharing relationship with a number of friends.	Yes	No	Don't know
14. My friends get good ideas about how to do things or make things for me.	Yes	No	Don't know
15. When I confide in friends, it makes me feel uncomfortable.	Yes	No	Don't know
16. My friends seek me out for companionship.	Yes	No	Don't know
17. I think that my friends feel that I'm good at helping them solve problems.	Yes	No	Don't know
18. I don't have a relationship with a friend that is as intimate as other people's relationships with friends.	Yes	No	Don't know
19. I've recently gotten a good idea about how to do something from a friend.	Yes	No	Don't know
20. I wish my friends were much different.	Yes	No	Don't know